

**U.S. DEPARTMENT OF TRANSPORTATION  
FEDERAL AVIATION ADMINISTRATION**

As Lead Federal Agency pursuant to the National Environmental Policy Act of 1969

# **FINAL ENVIRONMENTAL IMPACT STATEMENT**

**PHOENIX SKY HARBOR INTERNATIONAL AIRPORT  
Phoenix, Maricopa County, Arizona**

This Final Environmental Impact Statement (EIS) assesses the potential environmental impacts of the proposed Airport Development Program (ADP) as well as seven alternatives to the proposed project including the No-Action Alternative. This Final EIS addresses the environmental impacts anticipated from the proposed Airport Development Program as identified in the Airport Layout Plan for Phoenix Sky Harbor International Airport. Specifically, this Final EIS includes the evaluation of the following projects and associated developments proposed by the City of Phoenix – construction and operation of a new West Terminal Complex, demolition of Terminal 2, construction of Stage 2 of the Automated People Mover, construction of Crossfield Taxiways Uniform “U” and Victor “V”, modification of Sky Harbor Boulevard, and modification of Concourse N4 International Gates in Terminal 4.

The ADP Alternative, as well as the No-Action Alternative, have been assessed in detail and the potential impacts are disclosed within this document. This Final EIS has been prepared pursuant to the following public law requirements: Section 102(2)(c) of the National Environmental Policy Act of 1969 and Section 509(b)(5) of the Airport and Airway Improvement Act of 1962, as amended.

**VOLUME 2: APPENDIX A-E**

**FEBRUARY 2006**

For Further Information:

Ms. Jennifer Mendelsohn  
U.S. Department of Transportation  
Federal Aviation Administration  
P.O. Box 92007  
Los Angeles, CA 90009-2007  
Telephone: 310-725-3637



**U.S. DEPARTMENT OF TRANSPORTATION  
FEDERAL AVIATION ADMINISTRATION**

As Lead Federal Agency pursuant to the National Environmental Policy Act of 1969

# **FINAL ENVIRONMENTAL IMPACT STATEMENT**

**PHOENIX SKY HARBOR INTERNATIONAL AIRPORT  
Phoenix, Maricopa County, Arizona**

This Final Environmental Impact Statement (EIS) assesses the potential environmental impacts of the proposed Airport Development Program (ADP) as well as seven alternatives to the proposed project including the No-Action Alternative. This Final EIS addresses the environmental impacts anticipated from the proposed Airport Development Program as identified in the Airport Layout Plan for Phoenix Sky Harbor International Airport. Specifically, this Final EIS includes the evaluation of the following projects and associated developments proposed by the City of Phoenix – construction and operation of a new West Terminal Complex, demolition of Terminal 2, construction of Stage 2 of the Automated People Mover, construction of Crossfield Taxiways Uniform “U” and Victor “V”, modification of Sky Harbor Boulevard, and modification of Concourse N4 International Gates in Terminal 4.

The ADP Alternative, as well as the No-Action Alternative, have been assessed in detail and the potential impacts are disclosed within this document. This Final EIS has been prepared pursuant to the following public law requirements: Section 102(2)(c) of the National Environmental Policy Act of 1969 and Section 509(b)(5) of the Airport and Airway Improvement Act of 1962, as amended.

**VOLUME 2: APPENDIX A-E**

**FEBRUARY 2006**

For Further Information:

Ms. Jennifer Mendelsohn  
U.S. Department of Transportation  
Federal Aviation Administration  
P.O. Box 92007  
Los Angeles, CA 90009-2007  
Telephone: 310-725-3637



**VOLUME 2  
LIST OF APPENDICES**

- A Agency Coordination
- B Aircraft Noise
- C Historical/Architectural, Archaeological and Cultural Resources Supporting Materials
- D Fish, Wildlife, and Plants Supporting Materials
- E Water Resources Supporting Materials



APPENDIX A

AGENCY COORDINATION

This appendix contains various government agency correspondence related to the development of the EIS. Letters are primarily related to the collection of data and clarification of EIS-related issues.



# City of Phoenix

AVIATION DEPARTMENT

June 18, 2001

Mayor Neil Giuliano  
City of Tempe  
P.O. Box 5002  
Tempe, AZ 85280

Dear Mayor Giuliano:

As you know, the Intergovernmental Agreement (IGA) between the Cities of Tempe and Phoenix addresses noise abatement and mitigation procedures for Sky Harbor International Airport. One of the measures requires eastbound departures of jets and large turboprop aircraft<sup>1</sup> to fly a 4 DME Procedure. In essence, this procedure requires these aircraft to fly along the Salt River bed until approximately five miles east of the Airport prior to initiating any turns.

Based on past discussions between our two cities, we previously believed that Tempe would rather not have large turboprop aircraft fly the 4 DME Procedure. It was our understanding that Tempe preferred this approach to minimize the number of overflights Tempe residents would experience from these aircraft. However, in your recent letter to the Federal Aviation Administration (FAA), you indicate that Phoenix is violating the IGA because large turboprops were not following the 4 DME Procedure. It is very important to us that we are in complete compliance with the IGA. This is the only item in the IGA that has yet to be implemented. Based on Tempe's complaint to the FAA's Washington headquarters, we will ask the FAA to change current practice and begin to require large turboprops to adhere to the 4 DME Procedure. We, in turn, will issue Notices of Deviation (NODs) to all carriers that violate the Procedure. Prior to moving forward with implementation, however, we wanted to be certain that this is the direction you desire.

Currently large turboprops departing on our north, center, and south runways initiate turns immediately after takeoff. The north runway departures, which constitute about 50% of the large turboprop departures, fly over the most northern Tempe boundaries with almost all of the traffic avoiding Tempe neighborhoods. The center and south runway departures fly in a southeasterly direction over Tempe's industrial corridor and turn towards the west once outside of Tempe's boundaries.

Requiring large turboprop aircraft to fly the 4 DME Procedure will significantly *increase* noise exposure to Tempe residents. Under the proposal large turboprops departing from the north runway will be required to fly the 4 DME through Tempe prior to initiating a turn. As noted earlier, many of these aircraft bypass Tempe under current flight practices. Further, large turboprops using the center and south runways will fly the 4 DME and then turn westerly back over Tempe neighborhoods. Thus, the 4 DME departures with west-bound destinations will overfly Tempe twice. While you might think that these westbound aircraft will be at a higher altitude when looping back over Tempe, these aircraft will actually remain at a lower altitude to avoid jet traffic whose flight patterns conflict with these aircraft.

Until the new procedure is in place, the exact flight patterns for the large turboprop aircraft cannot be pinpointed. However, Attachment A illustrates the areas that, at a minimum, may be adversely impacted by your decision to require large turboprops to fly through the 4 DME gate. The neighborhoods that lie within the illustrated area include:

<sup>1</sup> Large turboprop aircraft is defined as all turboprop aircraft required to be certified and operated pursuant to F.A.R. Section 121 or Section 135 or any general aviation turboprop aircraft with a gross weight exceeding 12,500 pounds.



Alameda Campus  
Baseline-Hardy  
Brentwood-Cavalier  
Broadmor  
Broadway Palms  
Clark Park  
Cyprus Southwest  
Daley Park  
Date Palm Manor  
Escalante  
Evergreen  
Gililand  
Holdeman  
Hudson Manor  
Hughes Acres

Jen Tilly Terrace  
Knoell Gardens  
Kyrene-Superstition  
Lindon Park  
MACH 8  
Maple-Ash  
Marilyn Ann  
McClintock  
McClintock Manor  
Meyer Park  
Mitchell Park East  
Mitchell Park West  
North Tempe - Canal Park  
North Tempe - College  
North Tempe - Cavalier Hills

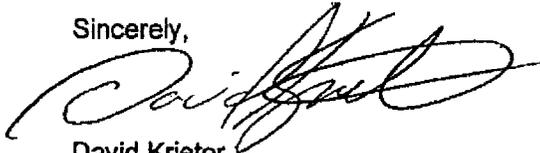
North Tempe - East Rio  
North Tempe - Indian Bend  
North Tempe - West Rio  
Peterson Park  
Riverside  
Rural-Geneva  
Shalimar  
Sunset  
Superstition  
Tempe Gardens  
University Estates  
University Heights  
University Park

Requiring large turboprop aircraft to follow the 4 DME Procedure may also place all general aviation aircraft over Tempe. General aviation aircraft require only a small portion of the runways to become airborne. Once airborne, these aircraft turn north or south immediately, thereby avoiding overflying the City of Tempe altogether. If large turboprop aircraft are to follow the 4 DME, then the smaller general aviation aircraft would need to follow suit to avoid conflicting flight patterns. Therefore, the volume of flights over Tempe will increase. Further, similar to the large turboprops, these general aviation aircraft would then loop back over Tempe at a lower altitude.

In summary, requiring large turboprops to adhere to the 4 DME Procedure will result in increased noise and overflights to the City of Tempe. As we have stated many times, it is extremely important that the cities of Phoenix and Tempe comply with all aspects of the IGA. Prior to implementing the large turboprop procedure we want to be certain that you realize the adverse impact this will have on Tempe residents. I would also suggest that if we move forward on implementation, Phoenix and Tempe hold a series of neighborhood meetings in the impacted areas to explain why residents will be experiencing additional air traffic.

We would appreciate hearing from you in writing regarding your decision on this issue by July 3, 2001. If you have any questions, please contact me at (602) 273-3316.

Sincerely,



David Krietor  
Aviation Director

dk:dak

c: Mayor Skip Rimsza, City of Phoenix  
Frank Fairbanks, City Manager, City of Phoenix  
Marsha Wallace, Deputy City Manager, City of Phoenix  
Phoenix Aviation Advisory Board members  
Gus Nezer, Air Traffic Manager, Federal Aviation Administration  
TAVCO members  
Randy Gross, City of Tempe



City of Tempe  
P.O. Box 5002  
31 East Fifth Street  
Tempe, AZ 85280  
480-350-8865

June 25, 2001

Mayor Skip Rimsza  
City of Phoenix  
200 West Washington Street  
Phoenix, AZ 85003-1611

Neil G. Giuliano  
Mayor

Leonard W. Copple  
Vice-Mayor

P. Ben Arredondo  
Councilmember

Dennis J. Cahill  
Councilmember

Barbara J. Carter  
Councilmember

Hugh Hallman  
Councilmember

Mark W. Mitchell  
Councilmember

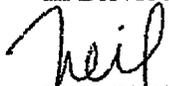
Dear Mayor Rimsza:

I am in receipt of a letter from Dave Krietor, Phoenix Aviation Director, stating Phoenix will be asking the "FAA to change current practice and begin to require large turboprops to adhere to the 4 DME Procedure."

Before the City of Phoenix takes any action in this regard, I request that the cities of Phoenix and Tempe meet to discuss the routing of turboprops to the east and for Phoenix not to ask for a change in existing procedures until this issue has been discussed between our communities.

I hope the City of Phoenix is open to discussing this issue before any changes are requested. I appreciate your consideration of this request and respectfully await a reply.

In Service,

  
Neil Giuliano  
Mayor

cc: Will Manley, City Manager, City of Tempe  
Randy Gross, Assistant City Manager  
Dave Krietor, Aviation Director, City of Phoenix  
Barbara Lichman, Attorney  
George Williams  
Oddvar Tveit, City of Tempe  
Frank Fairbanks, City Manager, City of Phoenix  
Marsha Wallace, Deputy City Manager, City of Phoenix  
Phoenix Aviation Advisory Board Members  
Gus Nezer, Air Traffic Manager, Federal Aviation Administration  
TAVCO Members



THE STATE OF ARIZONA  
**GAME AND FISH DEPARTMENT**

2221 WEST GREENWAY ROAD, PHOENIX, AZ 85023-4399  
(602) 942-3000 • WWW.AZGFD.COM

GOVERNOR  
JANE DEE HULL  
COMMISSIONERS  
CHAIRMAN, MICHAEL M. GOUGHLY, FLAGSTAFF  
JOE CARTER, SAFFORD  
SUSAN E. CHILTON, ARIZONA  
W. HAYS GILSTRAP, PHOENIX  
JOE MELTON, YUMA  
DIRECTOR  
DUANE L. SHROUPE  
DEPUTY DIRECTOR  
STEVE K. FERRELL



July 15, 2002

Mr. Jean Paul Charpentier  
URS Corporation  
1790 E. River Rd.  
Suite E-300  
Tucson, AZ 85718-5876

Re: **Special Status Species Information for Township 1 North, Range 3 East, Sections 11-14; Township 1 North, Range 4 East, Section 7 and 18; Proposed Improvements to Infrastructure at Phoenix Sky Harbor Airport.**

Dear Mr. Charpentier:

The Arizona Game and Fish Department (Department) has reviewed your letter, dated July 3, 2002, regarding special status species information associated with the above-referenced project area. The Department's Heritage Data Management System (HDMS) has been accessed and current records do not indicate the presence of any special status species as occurring in the project vicinity (2-mile buffer). In addition, this project does not occur in the vicinity of any proposed or designated Critical Habitats.

The Department's HDMS data are not intended to include potential distribution of special status species. Arizona is large and diverse with plants, animals, and environmental conditions that are ever changing. Consequently, many areas may contain species that biologists do not know about or species previously noted in a particular area may no longer occur there. Not all of Arizona has been surveyed for special status species, and surveys that have been conducted have varied greatly in scope and intensity.

Making available this information does not substitute for the Department's review of project proposals, and should not decrease our opportunities to review and evaluate new project proposals and sites. The Department is also concerned about other resource values, such as other wildlife, including game species, and wildlife-related recreation. The Department would appreciate the opportunity to provide an evaluation of impacts to wildlife or wildlife habitats associated with project activities occurring in the subject area, when specific details become available.

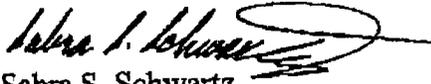
Mr. Jean Paul Charpentier

July 15, 2002

2

If you have any questions regarding this letter, please contact me at (602) 789-3618. General status information and county distribution lists for special status species are also available on our web site at [http://www.azgfd.com/frames/fishwild/hdms\\_site/Home.htm](http://www.azgfd.com/frames/fishwild/hdms_site/Home.htm), as well as some abstracts for special status species.

Sincerely,



Sabra S. Schwartz

Heritage Data Management System, Coordinator

SSS:ss

cc: Bob Broscheid, Project Evaluation Program Supervisor  
Russ Haughey, Habitat Program Manager, Region VI

AGFD# 07-05-02(21)



## United States Department of the Interior

U.S. Fish and Wildlife Service

Arizona Ecological Services Field Office

2321 West Royal Palm Road, Suite 103

Phoenix, Arizona 85021-4951

Telephone: (602) 242-0210 Fax: (602) 242-2513



In Reply Refer to:

AESO/SE

2-21-02-I-249

July 18, 2002

Mr. Jean Paul Charpentier  
URS Corporation  
1790 East River Road, Suite E-300  
Tucson, Arizona

RE: Sky Harbor Infrastructure (T1N, R3E, Section 7,1B) (T1N, R4E)

Dear Mr. Charpentier:

This letter responds to your recent request for information on threatened or endangered species, or those that are proposed to be listed as such under the Endangered Species Act of 1973, as amended (Act), which may occur in your project area. The Arizona Ecological Service Field Office has posted lists of the endangered, threatened, proposed, and candidate species occurring in each of Arizona's 15 counties on the Internet. Please refer to the following web page for species information in the county where your project occurs: <http://arizonaes.fws.gov>

If you do not have access to the Internet or have difficulty obtaining a list, please contact our office and we will mail or fax you a list as soon as possible.

After opening the web page, find Arizona County/Species List on the main page. Then click on the county of interest. The arrows on the left will guide you through information on species that are listed, proposed, candidates, or have conservation agreements. Here you will find information on the species' status, a physical description, all counties where the species occurs, habitat, elevation, and some general comments. Additional information can be obtained by going back to the main page. On the left side of the screen, click on Document Library, then click on Documents by Species, then click on the name of the species of interest to obtain General Species Information, or other documents when that may be available. Click on the cactus icon to view the desired document.

Please note that your project area may not necessarily include all or any of these species. The information provided includes general descriptions, habitat requirements, and other information for each species on the list. Under the General Species Information, citations for the of Federal Register (FR) are included for each listed and proposed species. The FR is available at most public libraries. This information should assist you in determining which species may or may not occur within your project area. Site-specific surveys could also be helpful and may be needed to verify the presence or absence of a species or its habitat as required for the evaluation of proposed project-related impacts.

Mr. Jean Paul Charpentier

2

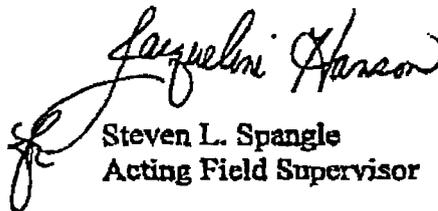
Endangered and threatened species are protected by Federal law and must be considered prior to project development. If the action agency determines that listed species or critical habitat may be adversely affected by a federally funded, permitted, or authorized activity, the action agency will need to request formal consultation with us. If the action agency determines that the planned action may jeopardize a proposed species or destroy or adversely modify proposed critical habitat, the action agency will need to enter into a section 7 conference. The county list may also contain candidate species. Candidate species are those for which there is sufficient information to support a proposal for listing. Although candidate species have no legal protection under the Act, we recommend that they be considered in the planning process in the event that they become listed or proposed for listing prior to project completion.

If any proposed action occurs in or near areas with trees and shrubs growing along watercourses, known as riparian habitat, we recommend the protection of these areas. Riparian areas are critical to biological community diversity and provide linear corridors important to migratory species. In addition, if the project will result in the deposition of dredged or fill materials into waterways, we recommend you contact the Army Corps of Engineers which regulates these activities under Section 404 of the Clean Water Act.

The State of Arizona protects some plant and animal species not protected by Federal law. We recommend you contact the Arizona Game and Fish Department and the Arizona Department of Agriculture for State-listed or sensitive species in your project area.

For future projects, you do not need to contact our office to obtain a project number. However, for additional communications regarding this project, please refer to consultation number 2-21-02-I-249. We appreciate your efforts to identify and avoid impacts to listed and sensitive species in your project area. If we may be of further assistance, please feel free to contact Tom Gatz for projects in northern Arizona or along the Colorado River (x240) or Sherry Barrett for projects in southern Arizona.

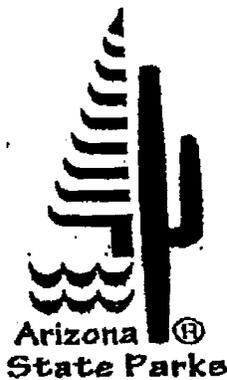
Sincerely,



Steven L. Spangle  
Acting Field Supervisor

cc: John Kennedy, Habitat Branch, Arizona Game and Fish Department, Phoenix, AZ

W:\Cathy Gordon\species list letters\URS sky harbor infrastructure.wpd:egg



1300 W. Washington  
Phoenix, AZ 85007

# FACSIMILE

Partnerships Division

• Grants • SHPO •

• Planning and Recreational Trails •

To: Dave Alberts

Fax: 813/636-2400

From: Pat Dutrack *pat*  
LRSP/LWCF Grant Coordinator

Fax 602/542-4180

Phone #: 602/542-7129

Date August 13, 2002

Pages: 20 pages including cover page

RE: Land and Water Conservation Fund)  
LWCF projects  
Cities of Phoenix and Tempe

---

Dave...  
Let me know if you need more information.



Pat Dutrack  
Grant Program Coordinator  
Local, Regional & State Parks  
Heritage Fund  
Land & Water Conservation Fund

Phone: (602) 542-7129

Fax: (602) 542-4180

Worldwide Web: <http://www.pr.state.az.us>

### LWCF Projects/Tempe

Project Number	Project Title	Resource Identifier	Grant Amount	Scope of Work	Project Description
400022	Tempe Canal Park	TEMPE: Canal Park	\$50,000	Walks Landscaping Ramadas Restroom Parking Utilities	To develop a 15 acre park with picnic facilities, parking, landscaping, ramadas, restroom, walks and roadways.
400051	Escalante Park	TEMPE: Escalante Park	\$11,320	Site Plan Utilities Ballfield Lighting Backstop Benches Drinking Fountains Multipurpose Court Picnic Areas Landscaping Picnic Tables Grills	To develop a ballfield, backstop, and benches, utilities, water fountain, all purpose slab and court facilities, and a picnic area.
400072	Tempe Canal Park No 2	TEMPE: Escalante Park	\$97,523	Ramadas Grills Tables Restroom Landscaping	To develop Escalante Park with picnic facilities, restroom and landscaping.
400109	Joyce Park Development	TEMPE: Joyce Park	\$8,250	Picnic Tables Grills Playground Landscaping	To install picnic facilities, playground and landscaping.
400110	Meyer Park Development	TEMPE: Meyer Park	\$6,985	Landscaping Playground Equipment Picnic Tables Grills	To develop a playground, picnic tables, grills, and landscaping at Meyer Park.
400111	Multi-Purpose Field Lighting	TEMPE: McKemy and Connolly Jr. High Schools	\$49,770	Lighted Ballfields Bleachers	To install lighting on multi-purpose fields at McKemy and Curry Schools.

Tuesday, August 13, 2002

LWCF Projects/Tempe

Project Number	Project Title	Resource Identifier	Grant Amount	Scope of Work	Project Description
400118	Rotary Park Development	TEMPE: Rotary Park	\$5,000	Picnic Tables Grills Site Preparation Landscaping Irrigation	To develop picnic tables, grills, site preparation, irrigation, and landscaping at Rotary Park.
400123	Cyprus Park Development	TEMPE: Cyprus Park	\$6,860	Picnic Tables (30) Grills (5) Playground Landscaping	To install picnic tables, grills, playground equipment, and landscaping of Cyprus Park.
400124	Sellah Park Development	TEMPE: Sellah Park	\$13,000	Sprinkler System Playground Sidewalks Landscaping	To develop an irrigation system with pump, playground, sidewalk, and landscaping at Sellah Park.
400148	Kiwanis Community Park Acquisition	TEMPE:	\$382,307	Acquisition	To acquire 123.58 acres of land for park development.
400150	Suggs Nghbrhd Park Acq. (Scudder)	TEMPE: Marco De Niza Jr. High School	\$17,835	Acquisition	Acquisition of 4 acres of land for development of a picnic area and playfield.
400151	Knoell Site Acquisition (Cole Park)	TEMPE: Cole Park	\$13,083	Acquisition	Acquisition of 3.738 acres.
400152	Tempe Canal Park Phase III	TEMPE: Canal Park	\$10,140	Landscaped Parking Lot	To develop a landscaped parking lot at Canal Park.
400153	Papago Park Development Phase I	TEMPE: Papago Park	\$18,218	Grading Landscaping Sprinkler System Grills Picnic Tables Restroom	To develop a sprinkler system and landscaping of Papago Park.
400154	Hudson Park Development	TEMPE: Hudson Park	\$7,811	Restrooms Multi-purpose Slab Picnic Tables	To develop a play ground, multi-purpose court, and support facilities.
400155	Sellah Park Development Phase II	TEMPE: Sellah Park	\$7,824	Restroom Multi-Purpose Slab Picnic Tables	To develop picnic and play facilities and a restroom.

### LWCF Projects/Tempe

Project Number	Project Title	Resource Identifier	Grant Amount	Scope of Work	Project Description
400226	Kiwanis Pk Dev.	TEMPE: Kiwanis Park	\$137,500	Ballfields Irrigation Roads	To develop a ballfield with irrigation and road system.
400227	Prelim Dev. Of Five Neighborhood Pks	TEMPE: Five Parks	\$46,875	Irrigation Landscaping Picnic Facilities Playground Equipment Water Systems	To develop picnic area, playgrounds and water systems at five neighborhood parks.
400257	Escalante Park Swimming Pool	TEMPE: Escalante Park	\$158,694	Swimming Pool Bathhouse Equipment	To develop a swimming pool, bathhouse and related equipment.
400274	Clark Park Swimming Pool	TEMPE: Clark Park	\$150,000	Swimming Pool	To construct a swimming pool, and bathhouse with support facilities at Clark Park.
400285	Papago Park, Phase II Development	TEMPE: Papago Park	\$49,237	Excavation Sprinkler System Landscaping Lights Bleachers Playground Equipment Backstop Fencing Parking	To construct a sprinkler system, landscaping, lights, bleachers, playground equipment, backstop, fence and excavation.
400292	Tennis Court Improvement	TEMPE: Tempe High School	\$20,257	Resurface Tennis Courts (4) Lights	To develop tennis court lighting at Marcos De Niza High School and resurfacing of tennis courts at Tempe High School.
400318	Casa Madre Park (Ehrhardt Park)	TEMPE: Casa Madre Park	\$64,263	Grading & Site Preparation Seeding Tree Planting Picnic Tables Playground Equipment Grills Irrigation Systems Multi-purpose Slab Lighting Total	The acquisition of 6 acres of land and the development of this land with picnic facilities, sports and playfields, and related support facilities.

### LWCF Projects/Tempe

Project Number	Project Title	Resource Identifier	Grant Amount	Scope of Work	Project Description
400333	Moer Park Development	TEMPE: Moer Park	\$65,612	Parking Lot Grading Sewer Restrooms Sprinkler systems Area lighting Ramadas Play Equipment Landscaping Picnic Facilities TOTAL	The renovation of existing park to include facilities for picnicking, playground equipment, parking facilities, lights, sprinkler system, and modern restrooms.
400358	Neighborhood Park - Carver Road & La	TEMPE: Waggoner	\$55,000	Acquisition of 4.83 Acres Site Preparation Landscaping Sprinkler System Playground Picnic Equipment Area Lighting	To acquire 4.83 Acres and develop a playground, picnic areas and general area lighting at Waggoner Park.
400456	Dev. Of Two Neighborhood Parks	TEMPE-Optimist and Camelot (Stroud) Parks	\$55,000	Grading Landscaping Utilities Lighting Play Equipment Picnic Equipment	To develop picnic facilities, general purpose playfields, and support facilities.
400485	Handball Court Lighting	TEMPE: Tempe High School and Marcos de Niza High School	\$18,203	Lighting System	To light 16 existing handball courts and 4 tennis courts at two high school locations.
400514	General Park Development	TEMPE: General Parks	\$70,278	Restrooms Sprinkler Systems Total	The construction of 3 restroom facilities adjacent to multi-purpose fields. Also the addition of sprinkler & irrigation systems.

LWCF Projects/Tempe

Project Number	Project Title	Resource Identifier	Grant Amount	Scope of Work	Project Description
400514	Kiwanis Pk. Group Picnic & Garden Areas	TEMPE: Kiwanis Park	\$928,500	Grading & Landscaping Sprinkler System Lighting Picnic Equipment Ramadas Parking Lot Drinking Fountains Volleyball Courts Multi-purpose Slabs Concrete Curbs Retaining Walls Walkways Driveways Fencing Total	The development of a group picnic area in Kiwanis Park including picnic ramadas, playground equipment, multi-purpose slabs, landscaping, sprinkler system, and a passive area with walkways, outdoor pavilion, landscaping, irrigation system and lighting.
400517	Multipurpose Athletic Field Dev.	TEMPE: Tempe Stadium Field	\$225,000	Lighting Fencing Restroom Building Landscaping Parking Lot Player Benches Sprinkler System	To develop multipurpose playfields, ballfields, football/soccer fields, and support facilities including restrooms, lighting, parking and utilities.
400541	Recreation Facilities Relighting	TEMPE: Palmer Park	\$17,080	Tennis Court Lighting Raquetball Court Lighting Ballfield Lighting	To provide tennis, raquetball and ballfield lighting.

### LWCF Projects/Tempe

Project Number	Project Title	Resource Identifier	Grant Amount	Scope of Work	Project Description
400592	Neighborhood Park Improv., Phase II	TEMPE: 14 Parks	\$81,630	Clark Park Volleyball Court Cyprus Park Playground Excalante Park Playground Picnic Sites Estrada Park Playground Picnic Facilities Hudson Park Playground Indian Bend Park Playground Jaycee Park Playground Picnic Facilities Joyce Park Playground Kiwanis Park Picnic Facilities Wheelchair Ramp (Tennis Center) Meyer Park Playground Picnic Facilities Palmer Park Playground Papago Park Picnic Facilities Sand Volleyball Court Rotary Park Playground Tempe Beach Playground	To develop picnic, playground, and game court facilities at 14 Tempe Parks.

### LWCF Projects/Tempe

Project Number	Project Title	Resource Identifier	Grant Amount	Scope of Work	Project Description
400610	Neighborhood Park Improv. Phase III	TEMPE: Escalante Park	\$38,460	Ramadas Concrete Slabs Picnic Tables Grills	To develop picnic facilities.
400628	Escalante Park Ballfield Improvements	TEMPE: Escalante Park	\$11,601	Lights Fencing Backstop Bench Enclosures	To renovate a ballfield and support facilities.
400658	Kiwanis Park Ramada		\$75,000	Ramadas Play/Exercise Equipment Safety Matting	This project will include the development of picnic areas and sports and playfields.
400690	McClintock Swimming Pool Renovation	TEMPE-McClintock Swimming Pool	\$370,000	Swimming Pool Renovation Bathhouse Renovation Pool Demolition Bathhouse Demolition Design and Engineering Pre-Agreement Costs	To renovate the City of Tempe's McClintock Public Swimming Pool. The Project will replace all piping, filtration equipment, and decking; expand main pool width to 25 yards; and renovate wading pool, bathhouse and main pool to comply with current Maricopa County, Federal, City, and A.D.A. codes and requirements.
400705	Tempe Sports Complex: Phase II	Tempe	\$500,000	General Construction Dog Park Parking Electrical/Lighting Landscaping/Irrigation Restrooms Playground Volleyball/basketball courts Picnic facilities Construction administration	The city plans to develop Phase II of the Tempe Sports Complex including lighted soccer fields, basketball and volleyball courts, dog park, picnic ramadas, and a playground. An FY 1997 Heritage Fund grant provided for a softball complex, and restroom/concession building. This project will complete the development of the complex.

### LWCF Projects/Phoenix

Project Number	Project Title	Resource Identifier	Grant Amount	Scope of Work	Project Description
400005	Squaw Peak Park	PHOENIX: Squaw Peak Park	\$103,152	Trails Restrooms Utilities	To develop picnic area with trails and support facilities.
400009	Papago Regional Park	PHOENIX: Papago Park	\$105,000	Access Roads Parking Viewpoints Hiking/Biking Trails Picnic Areas Ramadas Hunts Tomb Utilities Restroom	To develop roads, parking, viewpoints, trails, picnic areas, ramadas, completion of the Hunt's Tomb area, utilities, & restroom.
400012	North Mountain Park	PHOENIX: North Mountain Park	\$60,000	Ramadas Restrooms Road development Parking area Trail system Picnic facilities	To develop a park with facilities.
400013	South Mountain Park	PHOENIX: South Mountain Park	\$28,000	Park drive Restrooms Ramadas (10)	To develop South Mountain Park and facilities.

### LWCF Projects/Phoenix

Project Number	Project Title	Resource Identifier	Grant Amount	Scope of Work	Project Description
400023	Roadrunner Park Development	PHOENIX: Roadrunner Park	\$149,000	Grading Landscaping Swimming Pool Bathhouse Restroom Building Lighted Basketball Court Lighted Volleyball Court Baseball Diamond Softball Diamond Lighted Tennis Courts Shelters Tables Benches Fireplaces Walkways Parking Lot Total	The development of a park to include picnic facilities, playfields, tennis courts, swimming pool, and support facilities.
400024	Cortez Canal Bank Park	PHOENIX: Cortez Canal Park	\$62,736	Landscaping Boathouse Bridges Parking Area Trail System Horse Troughs	To develop a multiple use park.
400033	Roeser Road Park	PHOENIX: Esteban Park	\$100,961	Picnic Facilities Play Field Play Courts Lake Impoundment Support Facilities	To develop a regional level multi-use park.
400042	Camelback Mountain	PHOENIX: Camelback Mountain	\$165,585	Land Acquisition (263.38 acres)	To acquire 263.38 acres of land to preserve Camelback Mountain.

### LWCF Projects/Tempe

Project Number	Project Title	Resource Identifier	Grant Amount	Scope of Work	Project Description
400022	Tempe Canal Park	TEMPE: Canal Park	\$50,000	Walks Landscaping Ramadas Restroom Parking Utilities	To develop a 15 acre park with picnic facilities, parking, landscaping, ramadas, restroom, walks and roadways.
400051	Escalante Park	TEMPE: Escalante Park	\$11,320	Site Plan Utilities Ballfield Lighting Backstop Benches Drinking Fountains Multipurpose Court Picnic Areas Landscaping Picnic Tables Grills	To develop a ballfield, backstop, and benches, utilities, water fountain, all purpose slab and court facilities, and a picnic area.
400072	Tempe Canal Park No 2	TEMPE: Escalante Park	\$37,523	Ramadas Grills Tables Restroom Landscaping	To develop Escalante Park with picnic facilities, restroom and landscaping.
400109	Joyce Park Development	TEMPE: Joyce Park	\$8,250	Picnic Tables Grills Playground Landscaping	To install picnic facilities, playground and landscaping.
400110	Meyer Park Development	TEMPE: Meyer Park	\$6,985	Landscaping Playground Equipment Picnic Tables Grills	To develop a playground, picnic tables, grills, and landscaping at Meyer Park.
400111	Multi-Purpose Field Lighting	TEMPE: McKemy and Connolly Jr. High Schools	\$49,770	Lighted Ballfields Bleachers	To install lighting on multi-purpose fields at McKemy and Curry Schools.

### LWCF Projects/Tempe

Project Number	Project Title	Resource Identifier	Grant Amount	Scope of Work	Project Description
400118	Rotary Park Development	TEMPE: Rotary Park	\$5,000	Picnic Tables Grills Site Preparation Landscaping Irrigation	To develop picnic tables, grills, site preparation, irrigation, and landscaping at Rotary Park.
400123	Cyprus Park Development	TEMPE: Cyprus Park	\$6,860	Picnic Tables (30) Grills (5) Playground Landscaping	To install picnic tables, grills, playground equipment, and landscaping of Cyprus Park.
400124	Sellah Park Development	TEMPE: Sellah Park	\$13,000	Sprinkler System Playground Sidewalks Landscaping	To develop an irrigation system with pump, playground, sidewalk, and landscaping at Sellah Park.
400148	Kiwanis Community Park Acquisition	TEMPE:	\$382,307	Acquisition	To acquire 123.58 acres of land for park development.
400150	Suggs Nghbrhd Park Acq. (Scudder)	TEMPE: Marco De Niza Jr. High School	\$17,835	Acquisition	Acquisition of 4 acres of land for development of a picnic area and playfield.
400151	Knoell Site Acquisition (Cole Park)	TEMPE: Cole Park	\$13,083	Acquisition	Acquisition of 3.738 acres.
400152	Tempe Canal Park Phase III	TEMPE: Canal Park	\$10,140	Landscaped Parking Lot	To develop a landscaped parking lot at Canal Park.
400153	Papago Park Development Phase I	TEMPE: Papago Park	\$18,218	Grading Landscaping Sprinkler System Grills Picnic Tables Restroom	To develop a sprinkler system and landscaping of Papago Park.
400154	Hudson Park Development	TEMPE: Hudson Park	\$7,811	Restrooms Multi-purpose Slab Picnic Tables	To develop a play ground, multi-purpose court, and support facilities.
400155	Sellah Park Development Phase II	TEMPE: Sellah Park	\$7,824	Restroom Multi-Purpose Slab Picnic Tables	To develop picnic and play facilities and a restroom.

### LWCF Projects/Tempe

Project Number	Project Title	Resource Identifier	Grant Amount	Scope of Work	Project Description
400226	Kiwanis Pk Dev.	TEMPE: Kiwanis Park	\$137,500	Ballfields Irrigation Roads	To develop a ballfield with irrigation and road system.
400227	Prelim Dev. Of Five Neighborhood Pks	TEMPE: Five Parks	\$46,875	Irrigation Landscaping Picnic Facilities Playground Equipment Water Systems	To develop picnic area, playgrounds and water systems at five neighborhood parks.
400257	Escalante Park Swimming Pool	TEMPE: Escalante Park	\$158,694	Swimming Pool Bathhouse Equipment	To develop a swimming pool, bathhouse and related equipment.
400274	Clark Park Swimming Pool	TEMPE: Clark Park	\$150,000	Swimming Pool	To construct a swimming pool, and bathhouse with support facilities at Clark Park.
400285	Papago Park, Phase II Development	TEMPE: Papago Park	\$49,237	Excavation Sprinkler System Landscaping Lights Bleachers Playground Equipment Backstop Fencing Parking	To construct a sprinkler system, landscaping, lights, bleachers, playground equipment, backstop, fence and excavation.
400292	Tennis Court Improvement	TEMPE: Tempe High School	\$20,257	Resurface Tennis Courts (4) Lightis	To develop tennis court lighting at Marcos De Niza High School and resurfacing of tennis courts at Tempe High School.
400318	Casa Madre Park (Ehrhardt Park)	TEMPE: Casa Madre Park	\$64,263	Grading & Site Preparation Seeding Tree Planting Picnic Tables Playground Equipment Grills Irrigation Systems Multi-purpose Slab Lighting Total	The acquisition of 6 acres of land and the development of this land with picnic facilities, sports and playfields, and related support facilities.

### LWCF Projects/Tempe

Project Number	Project Title	Resource Identifier	Grant Amount	Scope of Work	Project Description
400333	Moeur Park Development	TEMPE: Moeur Park	\$65,612	Parking Lot Grading Sewer Restrooms Sprinkler systems Area lighting Ramadas Play Equipment Landscaping Picnic Facilities TOTAL	The renovation of existing park to include facilities for picnicking, playground equipment, parking facilities, lights, sprinkler system, and modern restrooms.
400358	Neighborhood Park - Carver Road & La	TEMPE: Waggoner	\$55,000	Acquisition of 4.83 Acres Site Preparation Landscaping Sprinkler System Playground Picnic Equipment Area Lighting	To acquire 4.83 Acres and develop a playground, picnic areas and general area lighting at Waggoner Park.
400456	Dev. Of Two Neighborhood Parks	TEMPE-Optimist and Camelot (Stroud) Parks	\$55,000	Grading Landscaping Utilities Lighting Play Equipment Picnic Equipment	To develop picnic facilities, general purpose playfields, and support facilities.
400485	Handball Court Lighting	TEMPE: Tempe High School and Marcos de Niza High School	\$18,203	Lighting System	To light 16 existing handball courts and 4 tennis courts at two high school locations.
400514	General Park Development	TEMPE: General Parks	\$70,278	Restrooms Sprinkler Systems Total	The construction of 3 restroom facilities adjacent to multi-purpose fields. Also the addition of sprinkler & irrigation systems.

LWCF Projects/Tempe

Project Number	Project Title	Resource Identifier	Grant Amount	Scope of Work	Project Description
400514	Kwanis Pk. Group Picnic & Garden Areas	TEMPE: Kwanis Park	\$328,500	Grading & Landscaping Sprinkler System Lighting Picnic Equipment Ramadas Parking Lot Drinking Fountains Volleyball Courts Multi-purpose Slabs Concrete Curbs Retaining Walls Walkways Driveways Fencing Total	The development of a group picnic area in Kwanis Park including picnic ramadas, playground equipment, multi-purpose slabs, landscaping, sprinkler system, and a passive area with walkways, outdoor pavilion, landscaping, irrigation system and lighting.
400517	Multipurpose Athletic Field Dev.	TEMPE: Tempe Stadium Field	\$225,000	Lighting Fencing Restroom Building Landscaping Parking Lot Player Benches Sprinkler System	To develop multipurpose playfields, ballfields, football/soccer fields, and support facilities including restrooms, lighting, parking and utilities.
400541	Recreation Facilities Relighting	TEMPE: Palmer Park	\$17,080	Tennis Court Lighting Raquetball Court Lighting Ballfield Lighting	To provide tennis, raquetball and ballfield lighting.

### LWCF Projects/Tempe

Project Number	Project Title	Resource Identifier	Grant Amount	Scope of Work	Project Description
400592	Neighborhood Park Improv., Phase II	TEMPE: 14 Parks	\$81,630	Clark Park Volleyball Court Cyprus Park Playground Excelsante Park Playground Picnic Sites Estrada Park Playground Picnic Facilities Hudson Park Playground Indian Bend Park Playground Jaycee Park Playground Picnic Facilities Joyce Park Playground Kiwanis Park Picnic Facilities Wheelchair Ramp (Tennis Center) Meyer Park Playground Picnic Facilities Palmer Park Playground Papago Park Picnic Facilities Sand Volleyball Court Rotary Park Playground Tempe Beach Playground	To develop picnic, playground, and game court facilities at 14 Tempe Parks.

LWCF Projects/Tempe

Project Number	Project Title	Resource Identifier	Grant Amount	Scope of Work	Project Description
400810	Neighborhood Park Improv. Phase III	TEMPE: Escalante Park	\$38,460	Ramadas Concrete Slabs Picnic Tables Grills	To develop picnic facilities.
400828	Escalante Park Ballfield Improvements	TEMPE: Escalante Park	\$11,601	Lights Fencing Backstop Bench Enclosures	To renovate a ballfield and support facilities.
400658	Kiwanis Park Ramada		\$75,000	Ramadas Play/Exercise Equipment Safety Matting	This project will include the development of picnic areas and sports and playfields.
400890	McClintock Swimming Pool Renovation	TEMPE-McClintock Swimming Pool	\$370,000	Swimming Pool Renovation Bathhouse Renovation Pool Demolition Bathhouse Demolition Design and Engineering Pre-Agreement Costs	To renovate the City of Tempe's McClintock Public Swimming Pool. The Project will replace all piping, filtration equipment, and decking; expand main pool width to 25 yards; and renovate wading pool, bathhouse and main pool to comply with current Maricopa County, Federal, City, and A.D.A. codes and requirements.
400705	Tempe Sports Complex: Phase II	Tempe	\$500,000	General Construction Dog Park Parking Electrical/Lighting Landscaping/Irrigation Restrooms Playground Volleyball/basketball courts Picnic facilities Construction administration	The city plans to develop Phase II of the Tempe Sports Complex including lighted soccer fields, basketball and volleyball courts, dog park, picnic ramadas, and a playground. An FY 1997 Heritage Fund grant provided for a softball complex, and restroom/concession building. This project will complete the development of the complex.

### LWCF Projects/Phoenix

Project Number	Project Title	Resource Identifier	Grant Amount	Scope of Work	Project Description
400005	Squaw Peak Park	PHOENIX: Squaw Peak Park	\$103,152	Trails Restrooms Utilities	To develop picnic area with trails and support facilities.
400009	Papago Regional Park	PHOENIX: Papago Park	\$105,000	Access Roads Parking Viewpoints Hiking/Biking Trails Picnic Areas Ramadas Hunts Tomb Utilities Restroom	To develop roads, parking, viewpoints, trails, picnic areas, ramadas, completion of the Hunt's Tomb area, utilities, & restroom.
400012	North Mountain Park	PHOENIX: North Mountain Park	\$60,000	Ramadas Restrooms Road development Parking area Trail system Picnic facilities	To develop a park with facilities.
400013	South Mountain Park	PHOENIX: South Mountain Park	\$28,000	Park drive Restrooms Ramadas (10)	To develop South Mountain Park and facilities.

### LWCF Projects/Phoenix

Project Number	Project Title	Resource Identifier	Grant Amount	Scope of Work	Project Description
400023	Roadrunner Park Development	PHOENIX: Roadrunner Park	\$149,000	Grading Landscaping Swimming Pool Bathhouse Restroom Building Lighted Basketball Court Lighted Volleyball Court Baseball Diamond Softball Diamond Lighted Tennis Courts Shelters Tables Benches Fireplaces Walkways Parking Lot Total	The development of a park to include picnic facilities, playfields, tennis courts, swimming pool, and support facilities.
400024	Cortez Canal Bank Park	PHOENIX: Cortez Canal Park	\$82,736	Landscaping Boathouse Bridges Parking Area Trail System Horse Troughs	To develop a multiple use park.
400033	Roeser Road Park	PHOENIX: Esteban Park	\$100,961	Picnic Facilities Play Field Play Courts Lake Impoundment Support Facilities	To develop a regional level multi-use park.
400042	Camelback Mountain	PHOENIX: Camelback Mountain	\$165,685	Land Acquisition (263.38 acres)	To acquire 263.38 acres of land to preserve Camelback Mountain.

LWCF Projects/Phoenix

Project Number	Project Title	Resource Identifier	Grant Amount	Scope of Work	Project Description
400060	Paradise Valley Urban Park	PHOENIX: Paradise Valley Park	\$108,133	Restrooms Judge's Building Gymkhana Arena Fencing Ramadas Picnic Tables Grills Drinking Fountains Irrigation Well Cattle Guards Roads Parking Irrigation	To develop restrooms, a judge's building, gymkhana arena, drinking fountains, irrigation and well, cattle guards, roads, parking, fencing, site preparation, and landscaping at Paradise Valley Park.
400063	Cortez Park Development	PHOENIX: Cortez Park	\$135,270	Swimming Pool Wading Pool Bathhouse Parking Walkways	To develop a swimming pool with support facilities, parking and walkways.
400070	Sueno Park, 43rd Ave & Encanto	PHOENIX: Desert West Park	\$95,520	Land Acquisition	To acquire land for the development of Desert West Park.
400096	La Pradera Park, 39th Ave. & Glendale	PHOENIX: La Pradera Park	\$192,135	Land Acquisition	To acquire 39 acres of land at 39th Ave and Glendale.
400112	G.R. Herberger Pk, 28th St/ Indian Schl	PHOENIX:Glenrosa Park	\$239,500	Acquire 24.5 Acres	Acquisition of 24.5 Acres for Glenrosa Park
400115	El Reposo Park	PHOENIX: El Reposo Park	\$79,974	Land Acquisition	The acquisition of 16 acres of land to serve as a community park.
400132	Echo Canyon Park Acq.	PHOENIX: Echo Canyon Park	\$207,500	Land Acquisition	Acquisition of 76 acres.
400136	El Oso Park, 75th Ave & Osborn	PHOENIX: 75th Ave. & Osborn	\$28,100	Land acquisition	Acquisition of 14 acres.
400137	Little Canyon Pk, 31st Ave & Missouri	PHOENIX: 31st Ave & Missouri	\$99,000	Land acquisition	Acquisition of 16 acres.
400138	Acoma Park, 39th Ave & Acoma	PHOENIX: 39th Ave & Acoma	\$98,343	Land	Acquisition of 10 acres.
400139	Sweetwater Park, 40th St./ Tatum	PHOENIX: 40th St. & Tatum	\$47,250	Land acquisition	Acquisition of 27 acres.

LWCF Projects/Phoenix

Project Number	Project Title	Resource Identifier	Grant Amount	Scope of Work	Project Description
400060	Paradise Valley Urban Park	PHOENIX: Paradise Valley Park	\$108,133	Restrooms Judge's Building Gymkhana Arena Fencing Ramadas Picnic Tables Grills Drinking Fountains Irrigation Well Cattle Guards Roads Parking Irrigation	To develop restrooms, a judge's building, gymkhana arena, drinking fountains, irrigation and well, cattle guards, roads, parking, fencing, site preparation, and landscaping at Paradise Valley Park.
400063	Cortez Park Development	PHOENIX: Cortez Park	\$135,270	Swimming Pool Wading Pool Bathhouse Parking Walkways	To develop a swimming pool with support facilities, parking and walkways.
400070	Sueno Park, 43rd Ave & Encanto	PHOENIX: Desert West Park	\$95,520	Land Acquisition	To acquire land for the development of Desert West Park.
400096	La Pradera Park, 39th Ave. & Glendale	PHOENIX: La Pradera Park	\$192,135	Land Acquisition	To acquire 39 acres of land at 39th Ave and Glendale.
400112	G.R. Herberger Pk, 28th St/ Indian Schl	PHOENIX:Glenrosa Park	\$239,500	Acquire 24.5 Acres	Acquisition of 24.5 Acres for Glenrosa Park
400115	El Reposo Park	PHOENIX: El Reposo Park	\$79,974	Land Acquisition	The acquisition of 16 acres of land to serve as a community park.
400132	Echo Canyon Park Acq.	PHOENIX: Echo Canyon Park	\$207,500	Land Acquisition	Acquisition of 76 acres.
400136	El Oso Park, 75th Ave & Osborn	PHOENIX: 75th Ave. & Osborn	\$28,100	Land acquisition	Acquisition of 14 acres.
400137	Little Canyon Pk, 31st Ave & Missouri	PHOENIX: 31st Ave & Missouri	\$99,000	Land acquisition	Acquisition of 16 acres.
400138	Acoma Park, 39th Ave & Acoma	PHOENIX: 39th Ave & Acoma	\$98,343	Land	Acquisition of 10 acres.
400139	Sweetwater Park, 40th St./ Tatum	PHOENIX: 40th St. & Tatum	\$47,250	Land acquisition	Acquisition of 27 acres.

LWCF Projects/Phoenix

Project Number	Project Title	Resource Identifier	Grant Amount	Scope of Work	Project Description
400140	Unnamed Pk Between 32nd & 40th St	PHOENIX: 32nd & 40th St.	\$120,000	Land	Acquisition of 50 acres.
400141	Ma-Ha-Tuak Park, 7th Ave/ McNeil	PHOENIX:	\$20,475	Land Acquisition	Acquisition of 11.7 acres.
400142	Desert West Park, 63rd Ave/ Encanto	PHOENIX-Desert West Park	\$104,347	Acquisition of 40 acres.	Acquisition of 40 acres.
400143	Circle K Pk, 12th St/ S Mountain Ave	PHOENIX: South Mountain Park	\$76,450	Land Acquisition	Acquisition of 38 acres.
400145	Palma Pk, 11th Street and Townley	PHOENIX: Palma Park	\$76,250	Land Acquisition	Acquisition of 7 acres for Palma Park.
400147	Royal Palm Pk, 15th Ave & Butler	PHOENIX:	\$257,500	Land Acquisition	Land Acquisition (28 acres).
400163	Paradise Valley Park Community Center	MULTI-CITY: Paradise Valley Park Community Center	\$3,538	Site Preparation Parking Picnic Tables Landscaping Irrigation	To provide picnic facilities and irrigation at Paradise Valley Park.
400207	Cactus Park Development	PHOENIX: Cactus Park	\$34,575	Lighted Softball Field Lighted Basketball Court Landscaping Parking Roadway	To develop lighted softball field, basketball court, parking and entrance roadway at Cactus Park.
400220	Cactus Pk Swimming Pool	PHOENIX: Cactus Park	\$201,842	Swimming Pool Bathhouse Parking	To develop a swimming pool and support facilities at Cactus Park.
400221	Nevitt Park, 44th St & Vineyard	PHOENIX: 44th St & Vineyard	\$36,250	Land	Acquisition of 8 acres.
400222	Dev. Of El Oso Pk, 75th Ave & Osborn	PHOENIX: 75th Ave. & Osborn	\$25,187	Lighted baseball diamond Landscaping Total	The development of a lighted baseball diamond and general landscaping.
400223	Acacia Park, 30th Ave & Hearn	PHOENIX: Vista Park	\$68,700	Acquisition	To acquire approximately 1.0 acre of land for the future development of a neighborhood park.
400243	Unnamed Pk. In Phoenix Mt. Preserve	PHOENIX: Phoenix Mountains Preserve	\$137,500	Land Acquisition	The acquisition of 30 acres of land in the Phoenix Mountain Preserve.

### LWCF Projects/Phoenix

Project Number	Project Title	Resource Identifier	Grant Amount	Scope of Work	Project Description
400248	Royal Palm Pk, 15th Ave & Butler	PHOENIX:	\$36,400	Site Preparation Irrigation System Landscaping	To conduct the initial development consisting of site preparation, irrigation, and landscaping.
400249	Ma-Ha-Tuak Initial Dev, 7th Ave/ McNeil	PHOENIX:	\$42,000	Site Preparation Top Soil Irrigation System Landscaping Tot Lot	To conduct the initial development of a park consisting of site preparation, irrigation system, landscaping, and top soil.
400250	Acoma Park-Initial Dev, 39th Ave/ Acoma	PHOENIX:	\$13,850	Site Preparation Irrigation System Landscaping	To conduct the initial development of a park consisting of site preparation, irrigation, and landscaping.
400251	Sueno Pk-Initial Dev, 43rd Ave/ Encanto	PHOENIX: 43rd Ave/ Encanto Park	\$49,400	Sport Playfields Landscaping	To develop a community park with playfields.
400252	El Reposo Pk-Initial Dev.	PHOENIX: El Reposo Park	\$40,900	Irrigation System Landscaping	To landscape and develop an irrigation system at El Reposo Park.
400267	Melg Acquisition Phoenix Mtn. Preserve	PHOENIX: Phoenix Mountain Preserve	\$47,460	Land Acquisition	To acquire 27 acres of land for protection of the Phoenix Mountain Preserve (Natural Area).
400277	Durham Acq. Option 2/ Phx Mtn Prsve.	PHOENIX: Phoenix Mountain Preserve	\$220,613	Land Acquisition	To acquire approximately 80 acres of land for the Phoenix Mountain Preserve.
400287	Palma Park, 12th St. & Dunlap	PHOENIX: Palma Park	\$19,580	Ballfield Backstops Landscaping Utilities Signs Springling System Drinking Fountain	To develop ball fields, site improvement, utilities, & lighting.
400290	Paradise Valley Park Gymkhana	MARICOPA COUNTY: Paradise Valley Park	\$34,532	Lighting/Bleachers Parking Irrigation Site Improvements/Turf Dev Fencing Hitching Rails Water Trough	To develop Paradise Park with lighting, bleachers, parking, irrigation, site improvement, turf, Fencing, hitching rails, and watering trough.
400293	Melg Acq, 4th Option-Phx Mtn Prsve	PHOENIX: South Mountain Preserve	\$47,565	Land Acquisition	Acquisition of 27.2 acres of land for the South Mountain Preserve.

LWCF Projects/Phoenix

Project Number	Project Title	Resource Identifier	Grant Amount	Scope of Work	Project Description
400294	Los Olivos Park, 28th St/ Glenrosa	PHOENIX: 28th Street and Glendale Park	\$87,188	Grading Irrigation Landscaping	The initial development of a park, which includes site preparation.
400297	Nuestro Park-Acq/Dev, 8th St/ Pima	PHOENIX: 8th Street and Pima Park	\$110,000	Land Acquisition Site Preparation Walkways Basketball Court Lighting Landscaping Sprinklers Play Area Benches	To acquire and develop land for construction of a park and facilities.
400300	Construction Of Tennis Courts-EI Reposo	PHOENIX:Arcadia Park; EI Reposo Park	\$70,000	Tennis Courts Lighting Fencing Drinking Fountain	To develop tennis courts, lighting and fencing.
400317	Alvord/Caesar Chavez Lake Development	PHOENIX: Alvord Lake	\$261,324	Excavation and grading Sealing of lakes Recirculation pump Design & Engineering Total	The development of a lake impoundment and support facilities.
400341	La Pradera Park	PHOENIX: La Pradera Park	\$101,225	Grading Sprinkler System Landscaping Area Lights Parking Lot Walkway	The initial development of a park consisting of grading, landscaping, lighting, parking lot and walkway.
400342	Alvord Park/Caesar Chavez Dev Phase II	PHOENIX: Alvord Lake	\$137,500	Sprinkling System Paving Parking Seeding Trees	The construction and installation of sprinkler system, paving and parking, and landscaping.
400357	Sandpiper/Crossed Arrows Pks-Acq. & Dev.	PHOENIX-Desert Springs Park	\$200,000	Land Acquisition Landscaping Two Lighted Tennis Courts Paved Parking Walkways	Acquisition and development of Sandpiper/Crossed Arrows Parks.

LWCF Projects/Phoenix

Project Number	Project Title	Resource Identifier	Grant Amount	Scope of Work	Project Description
400404	Durham Property Acq.-Phx Mtn Prsve	PHOENIX: South Mountain Park	\$195,939	Acquisition of about 60 acres	Acquisition of approximately 60 acres.
400417	Durham Property Acq. Phx Mtn Preserve	PHOENIX: Phoenix Mountain Preserve	\$274,798	Land Acquisition	Acquisition of 80 acre parcel in Phoenix Mountain Preserve.
400462	Singer Property Acq/Dev- Conocido Pk	PHOENIX: Singer Property	\$148,050	Acquisition of 10 acres land Landscaping Sprinkler System Walkway Grading	The acquisition of 10 acres of land for the development of park facilities.
400453	Phoenix Mountain Preserve Acq.	PHOENIX: Phoenix Mountain Preserve	\$344,675	Land Acquisition	The acquisition of land in Phoenix Mountain Preserve.
400455	Westcor Pt. I-Sweetwater/ Cholla Cove Pks	PHOENIX: Sweetwater Park	\$254,487	Land Acquisition Site Grading Sprinkler System Landscaping	Acquisition of Westcor Park and installation of turf and irrigation.
400484	Edison Park Development	PHOENIX: Edison Park	\$26,203	Softball Field Regrading Sprinkler System Court Lighting Landscaping Playground	To develop Edison Park with a softball field, regrading, sprinkler system, court lighting, and landscaping.
400486	G.R. Herberger Pk, 56th St/ Indian Schl	PHOENIX:	\$23,357	Grading Irrigation System Landscaping	To grade and develop an irrigation system, and landscaping at Indian School Road and 58th Street.
400492	Hayden Park Addition	PHOENIX: Hayden Park	\$157,790	Land	The acquisition of 7 acres of land.
400493	Parcel 57 Acq. Phoenix Mtn. Preserves	PHOENIX: Phoenix Mountains	\$300,000	Land	The acquisition of 80 acres of land located within the Phoenix Mountains.
400494	Norton Park Acq, 12th St & Hatcher	PHOENIX: 12th St & Hatcher	\$100,050	Land	The acquisition of 10 acres of land.

LWCF Projects/Phoenix

Project Number	Project Title	Resource Identifier	Grant Amount	Scope of Work	Project Description
400499	Paradise Valley Park Dev. Phase 6	MULTI-CITY: Paradise Valley Park	\$148,929	Racquetball Courts Volleyball Courts Basketball Courts Lighting Turf Sprinkler Systems Water Service Drinking Fountains Paved Parking Multi-use Sports Field Curbing Fencing Comfort Station Electric Service Total	The installation of lighted racquetball courts, lighted volleyball courts, lighted basketball courts, softball fields, turf areas, sprinkler system, self-propelled movable sprinkler system, water service, drinking fountains, multi-use sports field, paved parking area, curbing, fencing, comfort station, and electric service.
400513	Sweetwater/Cholla Cove Pks-Acq/ Dev II	PHOENIX: Sweetwater Park	\$88,712	Unlighted Soccer Field Softball Diamond Basketball Court Volleyball Court Drinking Fountain Parking Area Access Walks	Acquisition and development of Sweetwater Park; including unlighted soccer field, softball diamond, basketball court, volleyball court, drinking fountain, parking area, and access walks.
400514	Central Park Development	PHOENIX: Central Park	\$9,807	Spray Pad ; Area Lights Landscaping Playground Park Furniture	To design and develop a playground, spray pad, area lighting, landscaping, and park furniture at Central Park.
	El Reposo Park Continuing Development	PHOENIX: El Reposo Park	\$115,932	Lighted Volleyball Court Lighted Basketball Court Parking Patio Playground	To develop a group ramada, tot lot, tennis courts, game court, parking, and lighting at El Reposo Park.
	Parcel 65 Acq. Phoenix Mtn. Preserve	PHOENIX: Phoenix Mountain Park	\$300,000	Land Acquisition	To acquire approximately 50 acres of land for the Phoenix Mountain Park.

### LWCF Projects/Phoenix

Project Number	Project Title	Resource Identifier	Grant Amount	Scope of Work	Project Description
400514	Nueve Park Continuing Development	PHOENIX: Nueve park	\$116,000	Paved Walks & Patio Patio Lighted Tennis Courts Lighted Volleyball Courts Area Lighting Picnic Tables and Benches Sprinkler System Play Ground Landscaping	To develop family picnic site, tot lot, tennis courts, game court, site improvement/landscaping, utilities, and lighting at Nueve Park.
400516	Hoeizen Land Acq- Nevitt & Hoshoni Pks	PHOENIX: Nevitt & Hoshoni Parks	\$236,749	General Purpose Playfields Walkways Site Improvement/ Landscaping Utilities Parking	To develop general purpose playfields and support facilities.
400518	Sandpiper/Crossed Arrows Pk-61st/Acoma	PHOENIX-61st Street & Acoma; Desert Springs Park-66 St & Heam	\$204,803	61st St and Acoma Grading Sprinkler System Planting Desert Springs Sprinkler System Lighted Tennis Courts Landscaping	To develop a lighted playfield and tennis court.
400540	Sunburst Paradise Pk-47th Av/Paradise Ln	PHOENIX:	\$85,173	Site Preparation Sprinkler System Landscaping Area Lights	To provide playfields and support facilities.
400548	Parcel 49 Acq. Phoenix Mtn. Pres.	PHOENIX: Phoenix Mountain Preserve	\$106,538	Land Acquisition	To acquire 10 acres of land at South Mountain Park.
400549	Arcadia Park, 56th St & Osborn	PHOENIX: Arcadia Park	\$152,205	Sprinkler System Landscaping Area Lights Walks Parking Lighted Volleyball Playground Picnic Facilities	To develop picnic, playground, game court and support facilities at Arcadia Park.

### LWCF Projects/Phoenix

Project Number	Project Title	Resource Identifier	Grant Amount	Scope of Work	Project Description
400551	Hayden Park Development	PHOENIX: Hayden Park	\$101,488	Site Grading Sprinkler System Landscaping Lighted Softball Field Area Lighting	To develop a ballfield and support facilities.
400552	Alvord Pk & S. Mtn Parcel Acq	PHOENIX: Vista Park and South Mountain Park	\$210,000	Acquisition of 8.06 Acres/ South Mountain Picnic Area Sports and Playfields Support Facilities	To develop picnic, playground and support facilities at Vista Park.
400553	Develop Sueno & Sumida Parks	PHOENIX: Sueno & Squaw Peak Ranch	\$325,000	Site grading Sprinkler system Landscaping Fill dirt Lighted softball field Spray pad Exercise course Lighted basketball court Restroom facility Children's play apparatus Picnic Tables D & E Land	To acquire 5 acres of land and develop picnic, ballfield, playground, game court, trails and support facilities.
400554	Encanto Park	PHOENIX: Encanto Park	\$125,000	Picnic Facilities Lighted Multi-use Field Security Lighting Children's Play Area Total	To develop sports and playfields and related support facilities.
400556	La Pradera Park Development	PHOENIX: La Pradera Park	\$108,000	Lighted Softball Field Lighted Tennis Courts Restroom/Facility Lighted Volleyball Court Lighted Basketball Court Play Equipment	To develop ballfield, game courts, tennis courts and support facilities.

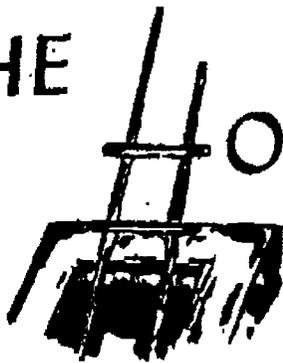
### LWCF Projects/Phoenix

Project Number	Project Title	Resource Identifier	Grant Amount	Scope of Work	Project Description
400586	Cactus Park	PHOENIX: Cactus Park	\$18,000	Lighted Volleyball Court Picnic tables Playground Panscaping	To develop picnic, game courts, and support facilities at Cactus Park.
400590	Moon Valley Park	PHOENIX: Moon Valley Park	\$147,565	Site Preparation Sprinkler System Landscaping Playground Parking	To develop a picnic area, irrigation, landscaping, parking and irrigation at Moon Valley Park.
400591	Cave Creek/Rose Mofford Sports Complex	PHOENIX: Cave Creek Park	\$140,000	Lighted Softball Fields (2) Restroom/Control building Parking Bleachers Site Preparation	To develop ballfields, and support facilities.
400606	Desert West Park - Phase I Development	PHOENIX: Alegre Park	\$65,000	Lighted Softball Fields Children's Play Area Total	The development of sports and playfields.
400612	Christy Cove Park Development	PHOENIX: Cristy Cove Park	\$60,125	Site Grading Landscaping Tot Lot Sprinkler System	To develop playfields, tennis courts and support facilities.
400613	Nevitt Park Continuing Development	PHOENIX: Nevitt Park	\$59,077	Volleyball Court Basketball Court Tot Lot Lighted Tennis Courts (2)	To develop tennis courts and other game courts.
400637	Cholla Cove Park	PHOENIX: Alegrae Park	\$66,750	Landscaping/Grading Walkways	To develop a playfield and support facilities.
400640	El Reposo Park Restroom	PHOENIX: El Reposo Park	\$25,851	Restroom/Control Building	To develop a restroom and control building.
400646	Solano Park Lighted Ballfield	PHOENIX: Solano Park	\$32,995	Ballfield Lighting	To install ballfield lighting.
400652	Nueva Park Game Court/ Play Area Devel	PHOENIX: Nueva Park	\$32,403	Childrens Play Equipment Drinking Fountain Picnic Tables and Benches Basketball Court Renovation	To develop picnic areas, sports and playfields, and related support facilities at Nueva Park.

LWCF Projects/Phoenix

Project Number	Project Title	Resource Identifier	Grant Amount	Scope of Work	Project Description
400655	Hermoso Park Picnic And Play Area	PHOENIX: Hermosa Park	\$31,942	Restroom Childrens Play Area total	To develop a playground, and support facilities.
400660	Lookout Mountain Park Improvements	PHOENIX: Lookout Mountain Park	\$45,637	Childrens Play Area Lighted Volleyball Court Design and Engineering Costs Project Supervision & Inspection	This project will include the development of sports and play fields.
400683	Buffalo Ridge Park Improvements	PHOENIX: Buffalo Ridge Park	\$114,500	Field Lighting Lighted Concrete Basketball Courts Restroom	To develop athletic field lighting for multi-use fields (softball/baseball/soccer), concrete basketball courts with lights, and restroom.
400692	63rd Ave. & Garfield Dev.	PHOENIX: 63rd & Garfield	\$227,500	Grading and Site Preparation Utilities Irrigation Landscaping Pre-Agreement Costs	To develop a 13 acre park at 63rd Avenue and Garfield to include grading, site preparation, landscaping, irrigation and security lights.

THE



# HOPi TRIBE

Hopi Cultural Preservation Office

Wayne Taylor, Jr.  
Chairman

Caleb Johnson  
Vice Chairman

October 6, 2003

Mickeal Agaibi, Supervisor, Planning Section  
Attention: Jennifer Mendelsohn  
U.S. Department of Transportation, Federal Aviation Administration  
Western Pacific Region, Airports Division  
P.O. Box 92007  
Los Angeles, California 90009

Dear Mr. Agaibi,

This letter is in response to your correspondence to Chairman Taylor and the Hopi Cultural Preservation Office dated September 25, 2003, regarding the Federal Aviation Administration (FAA) preparing a draft Environmental Impact Statement (EIS) for proposed terminal development at Sky Harbor International Airport.

As you know from our August 27<sup>th</sup> response to your August 20, 2003, correspondence, the Hopi Tribe claims cultural affiliation to prehistoric cultural groups in the Phoenix area, and therefore we appreciate the FAA's continuing solicitation of our input and your efforts to address our concerns. And therefore, we stated that we have an interest in and concerns about this project and have accepted your invitation to participate in consultations.

We have reviewed the enclosed *Literature Review and Cultural Resources Monitoring Plan for the Geotechnical Testing Phase of the Proposed Stage 1B Airport People Mover Section, From the East Economy Parking Lot North to Washington Street, City of Phoenix*, that identifies four prehistoric sites, Pueblo Grande, U:9:1, Park of the Four Waters, U:9:2, U:9:27, described as an artifact scatter and canals, and U:9:28, described as two canals, in the Stage 1B geotechnical project review area. Please provide us with a copy of the draft monitoring report for review and comment.

If you have any questions or need additional information, please contact Terry Morgart at the Hopi Cultural Preservation Office. Thank you again for consulting with the Hopi Tribe.

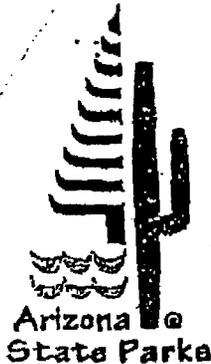
Respectfully,

Leigh J. Kuwanwisiwma, Director  
Hopi Cultural Preservation Office

cc: Office of the Chairman  
Todd Bostwick, City of Phoenix  
A.E. (Gene) Rogge, URS Corporation  
Arizona State Historic Preservation Office

"Managing and conserving natural, cultural, and recreational resources"

In reply, please refer to:  
SHPO-2003-194



Kevin Flynn  
Federal Aviation Administration  
P.O. Box 92007  
Los Angeles, CA 90009

RE: FAA/Phoenix Sky Harbor International Airport

Dear Mr. Flynn

Thank you for submitting documentation on the above referenced undertaking. I have reviewed the material pursuant to 36 CFR Part 800 and have the following comments:

1. We look forward to reviewing information regarding buildings and archaeological investigations that you agency is now gathering. In terms of potential historic buildings, the major property affected that might be considered is Terminal 2. Initial construction on Terminal 2 occurred in 1960, just at the end of the period you state will be considered the cut off for evaluation. This building may have exceptional significance in that it marked the beginning of the accommodation of jets at Sky Harbor. However, James Garrison, the State Historic Preservation Officer, noted that the building had been severely altered and he believes it has probably lost its historic integrity. I do have a concern about the artwork, a large mural in the building that may have significance itself. We recommend that your agency include a consideration of its preservation.

If you have any further questions or requests, you may contact me at (602) 542-7159, or by e mail at [wcollins@pr.state.az.us](mailto:wcollins@pr.state.az.us).

Sincerely,

William S. Collins, Ph.D.  
Deputy State Historic Preservation Officer  
State Historic Preservation Office

Janet Napolitano  
Governor

State Parks  
Board Members

Chair  
Suzanne Pfister  
Phoenix

Recreation Professional  
Vacant

John U. Hays  
Yarnell

Elizabeth Stewart  
Tempe

William C. Porter  
Kingman

Walter D. Armer, Jr.  
Benson

Mark Winkelman  
State Land  
Commissioner

Kenneth E. Travous  
Executive Director

Arizona State Parks  
1300 W. Washington  
Phoenix, AZ 85007

Tel & TTY: 602.542.4174  
[www.azstateparks.com](http://www.azstateparks.com)

800.285.3703 from  
(520 & 928) area codes

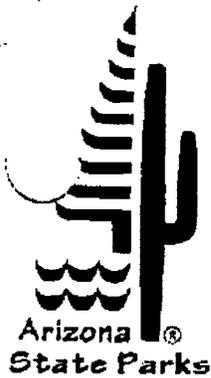
General Fax  
602.542.4180

Director's Office Fax  
602.542.4188

RECEIVED

MAR - 5 2003

REPORTS DIVISION  
APR - 2003



In reply refer to SHPO-2003-1970  
General comments

October 30, 2003

Mickeal Agaibi  
Supervisor, Planning Section  
Federal Aviation Administration  
P. O. Box 920007  
Los Angeles, CA 90009

**FAXED**  
10/30/2003

Attention: Jennifer Mendelsohn

Janet Napolitano  
Governor

State Parks  
Board Members

Chair  
Suzanne Pfister  
Phoenix

Gabriel Beechum  
Casa Grande

John U. Hays  
Yarnell

Elizabeth Stewart  
Tempe

William C. Porter  
Kingman

William Cordasco  
Flagstaff

Mark Winkleman  
State Land  
Commissioner

Kenneth E. Travous  
Executive Director

Arizona State Parks  
1300 W. Washington  
Phoenix, AZ 85007

Tel & TTY: 602.542.4174  
www.azstateparks.com

800.285.3703 from  
(520 & 928) area codes

General Fax:  
602.542.4180

Director's Office Fax:  
602.542.4188

Re: Proposed Automated People Mover for Phoenix Sky Harbor, FAA  
SHPO-2003-1970 (17465)

Dear M. Agaibi:

Thank you for initiating consultation with our office pursuant to Section 106 of the National Historic Preservation Act and implementing regulations at 36 CFR 800.3 regarding proposed terminal development at Phoenix Sky Harbor International Airport and in particular about the proposed Automated People Mover (APM). We understand that geotechnical testing along the proposed APM east side section is needed as part of the APM design process. I have reviewed the documentation submitted and have the following comments:

1. Thank you for the map delineating the area of potential effect (APE) for the larger project and including the area under current consideration. Your cover letter indicates that alternatives for the APM corridor are still under consideration and that the present consultation is limited to the proposed east side section of the APM and to the proposed geotechnical testing.
2. We understand that consultation with our office will continue as the proposed project progresses. SHPO architects will be pleased to be involved early in the APM design process.
3. We agree that additional survey to identify historic properties is not warranted for the proposed east side section of the proposed APM.

"Literature Review for the Geotechnical Testing Phase of the Proposed State 1B of the People Mover Section from the East Economy Parking Lot North to Washington Street"

4. This overview of previous archaeological investigations and historic properties located in and near the east side section of the proposed APM indicates that numerous prehistoric and historical period properties are present or likely to be present.

NOV 7 2003

Letter to M. Agaibi East Side Automated People Mover SHPO-2003-1970  
October 30, 2003, Page 2

a) The City of Phoenix (City) has established the western boundary of the Pueblo Grande Museum and Archaeological Park along the east side of State Route 153 (page 9 of the report). As you know, Pueblo Grande is a National Historic Landmark. You may or may not know that the boundaries of the Landmark have not been clearly delineated; however, the National Park Service and the City are currently working on defining those boundaries (the next meeting is set for November 18). Boundaries should be redefined/established soon; however, regardless of arbitrary Landmark or archaeological site boundaries, archaeological manifestations such as pithouses, pits, canals, middens, etc. that were part of prehistoric Pueblo Grande are likely to be present in the APM corridor.

b) Although it is true that the Grand Canal, the Joint Head Canal, and Cross-Cut Canal are not individually listed in the National Register (page 9), each canal is individually eligible for inclusion in the Register and thus warrants the same consideration as if listed on the Register.

5. Potential effects of geotechnical drilling would most likely be subsurface and include direct physical impacts (e.g., drilling through significant features and materials) and indirect physical impacts (e.g., vibration and possible displacement). At this point, visual effects to above surface historic properties are not likely. However, as the design of the APM progresses, consideration of visual effects will become much important. To reiterate (see point 2 above), SHPO wishes to be involved early in the APM design process.

“Cultural Resources Monitoring Plan for the Geotechnical Testing Phase of the Proposed State 1B Airport People Mover Section from the East Economy Parking Lot North to Washington Street”

6. We understand that geotechnical testing will not be located within existing historical period historic properties such as roads, railroads and canals.

7. The proposed archaeological monitoring plan is adequate.

8. If not already done, owners/managers of land and properties within and adjacent to the subject east side APM parcel (e.g., the Bureau of Reclamation, the Salt River Project [canals], the Arizona Department of Transportation [State Route 153], and the Union Pacific Railroad) should be invited to consult about this undertaking.

We appreciate your continuing cooperation with our office in complying with the requirements of historic preservation. Please contact me at (602) 542-7142 or by email at [jmedley@pr.state.az.us](mailto:jmedley@pr.state.az.us) if you have any questions or concerns.

Sincerely,

  
Jo Anne Medley  
Compliance Specialist/Archaeologist  
State Historic Preservation Office



**City of Phoenix**  
AVIATION DEPARTMENT

September 8, 2004

Barbara Stocklin  
City of Phoenix Historic Preservation Officer  
200 W. Washington Street, 17<sup>th</sup> Floor  
Phoenix, Arizona 85003

**Subject: Phoenix Sky Harbor International Airport West Terminal Development Program**

Dear Ms. Stocklin:

In the letter dated August 6, 2004 the Aviation Department attached Figures 2 and 3 to illustrate the elements of the proposed West Terminal Development Program, and the suggested Area of Potential Effect (APE) for Stage 2 East of the Automated People Mover (APM). As requested in our meeting on August 24, 2004, we have addressed the comments regarding the APE, and have revised Figures 2 and 3 to extend to the southern property line of Pueblo Grande Museum and identified the property line for Tovrea Castle. The enclosed revised Figures 2 and 3 now illustrate a suggested APE of visual effects. Please remove and replace the figures sent in the original letter on August 6, 2004.

We look forward to working with you to mutually agree on properly defining the Areas of Potential Effect (APE) for the EIS for the West Terminal Development Program.

If you have questions, please feel to contact me at (602) 273-3341.

Sincerely,

Christopher Hacker  
Project Manager

Enclosures

cc: Rodger Lidman, Director, Pueblo Grande Museum (w/ enclosures)  
Todd Bostwick, City of Phoenix Archaeologist (w/ enclosures)  
Carl Newman, City of Phoenix  
Carol Clements, City of Phoenix  
Nancy Kesteloot, City of Phoenix  
David Hensley, City of Phoenix  
Paul Blue, City of Phoenix



Barbara Stocklin  
West Terminal Development Program  
September 8, 2004  
Page 2

Jane Morris, City of Phoenix  
Paul Behrens, URS Corporation (w/ enclosures)  
Gene Rogie, URS Corporation  
David Kessler, Federal Aviation Administration (w/ enclosures)  
Jennifer Mendelsohn, Federal Aviation Administration  
Tom Mertens, DMJM/HDR  
John Williams, Ricondo & Associates

H:\Doc\Planning\CHPO-Section 106 (Revision).doc

PHOENIX SKY HARBOR  
INTERNATIONAL AIRPORT

Airport Property and  
Proposed West Terminal  
Development Program Elements

Figure 2



Legend

- Airport Property
- Proposed Development
- Suggested ADP Visual Impacts

0 900 1,800 3,600 Feet

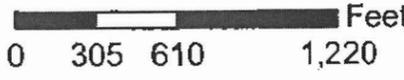
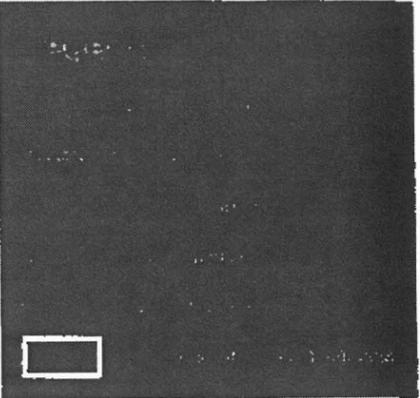


Prepared by DMJM/HDR  
Revised - August 24, 2004

PHOENIX SKY HARBOR  
INTERNATIONAL AIRPORT

Automated People Mover  
Stage II East and Proposed  
Off-Airport Areas of Potential  
Visual Effect

Figure 3



Prepared by DMJM/HDR  
Revised - August 24, 2004



## City of Phoenix

AVIATION DEPARTMENT

December 10, 2004

Ms. Barbara Stocklin  
City of Phoenix - Historic Preservation Officer  
200 W. Washington Street, 17<sup>th</sup> Floor  
Phoenix, Arizona 85003

Mr. Todd Bostwick  
City of Phoenix- Archaeologist  
4619 E. Washington Street  
Phoenix, Arizona 85034

**Subject: Phoenix Sky Harbor International Airport West Terminal Development Project**

Dear Barbara and Todd:

The purpose of this letter is to follow up on our meeting held on August 24, 2004, at which issues related to the environmental impact statement (EIS) being prepared for the proposed Airport Improvement Program (AIP) at Sky Harbor International Airport were discussed. As you know, the Aviation Department is assisting the Federal Aviation Administration (FAA) and its contractor, URS Corporation, to address NEPA requirements, including the requirements of Section 106 of the National Historic Preservation Act. In late October, FAA staff spoke with the State Historic Preservation Office (SHPO) staff who indicated they generally support evaluations and determinations made by the Phoenix City Historic Preservation Officer (CHPO) and City Archaeologist. I am writing to ask for your review of the proposed strategy for completing the EIS technical studies and the Section 106 consultations, and your concurrence with, or suggestions for, modifying this strategy.

### Definition of the Historic Period

At the beginning of the EIS process, it was anticipated that the proposed project would be completed by 2010. In order to ensure that properties at least 50 years old in 2010 would be evaluated for their historic values, the historic period for the project was defined as 1960 and earlier. During the August meeting, you suggested the historic period be extended to 1965 to coincide with the planned completion of the AIP, which is now expected to be in 2015. That suggestion has been adopted and all buildings and structures built in 1965 or earlier within the area of potential effect are being inventoried and evaluated (approximately 6 buildings on Airport property and 14 off Airport property). Although the analysis is not yet complete, it appears that none have sufficient significance or integrity to be eligible for the National Register of Historic Places.



### **Area of Potential Effect for Construction Impacts**

As we discussed at the August meeting, the area of potential effect (APE) for construction impacts is defined as the area that could be disturbed by construction activities (see attached Figure 1). The construction activity would occur within Airport property for most of the elements of the AIP, including:

- Demolition of Terminal 2
- Construction of the new West Terminal
- Modification of the N4 International gate within the existing concourse
- Construction of cross-field Taxiways U and V
- Realignment of Sky Harbor Boulevard
- Construction of Automated People Mover (APM) PM Stage II-West

Construction of APM Stage II-East would extend off Airport property and would require acquisition of property for the APM corridor, the APM maintenance facility, and the APM station to be located at the interconnection with the Valley Metro Rail.

The proposed development would require demolition of the existing Terminal 2 and approximately 8 other buildings on Airport property, as well as approximately 39 properties within the APM Stage II-East corridor and site of the maintenance facility.

Construction activities in the western portion of Airport property have the potential to disturb the margins of two large archaeological sites known as the Dutch Canal Ruin and Pueblo Salado. Along the APM route north of the eastern end of the Airport, buried remnants of approximately 20 Hohokam canals documented prior to the construction of the Sky Harbor Expressway (State Route 153) also could be disturbed. The potential impacts on these resources will be addressed in the EIS.

### **Area of Potential Effect for Visual Impacts**

As discussed at the August 2004 meeting, potential visual impacts of most elements of the proposed project would be confined to Airport property. One exception is the APM Stage II-East, which would extend north of the Airport, and would be elevated north of the Union Pacific Railroad for approximately 0.3 mile. The height of this elevated section of the guideway structure would be approximately 23 to 27 feet above the existing grade. The elevated station at the interconnection with the Valley Metro Rail has yet to be designed, but the roof of the station would have to be high enough to shelter the APM vehicles and passengers at the station.

In consideration of these project parameters, the APE for visual impacts is defined to include:

- The Airport

Ms. Barbara Stocklin  
Mr. Todd Bostwick  
West Terminal Development  
Page 3 of 4

- An area extending northeast of the airport between 42nd Street and the Hohokam Expressway (State Route 143) and encompassing the first tier of parcels north of Washington Street east of the Grand Canal and extending north to Van Buren Street east of 44th Street
- The discontinuous Tovrea Castle property, which is situated on a knoll almost 1 mile east of the Valley Metro Rail interconnection (refer to Figure 1)

Because the APM Stage II-East line, the maintenance facility, and the station at the interconnection with Valley Metro Rail are only at a conceptual stage of design, it is not possible to prepare meaningful visual simulations at this phase of planning. It is recognized that the most sensitive cultural resource within the off-Airport APE is the Pueblo Grande Museum and Archaeological Park, a designated National Historic Landmark. At the August 2004 meeting you suggested that the Museum Director and CHPO be involved in defining design goals to avoid or reduce the visual impacts of the elevated station on the museum and to enhance pedestrian access to the museum from the APM and Valley Metro Rail stations. The Airport planning staff is committed to involving the Museum Director and CHPO in defining design goals and reviewing developing designs. Visual simulations would be prepared as warranted as part of the design process. Both the CHPO and Museum Director would be invited to participate in the review and evaluation of the visual simulations.

#### **Paul Coze Mural in Terminal 2**

The Paul Coze mural in Terminal 2 was created and installed in 1962, which is within the extended historic period as defined for the project. It is anticipated that the mural will be evaluated as a historic object eligible for the National Register of Historic Places under Criterion C. The Aviation Department plans to remove the mural prior to demolition of Terminal 2 and then reinstall it elsewhere within an Airport facility. Because the significance of this mural is as a work of art rather than architecture, moving the mural is not expected to result in an adverse effect on its historic qualities and integrity.

#### **Section 106 Memorandum of Agreement (MOA)**

The FAA has consulted with the SHPO regarding the proposed activities at the Airport. SHPO has indicated that the existing MOA dated June 18, 1993, adequately addresses the necessary processes to provide resource protection and mitigation measures, and the MOA can be applied to the proposed project being evaluated in the EIS. Both the FAA and Aviation Department are committed to following the terms of the MOA with respect to the planned AIP projects. Additionally, the Aviation Department proposes that the protection and mitigation measures detailed above be appended to the MOA to provide additional protection to resources within the project area.

Ms. Barbara Stocklin  
Mr. Todd Bostwick  
West Terminal Development  
Page 4 of 4

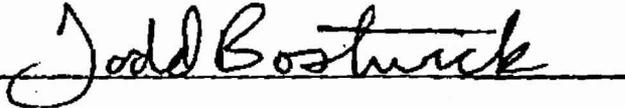
If you find the proposed strategy to be appropriate, please indicate your concurrence by signing below. If you have comments or suggestions, you can contact me at 273-3341 or christopher.hacker@phoenix.gov.

Sincerely,



Christopher Hacker  
Project Manager

I Concur:



Date:

12-27-04

Enclosure - June 18, 1993 MOA

cc: Rodger Lidman, Director, Pueblo Grande Museum (w/ enclosure)



**City of Phoenix**  
AVIATION DEPARTMENT

RECEIVED  
AVIATION DEPARTMENT  
BUSINESS & PROPERTIES  
2004 DEC 17 PM 2:46

December 10, 2004

Ms. Barbara Stocklin  
City of Phoenix - Historic Preservation Officer  
200 W. Washington Street, 17<sup>th</sup> Floor  
Phoenix, Arizona 85003

Mr. Todd Bostwick  
City of Phoenix- Archaeologist  
4619 E. Washington Street  
Phoenix, Arizona 85034

**Subject: Phoenix Sky Harbor International Airport West Terminal Development Project**

Dear Barbara and Todd:

The purpose of this letter is to follow up on our meeting held on August 24, 2004, at which issues related to the environmental impact statement (EIS) being prepared for the proposed Airport Improvement Program (AIP) at Sky Harbor International Airport were discussed. As you know, the Aviation Department is assisting the Federal Aviation Administration (FAA) and its contractor, URS Corporation, to address NEPA requirements, including the requirements of Section 106 of the National Historic Preservation Act. In late October, FAA staff spoke with the State Historic Preservation Office (SHPO) staff who indicated they generally support evaluations and determinations made by the Phoenix City Historic Preservation Officer (CHPO) and City Archaeologist. I am writing to ask for your review of the proposed strategy for completing the EIS technical studies and the Section 106 consultations, and your concurrence with, or suggestions for, modifying this strategy.

**Definition of the Historic Period**

At the beginning of the EIS process, it was anticipated that the proposed project would be completed by 2010. In order to ensure that properties at least 50 years old in 2010 would be evaluated for their historic values, the historic period for the project was defined as 1960 and earlier. During the August meeting, you suggested the historic period be extended to 1965 to coincide with the planned completion of the AIP, which is now expected to be in 2015. That suggestion has been adopted and all buildings and structures built in 1965 or earlier within the area of potential effect are being inventoried and evaluated (approximately 6 buildings on Airport property and 14 off Airport property). ~~Although the analysis is not yet complete, it appears that none have sufficient significance or integrity to be eligible for the National Register of Historic Places.~~

- Paul Coze  
Murray - perhaps too early to come to conclusions on other properties  
is almost certainly eligible.



### **Area of Potential Effect for Construction Impacts**

As we discussed at the August meeting, the area of potential effect (APE) for construction impacts is defined as the area that could be disturbed by construction activities (see attached Figure 1). The construction activity would occur within Airport property for most of the elements of the AIP, including:

- Demolition of Terminal 2
- Construction of the new West Terminal
- Modification of the N4 International gate within the existing concourse
- Construction of cross-field Taxiways U and V
- Realignment of Sky Harbor Boulevard
- Construction of Automated People Mover (APM) PM Stage II-West

Construction of APM Stage II-East would extend off Airport property and would require acquisition of property for the APM corridor, the APM maintenance facility, and the APM station to be located at the interconnection with the Valley Metro Rail.

The proposed development would require demolition of the existing Terminal 2 and approximately 8 other buildings on Airport property, as well as approximately 39 properties within the APM Stage II-East corridor and site of the maintenance facility.

Construction activities in the western portion of Airport property have the potential to disturb the margins of two large archaeological sites known as the Dutch Canal Ruin and Pueblo Salado. Along the APM route north of the eastern end of the Airport, buried remnants of approximately 20 Hohokam canals documented prior to the construction of the Sky Harbor Expressway (State Route 153) also could be disturbed. The potential impacts on these resources will be addressed in the EIS.

### **Area of Potential Effect for Visual Impacts**

As discussed at the August 2004 meeting, potential visual impacts of most elements of the proposed project would be confined to Airport property. One exception is the APM Stage II-East, which would extend north of the Airport, and would be elevated north of the Union Pacific Railroad for approximately 0.3 mile. The height of this elevated section of the guideway structure would be approximately 23 to 27 feet above the existing grade. The elevated station at the interconnection with the Valley Metro Rail has yet to be designed, but the roof of the station would have to be high enough to shelter the APM vehicles and passengers at the station.

In consideration of these project parameters, the APE for visual impacts is defined to include:

- The Airport

- An area extending northeast of the airport between 42nd Street and the Hohokam Expressway (State Route 143) and encompassing the first tier of parcels north of Washington Street east of the Grand Canal and extending north to Van Buren Street east of 44th Street
- The discontinuous Tovrea Castle property, which is situated on a knoll almost 1 mile east of the Valley Metro Rail interconnection (refer to Figure 1)

Because the APM Stage II-East line, the maintenance facility, and the station at the interconnection with Valley Metro Rail are only at a conceptual stage of design, it is not possible to prepare meaningful visual simulations at this phase of planning. It is recognized that the most sensitive cultural resource within the off-Airport APE is the Pueblo Grande Museum and Archaeological Park, a designated National Historic Landmark. At the August 2004 meeting you suggested that the Museum Director and CHPO be involved in defining design goals to avoid or reduce the visual impacts of the elevated station on the museum and to enhance pedestrian access to the museum from the APM and Valley Metro Rail stations. The Airport planning staff is committed to involving the Museum Director and CHPO in defining design goals and reviewing developing designs. Visual simulations would be prepared as warranted as part of the design process. Both the CHPO and Museum Director would be invited to participate in the review and evaluation of the visual simulations.

#### **Paul Coze Mural in Terminal 2**

The Paul Coze mural in Terminal 2 was created and installed in 1962, which is within the extended historic period as defined for the project. It is anticipated that the mural will be evaluated as a historic object eligible for the National Register of Historic Places under Criterion C. The Aviation Department plans to remove the mural prior to demolition of Terminal 2 and then reinstall it elsewhere within an Airport facility. Because the significance of this mural is as a work of art rather than architecture, moving the mural is not expected to result in an adverse effect on its historic qualities and integrity.

#### **Section 106 Memorandum of Agreement (MOA)**

The FAA has consulted with the SHPO regarding the proposed activities at the Airport. SHPO has indicated that the existing MOA dated June 18, 1993, adequately addresses the necessary processes to provide resource protection and mitigation measures, and the MOA can be applied to the proposed project being evaluated in the EIS. Both the FAA and Aviation Department are committed to following the terms of the MOA with respect to the planned AIP projects. Additionally, the Aviation Department proposes that the protection and mitigation measures detailed above be appended to the MOA to provide additional protection to resources within the project area.

Ms. Barbara Stocklin  
Mr. Todd Bostwick  
West Terminal Development  
Page 4 of 4

If you find the proposed strategy to be appropriate, please indicate your concurrence by signing below. If you have comments or suggestions, you can contact me at 273-3341 or christopher.hacker@phoenix.gov.

Sincerely,



Christopher Hacker  
Project Manager

I Concur:



Date: 1-16-04

Enclosure - June 18, 1993 MOA

cc: Rodger Lidman, Director, Pueblo Grande Museum (w/ enclosure)



michelle.woytenko@phoenix.  
gov  
04/22/2005 04:33 PM

To david\_alberts@URSCorp.com  
cc  
bcc  
Subject City of Phoenix Landfill Capacity

This is in response to a letter sent to Bruce Henning referencing City of Phoenix Landfill Capacity for the Proposed Airport Development Program at Phoenix Sky Harbor International Airport.

Our existing landfill, Skunk Creek Landfill, is scheduled to close in January 2006, based on the end of the land patent agreement. At that time, a new landfill which we are referring to as SR85 Landfill, located west of SR85 and south of Buckeye, will be operational. The anticipated life of SR85 Landfill is over 50 years, assuming growth rates in the Phoenix area continue at the current rate. The City-owned landfills will have more than sufficient capacity for disposal of construction debris from the ADP project.

Pleas call, or email if there are additional questions.

Michelle Woytenko  
Public Works Operations Manager  
Solid Waste Disposal Management  
(602) 262-7949 direct

## RECORD OF TELEPHONE CALL

**Date/Time:** 4/08/2005

**Persons Contacted:** Gary Loutzenheiser, FMYN Cultural Development Department, Fort McDowell Yavapai Nation

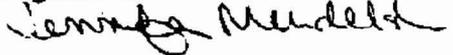
**Subject:** Mr. Loutzenheiser stated that he received the coordination letters and Cultural Resources Survey entitled *Historical, Archaeological and Traditional Cultural Places Technical Report*, dated March 2005 for the Draft Environmental Impact Statement for Phoenix Sky Harbor International Airport. At this time they do not have any comments.

Mr. Loutzenheiser replaced Marcy-Jean Mattson and Raphael Bear is the new President.

**Decisions/Actions to be taken:** None.

**Date:**  
4/08/2005

**Title:**  
Environmental Protection Specialist

**Signature:**  


**RECORD OF TELEPHONE CALL**

**Date/Time:** 4/26/2005

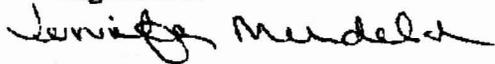
**Persons Contacted:** Barnaby Lewis, Gila River Indian Community

**Subject:** Mr. Lewis stated that they have received the coordination letters and Cultural Resources Survey entitled "*Historical, Archaeological and Traditional Cultural Places Technical Report*", dated March 2005 for the Draft Environmental Impact Statement for Phoenix Sky Harbor International Airport. At this time they do not have any comments.

**Decisions/Actions to be taken:** None.

**Date:**  
4/26/2005

**Title:**  
Environmental Protection Specialist

**Signature:**  




David.McCasland@aps.com

04/15/2005 09:53 AM

To David\_Alberts@urscorp.com

cc Kendra.Cea@aps.com, Michael.Nelson@aps.com,  
Thomas.Yost@aps.com

bcc

Subject RE: Electrical Generating Capacity

History: This message has been forwarded.

I'll be forwarding this information to our Asset Management group for evaluation. I suspect that they'll need some type of schedule for the proposed build outs and a breakdown by location as to what the MW demand will be at each site (both anticipated National Electric Code SES Sizes and anticipated actual demand KW). Megawatts/hr is not as critical to know as the anticipated Megawatt requirements (expressed in both National Electric Code requirements and actual demand requirements). These numbers are both critical to know for the evaluation. They'll also want the planned construction schedule for each one to fully assess the requirements needed at each site.

The answers to your immediate questions are:

1. APS has the generation capacity to support this new load growth. We do not have the distribution capacity to support these projects. I'm not sure if we have the substation or transmission line capacity to support this load. Substation and transmission line capacity questions will need to be reviewed further.
2. APS will have to build additional distribution capacity to support these new systems.

Very detailed requirements from you on timing of projects, where they will be located, what the NEC Connected load requirements will be and what the anticipated demand loads will be is needed in order to give you some magnitudes of the facility requirements needed. Associated costs for these additional facilities would also take a considerable amount of time to develop after we received the information noted above. Thanks.

Let us know if these answers meet you immediate needs or if further information is required.

-----Original Message-----

From: David\_Alberts@URSCorp.com [mailto:David\_Alberts@URSCorp.com]  
Sent: Friday, April 08, 2005 11:53 AM  
To: McCasland, David L(H64986)  
Subject: Electrical Generating Capacity

David L. McCasland, Sr. Electrical Engineer  
APS  
P.O. Box 53933, Mail Sta 3536  
Phoenix, AZ 85072-3933  
[hardcopy to follow via U.S. mail]

Ref: Electrical Generating Capacity for the Proposed Airport Development Program at Phoenix Sky Harbor International Airport

Dear Mr. McCasland,

As part of an Environmental Impact Statement (EIS), URS Corporation is currently assessing the environmental impacts of a proposed Airport Development Program (ADP) at Phoenix Sky Harbor International Airport (PHX) for the Federal Aviation Administration (FAA). The proposed project in the EIS includes the following developments:

- \* Demolition of Terminal 2 and Ancillary Facilities,
- \* West Terminal Development (33-gate terminal) garage and terminal roadways,
- \* Modifications to Terminal 4, Concourse N4 International Gates,
- \* Construction of Crossfield Taxiways Uniform "U" and Victor "V",
- \* Sky Harbor Boulevard Modifications, and
- \* Construction of Stage 2 of the Automated People Mover System (APM).

The proposed West Terminal Development, taxiways, and associated projects would increase electrical energy demand at PHX in order to provide taxiway lighting, interior and exterior terminal lighting, air conditioning, and other electrical needs. Based on preliminary design information from the City of Phoenix Aviation Department design team, the increase in electric usage to support terminal operations is estimated to be approximately 38,900 mw/hr per year, based on the overall size of the West Terminal in relation to the existing Terminal 2. This represents an increase of approximately 35 percent above the usage required for the existing Terminals 2, 3, and 4.

As part of the environmental analysis for the Draft EIS, the following information is required:

1. Does APS have the electrical capacity to support the estimated 38,900 mw/hr per year associated with the proposed Airport Development Program at PHX? 2. Would new distribution capacity be required to support the additional electrical demand at Sky Harbor Airport?

We would appreciate any information you could provide with respect to this matter. If you have any questions, please contact me at 813-675-6565 or via return email.

Thank You,

David Alberts  
URS Corporation  
Airport Environmental Planner

"MMS <apsc.com>" made the following annotations.

-----  
--- NOTICE ---

This message is for the designated recipient only and may contain confidential, privileged or proprietary information. If you have received it in error, please notify the sender immediately and delete the original and any copy or printout. Unintended recipients are prohibited from making any other use of this e-mail. Although we have taken reasonable precautions to ensure no viruses are present in this e-mail, we accept no liability for any loss or damage arising from the use of this e-mail or attachments, or for any delay or errors or omissions in the contents which result from e-mail transmission.

=====



Jan 6d1.6

*Preserving America's Heritage*

April 27, 2005

Jennifer Mendelsohn  
Environmental Protection Specialist  
Federal Aviation Administration  
Airports Division  
P.O. Box 92007  
Los Angeles, CA 90009

REF: *Terminal Development, Phoenix Sky Harbor International Airport, AZ.*

We received your notification and supporting documentation regarding the adverse effects of the referenced project on a property or properties eligible for inclusion in the National Register of Historic Places. Based upon the information you provided, we do not believe that our participation in consultation to resolve adverse effects is needed. However, should circumstances change, please notify us so we can re-evaluate if our participation is required. Pursuant to 36 CFR 800.6(b)(iv), you will need to file the Agreement, and related documentation at the conclusion of the consultation process. The filing of this Agreement with the ACHP is necessary to complete the requirements of Section 106 of the National Historic Preservation Act.

Thank you for providing us with your notification of adverse effect. If you have any questions, please contact Jane Crisler at 303/969-5110 or via email at [astanfill@achp.gov](mailto:astanfill@achp.gov).

Sincerely,

*Nancy Kochan*

Nancy Kochan  
Office Administrator/Technician  
Western Office of Federal  
Agency Programs

ADVISORY COUNCIL ON HISTORIC PRESERVATION

12136 West Bayaud Avenue, Suite 330 • Lakewood, Colorado 80228  
Phone: 303-969-5110 • Fax: 303-969-5115 • [achp@achp.gov](mailto:achp@achp.gov) • [www.achp.gov](http://www.achp.gov)

## RECORD OF TELEPHONE CALL

**Date/Time:** 4/26/2005

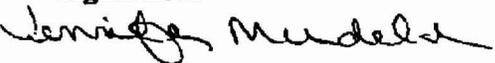
**Persons Contacted:** Barnaby Lewis, Gila River Indian Community

**Subject:** Mr. Lewis stated that they have received the coordination letters and Cultural Resources Survey entitled "*Historical, Archaeological and Traditional Cultural Places Technical Report*", dated March 2005 for the Draft Environmental Impact Statement for Phoenix Sky Harbor International Airport. At this time they do not have any comments.

**Decisions/Actions to be taken:** None.

**Date:**  
4/26/2005

**Title:**  
Environmental Protection Specialist

**Signature:**  




U.S Department  
of Transportation

Federal Aviation  
Administration

Western-Pacific Region  
Airports Division

P.O. Box 92007  
Los Angeles, CA 90009

MAR 11 2005

The Honorable Joni Ramos, President  
Salt River Pima-Maricopa Indian Community  
10005 E. Osborn Road  
Scottsdale, Arizona 85256

Dear President Ramos:

**Phoenix Sky Harbor International Airport  
Phoenix, Arizona  
Section 106 Coordination**

The Federal Aviation Administration (FAA) is in the process of preparing a Draft Environmental Impact Statement (EIS), pursuant to the National Environmental Policy Act of 1969, for proposed terminal development at Phoenix Sky Harbor International Airport (PHX). A Memorandum of Agreement (MOA) was executed on June 25, 1993, regarding development of PHX. Signatories to the MOA included the FAA, Advisory Council on Historic Preservation, and Arizona State Historic Preservation Officer. Concurring parties included the City of Phoenix, Gila River Indian Community and Salt River Pima-Maricopa Indian Community.

The proposed undertaking includes the following projects:

- Demolition of Terminal 2 and ancillary facilities,
- Construction and operation of a 33-gate West Terminal Complex and related construction of access roads, concourses, aprons, airline areas and structural and surface parking areas,
- Modifications to Terminal 4, Concourse N4 International Gates,
- Construction and operation of two crossfield Taxiways Uniform "U" and Victor "V",
- Realignment of Sky Harbor Boulevard,
- Construction and operations of the Automated People Mover (APM) Stage 2, including acquisition of approximately twenty-one acres of land to accommodate the proposed APM maintenance control and storage facility and APM station to connect with the Valley Metro Light Train Transit System.

The Cultural Resource Survey entitled, *Historical, Archaeological and Traditional Cultural Places Technical Report*, dated March 2005 has been enclosed for your review. If your community has an interest in or concerns about the project, we invite you to participate in the Section 106 consultations.

We expect to distribute a Draft Environmental Impact Statement (DEIS) for public review in Spring 2005, and we will send you a copy. Please contact me at 310/725-3637 if you have any questions or require additional information.

Sincerely,

**ORIGINAL SIGNED BY  
JENNIFER MENDELSON**

Jennifer Mendelsohn  
Environmental Protection Specialist

Enclosure

cc: Dezbah Hatathli, Acting Cultural Programs Supervisor  
Hans Klose, Community Development Director  
Kelly Washington, Acting Cultural Resources Dept. Director  
Todd Bostwick, Phoenix City Archaeologist  
Barbara Stocklin, Phoenix CHPO  
Joe Nucci, Tempe CHPO  
Chris Hacker, City of Phoenix  
✓A.E. (Gene) Rogge, URS



U.S Department  
of Transportation  
  
Federal Aviation  
Administration

Western-Pacific Region  
Airports Division

P.O. Box 92007  
Los Angeles, CA 90009

MAR 11 2005

The Honorable Richard Narcia, Governor  
Gila River Indian Community  
P.O. Box 97  
Sacaton, Arizona 85247

Dear Governor Narcia:

**Phoenix Sky Harbor International Airport  
Phoenix, Arizona  
Section 106 Coordination**

The Federal Aviation Administration (FAA) is in the process of preparing a Draft Environmental Impact Statement (EIS), pursuant to the National Environmental Policy Act of 1969, for proposed terminal development at Phoenix Sky Harbor International Airport (PHX). A Memorandum of Agreement (MOA) was executed on June 25, 1993, regarding development of PHX. Signatories to the MOA included the FAA, Advisory Council on Historic Preservation, and Arizona State Historic Preservation Officer. Concurring parties included the City of Phoenix, Gila River Indian Community and Salt River Pima-Maricopa Indian Community.

The proposed undertaking includes the following projects:

- Demolition of Terminal 2 and ancillary facilities,
- Construction and operation of a 33-gate West Terminal Complex and related construction of access roads, concourses, aprons, airline areas and structural and surface parking areas,
- Modifications to Terminal 4, Concourse N4 International Gates,
- Construction and operation of two crossfield Taxiways Uniform "U" and Victor "V",
- Realignment of Sky Harbor Boulevard,
- Construction and operations of the Automated People Mover (APM) Stage 2, including acquisition of approximately twenty-one acres of land to accommodate the proposed APM maintenance control and storage facility and APM station to connect with the Valley Metro Light Train Transit System.

The Cultural Resource Survey entitled, *Historical, Archaeological and Traditional Cultural Places Technical Report*, dated March 2005 has been enclosed for your review. If your community has an interest in or concerns about the project, we invite you to participate in the Section 106 consultations.

We expect to distribute a Draft Environmental Impact Statement (DEIS) for public review in Spring 2005, and we will send you a copy. Please contact me at 310/725-3637 if you have any questions or require additional information.

Sincerely,

**ORIGINAL SIGNED BY  
JENNIFER MENDELSON**

Jennifer Mendelsohn  
Environmental Protection Specialist

Enclosure

- cc: Barnaby Lewis, GRIC Cultural Resources Management Program
- Todd Bostwick, Phoenix City Archaeologist
- Barbara Stocklin, Phoenix CHPO
- Joe Nucci, Tempe CHPO
- Chris Hacker, City of Phoenix
- ✓ A.E. (Gene) Rogge, URS



U.S Department  
of Transportation

Federal Aviation  
Administration

MAR 11 2005

Western-Pacific Region  
Airports Division

P.O. Box 92007  
Los Angeles, CA 90009

The Honorable Wayne Taylor, Jr., Chairman  
Hopi Tribe  
P.O. Box 123  
Kykotsmovi, Arizona 86039

Dear Chairman Taylor:

Phoenix Sky Harbor International Airport  
Phoenix, Arizona  
Section 106 Coordination

The Federal Aviation Administration (FAA) is in the process of preparing a Draft Environmental Impact Statement (EIS), pursuant to the National Environmental Policy Act of 1969, for proposed terminal development at Phoenix Sky Harbor International Airport (PHX). A Memorandum of Agreement (MOA) was executed on June 25, 1993, regarding development of PHX. Signatories to the MOA included the FAA, Advisory Council on Historic Preservation, and Arizona State Historic Preservation Officer. Concurring parties included the City of Phoenix, Gila River Indian Community and Salt River Pima-Maricopa Indian Community.

The proposed undertaking includes the following projects:

- Demolition of Terminal 2 and ancillary facilities,
- Construction and operation of a 33-gate West Terminal Complex and related construction of access roads, concourses, aprons, airline areas and structural and surface parking areas,
- Modifications to Terminal 4, Concourse N4 International Gates,
- Construction and operation of two crossfield Taxiways Uniform "U" and Victor "V",
- Realignment of Sky Harbor Boulevard,
- Construction and operations of the Automated People Mover (APM) Stage 2, including acquisition of approximately twenty-one acres of land to accommodate the proposed APM maintenance control and storage facility and APM station to connect with the Valley Metro Light Train Transit System.

The Cultural Resource Survey entitled, *Historical, Archaeological and Traditional Cultural Places Technical Report*, dated March 2005 has been enclosed for your review. If your community has an interest in or concerns about the project, we invite you to participate in the Section 106 consultations.

We expect to distribute a Draft Environmental Impact Statement (DEIS) for public review in Spring 2005, and we will send you a copy. Please contact me at 310/725-3637 if you have any questions or require additional information.

Sincerely,  
ORIGINAL SIGNED BY  
JENNIFER MENDELSON

Jennifer Mendelsohn  
Environmental Protection Specialist

Enclosure

cc: Leigh Kuwanwisiwma/Terry Morgart, Hopi Cultural Preservation Office  
Todd Bostwick, Phoenix City Archaeologist  
Barbara Stocklin, Phoenix CHPO  
Joe Nucci, Tempe CHPO  
Chris Hacker, City of Phoenix  
A.E. (Gene) Rogge, URS



U.S. Department  
of Transportation

Federal Aviation  
Administration

Western-Pacific Region  
Airports Division

P.O. Box 92007  
Los Angeles, CA 90009

MAR 11 2005

The Honorable Clinton Pattea, President  
Fort McDowell Yavapai Nation  
P.O. Box 17779  
Fountain Hills, Arizona 85269

Dear President Pattea:

**Phoenix Sky Harbor International Airport  
Phoenix, Arizona  
Section 106 Coordination**

The Federal Aviation Administration (FAA) is in the process of preparing a Draft Environmental Impact Statement (EIS), pursuant to the National Environmental Policy Act of 1969, for proposed terminal development at Phoenix Sky Harbor International Airport (PHX). A Memorandum of Agreement (MOA) was executed on June 25, 1993, regarding development of PHX. Signatories to the MOA included the FAA, Advisory Council on Historic Preservation, and Arizona State Historic Preservation Officer. Concurring parties included the City of Phoenix, Gila River Indian Community and Salt River Pima-Maricopa Indian Community.

The proposed undertaking includes the following projects:

- Demolition of Terminal 2 and ancillary facilities,
- Construction and operation of a 33-gate West Terminal Complex and related construction of access roads, concourses, aprons, airline areas and structural and surface parking areas,
- Modifications to Terminal 4, Concourse N4 International Gates,
- Construction and operation of two crossfield Taxiways Uniform "U" and Victor "V",
- Realignment of Sky Harbor Boulevard,
- Construction and operations of the Automated People Mover (APM) Stage 2, including acquisition of approximately twenty-one acres of land to accommodate the proposed APM maintenance control and storage facility and APM station to connect with the Valley Metro Light Train Transit System.

The Cultural Resource Survey entitled, *Historical, Archaeological and Traditional Cultural Places Technical Report*, dated March 2005 has been enclosed for your review. If your community has an interest in or concerns about the project, we invite you to participate in the Section 106 consultations.

We expect to distribute a Draft Environmental Impact Statement (DEIS) for public review in Spring 2005, and we will send you a copy. Please contact me at 310/725-3637 if you have any questions or require additional information.

Sincerely,

ORIGINAL SIGNED BY  
JENNIFER MENDELSON

Jennifer Mendelsohn  
Environmental Protection Specialist

Enclosure

cc: Marcy-Jean Mattson, FMYN Cultural Development Department  
Todd Bostwick, Phoenix City Archaeologist  
Barbara Stocklin, Phoenix CHPO  
Joe Nucci, Tempe CHPO  
Chris Hacker, City of Phoenix.  
✓A.E. (Gene) Rogge, URS



U.S Department  
of Transportation

Federal Aviation  
Administration

Western-Pacific Region  
Airports Division

P.O. Box 92007  
Los Angeles, CA 90009

MAR 15 2005

Mr. Robert Spude, Program Manager  
Cultural Resources and National Register Program  
National Park Service  
P.O. Box 728  
Santa Fe, New Mexico 87504-0728

Dear Mr. Spude:

**Phoenix Sky Harbor International Airport  
Phoenix, Arizona  
Pueblo Grande Ruin and Irrigation Sites National Historic Landmark**

The Federal Aviation Administration (FAA) is in the process of preparing a Draft Environmental Impact Statement, pursuant to the National Environmental Policy Act of 1969, for proposed terminal development at Phoenix Sky Harbor International Airport (PHX). The proposed undertaking will provide additional facilities at PHX to meet passenger demand and improve the efficiency of airport operations.

The proposed undertaking includes the following projects:

- Demolition of Terminal 2 and ancillary facilities,
- Construction and operation of a 33-gate West Terminal Complex and related construction of access roads, concourses, aprons, airline areas and structural and surface parking areas,
- Modifications to Terminal 4, Concourse N4 International Gates,
- Construction and operation of two crossfield Taxiways Uniform "U" and Victor "V",
- Realignment of Sky Harbor Boulevard,
- Construction and operations of the Automated People Mover (APM) Stage 2, including acquisition of approximately twenty-one acres of land to accommodate the proposed APM maintenance control and storage facility and APM station to connect with the Valley Metro Light Train Transit System.

The purpose of this coordination effort is to address the potential impacts of the proposed project to National Historic Landmarks in accordance with Title 36, Code of Federal Regulations, Part 800.10(c), *Protection of Historic Properties*. The proposed project has the potential to affect the setting of the Pueblo Grande Ruin and Irrigation Sites National Historic Landmark.

The Pueblo Grande Ruin and Irrigation Sites National Historic Landmark within the Pueblo Grande Museum and Archaeological Park is located just east of the northern end of the APM Stage 2-East corridor. The part of the Pueblo Grande archaeological site within the park is listed in the National Register of Historic Places under Criteria A and D.

Please contact me at (310)725-3637 if you have any questions or require additional information.

Sincerely,

ORIGINAL SIGNED BY  
JENNIFER MENDELSON

Jennifer Mendelsohn  
Environmental Protection Specialist

Enclosure

cc: Todd Bostwick, Phoenix City Archaeologist  
Barbara Stocklin, Phoenix CHPO  
Joe Nucci, Tempe CHPO  
Chris Hacker, City of Phoenix  
A.E. (Gene) Rogge, URS



U.S. Department  
of Transportation

Federal Aviation  
Administration

Western-Pacific Region  
Airports Division

P.O. Box 92007  
Los Angeles, CA 90009

MAR 15 2005

Mr. Richard Boston, Archaeologist  
U.S. Bureau of Reclamation  
P.O. Box 81169  
Phoenix, Arizona 85069-1169

Dear Mr. Boston:

**Phoenix Sky Harbor International Airport  
Phoenix, Arizona  
Salt River Project Grand Canal**

The Federal Aviation Administration (FAA) is in the process of preparing a Draft Environmental Impact Statement, pursuant to the National Environmental Policy Act of 1969, for proposed terminal development at Phoenix Sky Harbor International Airport (PHX). The proposed undertaking will provide additional facilities at PHX to meet passenger demand and improve the efficiency of airport operations.

The proposed undertaking includes the following projects:

- Demolition of Terminal 2 and ancillary facilities,
- Construction and operation of a 33-gate West Terminal Complex and related construction of access roads, concourses, aprons, airline areas and structural and surface parking areas,
- Modifications to Terminal 4, Concourse N4 International Gates,
- Construction and operation of two crossfield Taxiways Uniform "U" and Victor "V",
- Realignment of Sky Harbor Boulevard,
- Construction and operations of the Automated People Mover (APM) Stage 2, including acquisition of approximately twenty-one acres of land to accommodate the proposed APM maintenance control and storage facility and APM station to connect with the Valley Metro Light Train Transit System.

The purpose of this consultation effort is to address the potential impacts of the proposed project to the Grand Canal. The Grand Canal is a feature of the Salt River Project (SRP) irrigation system, which is considered eligible for the National Register of Historic Places (NRHP) under Criterion A.

The APM Stage 2-East would leave the north side of the East Economy parking garage at the second floor level, and generally parallel the west side of State Route 153 north to the Union Pacific Railroad. North of the railroad, the alignment would curve to the west and then back to the northeast across the Grand Canal. The APM Stage 2-East would cross beneath the Southern Pacific Railroad under the existing bridge that carries the railroad over the depressed Sky Harbor Expressway. The APM would cross over the Grand Canal on an elevated section of guideway. The APM maintenance facility would be constructed between the railroad and canal.

The canal and railroad would not be altered. The proposed undertaking is not expected to adversely affect the historic qualities of the structures that make them eligible for the NRHP.

The Cultural Resource Survey entitled, *Historical, Archaeological and Traditional Cultural Places Technical Report*, dated March 2005 has been enclosed for your information. We would appreciate your comments on the proposed APM crossing of the Grand Canal. We expect to distribute a Draft Environmental Impact Statement (DEIS) for public review in Spring 2005, and we will send you a copy.

Please contact me at (310)725-3637 if you have any questions or require additional information.

Sincerely,

ORIGINAL SIGNED BY  
JENNIFER MENDELSON

Jennifer Mendelsohn  
Environmental Protection Specialist

Enclosure

cc: Todd Bostwick, Phoenix City Archaeologist  
Barbara Stocklin, Phoenix CHPO  
Joe Nucci, Tempe CHPO  
Chris Hacker, City of Phoenix  
A.E. (Gene) Rogge, URS



U.S. Department  
of Transportation  
**Federal Aviation  
Administration**

Western-Pacific Region  
Airports Division

P.O. Box 92007  
Los Angeles, CA 90009

MAR 16 2005

Mr. Don L. Klima, Director  
Office of Federal Agency Programs  
Advisory Council on Historic Preservation  
1100 Pennsylvania Avenue, NW, Room 803  
Washington, D.C. 20004-2501

Dear Mr. Klima:

**Phoenix Sky Harbor International Airport  
Phoenix, Arizona  
Pueblo Grande Ruin and Irrigation Sites National Historic Landmark and  
other National Register-Eligible Properties**

The Federal Aviation Administration (FAA) is in the process of preparing a Draft Environmental Impact Statement, pursuant to the National Environmental Policy Act of 1969, for proposed terminal development at Phoenix Sky Harbor International Airport (PHX). The proposed undertaking will provide additional facilities at PHX to meet passenger demand and improve the efficiency of airport operations.

The proposed undertaking includes the following projects:

- Demolition of Terminal 2 and ancillary facilities,
- Construction and operation of a 33-gate West Terminal Complex and related construction of access roads, concourses, aprons, airline areas and structural and surface parking areas,
- Modifications to Terminal 4, Concourse N4 International Gates,
- Construction and operation of two crossfield Taxiways Uniform "U" and Victor "V",
- Realignment of Sky Harbor Boulevard,
- Construction and operations of the Automated People Mover (APM) Stage 2, including acquisition of approximately twenty-one acres of land to accommodate the proposed APM maintenance control and storage facility and APM station to connect with the Valley Metro Light Train Transit System.

We are contacting you in compliance with regulations for Protection of Historic Properties (Title 36, Code of Federal Regulations (CFR), Part 800.6(a)(1)). This letter is intended to formally notify the Advisory Council that the proposed undertakings at PHX may adversely affect historic properties listed in or eligible for the National Register of Historic Places. In addition, we are notifying you that this project has the potential to affect the Pueblo Grande Ruin and Irrigation Sites National Historic Landmark, but in accordance with 36 CFR Part 800.10(a) special consideration has been given to protecting the landmark, and planning is being undertaken to minimize impacts. The Department of the Interior has been formally notified of the potential impacts on the Pueblo Grande Ruin

and Irrigation Sites National Historic Landmark by a letter sent to the National Park Service office in Santa Fe.

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 Federal Aviation Administration and Phoenix Aviation Department would work with the Museum Director and the Phoenix City Historic Preservation Office in defining design criteria and reviewing developing designs of the Automated People Mover Stage 2-East station and Automated People Mover maintenance, control, and storage facility. There appears to be good potential to avoid an adverse visual effect through sensitive design. The project even has potential to result in a beneficial effect by increasing public awareness of the Pueblo Grande Museum and enhancing pedestrian access from the Automated People Mover and Valley Metro Light Rail Transit stations.

To address documentation of the views of consulting parties, I am enclosing copies of letters exchanged with the National Park Service, U.S. Bureau of Reclamation, City of Phoenix Historic Preservation Office, Phoenix City Archaeologist, State Historic Preservation Office and affiliated tribes. Although only one tribe responded, known concerns of the other tribes regarding human remains and objects that might be associated with archaeological sites are addressed by a burial agreement that the City of Phoenix developed in 1995 to ensure that City of Phoenix projects comply with the Arizona Antiquities Act. Agency and public scoping meetings, and a media briefing were held in April 2001. A public workshop was held in October 2002. To date, no general public comments have expressed concerns about historic preservation issues. We plan to issue a draft Environmental Impact Statement for public review in Spring 2005.

The Cultural Resource Survey entitled, *Historical, Archaeological and Traditional Cultural Places Technical Report*, dated March 2005 has been enclosed for your information. We would appreciate your comments on the proposed project and the ongoing planning to minimize impacts to the Pueblo Grande Ruin and Irrigation Sites National Historic Landmark.

Please contact me at 310/725-3637 if you have any questions or require additional information.

Sincerely,

**ORIGINAL SIGNED BY  
JENNIFER MENDELSON**

Jennifer Mendelsohn  
Environmental Protection Specialist

Enclosure

cc: James Garrison, SHPO  
Todd Bostwick, Phoenix City Archaeologist  
Barbara Stocklin, Phoenix CHPO  
Joe Nucci, Tempe CHPO  
Chris Hacker, City of Phoenix  
A.E. (Gene) Rogge, URS



U.S Department  
of Transportation  
**Federal Aviation  
Administration**

Western-Pacific Region  
Airports Division

P.O. Box 92007  
Los Angeles, CA 90009

MAR 16 2005

James Garrison  
State Historic Preservation Officer  
Arizona State Parks  
1300 W. Washington Street  
Phoenix, Arizona 85007

Dear Mr. Garrison:

**Phoenix Sky Harbor International Airport  
Phoenix, Arizona  
Section 106 Coordination**

The Federal Aviation Administration (FAA) is in the process of preparing a Draft Environmental Impact Statement, pursuant to the National Environmental Policy Act of 1969, for proposed terminal development at Phoenix Sky Harbor International Airport (PHX). The proposed undertaking will provide additional facilities at PHX to meet passenger demand and improve the efficiency of airport operations.

The proposed undertaking includes the following projects:

- Demolition of Terminal 2 and ancillary facilities,
- Construction and operation of a 33-gate West Terminal Complex and related construction of access roads, concourses, aprons, airline areas and structural and surface parking areas,
- Modifications to Terminal 4, Concourse N4 International Gates,
- Construction and operation of two crossfield Taxiways Uniform "U" and Victor "V",
- Realignment of Sky Harbor Boulevard,
- Construction and operations of the Automated People Mover (APM) Stage 2, including acquisition of approximately twenty-one acres of land to accommodate the proposed APM maintenance control and storage facility and APM station to connect with the Valley Metro Light Train Transit System.

The purpose of this consultation effort is to address the potential impacts of the proposed undertaking to historic properties and archaeological resources that occur or are likely to occur in the vicinity of the airport. The FAA has determined that the Area of Potential Effect (APE) for construction impacts encompasses approximately 432 acres (Figure 5). This area includes construction zones for demolition of Terminal 2, building the new West Terminal, constructing crossfield Taxiways U and V, realigning Sky Harbor Boulevard, modifying Concourse N4 International Gates in Terminal 4 and constructing APM Stage 2. The APE extends beyond the property line on the northeast side of the airport to include the construction and operation site for the proposed APM. The proposed APM would connect to the proposed

Valley Metro Light Rail Transit system at Washington Street on the west side of 44<sup>th</sup> Street. The APE includes all areas where activities that would disturb the ground would take place.

The FAA has determined that the APE for visual impacts encompasses approximately 5.3 square miles. It includes the airport property between 16<sup>th</sup> Street and the Hohokam Expressway (State Route 143), an area extending north from the airport boundary to Washington Street between 42<sup>nd</sup> Street and the Hohokam Expressway, the first row of parcels north of Washington Street to Van Buren Street between 44<sup>th</sup> Street and the Hohokam Expressway. The APE for visual impacts also includes the Tovrea Castle property that is situated on a prominent hill northeast of the airport.

The Cultural Resource Survey entitled, *Historical, Archaeological and Traditional Cultural Places Technical Report*, dated March 2005 has been enclosed for your review. The following archaeological resources and historic properties located within the APE are listed below. These properties are either listed or eligible for listing on the National Register of Historic Places (NRHP).

#### Grand Canal and the Phoenix Main Line of the Southern Pacific Railroad

Two historical properties located within the APE are the Grand Canal and the Phoenix Main Line of the Southern Pacific Railroad which are both eligible for the NRHP under Criterion A. The APM Stage 2-East would cross beneath the Southern Pacific Railroad under the existing bridge that carries the railroad over the depressed Sky Harbor Expressway. The APM would cross over the Grand Canal on an elevated section of guideway. The APM maintenance facility would be constructed between the railroad and canal. The canal and railroad would not be altered. The proposed undertaking is not expected to adversely affect the historic qualities of the structures that make them eligible for the NRHP.

#### Hohokam Habitation Sites

The Pueblo Salado, Dutch Canal Ruin and Pueblo Grande are eligible for the NRHP under Criterion D. The proposed undertaking has the potential to adversely affect the margins of these sites as well as buried remnants of many of the 19 Hohokam irrigation canals and the historical Joint Head Canal. Data recovery studies have been conducted within parts of all of these sites to mitigate the impacts of prior projects. Other unrecorded Hohokam sites, as well as early historic-era archaeological sites could be encountered on and off the airport. Intact archaeological resources at these sites are likely to have potential to yield important information.

The Phoenix Aviation Department, in coordination with the FAA would arrange to have archaeological testing or monitoring plans prepared and implemented. If archaeological resources are discovered, they would be evaluated and measures to avoid, reduce or mitigate impacts would be developed and implemented, with subsequent data recovery studies as warranted, as project planning proceeds and as final designs are prepared for the proposed undertaking. Traditional cultural concerns about disturbance of human remains and funerary objects that might be associated with archaeological sites would be addressed in accordance with a 1995 burial agreement that the City of Phoenix has developed to comply with the Arizona Antiquities Act.

#### Paul Coze Mural

The Phoenix, a mural by Paul Coze, is located within Terminal 2. The mural is recommended as eligible for the NRHP under Criterion C. Terminal 2 would be demolished as part of the proposed undertaking. The Phoenix Aviation Department would photo document and carefully remove the mural prior to demolition of the terminal and reinstall it at another airport location. This is not expected to adversely affect the historic qualities of the mural that make it eligible for the NRHP. The City of Phoenix would develop a plan for the removal and remounting of the mural prior to demolition of Terminal 2. This plan would be coordinated with the City Historic Preservation Office, the FAA and your office.

#### Sacred Heart Church and Tovrea Castle

The Sacred Heart Church was constructed in 1956 within the Golden Gate Barrio. All of the Golden Gate Barrio except the Sacred Heart Church was demolished when the property was integrated into the airport. The Sacred Heart Church is considered eligible for the NRHP under Criterion A. The church is currently located within a highly altered setting and the proposed new airport facilities would be a minor change in the current setting of the church. The FAA has determined the proposed undertaking would not have an adverse affect on the Sacred Heart Church.

The Tovrea Castle and surrounding 44-acre Carraro Cactus Garden is listed in the NRHP under Criteria A and C, and is a Phoenix Historic Landmark that currently is being developed for heritage tourism. Tovrea Castle is almost one mile east of the proposed APM Stage 2-East station and APM maintenance, control, and storage facility, and is on the opposite side of the elevated Hohokam Expressway. The proposed APM facilities would result in only minor changes of the highly developed urban landscape around the Tovrea Castle. The FAA has determined the proposed undertaking would not have an adverse affect on the Tovrea Castle.

#### Pueblo Grande Museum and Archaeological Park

The Pueblo Grande Ruin and Irrigation Sites National Historic Landmark within the Pueblo Grande Museum and Archaeological Park is located just east of the northern end of the APM Stage 2-East corridor. The part of the Pueblo Grande archaeological site within the park is listed in the NRHP under Criteria A and D. Pueblo Grande Ruin within the park is listed in the NRHP under Criteria A and D. The elevated elements of the APM Stage 2-East would alter the setting of the park. The APM station has yet to be designed, but it could be the equivalent of a two- to four-story building or taller. The guideway structure for the elevated section south of the station also has yet to be designed, but is expected to be approximately 11 feet deep and approximately 23 to 27 feet above the existing grade. Approximately 1,000 feet of elevated guideway entering the East Economy parking garage also would be visible from the southern part of the park. The top of this section of the guideway structure would be approximately 45 feet above Sky Harbor Boulevard, which is depressed below normal grade at this location at the eastern end of the Airport.

Views from the park to the west are dominated by light industrial, commercial and Airport development. Much of this development is one story in height, but some buildings are taller. The Crowne Plaza Hotel, just north of the interconnection of the APM and the Light Rail Transit station, is the tallest, at approximately 10 stories. There also are power lines, tall metal storage tanks, and billboards in the viewshed. From many places within the park, museum buildings, walls and trees screen views to the west. The elevated APM facilities would modify the landscape and be visible from parts of the park. The extent of visual changes cannot be fully assessed until the proposed facilities are designed in more detail. There is potential that the changes could result in an adverse effect on the setting of the park. The primary historic values of the park are not related to its setting, but instead are related to the archaeological information the site has yielded and has yet potential to yield, and to associations with the development of irrigation agriculture during the prehistoric and early historic eras. The proposed undertaking has potential to result in an adverse visual effect on the Pueblo Grande Ruin and Irrigation Sites National Historic Landmark within the Pueblo Grande Museum and Archaeological Park.

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, the City Historic Preservation Officer, and your office, to define design criteria and review developing designs of the APM Stage 2-East facilities. It is anticipated that a sensitive, compatible design could avoid an adverse visual effect to Pueblo Grande. The project has potential to result in a beneficial effect by enhancing pedestrian access to the Pueblo Grande Museum.

The FAA has coordinated with the City Historic Preservation Officer, City Archaeologist, and four tribes (Salt River Pima-Maricopa Indian Community, Gila River Indian Community, Fort McDowell Yavapai Nation, and Hopi Tribe) on the proposed undertaking.

Based on the information in the Cultural Resources Survey, the FAA has determined that the proposed undertaking at PHX may adversely affect the margins of three archaeological sites that are remnants of large Hohokam habitation sites. These include the margins of Pueblo Salado, Dutch Canal Ruin and Pueblo Grande. The proposed undertaking may adversely affect portions of 19 Hohokam irrigation canals and the historical Joint Head Canal northeast of the airport. If archaeological resources are discovered, they would be evaluated and measures to avoid, reduce or mitigate impacts would be developed and implemented, with subsequent data recovery studies as warranted, as project planning proceeds and as final designs are prepared for the proposed undertaking. We request your written concurrence with the APE and our determinations. Results of this coordination will be incorporated into the Draft Environmental Impact Statement (DEIS).

We expect to distribute a DEIS for public review in May 2005, and we will send you a copy. Please contact me at 310/725-3637 if you have any questions or require additional information.

Sincerely,

**ORIGINAL SIGNED BY  
JENNIFER MENDELSON**

Jennifer Mendelson  
Environmental Protection Specialist

Enclosure

cc: Don L. Klima, Advisory Council on Historic Preservation  
Todd Bostwick, Phoenix City Archaeologist  
Barbara Stocklin, Phoenix CHPO  
Joe Nucci, Tempe CHPO  
Chris Hacker, City of Phoenix  
A.E. (Gene) Rogge, URS



"Managing and conserving natural, cultural, and recreational resources"

In reply refer to SEPO-2003-194  
Adverse Effect

April 20, 2005

Jennifer Mendelsohn  
Environmental Protection Specialist  
Federal Aviation Administration  
P. O. Box 920007  
Los Angeles, CA 90009

Janet Napolitano  
Governor

State Parks  
Board Members

Chair  
Elizabeth Stewart  
Tampa

William C. Porter  
Kingman

William Cordasco  
Flagstaff

Janice Chilton  
Payson

William C. Scabin  
Phoenix

John U. Hays  
Yarnall

Mark Winkelman  
State Land  
Commissioner

Kenneth E. Trivette  
Executive Director

Arizona State Parks  
1300 W. Washington  
Phoenix, AZ 85007

Tel & TTY: 602.542.4174  
www.azstateparks.com

800.285.3703 from  
(620 & 928) area codes

General Fax:  
602.542.4188

Director's Office Fax:  
602.542.4184

Re: Proposed Development and Improvements at Phoenix Sky Harbor International Airport;  
FAA  
SEPO-2003-194 (23272)

Dear Ms. Mendelsohn:

Thank you for continuing to consult with our office regarding proposed development/improvement projects at Phoenix Sky Harbor International Airport. These projects include demolition of Terminal 2 and auxiliary facilities; construction and operation of a 33 gate West Terminal Complex and related construction, modifications to Terminal 4, Concourse N4 international gates; construction and operation of two cross field taxiways Uniform "U" and Victor "V," realignment of Sky Harbor Boulevard; and construction and operations of the Automated People Mover (APM) State 2, including acquisition of approximately 21 acres of land to accommodate the proposed APM maintenance control and storage facility and APM station to connect with the Valley Metro Light Train Transit System.

Thank you for the extended review time. William Collins, Deputy State Historic Preservation Officer and I have reviewed the materials submitted and have the following comments pursuant to 36 CFR 800:

1. The cultural resources survey titled *Historical, Archaeological and Traditional Cultural Places Technical Report* (March 2005) identifies the following properties within the area of potential effect (APE) that are listed or eligible for listing in the National Register of Historic Places (NRHP):

The Grand Canal, eligible under Criterion A  
Phoenix Main Line of the Southern Pacific Railroad  
Paul Coe Mural *The Phoenix*, located within Terminal 2  
Sacred Heart Church  
Tovrea Castle  
Pueblo Grande Ruin and Irrigation Sites National Historic Landmark, which is contained within the boundaries of the Pueblo Grande Museum and Archaeological Park  
Hohokam Habitation Sites: Pueblo Grande, Pueblo Salado, and Dutch Canal Ruin

2. We concur that the Grand Canal, the Southern Pacific Railroad, the Coe Mural, Sacred Heart Church and Tovrea Castle would not be adversely affected by the undertaking.

3. Although not mentioned in the Pueblo Grande Ruin and Irrigation Sites National Historic Landmark (NHL) designation or NRHP nomination, we believe that Pueblo Grande is Register-eligible under Criterion A for importance in the history of the City of Phoenix as the first archaeological site set aside as a City park, for importance in the history of American Archaeology,

Letter to Ms. Mendelsohn  
April 20, 2005  
Page 2

Sky Harbor Airport Improvements

SHPO-2003-194

and as a place of importance in the history of several Indian tribes. We also believe that Pueblo Grande is Register-eligible under Criterion C for type of construction. The report should be revised to expand the significance discussion.

4. We recommend that FAA reconsider the potential for effect to Pueblo Grande based on new information about the property's significance.

5. We concur that the undertaking has the potential to affect the Pueblo Grande Ruin, which is the first archaeological site set aside as a City of Phoenix Park.

6. We suggest that FAA reconsider whether Pueblo Grande Park has been adequately evaluated as a Section 4f property.

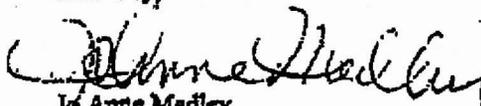
7. We concur that the undertaking has the potential to adversely affect portions (more than just margins) of Hohokam habitation sites Pueblo Salado and the Dutch Canal Ruin. It is also possible that an unknown number of prehistoric canals associated with these sites could be adversely affected.

8. Although you did not request our concurrence on eligibility of 129 buildings and parcels inventoried (Appendix A), based on the information provided, it is our opinion that none would be eligible for inclusion in the NRHP.

9. A Memorandum of Agreement should be developed for this undertaking.

We look forward to continuing to consult and appreciate your continuing cooperation with our office in complying with the requirements of historic preservation. Please contact Dr. Collins at (602) 542-7159 or me at (602) 542-7142 if you have any questions or concerns.

Sincerely,



Jo Anne Medley  
Compliance Specialist/Archaeologist  
State Historic Preservation Office



U.S Department  
of Transportation

Federal Aviation  
Administration

Western-Pacific Region  
Airports Division

P.O. Box 92007  
Los Angeles, CA 90009

AUG 1 2005

Ms. Jo Anne Medley  
Compliance Specialist/Archaeologist  
State Historic Preservation Office  
Arizona State Parks  
1300 W. Washington Street  
Phoenix, Arizona 85007

Dear Ms. Medley:

**Phoenix Sky Harbor International Airport  
Phoenix, Arizona  
Section 106 Coordination**

Thank you for your letter dated July 11, 2005, reference number SHPO-2003-194, regarding the Draft Environmental Impact Statement (EIS) for the proposed Airport Development Program at Phoenix Sky Harbor International Airport. Your letter stated that the inventory of cultural resources compiled for the Draft EIS is incomplete because (1) the Swilling residence, (2) the Salt River Valley Canal, and (3) the Dutch Ditch (a branch of the Swilling Canal) were not included in the inventory. Our research indicates that these resources are close to, though probably not within, the Area of Potential Effect (APE).

The Jack Swilling residence, a large Mexican-style adobe called Swilling's Castle, was built within the Phoenix Settlement (also called Punkinsville) in 1868 or 1869. The residence also became known as Dos Casas because it was built on the ruins of a Hohokam adobe building. Barney (1933) mapped Swilling's house in the NW1/4 of Section 12, Township 1 North, Range 3 East (see Cable and Doyel 1986:9; Greenwald and Stein 1996:5). This would place the house somewhere east of 32nd Street, west of 36th Street, south of Washington Street, and north of the Union Pacific Railroad. This area is west of the parking lot of the Phoenix Greyhound Park, which is approximately one-half mile or more from the APE for construction impacts.

The Salt River Valley Canal (also known as the Town Ditch) was originally called the Extension Ditch. This canal expanded the service area of the original 2.5-mile-long Swilling Canal by extending it to the northwest. The Swilling Canal was included in the inventory compiled for the Draft EIS, and the supporting technical report describes the archaeological discovery of remnants of the canal just east of the north runway at Sky Harbor International Airport (Cable and Doyel 1986). The Swilling Canal was put into service in March 1868, and excavation of the extension that eventually became known as the Salt River Valley Canal must have begun almost immediately because it too was reported to be in service that same year (Luckingham 1989:20; Mawn 1979:43).

In 1872, John Alsap described the branching of the original Swilling Canal at a location about one mile from the river where the flows reached ground level. From that point, the flow of the Swilling Canal was divided among the Dutch Ditch, the Extension Ditch, and the North Extension Ditch (which later became known as the Maricopa Canal) (Stein 2003:35-36; Zarbin 1997:34). A 1902-1903 U.S. Reclamation Service map documents the location of that branching as being along the mid-section line of Section 12 of Township 1 North, Range 3 East (LaBar and Dudley 2003: Attachment 9; also see Stein 2003:38-39). By that time, the Joint Head Canal had been built to replace earlier headings of the Swilling Canal that had been damaged by floods. The inventory compiled for the Draft EIS included the Joint Head Canal, and described its alignment as crossing the APE for construction of the proposed Stage 2-East Automated People Mover.

The location of the branching would have been near the current alignment of the Union Pacific Railroad along the south side of the Phoenix Greyhound Park, which is one-half mile or more from the APE for construction impacts. Although the Swilling Canal and the later Joint Head Canal, which supplied water to the Salt River Valley Canal, are within or close to the APE for construction impacts, the portion of the canal that came to be known as the Salt River Valley Canal is not.

Similarly, the Dutch Ditch originated at the same branching of the Swilling Canal, and is outside the area of potential effects for construction impacts. The Dutch Ditch probably was excavated in 1868 or 1869. After the turn of the century, the canal was incorporated into the Salt River Project and continued to be used into the 1950s (Greenwald and Anderson 1996:97; Stein 2003:34).

The western part of the ditch was modified several times (Rodgers and Greenwald 1988:36-43; Wilcox 1994:46-47). Although no early maps of the canal have been found, later maps (1891, 1902-1903, 1911, 1914, 1917, 1924, 1936, and 1938) indicate that the eastern part of the canal was probably always aligned along the mid-section line of Sections 10, 11, and 12 of Township 1 North, Range 3 East (Stein 2003:37-43; Wilcox 1994:40-52). This would put the alignment adjacent to the current Union Pacific Railroad north of the Phoenix Sky Harbor International Airport. A southwesterly branch, originally known as the ~~Gray Branch, diverged from the Dutch Ditch~~ near the middle of Section 10 (near the modern Papago Freeway), and another branch continued to the west (Stein 2003:36-37; Wilcox 1994:52). One map indicates that the branching of the southwestern alignment may have been shifted about three-fourths of a mile to the east into Section 11 for a period during the late 1800s and early 1900s (Stein 2003:38-39).

Archeological excavations within the Papago Freeway corridor identified a canal that may have been a segment of the Dutch Ditch or a lateral of the ditch (Greenwald 1988:113), and a segment of the ditch was found to the west in the SW1/4 of Section 10, Township 1 North, Range 3 East during excavations within the Phoenix Sky Harbor Center (Greenwald and Anderson 1996:97-99). The available evidence indicates that although one or more alignments of the Gray Branch of the Dutch Ditch would have been close to the APE for construction of the proposed Sky Harbor Boulevard realignments, it probably was several hundred feet north of the APE for construction impacts.

In summary, our research indicates that it is unlikely that the Swilling residence is within the APE. The Draft EIS inventory includes the Swilling Canal, but the branches of this canal known as the Extension Ditch (and later the Town Ditch or Salt River Valley Canal) and the Dutch Ditch probably are not within the APE for construction impacts. Undiscovered laterals of the Dutch Ditch, as well as other historic-era archaeological artifacts and features, could be present almost anywhere within the APE both on and off the airport, but no evidence of specific canals or other types of features was identified. Any intact archaeological resources with potential to yield important information about early Euro-American settlement would be considered National Register eligible and treated appropriately if such resources were discovered as the project moves forward.

We request your written concurrence with the information provided regarding the APE and the locations of the Dutch Ditch, the Salt River Valley Canal and the Swilling residence. We are also working with the City of Phoenix to develop a Memorandum of Agreement for the proposed projects in the Draft EIS. We plan to have a draft MOA for your review by the end of September. Please contact me at 310/725-3637 if you have any questions or require additional information.

Sincerely,

**ORIGINAL SIGNED BY  
JENNIFER MENDELSON**

Jennifer Mendelsohn  
Environmental Protection Specialist

cc: Chris Hacker, City of Phoenix  
Paul Behrens, URS  
A.E. (Gene) Rogge, URS

## References Cited

- Barney, James M.  
1933 Phoenix—A History of its Pioneer Days and People. *Arizona Historical Review* 5(4):264-285.
- Cable, John S., and David E. Doyel  
1986 *The Archaeology of Swilling's Ditch: Phoenix's First Historic Canal*. Pueblo Grand Museum, Phoenix.
- Greenwald, David H.  
1988 Water Conveyance Features. In *Archaeological Investigations at the Dutch Canal Ruin, Phoenix, Arizona: Archaeology and History along the Papago Freeway Corridor*, edited by David H. Greenwald and Richard Ciolek-Torrello, pp. 69-115. Research Paper 38. Museum of Northern Arizona, Flagstaff.
- Greenwald, David H., and Kirk C. Anderson  
1996 The Phoenix Sky Harbor Center Canals. In *Early Desert Farming and Irrigation Settlements, Archaeological Investigations in the Phoenix Sky Harbor Center, Volume 4: Special Studies, Synthesis, and Conclusions*, edited by David H. Greenwald and Jean H. Ballagh, pp. 77-105. Anthropological Research Paper 4. SWCA Environmental Consultants, Flagstaff and Tucson.
- Greenwald, David H., and Pat H. Stein  
1996 Comparison of Prehistoric and Historic Settlement in the Phoenix Basin. In *Early Desert Farming and Irrigation Settlements, Archaeological Investigations in the Phoenix Sky Harbor Center, Volume 4: Special Studies, Synthesis, and Conclusions*, edited by David H. Greenwald and Jean H. Ballagh, pp. 1-15. Anthropological Research Paper 4. SWCA Environmental Consultants, Flagstaff and Tucson.
- LaBar, James, and Shelly Dudley  
2003 *Central Phoenix/East Valley Light Rail Transit Project: Historical Documentation of the Joint Head Dam and Joint Head Canal*. Valley Metro Rail, Phoenix.
- Luckingham, Bradford  
1989 *Phoenix: The History of a Southwestern Metropolis*. University of Arizona Press, Tucson.
- Mawn, Geoffrey P.  
1979 *Phoenix, Arizona: Central City of the Southwest, 1870-1920*. Unpublished Ph.D. dissertation, Department of History, Arizona State University, Tempe.
- Rodgers, James B., and David H. Greenwald  
1988 Historic Resources. In *Archaeological Investigations at the Dutch Canal Ruin, Phoenix, Arizona: Archaeology and History along the Papago Freeway Corridor*, edited by David H. Greenwald and Richard Ciolek-Torrello, pp. 30-68. Research Paper 38. Museum of Northern Arizona, Flagstaff.

Stein, Pat H.

- 2003 Land Use History of the Project Area. In *Hohokam Farming on the Salt River Floodplain: Excavations at the Sky Harbor Airport North Runway*, edited by T. Kathleen Henderson, pp. 33-39. Anthropological Papers 42. Center for Desert Archaeology, Tucson, and Anthropological Papers 9. Pueblo Grande Museum, Phoenix.

Wilcox, David R.

- 1994 Archaeology South of the Tracks. In *Early Desert Farming and Irrigation Settlements, Archaeological Investigations in the Phoenix Sky Harbor Center, Volume 1: Testing Results and Data Recovery Plan*, edited by David H. Greenwald, pp. 37-63. Anthropological Research Paper 4. SWCA Environmental Consultants, Flagstaff and Tucson.

Zarbin, Earl

- 1997 *Two Sides of the River: Salt River Valley Canals, 1867-1902*. Salt River Project, Phoenix.



In reply refer to SHPO-2003-194  
General Comments

August 23, 2005

Jennifer Mendelsohn  
Environmental Protection Specialist  
Federal Aviation Administration  
P. O. Box 92007  
Los Angeles, CA 90009

Janet Napolitano  
Governor

Re: Proposed Development and Improvements at Phoenix Sky Harbor International Airport,  
FAA  
SHPO-2003-194 (25070)

State Parks  
Board Members

Dear Ms. Mendelsohn:

Chair  
Elizabeth Stewart  
Tempe

Thank you for your letter which addresses our concerns about identification of historic properties within the area of potential effect (APE) for this undertaking. We appreciate the succinct clarification provided about the APE and locations of the Dutch Ditch, the Salt River Valley Canal, and the Swilling residence. We concur that the agency has made a good faith effort in the identification of historic properties pursuant to 36 CFR 800.4.

William C. Porter  
Kingman

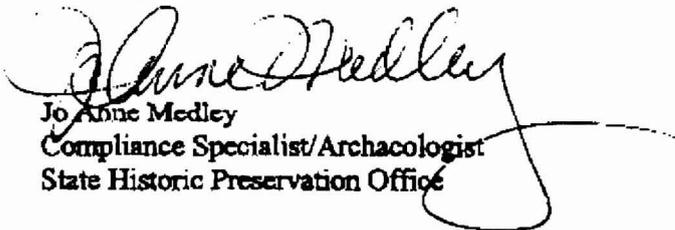
We look forward to continuing to consult and appreciate your continuing cooperation with our office in complying with the requirements of historic preservation. Please contact us at (602)542-7142 if you require additional information.

William Cordasco  
Flagstaff

Janice Chilton  
Payson

Sincerely,

William C. Scalzo  
Phoenix

  
Jo Anne Medley  
Compliance Specialist/Archaeologist  
State Historic Preservation Office

John U. Hays  
Yarnell

Mark Winkelman  
State Land  
Commissioner

Kenneth E. Travous  
Executive Director

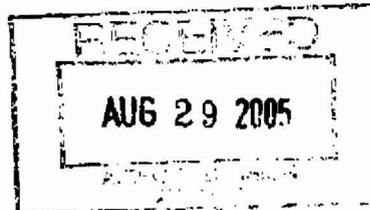
Arizona State Parks  
1300 W. Washington  
Phoenix, AZ 85007

Tel & TTY: 602.542.4174  
www.azstateparks.com

800.285.3703 from  
(520 & 928) area codes

General Fax:  
602.542.4180

Director's Office Fax:  
602.542.4188

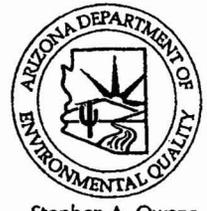




Janet Napolitano  
Governor

# ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY

1110 West Washington Street • Phoenix, Arizona 85007  
(602) 771-2300 • www.adeq.gov



Stephen A. Owens  
Director

CERTIFIED MAIL  
Return Receipt Requested  
AN - 7001 0360 0003 1408 6780  
October 7, 2005

Ms. Troy Meyer  
Remediation Portfolio Director  
Honeywell  
101 Columbia Road  
Morristown, New Jersey 07962

**RE: CORRECTIVE ACTION PLAN FINAL APPROVAL**

LUST File #0393.02-.10, .15  
Facility ID #0-002227

Honeywell  
111 South 34th Street  
Phoenix, Arizona

Dear Ms. Meyer:

Arizona Department of Environmental Quality (ADEQ) Tank Programs Division's Corrective Action Section staff has completed a review of the following documents submitted by CH2M HILL on behalf of Honeywell:

- *Response to ADEQ comments dated September 30, 2004 on Honeywell's Revised Corrective Action Plan . . . .*, dated November 15, 2004;
- an untitled, undated document containing revised Corrective Action Plan (CAP) text, appendices, tables, and figures, submitted with the above document, and;
- *Revised Corrective Action Plan, Honeywell 34<sup>th</sup> Street Facility (Volumes 1, 2, and 3) and Data Submittal: Supplement to the Revised Corrective Action Plan*, dated July 2004.

Hereafter, ADEQ will refer to the above documents collectively as "the CAP."

Preliminary approval of the CAP was granted by ADEQ on December 29, 2004. Pursuant to Arizona Administrative Code (A.A.C.) R18-12-264.01, a public notice was subsequently

Northern Regional Office  
1515 East Cedar Avenue • Suite F • Flagstaff, AZ 86004  
(928) 779-0313

Southern Regional Office  
400 West Congress Street • Suite 433 • Tucson,  
(520) 628-6733

published by ADEQ in the *Arizona Republic* on February 28 and March 7, 2005. The 30-day public comment period ended on April 6. Because numerous comments were received, ADEQ scheduled and conducted a public meeting on June 29, 2005. Based on comments received by ADEQ during the public comment period and at the public meeting, ADEQ hereby grants final approval to the CAP, in accordance with the following comments and conditions:

1. Within one month of receipt of this *CAP Final Approval* letter, please submit an update of all site characterization activities completed to date.
2. Honeywell must obtain an appropriate air permit from Maricopa County for the proposed vapor-treatment system, and must comply with all terms and conditions specified by that permit. Honeywell must also incorporate all modifications requested by Maricopa County as a result of public comments. ADEQ hereby makes approval of the air permit by Maricopa County a condition of final CAP approval.
3. Honeywell should continue to coordinate with City of Phoenix (COP) Aviation Department representatives regarding the performance of a series of site-specific pilot tests of the chosen remediation method. The completion of the pilot tests is a condition of final CAP approval. Relevant information gained from these pilot tests must be incorporated into the remediation system design and operation and monitoring programs.
4. The vapor-treatment system must include safety valves or other fail-safe systems to prevent the possible release of potentially harmful products due to equipment failure of the vapor-treatment system.
5. The vapor-treatment monitoring plan shall include periodic monitoring for dioxins, along with all other chemicals of concern listed in Table 17 of the CAP.
6. Prior to terminating the soil vapor extraction and air treatment process, Honeywell shall notify ADEQ of its intent, in accordance with Section 4.2.3.3 and Table 22 of the CAP.
7. Chlorinated volatile organic compounds (CVOCs) are present in the soil, free product, and groundwater, and are likely to be partially remediated as a result of efforts undertaken in accordance with this CAP. Please be aware that any partial remediation of CVOCs achieved under this CAP does not relieve Honeywell of any responsibility to propose and conduct CVOC investigation and remediation during the ongoing Remedial Investigation/Feasibility Study conducted for ADEQ's Remedial Projects Section.
8. ADEQ hereby withholds approval of monitored natural attenuation (MNA) as the appropriate remediation method for dissolved-phase groundwater contamination, pending completion of free-product removal to the maximum extent practicable. Active remediation of dissolved-phase groundwater contamination may be necessary in the future, either under this CAP with possible modifications or under the oversight of ADEQ's Remedial Projects Section.

9. As discussed in ADEQ's December 29, 2004 *Preliminary CAP Approval* letter, this final approval does not constitute ADEQ's concurrence with Honeywell's conclusions and recommendations regarding:

- the February - March 2003 Bioventing/SVE Pilot Study, included in the CAP as Appendix B and discussed in Section 2.2.1 and elsewhere throughout the CAP, and;
- the *Free Product Mobility Assessment*, included in the CAP as Appendix F and summarized in Section 2.3.3.6.

10. As discussed in ADEQ's December 29, 2004 *Preliminary CAP Approval* letter, this final approval does not include the *Proposal for Additional Investigation Downgradient of ASE-96A*, incorporated as Attachment B in CH2M HILL's *Response to ADEQ comments . . .*, as this work plan was not submitted in conjunction with a State Assurance Fund pre-approval application, or within the scope of an administrative or judicial order. In the course of CAP implementation, Honeywell should conduct any additional investigative activities necessary to determine and maintain full characterization of any soil, groundwater, and/or free product contamination resulting from the UST releases. Site characterization activities should be conducted in accordance with A.A.C. R18-12-262.

11. As discussed in ADEQ's December 29, 2004 *Preliminary CAP Approval* letter, plans specifically referenced in the CAP, as well as any future proposals submitted by Honeywell that constitute proposals to modify the CAP, will be subject to ADEQ review and approval prior to implementation. Such plans may include, but are not limited to: soil, groundwater, soil-vapor, or air monitoring plans, contingency plans, Operation and Maintenance (O&M) plans, or confirmation sampling plans. Contingency plans for additional investigation should include plans for additional air and/or groundwater monitoring, as appropriate.

12. Periodic status reports shall be submitted quarterly, beginning with the date of this correspondence, through completion of the first year of remediation-system operation. At that point in time, Honeywell may request a CAP modification to submit periodic reports semi-annually, as proposed in the CAP. All status reports should include information regarding the remediation efforts, as well as ongoing contaminant characterization efforts, including updated contaminant mass estimates, as appropriate. All status reports should be submitted to the undersigned Case Manager, in hard-copy format for entry into the public LUST file, and in electronic format for posting on ADEQ's web site as public information. In addition, hard copies and electronic copies should also be sent to Kris Paschall, ADEQ Remedial Projects Section Project Manager, and Nadia Hollan, EPA's Superfund Remedial Project Manager.

13. In accordance with A.A.C. R18-12-263.02(K) and (L), ADEQ may require revisions to this CAP, or submittal of a new CAP, at any time in the future, if it is determined that the chosen remediation methods are not shown to be effective in protecting public health and welfare and the environment and other provisions of Arizona Revised Statutes (A.R.S.) § 49-1005(D).

This letter, including the above comments and conditions, constitutes ADEQ's final approval of the CAP. Implementation of the CAP must begin in accordance with the approved CAP schedule. ADEQ reserves the right to require future modifications to the CAP and/or additional corrective actions in accordance with A.R.S. § 49-1005 and A.A.C. R18-12-263.02(K). It is your responsibility as the owner and operator to ensure that all proper procedures are followed and are adequately documented.

## **NOTICE OF RIGHT TO APPEAL**

### Informal Appeal of an Interim Decision

Pursuant to A.R.S. § 49-1091, this correspondence is an informally appealable interim decision. To obtain an informal appeal, you must file a notice of disagreement with ADEQ within thirty (30) days of receiving this correspondence. ADEQ recommends the enclosed *Tank Corrective Action Section Informal Appeal Guidance* for information on filing a notice of disagreement and a general description of the various informal appeal processes and procedures that will ultimately result in a final decision. Please be advised that if you do not file an informal appeal notice of disagreement within thirty (30) days after you receive this correspondence, this interim decision will automatically become a final decision without further notice to you. The effective date for such an automatic final decision is forty-five (45) days after the date you receive this correspondence. You may formally appeal an automatic final decision pursuant to A.R.S. § 41-1092 et al.

### Formal Appeal of an Automatic Final Written Decision

Pursuant to A.R.S. §§ 49-1091 (E) and 41-1092 (3), a final decision that is issued in writing, or an interim decision that becomes a final decision by operation of law (e.g., if you do not file an informal appeal), is an appealable agency action that will determine certain legal rights, duties, and privileges. Appealable agency action may be administratively appealed before the Office of Administrative Hearings. To obtain an administrative hearing on an automatic final decision, you must file a "Notice of Appeal" within thirty (30) days of the effective date of the final decision. Please refer to the enclosed *Corrective Action Section Informal Appeal Guidance* document for additional information on filing a formal appeal.

## **ADDITIONAL INFORMATION**

Additional information pertaining to CAP requirements or other general program information can be obtained by accessing the ADEQ web page at [www.azdeq.gov](http://www.azdeq.gov), or by visiting ADEQ's main office at 1110 West Washington Street, Phoenix. You may contact the Tank Program's file room staff about reviewing or copying case file information at (602) 771-4344 or fax a request to

Ms. Troy Meyer  
October 7, 2005  
Page 5 of 6

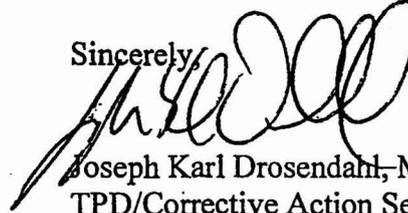
(602) 771-4302. If you have questions regarding this correspondence, please contact the undersigned Case Manager at (602) 771-4297 or toll free at (800) 234-5677, extension 771-4297.

Sincerely,



Mark W. Lucas, Case Manager  
LUST Enforcement Unit  
TPD/Corrective Action Section

Sincerely,



Joseph Karl Drosendahl, Manager  
TPD/Corrective Action Section

MWL/JKD/sya

Enclosure: Informal Appeal Guidance Form

cc: Nadia Hollan, Superfund Remedial Project Manager  
U.S. Environmental Protection Agency, Region IX  
75 Hawthorne Street (SFD-8-2)  
San Francisco, California 94105

Cynthia Parker, Environmental Programs Supervisor  
City of Phoenix Sky Harbor International Airport Aviation Department  
3400 East Sky Harbor Boulevard  
Suite 3300  
Phoenix, Arizona 85034-4405

Kathlene Graf, Permitting Division Manager  
Maricopa County  
Air Quality Department  
1001 North Central Avenue  
Phoenix, Arizona 85004

Thomas J. Mooney, R.G., Project Manager  
CH2M HILL  
2625 South Plaza Drive, Suite 300  
Tempe, Arizona 85282-8440

Mary Moore, Vice-President  
Lindon Park Neighborhood Association  
4839 East Brill Street  
Phoenix, Arizona 85008

Rick Avellone, President  
Greater Orangedale Neighborhood Association  
4951 East Sheridan Street  
Phoenix, Arizona 85008

Paul Barnes, President  
Neighborhood Coalition of Greater Phoenix  
5518 East Mariposa  
Phoenix, Arizona 85018

Rene Chase DuFault, President  
Lindon Park Neighborhood Association  
1423 North 50<sup>th</sup> Street  
Phoenix, Arizona 85008

Hillery Lopez, President  
Delores Sullens, Secretary  
Servando Munoz, Treasurer  
Sky Harbor Neighborhood Association  
[Lm2k1@aol.com](mailto:Lm2k1@aol.com)

Dr. Ruth Ann Marsten, President  
Phoenix Elementary School District Governing Board  
57 West Vernon Avenue  
Phoenix, Arizona 85003

Harold Pickering, President  
Sunbeam Neighborhood Association  
3322 East Fillmore  
Phoenix, Arizona 85008

F.C. Slaght, III, President  
Westwood Village, Westwood Estates, & Siesta Terrace Neighborhood Associations  
2949 North 22<sup>nd</sup> Avenue  
Phoenix, Arizona 85015

Hal Wiley, President  
Moundview Neighborhood Association  
5430 East Yale Street  
Phoenix, Arizona 85008



U.S Department  
of Transportation

**Federal Aviation  
Administration**

Western-Pacific Region  
Airports Division

P.O. Box 92007  
Los Angeles, CA 90009

November 21, 2005

Mr. Charles Haecker  
National Park Service  
Heritage Partnerships Program  
P.O. Box 728  
Santa Fe, New Mexico 87504-0728

Dear Mr. Haecker:

**Phoenix Sky Harbor International Airport  
Phoenix, Arizona  
Memorandum of Agreement Coordination**

The Federal Aviation Administration (FAA) is in the process of preparing a Memorandum of Agreement (MOA) for the Environmental Impact Statement (EIS) proposed projects at Phoenix Sky Harbor International Airport (PHX). The proposed undertaking is to provide additional facilities at PHX to meet passenger demand and improve the efficiency of airport operations. The proposed undertaking includes demolition of Terminal 2, construction and operation of a new 33-gate West Terminal Complex, modifications to Terminal 4, construction and operation of two crossfield taxiways, realignment of Sky Harbor Boulevard and construction and operation of the Automated People Mover (APM) Stage 2.

The purpose of this coordination effort is to invite the National Park Service to be a signatory to the MOA. The FAA coordinated with your office on March 15, 2005, providing the Cultural Resource Survey and a description of the potential impacts to the Pueblo Grande Ruin and Irrigation Sites National Historic Landmark within the Pueblo Grande Museum and Archaeological Park. As described in our previous letter, the elevated APM facilities would modify the landscape and be visible from parts of the Pueblo Grande Museum and Archaeological Park. The extent of visual changes cannot be fully assessed until the proposed facilities are designed in more detail. There is potential that the changes could result in an adverse effect on the setting of the park. To specifically address potential visual effects, the FAA and Phoenix Aviation Department would work with the Museum Director, the City Historic Preservation Office, the State Historic Preservation Office and your office, to define design criteria and review developing designs of the APM Stage 2 facilities. This process is described under Stipulation 3 of the Draft MOA. It is anticipated that a sensitive, compatible design could avoid an adverse visual effect.

The FAA appreciated your comments on proposed undertaking and has consulted with the appropriate tribes throughout the EIS process. The tribes will be concurring parties to the MOA. If the National Park Service has an interest in being a signatory to the MOA, please contact me by December 21, 2005. I can be reached at 310/725-3637 or by email at [jennifer.mendelsohn@faa.gov](mailto:jennifer.mendelsohn@faa.gov).

Sincerely,

**ORIGINAL SIGNED BY  
JENNIFER MENDELSON**

Jennifer Mendelsohn  
Environmental Protection Specialist

cc: Chris Hacker, City of Phoenix

---



## City of Phoenix

AVIATION DEPARTMENT

November 30, 2005

Ms. Jennifer Mendelsohn  
U.S. Department of Transportation  
Federal Aviation Administration  
P.O. Box 92007  
Los Angeles, CA 90009-2007

Subject: Williams Gateway Airport

To Ms. Mendelsohn:

Per your request, the City of Phoenix submits this letter to the administrative record for Phoenix Sky Harbor International Airport's Airport Development Program Environmental Impact Statement.

The City of Phoenix supports Williams Gateway Airport's (WGA) efforts to begin scheduled commercial service. WGA is currently designated as Phoenix Sky Harbor's (PHX) commercial service reliever airport. Over the last three years, the City of Phoenix has budgeted \$360,000 to provide marketing efforts in support of attracting commercial air service at WGA.

Although, WGA does not provide for a substantial reduction in operational levels at PHX, WGA will provide additional opportunities for scheduled commercial service for the East Valley, thereby providing the ability to attract airline service when the market demands. WGA currently provides the Phoenix metropolitan area with an excellent opportunity for general aviation activities, cargo support and a limited amount of scheduled commercial service.

The transformation of WGA from a military to a civilian facility, which currently meets FAA standards for commercial service was a monumental task and all members of the Williams Gateway Airport Authority should be commended on their efforts. The potential for commercial service at WGA in no way affects the purpose and need for the proposed Airport Development Program at Phoenix Sky Harbor International Airport.



Ms. Jennifer Mendelsohn  
Williams Gateway Airport  
November 30, 2005  
Page 2

The City of Phoenix looks forward in continuing to partner with WGA in developing scheduled commercial service.

If you have any questions, please do not hesitate to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read 'D. Krietor', written over a horizontal line.

David Krietor  
Aviation Director

cc: Honorable Phil Gordon, Mayor, - City of Phoenix  
Honorable Keno Hawker, Mayor - City of Mesa  
Andrea Tevlin, City of Phoenix  
Wayne Balmer - City of Mesa  
Lynn Kusy - WGA



U.S Department  
of Transportation

**Federal Aviation  
Administration**

Western-Pacific Region  
Airports Division

P.O. Box 92007  
Los Angeles, CA 90009

December 12, 2005

Mr. Terry O. Enos  
Chairperson  
Ak-Chin Indian Community  
42507 W. Peters & Nall Road  
Maricopa, AZ 85239

Dear Mr. Enos:

**Phoenix Sky Harbor International Airport  
Phoenix, Arizona  
Section 106 Coordination**

The Federal Aviation Administration (FAA) has prepared a Draft Environmental Impact Statement for proposed Airfield Development Program at Phoenix Sky Harbor International Airport.

The proposed undertaking includes the following projects:

- Demolition of Terminal 2 and ancillary facilities,
- Construction and operation of a 33-gate West Terminal Complex and related construction of access roads, concourses, aprons, airline areas and structural and surface parking areas,
- Modifications to Terminal 4, Concourse N4 International Gates,
- Construction and operation of two crossfield Taxiways Uniform "U" and Victor "V",
- Realignment of Sky Harbor Boulevard,
- Construction and operations of the Automated People Mover (APM) Stage 2, including acquisition of approximately twenty-one acres of land to accommodate the proposed APM maintenance control and storage facility and APM station to connect with the Valley Metro Light Train Transit System.

The FAA determined that the proposed undertaking may adversely affect portions of three archaeological sites that are remnants of large Hohokam habitation sites. These include portions of Pueblo Salado, Dutch Canal Ruin and Pueblo Grande. The proposed undertaking may adversely affect portions of 19 Hohokam irrigation canals and the historical Joint Head Canal northeast of the airport. Pursuant to 34 Code of Federal Regulations Part 800.6, the FAA, the State Historic Preservation Office, Bureau of Reclamation, Salt River Project and the City of Phoenix have prepared a Draft Memorandum of Agreement (MOA) for your review.

We would appreciate your comments on the Draft MOA by January 11, 2006. If you have any questions or require additional information please contact me at 310/725-3637.

Sincerely,

**ORIGINAL SIGNED BY  
JENNIFER MENDELSON**

Jennifer Mendelsohn  
Environmental Protection Specialist

Enclosure

cc: Paul Behrens, URS  
Chris Hacker, City of Phoenix



U.S Department  
of Transportation

**Federal Aviation  
Administration**

Western-Pacific Region  
Airports Division

P.O. Box 92007  
Los Angeles, CA 90009

December 12, 2005

Mr. Joseph Joaquin  
Cultural Affairs Office  
Tohono O'Odham Nation  
P.O. Box 837  
Sells, AZ 86534

Dear Mr. Joaquin:

**Phoenix Sky Harbor International Airport  
Phoenix, Arizona  
Section 106 Coordination**

The Federal Aviation Administration (FAA) has prepared a Draft Environmental Impact Statement for proposed Airfield Development Program at Phoenix Sky Harbor International Airport.

The proposed undertaking includes the following projects:

- Demolition of Terminal 2 and ancillary facilities,
- Construction and operation of a 33-gate West Terminal Complex and related construction of access roads, concourses, aprons, airline areas and structural and surface parking areas,
- Modifications to Terminal 4, Concourse N4 International Gates,
- Construction and operation of two crossfield Taxiways Uniform "U" and Victor "V",
- Realignment of Sky Harbor Boulevard,
- Construction and operations of the Automated People Mover (APM) Stage 2, including acquisition of approximately twenty-one acres of land to accommodate the proposed APM maintenance control and storage facility and APM station to connect with the Valley Metro Light Train Transit System.

The FAA determined that the proposed undertaking may adversely affect portions of three archaeological sites that are remnants of large Hohokam habitation sites. These include portions of Pueblo Salado, Dutch Canal Ruin and Pueblo Grande. The proposed undertaking may adversely affect portions of 19 Hohokam irrigation canals and the historical Joint Head Canal northeast of the airport. Pursuant to 34 Code of Federal Regulations Part 800.6, the FAA, the State Historic Preservation Office, Bureau of Reclamation, Salt River Project and the City of Phoenix have prepared a Draft Memorandum of Agreement (MOA) for your review.

We would appreciate your comments on the Draft MOA by January 11, 2006. If you have any questions or require additional information please contact me at 310/725-3637.

Sincerely,

ORIGINAL SIGNED BY  
JENNIFER MENDELSON

Jennifer Mendelsohn  
Environmental Protection Specialist

Enclosure

cc: Paul Behrens, URS  
Chris Hacker, City of Phoenix



U.S Department  
of Transportation

**Federal Aviation  
Administration**

Western-Pacific Region  
Airports Division

P.O. Box 92007  
Los Angeles, CA 90009

December 12, 2005

Ms. Nancy Hayden  
Cultural Resource Director  
Yavapai-Prescott Indian Tribe  
530 E. Merritt Street  
Prescott, AZ 86301

Dear Ms. Hayden:

**Phoenix Sky Harbor International Airport  
Phoenix, Arizona  
Section 106 Coordination**

The Federal Aviation Administration (FAA) has prepared a Draft Environmental Impact Statement for proposed Airfield Development Program at Phoenix Sky Harbor International Airport.

The proposed undertaking includes the following projects:

- Demolition of Terminal 2 and ancillary facilities,
- Construction and operation of a 33-gate West Terminal Complex and related construction of access roads, concourses, aprons, airline areas and structural and surface parking areas,
- Modifications to Terminal 4, Concourse N4 International Gates,
- Construction and operation of two crossfield Taxiways Uniform "U" and Victor "V",
- Realignment of Sky Harbor Boulevard,
- Construction and operations of the Automated People Mover (APM) Stage 2, including acquisition of approximately twenty-one acres of land to accommodate the proposed APM maintenance control and storage facility and APM station to connect with the Valley Metro Light Train Transit System.

The FAA determined that the proposed undertaking may adversely affect portions of three archaeological sites that are remnants of large Hohokam habitation sites. These include portions of Pueblo Salado, Dutch Canal Ruin and Pueblo Grande. The proposed undertaking may adversely affect portions of 19 Hohokam irrigation canals and the historical Joint Head Canal northeast of the airport. Pursuant to 34 Code of Federal Regulations Part 800.6, the FAA, the State Historic Preservation Office, Bureau of Reclamation, Salt River Project and the City of Phoenix have prepared a Draft Memorandum of Agreement (MOA) for your review.

We would appreciate your comments on the Draft MOA by January 11, 2006. If you have any questions or require additional information please contact me at 310/725-3637.

Sincerely,

ORIGINAL SIGNED BY  
JENNIFER MENDELSON

Jennifer Mendelsohn  
Environmental Protection Specialist

Enclosure

cc: Paul Behrens, URS  
Chris Hacker, City of Phoenix



**City of Phoenix**

AVIATION DEPARTMENT

December 12, 2005

Ms. Jennifer Mendelsohn  
U.S. Department of Transportation  
Federal Aviation Administration  
P.O. Box 92007  
Los Angeles, CA 90009-2007

Subject: Airport Development Program - Project Coordination

To Ms. Mendelsohn:

As previously documented in the Draft Environmental Impact Statement for Phoenix Sky Harbor International Airport's, Airport Development Program (ADP), the City of Phoenix will coordinate with the appropriate Federal, State and local agencies to ensure the construction and operations of those facilities associated with the ADP are compliant with applicable regulations and standards.

If you have any questions, please do not hesitate to contact Christopher Hacker at (602) 273-3341.

Sincerely,

David Krietor  
Aviation Director

cc: Carl Newman  
Carol Clements  
Nancy Kesteloot  
Jane Morris  
Christopher Hacker

H:\Doc\Planning\PHX\_EIS Compliance Letter.doc





Jennifer.Mendelsohn@faa.gov  
v  
01/19/2006 11:48 AM

To paul\_behrens@urscorp.com  
cc David\_Alberts@urscorp.com  
bcc  
Subject Fw: PHX MOA

Charles\_Haecker@n  
ps.gov

→ 12/12/2005 08:27  
AM

Jennifer Mendelsohn/AWP/FAA@FAA To  
cc  
Subject  
Re: PHX MOA

Hello, Jennifer,  
Please accept my apologies for not responding in a timely manner, I have  
been out of the office these past few weeks. The National Park Service  
declines the offer of being a signatory to the MOA, Phoenix Sky Harbor  
International Airport Environmental Statement.  
Sincerely,  
Charles M. Haecker

Charles Haecker, Heritage Partnerships Program ♦ National Park Service -  
Intermountain Region

505-988-6757 Voice ♦ 505-988-6876 Fax

The National Park Service cares for special places saved by the American  
people so that all may experience our heritage.



## City of Phoenix

AVIATION DEPARTMENT

January 5, 2006

Ms. Jennifer Mendelsohn  
Federal Aviation Administration  
Western Pacific Region-Airports Division, AWP-621.6  
15000 Aviation Boulevard  
Hawthorne, CA 90261

### **SUBJECT: COMPATIBLE LAND USE - AIRPORT DEVELOPMENT PROGRAM**

Dear Ms. Mendelsohn:

The City of Phoenix is a municipal corporation recognized by the State of Arizona as it is established pursuant to Title 9, Arizona Revised Statutes. It has the authority to establish zoning in the municipality pursuant to Arizona Revised Statutes, Section 9-462.01. The City of Phoenix makes the following statement regarding compatible land uses as required by 49 USC 47107(a)(10), formerly Section 511(a)(5) of the Airport and Airway Improvement Act of 1982 to ensure that the projects are consistent with plans for development within the local area.

Phoenix Sky Harbor International Airport is physically located in the City of Phoenix, Arizona, which has the authority to regulate or control land use and zoning within the City of Phoenix municipal limits. Directly to the east of the Airport is the City of Tempe, Arizona. The City of Tempe governs Planning and Zoning in the City of Tempe municipal limits.

In the Airport vicinity within the City of Phoenix municipal limits, heights of structures and natural objects are regulated by Phoenix City Code Sections 4-236 through 4-250, authorized by Phoenix City Council in Ordinance Number G-3106 which was passed on April 13, 1988. This Ordinance was written and adopted in conformance with Federal Aviation Regulation (FAR) Part 77.

The City of Phoenix Aviation Department provides comment to the City of Phoenix Development Services and Planning Departments on land use proposals and zoning changes, which may affect this airport. The comments are then considered in City policy. The City of Phoenix comments on proposed land use development in neighboring communities should it affect the airport at every available opportunity.



Ms. Jennifer Mendelsohn  
Land Use Assurance Letter  
January 5, 2006  
Page 2

The approval of future land uses in the vicinity of the airport will be evaluated to ensure continued compatibility with airport operations. We encourage the City of Tempe in their efforts to do the same.

If the Federal Aviation Administration has any questions or comments regarding these land use assurances, please do not hesitate to contact Christopher Hacker at (602) 273-3341.

Sincerely,



David Krietor *DK*  
Aviation Director

cc: Carl Newman  
Carol Clements  
Nancy Kesteloot  
Jane Morris  
Christopher Hacker



## City of Phoenix

To: Aviation Staff

Date: January 5, 2006

From: David Krietor  
Aviation Director

Subject: DELEGATION OF AUTHORITY

In accordance with Administrative Regulation 1.51, Carl Newman, Assistant Aviation Director, is authorized to act in my behalf and approve and sign all documents requiring the approval of the Aviation Director as necessary during my absence from the office from 8:00 am Sunday, January 8<sup>th</sup> until 8:00 am Wednesday, January 11<sup>th</sup> 2006.

A handwritten signature in cursive script that reads "Carl W. Newman". The signature is written over a horizontal line.

Carl Newman  
Assistant Aviation Director

cc: Mark Leonard  
Aviation Communications Center

January 18, 2006

Ms. Jennifer Mendelsohn  
Environmental Protection Specialist, AWP-621  
Federal Aviation Administration  
P.O. Box 92007  
Los Angeles, California 90009-2007

Dear Ms. Mendelsohn:

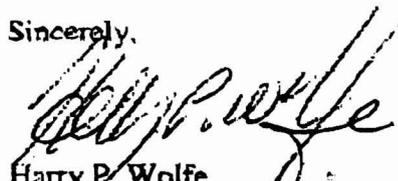
The Maricopa Association of Governments (MAG) is the designated Metropolitan Planning Organization for the Phoenix Metropolitan area. MAG has been responsible for conducting Regional Aviation System Planning since the 1978. MAG is currently updating its Regional Aviation System Plan (RASP) that addresses the aviation needs of the Phoenix area.

As a part of the MAG RASP Update, a number of alternatives have been evaluated for accommodating the air transportation needs of the region to 2025. The selected alternative includes the west area terminal and the people mover at Phoenix Sky Harbor International Airport.

The MAG RASP Technical Advisory Committee met to consider the selected alternative and recommended that it be forwarded to the MAG RASP Policy. The Policy Committee will be meeting to consider action on the recommendation.

If you have any questions or need additional information, please feel free to contact me at 602-254-6300.

Sincerely,

  
Harry P. Wolfe  
Senior Project Manager

A Voluntary Association of Local Governments in Maricopa County

City of Apache Junction • City of Avondale • Town of Buckeye • Town of Cave Creek • City of Chandler • City of Gilbert • Town of Fountain Hills • Town of Gila Bend • Gila River Indian Community • Town of Gilbert • City of Glendale • City of Goodyear • Town of Guadalupe • City of Litchfield Park • Maricopa County • City of Mesa • Town of Paradise Valley • City of Peoria • City of Phoenix • Town of Queen Creek • Salt River Pima-Maricopa Indian Community • City of Scottsdale • City of Surprise • City of Tempe • City of Tolson • Town of Wickenburg • Town of Youngtown • Arizona Department of Transportation



**APPENDIX B**

**AIRCRAFT NOISE**

This appendix contains supporting materials collected and developed in connection with the impact assessments provided in Section 4.14 (Noise) of this EIS.

**PHOENIX SKY HARBOR  
INTERNATIONAL AIRPORT**

**NOISE EXPOSURE  
METHODOLOGY AND  
ASSUMPTIONS**

**Prepared By:**

**URS**

**APPENDIX B-1**

## TABLE OF CONTENTS

<u>Section</u>	<u>Page</u>
1.0 EXISTING CONDITION .....	1
1.1 INTRODUCTION.....	1
1.1.1 Methodology.....	1
1.1.2 Data Sources .....	2
1.2 AIRCRAFT OPERATIONS AND FLEET MIX .....	2
1.2.1 Number of Aircraft Departures and Arrivals .....	2
1.2.2 Aircraft Types .....	3
1.2.3 Time of Day.....	4
1.2.4 Aircraft Profiles .....	4
1.2.5 Average Annual Day Operations .....	6
1.3 FLIGHT TRACKS AND RUNWAY UTILIZATION .....	6
1.3.1 Flight Tracks.....	6
1.3.2 Runway Utilization.....	7
2.0 2015 FUTURE CONDITION .....	8
2.1 INTRODUCTION.....	8
2.1.1 Methodology.....	8
2.1.2 Data Sources .....	8
2.2 AIRCRAFT OPERATIONS AND FLEET MIX .....	8
2.2.1 Number of Aircraft Departures and Arrivals .....	8
2.2.2 Aircraft Types .....	9
2.2.3 Average Annual Day Operations .....	10
2.3 FLIGHT TRACKS AND RUNWAY UTILIZATION .....	10

## LIST OF TABLES

Table B-1-1	Summary of 2001 FAA Form 7230-1
Table B-1-2	2001 Aircraft Activity Summary
Table B-1-3	A List of INM Aircraft Types with IATA Aircraft Type Codes, FAR Part 36 Stage, and Hush Kit
Table B-1-4	IATA Airline Codes and Operators
Table B-1-5	Departure Stage Length Distance in Nautical Miles
Table B-1-6	Cargo Airline Hub Airports and Distances to PHX
Table B-1-7	Destinations and Stage Lengths from PHX
Table B-1-8	2001 Air Carrier Average Daily Aircraft Operations Summary
Table B-1-9	2001 Air Cargo Average Daily Aircraft Operations Summary
Table B-1-10	2001 General Aviation Average Daily Aircraft Operations Summary
Table B-1-11	2001 Military Average Daily Aircraft Operations Summary
Table B-1-12	Departure Flight Track Utilization Summary
Table B-1-13	Arrival Flight Track Utilization Summary
Table B-1-14	2001 Existing Condition Runway Utilization Summary
Table B-1-15	2001 Normalized Condition Runway Utilization Summary
Table B-1-16	2015 Future Condition Annual Aircraft Operations Summary
Table B-1-17	2015 Future Condition Air Carrier's Aircraft Replacement / Retirement Summary
Table B-1-18	2015 Future Condition Air Carrier Average Daily Aircraft Operations Summary
Table B-1-19	2015 Future Condition Air Cargo Average Daily Aircraft Operations Summary
Table B-1-20	2015 Future Condition General Aviation Average Daily Aircraft Operations Summary
Table B-1-21	2015 Future Condition Military Average Daily Aircraft Operations Summary

## LIST OF FIGURES

Figure B-1-1	Runway 7L/25R Jet Departure Flight Tracks
Figure B-1-2	Runway 7L/25R Turbo-Prop Departure Flight Tracks
Figure B-1-3	Runway 7L/25R Prop Departure Flight Tracks
Figure B-1-4	Runway 7R/25L Jet Departure Flight Tracks
Figure B-1-5	Runway 7R/25L Turbo-Prop Departure Flight Tracks
Figure B-1-6	Runway 7R/25L Prop Departure Flight Tracks
Figure B-1-7	Runway 8/26 Jet Departure Flight Tracks
Figure B-1-8	Runway 8/26 Turbo-Prop Departure Flight Tracks
Figure B-1-9	Runway 8/26 Prop Departure Flight Tracks
Figure B-1-10	Runway 7L/25R Jet Arrival Flight Tracks
Figure B-1-11	Runway 7L/25R Turbo-Prop Arrival Flight Tracks
Figure B-1-12	Runway 7L/25R Prop Arrival Flight Tracks
Figure B-1-13	Runway 7R/25L Jet Arrival Flight Tracks
Figure B-1-14	Runway 7R/25L Turbo-Prop Arrival Flight Tracks
Figure B-1-15	Runway 7R/25L Prop Arrival Flight Tracks
Figure B-1-16	Runway 8/26 Jet Arrival Flight Tracks
Figure B-1-17	Runway 8/26 Turbo-Prop Arrival Flight Tracks
Figure B-1-18	Runway 8/26 Prop Arrival Flight Tracks
Figure B-1-19	2001 Existing Condition East/West Flow Percentages
Figure B-1-20	2001 Normalized Condition East/West Flow Percentages
Figure B-1-21	2015 Future Condition Runway 7R/25L Jet Arrival Flight Times
Figure B-1-22	2015 Future Condition Runway 7R/25L Turbo-Prop Arrival Flight Tracks
Figure B-1-23	2015 Future Condition Runway 7R/25L Prop Arrival Flight Tracks

## **1.0 EXISTING CONDITION**

### **1.1 INTRODUCTION**

This report describes the methodology and assumptions to be utilized for the 2001 Baseline Condition aircraft noise exposure analysis for the operation of the Phoenix Sky Harbor International Airport (PHX). It was prepared as part of an Environmental Impact Statement (EIS) for PHX. This aircraft noise analysis is based on PHX's airport and aircraft operations for the period January 1 through December 31, 2001.

#### **1.1.1 METHODOLOGY**

The evaluation of the PHX noise environment was conducted using the methodologies developed by the FAA and published in FAA Order 5050.4A, FAA Order 1050.1E, and FAR Title 14 CFR Part 150. These publications require that aircraft noise levels in the vicinity of airports be determined on an annual average-daily basis utilizing the Day Night Average Sound Level (DNL) metric.

The Integrated Noise Model (INM), Version 6.1, will be used to produce the noise contours and to analyze noise levels at sensitive sites. The FAA developed the INM computer model and it is the most commonly used method to predict airport noise contours. FAA continually enhances the INM to take advantage of increased computer speed, to incorporate new aircraft types into the aircraft noise database, and to improve its noise computation algorithms.

INM was designed to model the noise from aircraft operations in the immediate vicinity of an airport. Numerous tests have proven its ability to accurately model the DNL metric at distances from the airport corresponding to the 65 dB DNL contour. The INM models departure operations beginning at the start of takeoff roll and ending when aircraft reach an altitude of 10,000 feet, and arrival operations beginning at 6,000 feet and ending when aircraft land and complete application of reverse thrust.

Information required to run the model includes:

- A physical description of the airport layout,
- The airport elevation and average annual temperature,
- The aircraft fleet mix for the average day,
- The number of daytime flight and engine run-up operations (7 a.m. to 9:59 p.m.),
- The number of nighttime flight and engine run-up operations (10 p.m. to 6:59 a.m.),
- Runway utilization rates,
- Primary departure and arrival flight tracks, and
- Flight track utilization rates.

### 1.1.2 DATA SOURCES

Multiple sources of data were collected, examined, and utilized to ensure that this aircraft noise analysis provides an accurate depiction of the PHX baseline (2001) aircraft noise environment. The data sources examined for this analysis included:

- Aircraft operations from the January through December 2001 Federal Aviation Administration (FAA) **Airport Traffic Records**, Form 7230-1;
- Passenger and Cargo Airline operations from PHX's monthly **Passenger and Activity Worksheets** for January 2000 through April 2002;
- Aircraft fleet mix, destination, time of day data, and runway use based on a sample of five days per month from PHX's Total Airport Management Information System (TAMIS). TAMIS is operated and maintained by the PHX Noise Office; and
- Aircraft flight track information for each of the PHX air traffic flows based on a sample of ten days from PHX's TAMIS.

### 1.2 AIRCRAFT OPERATIONS AND FLEET MIX

Airport operational factors that can significantly affect overall noise levels, as described by DNL, include the total number of operations, aircraft fleet mix, and the time of day when aircraft operations occur. The following paragraphs describe these factors in more detail.

#### 1.2.1 NUMBER OF AIRCRAFT DEPARTURES AND ARRIVALS

The FAA's Airport Traffic Records for 2001 provided the total number of operations that occurred during 2001. The Airport Traffic Records (FAA Form 7230-1) report the number of operations in four general categories:

- AC (Air Carrier),
- AT (Air Taxi),
- GA (General Aviation), and
- MIL (Military).

For traffic count purposes, an air carrier aircraft is considered to be an aircraft capable of carrying more than 60 passengers. This applies even if the aircraft is conducting air freight operations. The air taxi category includes operations by aircraft other than air carriers, which use three-letter company designators or the prefix "TANGO." General aviation includes all civil aircraft except those classified as air carriers or air taxis, and military includes all classes of military operations (FAA Order 7210.3R, Facility Operation and Administration). Sometimes large private aircraft are counted in the AT category, rather than in the GA category.

The total number of annual itinerant operations, by category, was divided by 365 to obtain the number of average daily operations by category. The total number of average daily operations, by category, was divided in half to obtain the number of average daily arrivals and average daily departures. **Table B-1** summarizes the data obtained from the FAA Airport Traffic Records. According to the **FAA Form 7230-1**,

there were a total of 553,330 itinerant aircraft operations and 53,358 local aircraft operations in 2001. FAA Tower personnel at PHX indicated that "itinerant" refers to aircraft operated at PHX and "local" refers to aircraft that operated at satellite airports under the PHX Terminal Radar Approach Control facility (TRACON). Therefore, the number of local aircraft operations was excluded from noise modeling. The number of average daily aircraft operations was 1,516 (annual aircraft operations divided by 365 days).

The aircraft operations data taken from the monthly **Passenger and Activity Worksheets** provided by PHX are summarized in **Table B-1-2**. The worksheets indicated that there were 442,592 air carrier operations and 28,866 air cargo operations, for a total of 471,458 annual air carrier and cargo operations.

The **FAA Form 7230-1** data indicated there were 394,912 AC operations and 93,751 AT operations, for a total of 488,663 AC & AT operations.

Sometimes large private aircraft are counted in the AT category, rather than in the GA category. Therefore, to reconcile the difference between the **FAA Form 7230-1** data (488,663 operations) and the **Passenger and Activity Worksheet** data (471,458 operations), URS assumed that the excess operations ( $488,663 - 471,458 = 17,205$  annual operations) were actually GA operations that had been counted as AT operations.

The 17,205 excess AT operations calculated above were added to the 59,581 GA operations for a total of 76,786 general aviation operations.

### **1.2.2 AIRCRAFT TYPES**

Certain aircraft operating in the United States are subject to Federal requirements regarding noise emission levels. Title 14 CFR Part 36, Noise Standards: Aircraft Type and Airworthiness Certification prescribes the noise standards for aircraft certification in the United States. An aircraft is categorized under this regulation by one of three noise standards called stages. Stage 1 is the loudest category and Stage 3 is currently the quietest category. Title 14 CFR Part 91 Subpart I, Operating Noise Limits, in conjunction with Part 36, apply to civil subsonic aircraft with maximum weights of more than 75,000 pounds and mandate operating limits and compliance times for each stage. Under Part 91, Stage 1 and 2 aircraft cannot be operated in the United States. Specifically, Title 14 CFR Part 91, § 91.853 reads in part as follows: "Except as provided in § 91.873, after December 31, 1999, no person shall operate to or from any airport in the contiguous United States any airplane subject to § 91.801(c) of this subpart, unless that airplane has been shown to comply with Stage 3 noise levels." Airlines operating in the United States have been able to comply with the Part 91 requirements by acquiring new aircraft that meet Stage 3 standards, and by re-certificating some of their newer Stage 2 aircraft. Re-certificated Stage 2 aircraft have been modified in some way to meet the more stringent Stage 3 standards. Examples of such modifications include the installation of hush-kits on existing engines, replacement of existing engines, installation or modification of other airframe components, and modification of aircraft operational parameters.

Military aircraft (e.g., KC-135, C141) and civil aircraft with maximum takeoff weights of less than 75,000 lb (e.g., GII, Falcon 20, Lear 25) are exempt from meeting the Stage 3 standards.

Based on the sample of TAMIS data analyzed for this project, all civil aircraft with maximum weights of more than 75,000 pounds complied with Part 36 Stage 3 in 2001. However, approximately 7 percent of overall aircraft operations in 2001 met the Stage 3 requirement through the use of re-certificated Stage 2 aircraft.

The make and model of aircraft that operated at PHX during 2001 was obtained from the TAMIS data. The aircraft type was provided in the Air Transport Association (ATA)/International Air Transport Association (IATA) Aircraft Type Codes. These ATA/IATA codes were translated by URS into INM aircraft types. **Table B-1-3** shows the ATA/IATA codes and the corresponding INM aircraft types, as determined by URS.

The INM aircraft database contains actual noise and performance data for 248 types of aircraft. Although the INM aircraft database provides a large selection of aircraft to model, it does not contain every known aircraft. For this reason, the FAA has developed an official aircraft substitution list, containing 256 types of aircraft, which allows the modeler to substitute similar aircraft when necessary for modeling purposes. These substitutions represent a very close estimate of the noise produced by the aircraft. For the calculation of the 2001 Baseline Condition contours, all modeled aircraft in this study are either a true representative of an aircraft type or an acceptable FAA-approved substitution.

The TAMIS data also provided an IATA Airline Code and flight number or an aircraft "N" number. **Table B-1-4** shows the list of IATA airline codes and the corresponding aircraft operator, as determined by URS.

### **1.2.3**      ***TIME OF DAY***

The time of day that aircraft operations occur is a very important factor in the calculation of cumulative noise exposure. The DNL treats nighttime (10:00 p.m. to 6:59 a.m.) noise differently from daytime (7:00 a.m. to 9:59 p.m.) noise. DNL multiplies each nighttime operation by 10. This weighting of the operations effectively adds 10 dB to the A-weighted levels of each nighttime operation. This weighting factor is applied to account for people's greater sensitivity to nighttime noise. In addition, events during the night are often more intrusive because the ambient sound levels during this time are usually lower than daytime ambient sound levels.

The TAMIS data listed the time of day operations occurred.

### **1.2.4**      ***AIRCRAFT PROFILES***

The impact of noise on people increases or decreases as a function of the distance between the noise source and the people. The greater the distance between the noise source and people, the less impact noise has on people. Correspondingly, as the distance decreases, increased noise impacts are experienced.

Aircraft profiles are associated with distance in feet traveled from the runway, altitude in feet (above field elevation), speed in knots (true airspeed), and thrust setting in pounds. During departure procedures, distance is proportional to altitude and speed. When distance increases, altitude and speed also

increase. On the other hand, when distance increases, thrust setting decreases and remains stable. During arrival procedures, altitude and speed decrease as an aircraft approaches the airport. Unlike departure profiles, the thrust setting increases when an aircraft approaches the airport.

### **Departure Profiles**

There are several factors that can influence an aircraft's climb rate performance and altitude as it departs from PHX. The major influencing factors include the aircraft's takeoff weight, instructions from Air Traffic Control, and the temperature and humidity. Generally, the aircraft's altitude continues to increase as it travels further away from the runway. The INM models departure profiles (i.e., altitude vs. distance from the runway) based on the pre-determined performance characteristics of each aircraft type.

The altitude and temperature of the airport are important factors for noise modeling because high altitude and temperature reflect lower air densities, resulting in decreased aircraft performance. According to the Airport Layout Plan, PHX is at an altitude of 1,133 feet above mean sea level. The INM input temperature was obtained from National Oceanic and Atmospheric Administration (NOAA), Monthly Station Normals of Temperature, Precipitation, and Heating and Cooling Degree Days, 1971-2000. It indicated that annual average temperature at PHX is 72.8° Fahrenheit. The average relative humidity was obtained from NOAA, National Climatic Data Center, 1960-2001. It indicated that annual average relative humidity in the morning was 50 percent and in the afternoon was 23 percent. URS assumed that annual relative humidity would be the average of the morning and afternoon annual average relative humidity. Therefore, the average relative humidity would be 36.5 percent for the INM input.

The INM database contains several departure profiles for each aircraft type representing the varying performance characteristics for that aircraft at a particular takeoff weight. Use of appropriate departure profiles is an important component of calculating DNL noise exposure contours. Historically, it has been easier to obtain trip length data than average weight data, so the INM uses "departure stage length" to best represent typical aircraft takeoff weight. INM standard database aircraft departure profiles will be used to model existing aircraft operations at PHX.

Departure stage length is the distance between the departure airport and the destination airport. As the departure stage length increases, the aircraft's required fuel load and takeoff weight also increase. The increase in takeoff weight equates to a decrease in aircraft takeoff and climb performance. A decrease in aircraft performance results in a longer takeoff departure roll and decreased climb rates. These performance characteristics produce increased noise exposure impacts. The aircraft's noise impacts are greater because the aircraft is producing noise closer to the ground longer. The departure stage lengths are defined in **Table B-1-5**.

The TAMIS data listed the destination of the air carrier departure operations. However, destinations for cargo operations were often listed as "unknown." In these cases, URS assumed that the destination of these flights was each airline's respective hub airport. A list of cargo hub airports is shown in **Table B-1-6**.

For passenger and cargo air carrier operations, departure stage lengths were identified by determining the distance between PHX and each destination airport. **Table B-1-7** contains the list of destinations and their distance from PHX.

Destinations were not provided by TAMIS for general aviation or military operations. URS assumed the longest stage length available in INM for each general aviation and military aircraft type.

### **Approach Profiles**

URS assumed that all aircraft used standard approach profiles. Standard approach procedures have 4 descent steps starting at 6,000, 3,000, 1,500, and 1,000 feet above field elevation and 2 final steps, which are land and decelerate steps. A 3-degree descent angle is used to model all approaches. The INM calculates aircraft noise until the aircraft has landed and stopped on the runway. The land and decelerate steps end when aircraft stop on the runway.

#### **1.2.5 AVERAGE ANNUAL DAY OPERATIONS**

**Tables B-1-8** through **B-1-11** provide the detailed average daily operations, by aircraft type, stage length, and time of day for air carrier, air cargo, general aviation, and military operations at PHX. These tables will be the basis of the INM input.

### **1.3 FLIGHT TRACKS AND RUNWAY UTILIZATION**

In order to calculate the annual average noise exposure, it is necessary to identify the predominant departure and arrival flight tracks for each runway, and the number of aircraft that used each runway and flight track. These are significant factors in determining the extent and shape of the noise contours.

#### **1.3.1 FLIGHT TRACKS**

Radar flight track data depict the actual path of aircraft over the ground for each aircraft departure and arrival. Ten days of 2001 radar data were used to identify the predominant departure and arrival flight tracks at PHX. The radar flight track data provided the underlying foundation for the development of flight tracks for the noise modeling effort.

“Spine” tracks are placed in the area with the highest concentration of radar flight tracks. Dispersion flight tracks are placed in areas of lesser concentration of radar flight tracks. Dispersion flight tracks are not necessarily parallel to the spine tracks, but placed so as to adequately represent the range of diversity of the radar flight tracks. These dispersion flight tracks simulate variations in pilot and air traffic controller techniques and aircraft performance. The number of dispersion flight tracks for each “spine” track and the width of the associated dispersion were developed by analyzing the radar data samples. In general, the width of the dispersion flight tracks increase in proportion to the distance from the runway.

**Figures B-1-1** through **B-1-18** depict the existing departure and arrival flight tracks by runway ends and aircraft categories.

The use of individual flight tracks on any given runway is dependent on a variety of factors including Air Traffic Control procedures, the aircraft's origin or destination, aircraft performance, weather conditions, and PHX noise abatement policies. The flight track utilization rates were derived from the radar data described above. The radar data were segregated by the first navigation point (waypoint) for departures or the last waypoint for arrivals. Each waypoint was associated with a particular departure or arrival flight track. The percentage of operations using each waypoint were summed and assigned to the associated flight track. **Tables B-1-12 and B-1-13** provide detailed information regarding departure and arrival flight track utilization by jet, turboprop, and prop aircraft.

### **1.3.2 RUNWAY UTILIZATION**

Runway use statistics, concerning which aircraft landed or departed a particular runway, were collected and summarized for 2001. A sample of five days of aircraft operational data for each month, based on actual observations from the TAMIS data, was evaluated to identify runway utilization. The TAMIS data listed the runway used for each aircraft operation.

**Table B-1-14** provides the runway utilization for air carriers, cargo, general aviation, and military aircraft operations by aircraft category and day/night. In addition, **Figure B-1-19** indicated over all runway use in east/west flow and by day/night.

During the months of January through April of 2001, Runway 8/26 (north runway) was reconstructed in concrete and utilization of the runway was limited during nighttime hours (between 10:00 p.m. and 7:00 a.m.). The runway reconstruction was completed on May 5, 2001. As a result, the runway utilization for the study year 2001 does not represent the typical aircraft operational environment at PHX. **Figure B-1-19** illustrates percentages for East and West flow for each runway during daytime and nighttime periods from January 1, 2001 through December 31, 2001.

To normalize runway utilization and develop noise contours representing typical aircraft operations, aircraft operational data from June 1, 2001 to May 31, 2002 was collected and analyzed. During this period, the airport operated under typical conditions. It was assumed that the runway utilization during this period would represent typical and normal aircraft operations at PHX. **Table B-1-15** provides the runway utilization for air carriers, cargo, general aviation, and military aircraft operations by aircraft category and day/night. **Figure B-1-20** illustrates percentages for East and West flow for each runway during daytime and nighttime periods from June 1, 2001 through May 31, 2002.

**TABLE B-1-1**

**Summary of 2001 FAA Form 7230-1  
Phoenix Sky Harbor International Airport Environmental Impact Statement  
Methodology and Assumptions Report**

Month	Itinerant					Local			Grand Total
	Air Carrier	Air Taxi	GA	Military	Total	GA	Military	Total	
Jan-01	35,578	7,815	5,399	429	49,221	4,839	194	5,033	54,254
Feb-01	32,180	7,302	5,398	355	45,235	4,799	138	4,937	50,172
Mar-01	36,118	8,300	6,169	394	50,981	5,657	194	5,851	56,832
Apr-01	34,135	7,759	5,855	357	48,106	5,186	165	5,351	53,457
May-01	34,562	7,848	5,932	273	48,615	5,449	267	5,716	54,331
Jun-01	33,596	8,022	5,102	293	47,013	4,701	191	4,892	51,905
Jul-01	34,803	7,974	4,997	352	48,126	4,485	150	4,635	52,761
Aug-01	35,143	8,128	5,123	382	48,776	4,455	345	4,800	53,576
Sep-01	27,977	6,331	3,301	770	38,379	2,508	74	2,582	40,961
Oct-01	32,162	7,653	4,314	811	44,940	2,683	116	2,799	47,739
Nov-01	28,695	8,294	4,231	418	41,638	3,221	129	3,350	44,988
Dec-01	29,963	8,325	3,760	252	42,300	3,303	109	3,412	45,712
<b>Total</b>	<b>394,912</b>	<b>93,751</b>	<b>59,581</b>	<b>5,086</b>	<b>553,330</b>	<b>51,286</b>	<b>2,072</b>	<b>53,358</b>	<b>606,688</b>

Note: GA - General Aviation

Source: Phoenix Sky Harbor International Airport, 2001.

FAA Airport Traffic Records, 2001.

TABLE B-1-2

**2001 Aircraft Activity Summary**  
**Phoenix Sky Harbor International Airport Environmental Impact Statement**  
**Methodology and Assumptions Report**

Airline	IATA Code*	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
<b>Terminal 2</b>														
Air Canada	ACA	72	54	66	60	62	60	62	62	52	78	182	182	992
Alaska	ASA	808	758	886	832	556	502	514	498	392	564	720	774	7,804
Express Air Inc	AAE	184	156	104	54	-	-	-	-	-	-	-	-	498
Great Lakes Aviation Ltd	GLA	-	-	-	-	-	106	156	154	130	152	100	96	894
TWA	TWA	374	338	380	362	372	358	370	376	284	314	350	-	3,878
United	UAL	1,850	1,664	1,838	1,814	1,870	1,714	1,716	1,750	1,244	1,528	1,092	1,152	19,232
USAirways	USA	556	598	676	648	576	538	562	558	434	438	526	480	6,590
<b>Terminal 3</b>														
American	AAL	1,466	1,328	1,506	1,470	1,436	1,372	1,402	1,408	864	976	820	1,246	15,294
American Trans Air	AMT	228	198	238	230	222	186	194	192	176	198	182	202	2,446
Casino Express	CXP	46	56	44	46	38	10	6	2	4	4	4	12	272
Delta	DAL	1,414	1,112	1,234	1,250	1,296	1,160	1,216	1,262	1,082	1,252	982	1,054	14,314
Frontier	FFT	238	224	258	218	242	214	210	234	176	230	212	212	2,668
Midwest Express	MEP	112	110	124	120	90	96	94	98	82	116	106	114	1,262
Northwest	NWA	736	728	874	720	678	652	680	676	516	558	598	772	8,188
SkyWest	SKW	-	-	-	-	-	-	118	124	106	200	774	800	2,122
Sun Country	SCX	60	64	80	72	60	60	62	62	54	62	60	-	696
<b>Terminal 4</b>														
Aerolitoral	SLI	8	6	10	6	2	-	-	-	-	-	-	-	32
Aeromexico	AMX	156	150	168	132	108	102	120	116	92	94	102	120	1,460
Air Jamaica	AJM	20	16	22	16	18	20	22	18	14	4	-	-	170
Allegro	GRO	8	8	10	8	12	12	8	8	10	8	8	6	106
America West	AWE	14,504	13,190	14,752	13,634	14,182	13,980	14,378	14,556	11,790	12,826	10,690	11,470	159,952
British Airways	BAW	122	112	110	60	62	60	62	62	52	62	58	60	882
Continental	COA	784	696	772	752	726	686	712	722	562	624	604	624	8,264
Lufthansa	DLH	-	-	-	60	58	60	62	62	52	28	26	32	440
Mesa Airlines	ASH/AMW	5,420	4,828	5,638	5,322	5,276	5,278	5,310	5,410	3,806	4,126	4,766	4,990	60,170
Southwest	SWA	10,452	9,418	10,518	10,258	10,524	10,340	10,898	10,990	9,112	10,940	10,208	10,308	123,966
<b>Passenger Airline Total</b>		<b>39,618</b>	<b>35,812</b>	<b>40,308</b>	<b>38,144</b>	<b>38,466</b>	<b>37,566</b>	<b>38,934</b>	<b>39,400</b>	<b>31,086</b>	<b>35,382</b>	<b>33,170</b>	<b>34,706</b>	<b>442,592</b>
<b>Cargo</b>														
ABX Air	ABX	154	150	170	146	172	166	152	170	136	174	156	150	1,896
AirNet	USC	128	140	156	150	168	170	156	178	144	166	160	166	1,882
Ameriflight	AMF	922	802	644	978	1,066	986	986	980	722	942	842	816	10,686
BAX Global	CCI	48	48	48	38	42	46	38	48	32	44	40	46	518
DHL	DHL	80	80	92	80	88	94	80	92	74	88	84	76	1,008
Emery Worldwide	EWV/RYN	56	44	66	80	82	86	76	90	66	84	44	40	814
Emery Worldwide Postal	EWV/RYN	240	212	162	154	154	154	154	154	-	-	-	-	1,384
Empire	CFS	198	192	206	172	192	190	176	196	162	178	180	204	2,246
Evergreen	EIA	-	-	-	-	-	-	-	-	-	-	-	28	28
Federal Express	FDX	276	260	322	268	282	268	262	302	276	354	372	310	3,552
Kalitta Air	CKS	-	-	-	-	-	-	-	-	2	-	-	12	14
Kitty Hawk	KHA	202	192	158	140	138	104	78	122	40	56	56	44	1,330
Mid-Atlantic Freight	MDC	42	40	46	40	44	44	40	46	32	44	42	38	498
UPS	UPS	244	232	246	236	256	246	246	282	92	272	290	368	3,010
<b>Cargo Airline Total</b>		<b>2,590</b>	<b>2,392</b>	<b>2,316</b>	<b>2,482</b>	<b>2,684</b>	<b>2,554</b>	<b>2,444</b>	<b>2,660</b>	<b>1,778</b>	<b>2,402</b>	<b>2,266</b>	<b>2,298</b>	<b>28,866</b>
<b>GRAND TOTAL</b>		<b>42,208</b>	<b>38,204</b>	<b>42,624</b>	<b>40,626</b>	<b>41,150</b>	<b>40,120</b>	<b>41,378</b>	<b>42,060</b>	<b>32,864</b>	<b>37,784</b>	<b>35,436</b>	<b>37,004</b>	<b>471,458</b>

Source: Phoenix Sky Harbor International Airport, 2001.

\* Airline Coding Directory, 57th Edition, Effective 12/01/01 through 03/31/02, International Air Transport Association

\* URS Corporation, 2003.

TABLE B-1-3

A List of INM Aircraft Types with IATA Aircraft Type Codes, FAR Part 36 Stage, and Hush Kit  
Phoenix Sky Harbor International Airport Environmental Impact Statement  
Methodology and Assumptions Report

ATA/IATA Aircraft Type Codes	FAR Part 36 Stage	Hush Kit Stage 3	INM Aircraft Type
KC135E*	1		707320
B717-200	3		717200
B737-300	3		737300
B737-400	3		737400
B737-500	3		737500
B737-700	3		737700
B737-800/-900	3		737800
B747-400	3		747400
B767-300	3		767300
B777-200	3		777200
B720 (see Note 1)	1		720B
B727-100	3	Hush Kit	727EM1
B727-200	3	Hush Kit	727EM2
B737-200	3	Hush Kit	737N17
B737-200	3	Hush Kit	737N9
B747-100	3		74710Q
B747-200	3		74720A
B747-200	3		74720B
B757-200	3		757PW
B757-200	3		757RR
B767-200	3		767CF6
B767-200	3		767JT9
A300	3		A300
A310	3		A310
A319	3		A319
A320	3		A320
A320	3		A32023
A321	3		A32123
A340	3		A340
A4*	N/A		A4C
BAC111 (see Note 2)	2		BAC111
AC50, ASTR, BE18/50/55/58/60/65/76/95, C303/310/320/337/340/401/402/404/414/421, PA23/30/31/32/34/44	N/A		BEC58P
C12*	N/A		C12
C130*	3		C130

**TABLE B-1-3**

**A List of INM Aircraft Types with IATA Aircraft Type Codes, FAR Part 36 Stage, and Hush Kit  
Phoenix Sky Harbor International Airport Environmental Impact Statement  
Methodology and Assumptions Report**

ATA/IATA Aircraft Type Codes	FAR Part 36 Stage	Hush Kit Stage 3	INM Aircraft Type
C141*	N/A		C141A
C5*	N/A		C5A
DC9*	N/A		C9A
C650	3		CIT3
CL600, FA2000	3		CL600
CL64, FA50, CRJ 200	3		CL601
C120/150/152/170/172/177/175	N/A		CNA172
C180/182/185/188/190/195/206/210	N/A		CNA206
AC680/690/95, BE100/90, C425/441, PA42, MERLIN III	N/A		CNA441
C500/501/525	3		CNA500
C750	3		CNA750
CVR640, CVLT	N/A		CVR580
DC10	3		DC1010
DC10	3		DC1030
DC10	3		DC1040
DC3, CVR240/340	N/A		DC3
DC8, DC870	3		DC870
DC9	3	Hush Kit	DC93LW
BE 02/190/200/300/350/99, MU2, PC12/13, JS31, MERLIN IV, C12	N/A		DHC6
DHC8	3		DHC8
EMB120	3		EMB120
FA900	3		EMB145
F-100	3		F10065
F18*	N/A		F-18
FA20	2		FAL20
AA1/5, AC112/114, BE17/23, C208/305, DHC1, PA18, BL26	N/A		GASEPF
BE33/35/36, M20, PA27/28/32/46	N/A		GASEPV
GII/III	2		GIIB
GIV	3		GIV
GV	3		GV
G1159, F27	2		HS748A
WW1124/1125	3		IA1125
KC135R*	N/A		KC135R
L-1011	3		L1011

**TABLE B-1-3**

**A List of INM Aircraft Types with IATA Aircraft Type Codes, FAR Part 36 Stage, and Hush Kit  
Phoenix Sky Harbor International Airport Environmental Impact Statement  
Methodology and Assumptions Report**

ATA/IATA Aircraft Type Codes	FAR Part 36 Stage	Hush Kit Stage 3	INM Aircraft Type
HS125, LJ24/25/28, SABR40	2		LEAR25
LJ31/35/36/45/55/60, L1329, HS125B/C, FA10, BE40	3		LEAR35
MD11	3		MD11GE
MD80/87	3		MD81
MD80/82	3		MD82
MD80/83/88	3		MD83
C550/551/560, MU3	3		MU3001
BE2000	3		SD330
T34*	N/A		T34
T37*	N/A		T37B
T38*	N/A		T-38A

\* = Military Aircraft

Note 1: This Boeing 727-015B aircraft is operated by Honeywell International, Inc. at PHX.

It has an "Experimental Exemption" and is used for engine research and development.

Note 2: This BAC-111 aircraft is operated by Select Leasing. It has hushkits that meet Stage 3.

Source: Integrated Noise Model 6.1

TABLE B-1-4

**IATA Airline Codes and Operators**  
**Phoenix Sky Harbor International Airport Environmental Impact Statement**  
**Methodology and Assumptions Report**

IATA Codes		Operators		IATA Codes		Airline Name	
Passenger Airlines				Others			
AAE	Express Air	CMM	Canada 3000				
AAL	American	COO	Corporate Airlink				
ACA	Air Canada	CPF	Airtechservice Ltd				
AJM	Air Jamaica	CSK	Flightcraft Inc				
AMT	American Trans Air	CTT	Custom Air Transport				
AMW	Mesa Airlines/Air Midwest/US Airways Express	CVF	Dassault Falcon Jet Corp				
AMX	Aeromexico	CYO	Air Transport Inc				
ASA	Alaska Air	DST	AEX Air Inc				
ASH	Mesa Airlines	EGJ	Eagle Jet Charter				
AWE	America West	EJA	Executive Jet				
BAW	British Airways	EJM	Executive Jet Management				
COA	Continental	ELT	Elliott Aviation Inc				
CXP/CSO	Casino Express	ELX	Unknown				
DAL	Delta	EXA	Execaire Aviation LTD				
DLH	Lufthansa	FAB	First Air Ltd				
FFT	Frontier	FBD	Unknown				
GLA	Great Lake Aviation	FLC	Finfo Flight Inspectin Aircraft				
MEP	Midwest Express	GCO	Gemini Air Cargo				
NWA	Northwest	HPJ	Hop-A-Jet Inc				
SCX	Sun Country	HTV	Unknown				
SKW	Sky West	JUD	Dep of Justice				
SLI	Aerolitoral	JUS	USA Jet Airways				
SWA	Southwest	KAI	Kaiser Air Inc				
TWA	TWA	KSS	Raytheon Travel				
UAL	United	LAN	LAN Chili				
USA	US Airways	LHN	Express One International				
GRO	Allegro	LXJ	Unknown/Flex Jet?				
Cargo Airlines							
ABX	ABX Air	NAT	North Atlantic Air Inc				
AMF	Ameriflight	NJC	Nashville Jet Charters				
CCI	BAX Global/Capital Cargo International Airline	OJF	Occitania Jet Fleet				
CFS	Empire	OPT	Corporate Wings				
CKS	Kalitta Air/Kitty Hawk Charters	PAT	Army				
DHL	DHL	PKW	Sierra West				
EIA	Evergreen	PLZ	Planet Airways				
EWV/RYN	Emery Worldwide	RCH	Air Mobility Commando				
FDX	FedEx	RLT	Raliant Airline				
KHA	Kitty Hawk	ROK	National Airlines				
MDC	Mid-Atlantic Freight	RTN	Raytheon Aircraft Company				
UPS	UPS	SLH	Silverhawk Aviation				
USC	AirNet	SNK	Southeast Airlines				
Others							
AFX	Airfreight Express Limited	SPA	Sierra Pacific Airlines				
AIP	Alpine Aviation	SPK	Diamond Aviation				
AJI	Ameristar Jet Charter	SSV	Skyservice FBO				
ATN	Air Transport International	STR	Astanair-Kazakhstan				
BSK	Miami Air International	SWQ	Interstate Equipment Leasing Inc				
BYA	Berry Aviation Inc	TAG	TAG Aviation USA				
CAP	Capital Air	TDX	Tradewinds Airlines (Wrangler Aviation)				
CBT	Catalina Flying Boat	TRZ	Transmeridian Airlines (Prime Air)				
CCP	Champion Air	TSU	Contract Air Cargo				
CCY	Cherry Air	TWN	Avialeasing Aviation Company				
CFP	Compania De Aviacion	UJT	Universal jet Aviation				
CGN	Changan Airlines	VBS	Avbase Aviation LLC				
CJY	Unknown	VCM	Volare Air Charter				
CLX	Cargolux Airlines International	WOA	World Airways				
		WST	Unknown				
		WTV	Western Aviators				

**Note:**

BAX Global is operated by Capital Cargo International.  
 Kalitta Air is operated by Kitty Hawk Charters.  
 AMW (Air Midwest) is operated by Mesa Airlines.  
 Others are categorised as General Aviation.

Source: Phoenix Sky Harbor International Airport, 2001.

Airline Coding Directory, 57th Edition, Effective 12/01/01 through 03/31/02, International Air Transport Association

**TABLE B-1-5**

**Departure Stage Length Distance in Nautical Miles  
Phoenix Sky Harbor International Airport Environmental Impact Statement  
Methodology and Assumptions Report**

<b>Stage</b>	<b>Distance (NM)</b>
1	Less Than 500
2	500 - 1,000
3	1,000 - 1,500
4	1,500 - 2,500
5	2,500 - 3,500
6	3,500 - 4,500
7	Greater Than 4,500

Source: Integrated Noise Model (INM) 6.1

**TABLE B-1-6**

**Cargo Airline Hub Airports and Distance to PHX  
Phoenix Sky Harbor International Airport Environmental Impact Statement  
Methodology and Assumptions Report**

<b>Airline</b>	<b>Airport</b>	<b>City</b>	<b>State</b>	<b>Stage Length*</b>
Airborne Express	Airborne Airpark	Wilmington	OH	3
Ameriflight	Phoenix Sky Harbor International Airport	Phoenix	AZ	1
BAX Global	Orlando International/Executive Airport	Orlando	FL	4
Empire	Phoenix Sky Harbor International Airport	Phoenix	AZ	1
Kalitta Air	Willow Run Airport	Detroit	MI	3
DHL	Cincinnati/Northern Kentucky Int'l Airport	Cincinnati	OH	3
Evergreen	Oakland International Airport	Oakland	CA	2
Emery Worldwide	Dayton International Airport	Dayton	OH	3
FedEx	Memphis International Airport	Memphis	TN	3
Kitty Hawk	Denver International Airport	Denver	CO	2
Mid-Atlantic Freight	Piedmont Triad International Airport	Greensboro	NC	4
UPS	Louisville International Airport	Louisville	KY	3
US Check	Port Columbus International Airport	Columbus	OH	3

**Note:**

BAX Global is operated by Capital Cargo International.

Kalitta Air is operated by Kitty Hawk International.

\* Stage length from PHX to destination airport.

See Table 5 for description of Stage Lengths.

Source: URS Corporation, 2003.

TABLE B-1-7

**Destinations and Stage Lengths from PHX**  
**Phoenix Sky Harbor International Airport Environmental Impact Statement**  
**Methodology and Assumptions Report**

Airport ID	Location	Distance (N Mi.)	Stage Length*	Airport ID	Location	Distance (N Mi.)	Stage Length*
ABQ	Albuquerque	284	1	LIT	Little Rock	984	2
ACA	Acapulco	1197	3	MCI	Kansas City	904	2
ANC	Anchorage	2213	4	MCO	Orlando	1601	4
ATL	Atlanta	1375	3	MDW	Midway	1251	3
AUS	Austin	755	2	MEM	Memphis	1094	3
BDL	Hartford	1917	4	MEX	Mexico City	1087	3
BHM	Birmingham	1260	3	MIA	Miami	1709	4
BNA	Nashville	1255	3	MKE	Milwaukee	1266	3
BOI	Boise	638	2	MSP	Minneapolis	1107	3
BOS	Boston	1992	4	MSY	New Orleans	1127	3
BUF	Buffalo	1656	4	MZT	Mazatlan	684	2
BUR	Burbank	319	1	OAK	Oakland	560	2
BWI	Baltimore	1731	4	OGG	Kahului	2467	4
CLE	Cleveland	1505	4	OKC	Oklahoma City	722	2
CLT	Charlotte	1536	4	OMA	Omaha	899	2
CMH	Columbus	1447	3	ONT	Ontario	281	1
COS	Colorado Springs	478	1	ORD	Chicago O'Hare	1248	3
CVG	Cincinnati	1359	3	PDX	Portland	876	2
DAY	Dayton	1386	3	PHL	Philadelphia	1798	4
DCA	Washington National	1714	4	PIT	Pittsburgh	1571	4
DEN	Denver	522	2	PSP	Palm Springs	225	1
DFW	Dallas Ft. Worth	751	2	PVD	Providence	1973	4
DSM	Des Moines	996	2	PVR	Puerto Vallarta	843	2
DTW	Detroit	1448	3	RDU	Raleigh-Durham	1638	4
ELP	El Paso	300	1	RNO	Reno	521	2
EWB	Newark	1848	4	SAN	San Diego	263	1
FLL	Ft. Lauderdale	1709	4	SAT	San Antonio	730	2
FRA	Frankfurt	4898	7	SDF	Louisville	1304	3
FWA	Fort Wayne	1359	3	SEA	Seattle	961	2
GDL	Guadalajara	901	2	SFO	San Francisco	564	2
GEG	Spokane	887	2	SJC	San Jose	539	2
GYM	Guaymas	331	1	SJD	San Jose Cabo	627	2
HMO	Hermosilla	266	1	SLC	Salt Lake City	441	1
HNL	Honolulu	2530	5	SMF	Sacramento	561	2
HOU	Houston	884	2	SNA	Orange County	293	1
IAD	Washington Dulles	1694	4	STL	St. Louis	1093	3
IAH	Houston	874	2	TPA	Tampa	1549	4
ICT	Wichita	754	2	TUL	Tulsa	810	2
IND	Indianapolis	1289	3	TUS	Tucson	95	1
ILN	Wilmington	1402	3	YVR	Vancouver	1068	3
JFK	New York	1865	4	YYC	Calgary	1063	3
LAS	Las Vegas	221	1	YYZ	Toronto	1630	4
LAX	Los Angeles	320	1	ZIH	Ixtapa	1104	3
LGB	Long Beach	307	1	ZLO	Manzanillo	943	2
LGW	London, England	4600	7				

Note: See Table 5 for list of corresponding INM Stage Lengths.

Source: Airline Coding Directory, 57th Edition, Effective 12/01/01 through 03/31/02, Int'l Air Transport Assoc.  
 Great Circle Mapper at <http://gc.kls2.com/>

TABLE B-1-8

2001 Air Carrier Average Daily Aircraft Operations Summary  
 Phoenix Sky Harbor International Airport Environmental Impact Statement  
 Methodology and Assumptions Report

Airline	Aircraft		Engine	Arrivals		Departures														Total
	Actual	INM		Day	Night	Stage 1		Stage 2		Stage 3		Stage 4		Stage 5		Stage 6		Stage 7		
						Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	
Express Air	PA31	BEC58P	P	0.26	-	0.17	0.09	-	-	-	-	-	-	-	-	-	-	-	-	0.52
	C208	GASEPF	P	0.42	-	0.25	0.17	-	-	-	-	-	-	-	-	-	-	-	-	0.84
American	B737-800	737800	J	0.02	-	-	-	-	-	0.02	-	-	-	-	-	-	-	-	-	0.03
	B767-300	767300	J	0.02	-	-	-	0.02	-	-	-	-	-	-	-	-	-	-	-	0.03
	B757-200	757RR	J	3.12	0.03	-	-	2.46	-	0.69	-	-	-	-	-	-	-	-	-	8.31
	F-100	F10085	J	0.02	-	-	-	0.02	-	-	-	-	-	-	-	-	-	-	-	0.03
Air Canada	MD80	MD82	J	15.84	2.10	2.92	0.37	7.83	1.82	4.82	0.38	-	-	-	-	-	-	-	-	35.49
	B737-200	737N17	J	0.52	0.07	-	-	-	-	0.32	0.02	0.25	-	-	-	-	-	-	-	1.18
	B767-200	767JT9	J	0.43	-	-	-	-	-	-	0.42	0.02	-	-	-	-	-	-	-	0.86
	A319	A319	J	0.22	-	-	-	-	-	-	0.22	-	-	-	-	-	-	-	-	0.45
Air Jamaica	A320	A320	J	0.10	0.01	-	-	-	-	-	0.12	-	-	-	-	-	-	-	-	0.23
	A320	A320	J	0.18	0.05	-	-	-	0.23	-	-	-	-	-	-	-	-	-	-	0.47
American Trans Air	B737-800	737800	J	0.21	-	-	-	-	-	0.14	0.07	-	-	-	-	-	-	-	-	0.41
	B757-300	757300	J	0.21	0.04	-	-	-	-	0.18	0.07	-	-	-	-	-	-	-	-	0.50
	B727-200	727EM2	J	0.35	0.12	-	-	-	-	0.16	0.30	-	-	-	-	-	-	-	-	0.93
	B757-200	757RR	J	1.77	0.62	-	-	-	-	0.91	1.00	0.26	-	0.23	-	-	-	-	-	4.79
	L-1011	L-1011	J	0.03	-	-	-	-	-	0.03	-	-	-	-	-	-	-	-	-	0.07
Aeromexco	MD80/87	MD81	J	0.40	0.21	0.24	-	0.07	0.15	0.15	-	-	-	-	-	-	-	-	-	1.23
	MD82	MD82	J	0.78	0.15	0.78	-	0.06	0.06	-	-	-	-	-	-	-	-	-	-	1.82
	MD83	MD83	J	0.24	0.24	0.34	-	0.03	0.08	0.03	-	-	-	-	-	-	-	-	-	0.95
Alaska Air	B737-400	737400	J	2.88	0.67	-	-	2.84	0.40	0.12	-	-	-	-	-	-	-	-	-	6.69
	B737-700	737700	J	0.48	-	-	-	0.48	-	-	-	-	-	-	-	-	-	-	-	0.92
	B737-800/900	737800	J	0.30	0.02	-	-	0.29	0.02	-	-	-	-	-	-	-	-	-	-	0.62
	B737-200	737N17	J	0.02	0.02	-	-	0.02	0.02	-	-	-	-	-	-	-	-	-	-	0.07
Mesa Airline	MD80	MD83	J	4.89	1.65	-	-	6.11	0.33	0.10	-	-	-	-	-	-	-	-	-	13.08
	CRJ 200	CL601	J	35.14	2.03	34.65	2.52	-	-	-	-	-	-	-	-	-	-	-	-	74.34
America West	B190	DHC6	T	10.59	0.71	10.96	0.34	-	-	-	-	-	-	-	-	-	-	-	-	22.60
	DHC8	DHC8	T	32.41	1.55	32.67	1.29	-	-	-	-	-	-	-	-	-	-	-	-	67.91
	B737-300	737300	J	78.52	5.50	28.35	2.43	45.70	2.43	5.06	0.02	0.03	-	-	-	-	-	-	-	168.04
British Airways	B737-200	737N9	J	28.40	2.09	13.94	1.21	12.28	1.08	-	-	-	-	-	-	-	-	-	-	56.98
	B757-200	757RR	J	12.80	0.93	8.11	0.37	1.20	0.19	1.18	-	4.41	0.28	-	-	-	-	-	-	27.48
	A319	A319	J	31.29	1.40	8.88	0.88	7.51	0.42	7.87	0.12	8.92	0.49	-	-	-	-	-	-	65.38
	A320	A32023	J	57.19	3.03	16.98	1.84	10.72	1.84	16.07	-	12.43	0.50	-	-	-	-	-	-	120.38
Continental Airline	B747-400	747400	J	0.47	0.02	0.23	-	-	-	-	-	-	-	-	-	-	-	-	0.73	0.25
	B777-200	777200	J	0.73	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.45
Casino Express	B737-300	737300	J	0.83	0.02	-	-	0.02	0.02	-	-	-	-	0.61	0.20	-	-	-	-	1.68
	B737-700	737700	J	0.04	-	-	-	-	-	-	-	-	-	0.03	0.01	-	-	-	-	0.08
	B737-800	737800	J	4.20	0.83	-	-	0.53	0.02	-	-	-	-	3.52	0.87	-	-	-	-	10.07
	B757-200	757RR	J	2.98	0.24	-	-	1.78	0.09	-	-	-	-	1.37	0.02	-	-	-	-	6.46
	MD80	MD82	J	0.38	0.11	-	-	0.34	0.12	-	-	-	-	0.02	-	-	-	-	-	0.95
	MD83	MD83	J	1.65	0.03	-	-	1.16	0.50	-	-	-	-	0.02	-	-	-	-	-	3.37
Delta Airline	B737-200	737N17	J	0.37	-	0.37	-	-	-	-	-	-	-	-	-	-	-	-	-	0.75
	B737-300	737300	J	1.30	0.45	1.19	0.57	-	-	-	-	-	-	-	-	-	-	-	-	3.51
	B737-800	737800	J	0.56	-	-	-	-	-	0.05	0.13	0.38	-	-	-	-	-	-	-	1.12
	B767-300	767300	J	1.40	0.03	1.01	0.20	-	-	0.05	-	0.17	-	-	-	-	-	-	-	2.88
	B727-200	727EM2	J	2.75	1.06	0.95	-	0.17	-	1.65	1.03	-	-	-	-	-	-	-	-	7.60
	B757-200	757PW	J	8.21	1.13	2.26	0.02	0.25	-	5.51	0.80	0.50	-	-	-	-	-	-	-	18.88
	B767-200	767CF6	J	0.35	0.25	0.17	-	-	-	0.42	-	-	-	-	-	-	-	-	-	1.19
	MD88	MD83	J	1.64	0.49	-	-	1.53	-	0.31	0.24	-	-	0.05	-	-	-	-	-	4.28
	A340	A340	J	0.60	-	-	-	-	-	-	-	-	-	-	-	-	-	0.60	-	1.21
	Frontier	B737-300	737300	J	1.93	0.41	-	-	2.34	-	-	-	-	-	-	-	-	-	-	-
B737-200		737N17	J	0.53	0.05	-	-	0.58	0.02	-	-	-	-	-	-	-	-	-	-	1.18
A319		A319	J	0.74	-	-	-	0.74	-	-	-	-	-	-	-	-	-	-	-	1.47
Great Lakes	B190	DHC6	T	1.22	-	1.22	-	-	-	-	-	-	-	-	-	-	-	-	-	2.45
Allegro	B727-200	727EM2	J	0.15	-	0.15	-	-	-	-	-	-	-	-	-	-	-	-	-	0.29
Medwest Express	DC9	DC98LW	J	0.03	0.02	0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	0.09
	MD80	MD81	J	0.34	0.01	-	-	-	-	0.38	-	-	-	-	-	-	-	-	-	0.72
	MD82	MD82	J	0.10	-	-	-	-	-	0.10	-	-	-	-	-	-	-	-	-	0.20
	MD83	MD83	J	1.22	-	-	-	-	-	1.22	-	-	-	-	-	-	-	-	-	2.45
Northwest Airline	B727-200	727EM2	J	0.04	0.06	-	-	-	-	0.04	0.06	-	-	-	-	-	-	-	-	0.21
	B747-200	74720B	J	0.02	-	-	-	-	-	0.02	-	-	-	-	-	-	-	-	-	0.05
	B757-200	757PW	J	3.97	0.79	-	-	-	-	4.09	0.67	-	-	-	-	-	-	-	-	9.51
	A319	A319	J	0.55	0.10	-	-	-	-	0.55	0.09	-	-	-	-	-	-	-	-	1.29
	A320	A320	J	3.85	0.54	-	-	-	-	3.69	0.70	-	-	-	-	-	-	-	-	8.77
	DC10	DC1040	J	0.98	0.33	-	-	-	-	1.29	0.02	-	-	-	-	-	-	-	-	2.60
Sun Country	B737-800	737800	J	0.40	-	-	-	-	-	0.40	-	-	-	-	-	-	-	-	-	0.79
	B727-200	727EM2	J	0.54	0.02	-	-	-	-	0.53	0.03	-	-	-	-	-	-	-	-	1.12
Skywest	CRJ 200	CL601	J	2.51	0.40	2.87	0.04	-	-	-	-	-	-	-	-	-	-	-	-	5.81
Aeroflot	MEFLIN IV	DHC6	T	0.04	-	0.04	-	-	-	-	-	-	-	-	-	-	-	-	-	0.09
Southwest Airline	B737-300	737300	J	97.30	10.89	56.55	7.84	30.57	1.15	10.07	0.03	1.99	-	-	-	-	-	-	-	216.39
	B737-500	737500	J	14.58	2.72	11.89	1.31	3.26	0.66	0.15	-	0.02	-	-	-	-	-	-	-	34.57
	B737-700	737700	J	37.50	3.78	14.32	1.39	12.31	0.70	6.39	0.02	6.12	-	-	-	-	-	-	-	82.51
	B737-200	737N17	J	2.62	0.46	2.09	0.34	0.51	0.08	0.06	-	-	-	-	-	-	-	-	-	6.16
TWA	B717-200	717200	J	-																

TABLE B-1-9

2001 Air Cargo Average Daily Aircraft Operations Summary  
Phoenix Sky Harbor International Airport Environmental Impact Statement  
Methodology and Assumptions Report

Airline	Aircraft		Engine	Arrivals		Departures								Total
	Actual	INM		Day	Night	Stage 1		Stage 2		Stage 3		Stage 4		
						Day	Night	Day	Night	Day	Night	Day	Night	
Airborne Express	B767-200	767CF6	J	0.58	0.67	-	-	-	-	0.91	0.34	-	-	2.49
	A300	A300	J	-	0.01	-	-	-	-	-	0.01	-	-	0.03
	DC9	DC93LW	J	0.68	0.66	-	-	-	-	0.89	0.45	-	-	2.67
Ameriflight	PA31	BEC58P	P	2.79	0.35	1.15	1.99	-	-	-	-	-	-	6.27
	MERLIN III	CNA441	T	0.05	0.43	0.15	0.34	-	-	-	-	-	-	0.97
	B190, MERLIN IV, BE02	DHC6	T	7.03	1.43	4.45	4.01	-	-	-	-	-	-	16.92
	PA32	GASEPV	P	2.02	0.01	0.67	1.36	-	-	-	-	-	-	4.06
	LJ35	LEAR35	J	-	0.52	-	0.52	-	-	-	-	-	-	1.05
BAX Global	B727-200	727EM2	J	0.71	-	-	-	-	-	-	-	0.71	-	1.42
Empire	C208	GASEPF	P	3.08	-	2.59	0.48	-	-	-	-	-	-	6.15
Kalitta Air	B727-200	727EM2	J	0.01	0.00	-	-	-	-	0.01	0.00	-	-	0.02
	B747-100	74710Q	J	0.00	0.00	-	-	-	-	0.00	0.00	-	-	0.01
	HS-125	LEAR35	J	0.00	-	0.00	-	-	-	-	-	-	-	0.00
DHL	B727-200	727EM2	J	0.42	0.29	0.11	0.24	-	-	0.36	-	-	-	1.43
	A300	A300	J	0.39	0.26	0.13	0.19	-	-	0.33	-	-	-	1.31
	DC8	DC870	J	-	0.02	0.02	-	-	-	-	-	-	-	0.03
Evergreen	B747-100	74710Q	J	0.01	0.01	-	-	0.01	0.02	-	-	-	-	0.04
	B747-200	74720A	J	0.01	-	-	-	0.01	0.01	-	-	-	-	0.03
	LJ35	LEAR35	J	0.00	-	0.00	-	-	-	-	-	-	-	0.01
Emery Worldwide	B727-200	727EM2	J	1.62	0.60	-	-	-	-	1.50	0.72	-	-	4.44
	DC10	DC1010	J	0.23	0.27	0.19	0.07	-	-	0.22	0.02	-	-	1.00
	DC8	DC870	J	0.26	0.02	-	-	-	-	0.25	0.02	-	-	0.55
	MD11	MD11GE	J	0.02	-	-	-	-	-	0.02	-	-	-	0.04
FedEx	B727-100	727EM1	J	-	0.01	-	-	-	-	-	0.01	-	-	0.03
	B727-200	727EM2	J	0.93	1.44	-	-	-	-	1.24	1.14	-	-	4.76
	A300	A300	J	0.53	0.47	-	-	-	-	0.91	0.10	-	-	2.01
	A310	A310	J	0.05	0.01	-	-	-	-	0.05	0.02	-	-	0.13
	DC10	DC1010	J	0.51	0.45	-	-	-	-	0.87	0.09	-	-	1.91
	DC10	DC1030	J	0.19	0.24	-	-	-	-	0.33	0.10	-	-	0.86
	MD11	MD11GE	J	0.01	-	-	-	-	-	0.01	-	-	-	0.03
Kitty Hawk	B727-200	727EM2	J	1.13	0.67	-	-	1.11	0.69	-	-	-	-	3.60
	LJ25	LEAR25	J	-	0.01	0.01	-	-	-	-	-	-	-	0.02
	LJ36	LEAR35	J	0.01	-	0.01	-	-	-	-	-	-	-	0.02
Mid-Atlantic Freight	C208	GASEPF	P	0.67	0.01	0.32	0.36	-	-	-	-	-	-	1.36
UPS	B767-300	767300	J	1.21	1.36	0.07	1.13	-	-	0.82	0.54	-	-	5.13
	B727-200	727EM2	J	-	0.03	-	-	-	-	0.03	-	-	-	0.06
	B757-200	757PW	J	0.82	0.54	0.01	0.48	0.55	-	0.25	0.07	-	-	2.72
	A300	A300	J	0.06	-	-	-	-	-	0.06	-	-	-	0.11
	DC8	DC870	J	0.01	0.09	-	-	-	-	-	0.10	-	-	0.20
	C208	GASEPF	P	0.01	-	0.01	-	-	-	-	-	-	-	0.03
	LJ35	LEAR35	J	1.14	1.43	0.67	1.91	-	-	-	-	-	-	5.16
<b>Total</b>				<b>27.20</b>	<b>12.35</b>	<b>10.58</b>	<b>13.09</b>	<b>1.67</b>	<b>0.71</b>	<b>9.06</b>	<b>3.73</b>	<b>0.71</b>	<b>-</b>	<b>79.08</b>

Engine: J - Jet  
T - Turboprop  
P - Prop

Day: 7:00 a.m. - 10:00 p.m.  
Night: 10:00 p.m. - 7:00 a.m.

Source: Phoenix Sky Harbor International Airport, 2001.  
URS Corporation, 2003.

TABLE B-1-10

2001 General Aviation Average Daily Aircraft Operations Summary  
Phoenix Sky Harbor International Airport Environmental Impact Statement  
Methodology and Assumptions Report

Aircraft	INM	Engine	Arrivals		Departures														Total			
			Day	Night	Stage 1		Stage 2		Stage 3		Stage 4		Stage 5		Stage 6		Stage 7					
Actual			Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night		
B737-300	737300	J	0.02	0.05	-	-	-	-	-	-	-	-	-	0.07	-	-	-	-	-	-	0.14	
B737-400	737400	J	0.18	0.11	-	-	-	-	-	-	-	-	-	0.21	0.08	-	-	-	-	-	0.58	
B737-800	737700	J	0.02	-	-	-	-	-	-	-	-	-	-	-	-	0.02	-	-	-	-	0.05	
B747-400	747400	J	0.02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.02	-	-	0.05	
B767-300	767300	J	0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	0.05	-	-	-	0.10	
B720	720B	J	0.24	-	-	-	-	-	-	-	-	-	-	-	0.24	-	-	-	-	-	0.48	
B727-100	727EM1	J	0.10	-	-	-	-	-	-	-	-	-	-	0.07	0.02	-	-	-	-	-	0.19	
B727-200	727EM2	J	0.28	0.26	-	-	-	-	-	-	-	-	-	-	0.47	0.07	-	-	-	-	1.09	
B737-200	737N17	J	0.11	0.03	-	-	-	-	-	-	-	-	-	0.07	0.07	-	-	-	-	-	0.27	
B747-200	74720B	J	0.02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.02	-	0.05	
B757-200	757RR	J	0.33	0.11	-	-	-	-	-	-	-	-	-	-	0.35	0.09	-	-	-	-	0.87	
B767-200	767CF6	J	0.42	0.02	-	-	-	-	-	-	-	-	-	-	-	-	-	0.37	0.07	-	0.89	
A300	A300	J	0.16	-	-	-	-	-	-	-	-	-	-	-	0.16	-	-	-	-	-	0.31	
A319	A319	J	0.05	-	-	-	-	-	-	-	-	-	-	0.05	-	-	-	-	-	-	0.10	
A320	A320	J	0.04	0.02	-	-	-	-	-	-	-	-	-	-	0.03	0.03	-	-	-	-	0.12	
BAC111	BAC111	J	0.07	-	-	-	-	-	0.07	-	-	-	-	-	-	-	-	-	-	-	0.14	
AC30, ASTH, BE18/50/55/58/60/65/76/95, C303/310/320/337/340/401/402/4 04/414/421, PA23/30/31/32/34/44	BEC58P	P	19.67	4.29	16.42	7.54	-	-	-	-	-	-	-	-	-	-	-	-	-	-	47.93	
C650	CIT3	J	2.06	0.15	1.85	0.36	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4.42	
CL600, FA2000	CL600	J	1.52	0.05	1.38	0.19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.14	
CL64, FA50	CL601	J	0.84	0.02	0.82	0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.74	
C120/150/152/170/172/177/175	CNA172	P	5.00	0.27	4.72	0.55	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10.53	
C180/182/185/188/190/195/206/2 10	CNA206	P	6.12	0.50	5.94	0.68	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13.24	
AC680/690/95, BE100/90, C425/441, PA42, Merlin III	CNA441	T	10.14	1.90	10.00	2.04	-	-	-	-	-	-	-	-	-	-	-	-	-	-	24.09	
C500/501/525	CNA500	J	1.65	0.02	1.56	0.12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.36	
C750	CNA750	J	0.79	0.08	0.80	0.07	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.74	
CVR640, CVLT	CVR680	T	-	0.02	-	-	-	-	0.02	-	-	-	-	-	-	-	-	-	-	-	0.05	
DC10	DC1030	J	0.51	0.17	-	-	-	-	-	-	-	-	-	-	-	-	-	0.51	0.17	-	1.35	
DC3, CVR240/340	DC3	P	0.05	0.05	-	-	-	-	0.11	-	-	-	-	-	-	-	-	-	-	-	0.22	
DC870	DC870	J	0.02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.02	-	0.05	
DC9	DC93LW	J	0.10	-	-	-	-	-	0.10	-	-	-	-	-	-	-	-	-	-	-	0.19	
BE190/200/300/350/99, MU2, PC12/13, Merlin IV, JS31	DHC6	T	8.85	1.14	7.65	2.33	-	-	-	-	-	-	-	-	-	-	-	-	-	-	19.98	
EMB120	EMB120	T	0.83	-	0.28	0.56	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.67	
FA900	EMB145	J	0.79	0.08	-	-	-	-	-	-	-	-	0.82	0.05	-	-	-	-	-	-	1.74	
FA20	FAL20	J	0.98	0.05	0.91	0.12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.05	
AA1/5, AC112/114, BE17/23, C208/305, DHC1, PA18, BL26	GASEPF	P	2.55	0.37	1.66	1.26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5.85	
BE33/35/36, M20, PA27/28/32/46	GASEPV	P	9.57	0.96	8.76	1.77	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21.07	
GI/III	GIIB	J	1.16	0.12	1.06	0.22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.56	
GIV	GIV	J	1.71	0.09	1.70	0.10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.60	
GV	GV	J	0.48	0.03	0.42	0.09	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.01	
G1159, F27	HS748A	T	0.37	-	0.33	0.04	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.75	
WW1124/1125	IA1125	J	0.97	-	0.90	0.07	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.93	
HS125, LJ24/25/28, SABR40	LEAR25	J	1.75	0.32	1.69	0.38	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4.13	
LJ31/35/36/45/55/60, L1329, HS125B/C, FA10, BE40	LEAR35	J	7.23	0.69	7.26	0.66	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15.85	
MD80	MD81	J	0.02	-	-	-	-	-	0.02	-	-	-	-	-	-	-	-	-	-	-	0.05	
C550/551/560, MU3	MU3001	J	5.00	0.29	4.91	0.38	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10.58	
BE2000	SD330	T	0.04	-	0.04	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.07	
<b>Total</b>			<b>92.90</b>	<b>12.28</b>	<b>81.06</b>	<b>19.58</b>	-	-	-	-	<b>0.33</b>	-	-	<b>1.22</b>	<b>0.29</b>	<b>1.25</b>	<b>0.19</b>	<b>0.02</b>	-	<b>1.00</b>	<b>0.24</b>	<b>210.37</b>

Engine: J - Jet  
T - Turboprop  
P - Prop  
Day: 7:00 a.m. - 10:00 p.m.  
Night: 10:00 p.m. - 7:00 a.m.  
Source: Phoenix Sky Harbor International Airport, 2001.  
URS Corporation, 2003.

TABLE B-1-11

**2001 Military Average Daily Aircraft Operations Summary  
Phoenix Sky Harbor International Airport Environmental Impact Statement  
Methodology and Assumptions Report**

Aircraft		Engine	Arrivals		Departures														Total		
Actual	INM		Day	Night	Stage 1		Stage 2		Stage 3		Stage 4		Stage 5		Stage 6		Stage 7				
					Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	
KC135E	707320	J	4.13	0.06	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4.19	-	8.37
A4	A4C	J	0.05	-	0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.10
CNA414	BEC58P	P	0.05	-	0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.10
C12	C12	T	0.42	-	0.42	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.83
C130	C130	T	0.08	-	-	-	0.08	-	-	-	-	-	-	-	-	-	-	-	-	-	0.16
C141	C141A	J	0.31	-	0.31	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.62
C5	C5A	J	0.05	-	0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.10
DC9	C9A	J	0.10	-	0.10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.21
CNA650	CIT3	J	0.05	-	0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.10
CNA210	CNA206	P	0.16	-	0.16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.31
BE20	DHC6	T	0.68	-	0.58	0.10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.35
F18	F-18	J	0.23	-	0.23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.47
KC135R	KC135R	J	0.08	-	0.04	0.04	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.16
LJ35, BE40	LEAR35	J	0.10	-	0.10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.21
CNA550/560	MU3001	J	0.13	-	0.13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.26
T34	T34	P	0.05	-	0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.10
T37	T37B	J	0.08	-	0.08	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.16
T38	T-38A	J	0.16	-	0.16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.31
<b>Total</b>			<b>6.39</b>	<b>0.06</b>	<b>2.05</b>	<b>0.14</b>	<b>0.08</b>	-	-	-	-	-	-	-	-	-	-	-	<b>4.19</b>	-	<b>13.93</b>

Engine: J - Jet  
T - Turboprop  
P - Prop

Day: 7:00 a.m. - 10:00 p.m.  
Night: 10:00 p.m. - 7:00 a.m.

Source: Phoenix Sky Harbor International Airport, 2001-2002.  
URS Corporation, 2003.

**TABLE B-1-12**

**Departure Flight Track Utilization Summary  
Phoenix Sky Harbor International Airport Environmental Impact Statement  
Methodology and Assumptions Report**

Runway	Track	Jet	Turboprop	Prop
07L	07LD1	100%	-	-
07L	07LD2	-	15%	-
07L	07LD3	-	85%	-
07L	07LD4	-	-	75%
07L	07LD5	-	-	25%
<b>Total</b>		100%	100%	100%
25R	25RD1	50%	-	-
25R	25RD2	50%	-	-
25R	25RD3	-	55%	-
25R	25RD4	-	45%	-
25R	25RD5	-	-	30%
25R	25RD6	-	-	70%
<b>Total</b>		100%	100%	100%
07R	07RD1	100%	-	-
07R	07RD2	-	20%	-
07R	07RD3	-	80%	-
07R	07RD4	-	-	35%
07R	07RD5	-	-	65%
<b>Total</b>		100%	100%	100%
25L	25LD1	45%	-	-
25L	25LD2	55%	-	-
25L	25LD3	-	65%	-
25L	25LD4	-	35%	-
25L	25LD5	-	-	35%
25L	25LD6	-	-	65%
<b>Total</b>		100%	100%	100%
08	08D1	40%	-	-
08	08D2	60%	100%	30%
08	08D3	-	-	45%
08	08D4	-	-	25%
<b>Total</b>		100%	100%	100%
26	26D1	40%	-	-
26	26D2	35%	100%	-
26	26D3	25%	-	-
26	26D4	-	-	100%
<b>Total</b>		100%	100%	100%

Source: Phoenix Sky Harbor International Airport, 2001.  
URS Corporation, 2003.

**TABLE B-1-13**

**Arrival Flight Track Utilization Summary**  
**Phoenix Sky Harbor International Airport Environmental Impact Statement**  
**Methodology and Assumptions Report**

Runway	Track	Jet	Turboprop	Prop
07L	07LA1	100%	100%	65%
07L	07LA2	-	-	35%
<b>Total</b>		100%	100%	100%
25R	25RA1	100%	100%	100%
<b>Total</b>		100%	100%	100%
07R	07RA1	100%	100%	85%
07R	07RA2	-	-	15%
<b>Total</b>		100%	100%	100%
25L	25LA1	100%	100%	60%
25L	25LA2	-	-	40%
<b>Total</b>		100%	100%	100%
08	08A1	95%	100%	75%
08	08A2	5%	-	-
08	08A3	-	-	15%
08	08A4	-	-	10%
<b>Total</b>		100%	100%	100%
26	26A1	85%	90%	100%
26	26A2	15%	10%	-
<b>Total</b>		100%	100%	100%

Source: Phoenix Sky Harbor International Airport, 2001.  
 URS Corporation, 2003.

TABLE B-1-14

**2001 Existing Condition Runway Utilization Summary  
Phoenix Sky Harbor International Airport Environmental Impact Statement  
Methodology and Assumptions Report**

**Air Carrier**

Runway	Arrival						Departure					
	Jet		Prop		Turboprop		Jet		Prop		Turboprop	
	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night
7L	5%	19%	0%	0%	1%	5%	47%	52%	5%	40%	18%	31%
25R	9%	30%	0%	0%	4%	1%	48%	30%	0%	0%	23%	45%
7R	18%	15%	34%	0%	10%	14%	1%	2%	53%	60%	2%	2%
25L	15%	8%	26%	0%	9%	3%	0%	1%	0%	0%	0%	0%
8	25%	15%	23%	0%	40%	67%	2%	7%	32%	0%	27%	12%
26	28%	13%	17%	0%	35%	9%	3%	9%	11%	0%	30%	11%
<b>Total</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>0%</b>	<b>100%</b>							

**Cargo**

Runway	Arrival						Departure					
	Jet		Prop		Turboprop		Jet		Prop		Turboprop	
	Day	Night										
7L	7%	40%	3%	4%	1%	72%	33%	49%	23%	46%	29%	30%
25R	19%	30%	9%	8%	5%	4%	45%	26%	3%	6%	24%	11%
7R	26%	21%	16%	20%	14%	14%	11%	17%	39%	16%	17%	44%
25L	37%	8%	39%	20%	43%	1%	9%	6%	13%	3%	5%	8%
8	3%	1%	9%	28%	13%	8%	0%	0%	15%	26%	10%	1%
26	7%	1%	24%	20%	23%	1%	2%	2%	7%	4%	15%	4%
<b>Total</b>	<b>100%</b>											

**General Aviation**

Runway	Arrival						Departure					
	Jet		Prop		Turboprop		Jet		Prop		Turboprop	
	Day	Night										
7L	2%	18%	3%	17%	1%	12%	22%	27%	14%	40%	11%	25%
25R	4%	15%	6%	26%	3%	25%	25%	20%	14%	11%	8%	10%
7R	20%	24%	22%	24%	18%	11%	13%	14%	16%	23%	16%	27%
25L	18%	16%	25%	15%	20%	6%	11%	12%	18%	9%	14%	6%
8	26%	12%	20%	10%	25%	20%	20%	16%	23%	13%	23%	22%
26	30%	17%	23%	8%	32%	26%	9%	11%	16%	3%	28%	10%
<b>Total</b>	<b>100%</b>											

**Military**

Runway	Arrival						Departure					
	Jet		Prop		Turboprop		Jet		Prop		Turboprop	
	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night
7L	11%	0%	0%	0%	0%	0%	36%	100%	0%	0%	15%	0%
25R	7%	0%	0%	0%	0%	0%	40%	0%	50%	0%	25%	0%
7R	34%	100%	0%	0%	10%	0%	13%	0%	0%	0%	10%	0%
25L	36%	0%	0%	0%	5%	0%	4%	0%	0%	0%	0%	0%
8	4%	0%	0%	0%	35%	0%	6%	0%	50%	0%	45%	50%
26	9%	0%	100%	0%	50%	0%	2%	0%	0%	0%	5%	50%
<b>Total</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>0%</b>	<b>100%</b>	<b>0%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>0%</b>	<b>100%</b>	<b>100%</b>

Source: Phoenix Sky Harbor International Airport, 2001.  
URS Corporation, 2003.

TABLE B-1-15

**2001 Normalized Condition Runway Utilization Summary**  
**Phoenix Sky Harbor International Airport Environmental Impact Statement**  
**Methodology and Assumptions Report**

**Air Carrier**

Runway	Arrival						Departure					
	Jet		Prop		Turboprop		Jet		Prop		Turboprop	
	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night
7L	4%	12%	18%	100%	1%	2%	37%	43%	38%	0%	16%	8%
25R	10%	33%	18%	0%	5%	2%	56%	23%	24%	0%	28%	39%
7R	13%	11%	29%	0%	10%	18%	0%	2%	0%	0%	1%	0%
25L	16%	7%	35%	0%	10%	0%	0%	1%	0%	0%	0%	0%
8	22%	19%	0%	0%	32%	72%	2%	11%	14%	0%	20%	8%
26	35%	18%	0%	0%	41%	6%	4%	20%	24%	0%	34%	44%
<b>Total</b>	<b>100%</b>	<b>0%</b>	<b>100%</b>	<b>100%</b>								

**Cargo**

Runway	Arrival						Departure					
	Jet		Prop		Turboprop		Jet		Prop		Turboprop	
	Day	Night										
7L	5%	32%	0%	4%	0%	58%	18%	42%	15%	28%	20%	21%
25R	23%	32%	10%	4%	8%	6%	58%	26%	3%	5%	35%	9%
7R	14%	21%	7%	8%	6%	15%	10%	20%	34%	10%	8%	52%
25L	44%	10%	43%	8%	51%	1%	13%	9%	14%	1%	9%	8%
8	4%	3%	4%	15%	8%	18%	0%	1%	27%	49%	9%	2%
26	10%	1%	36%	62%	27%	3%	1%	3%	7%	7%	20%	8%
<b>Total</b>	<b>100%</b>											

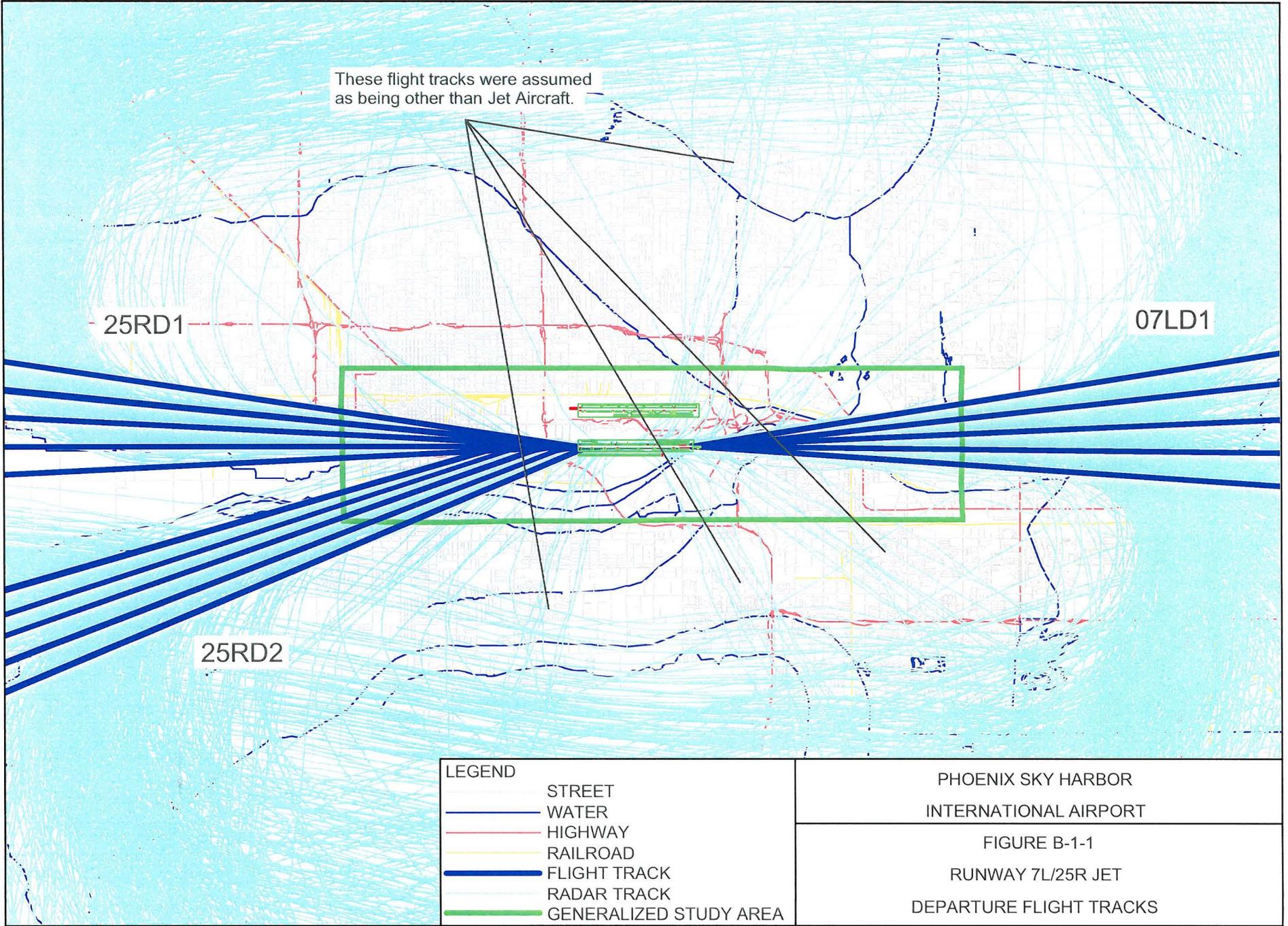
**General Aviation**

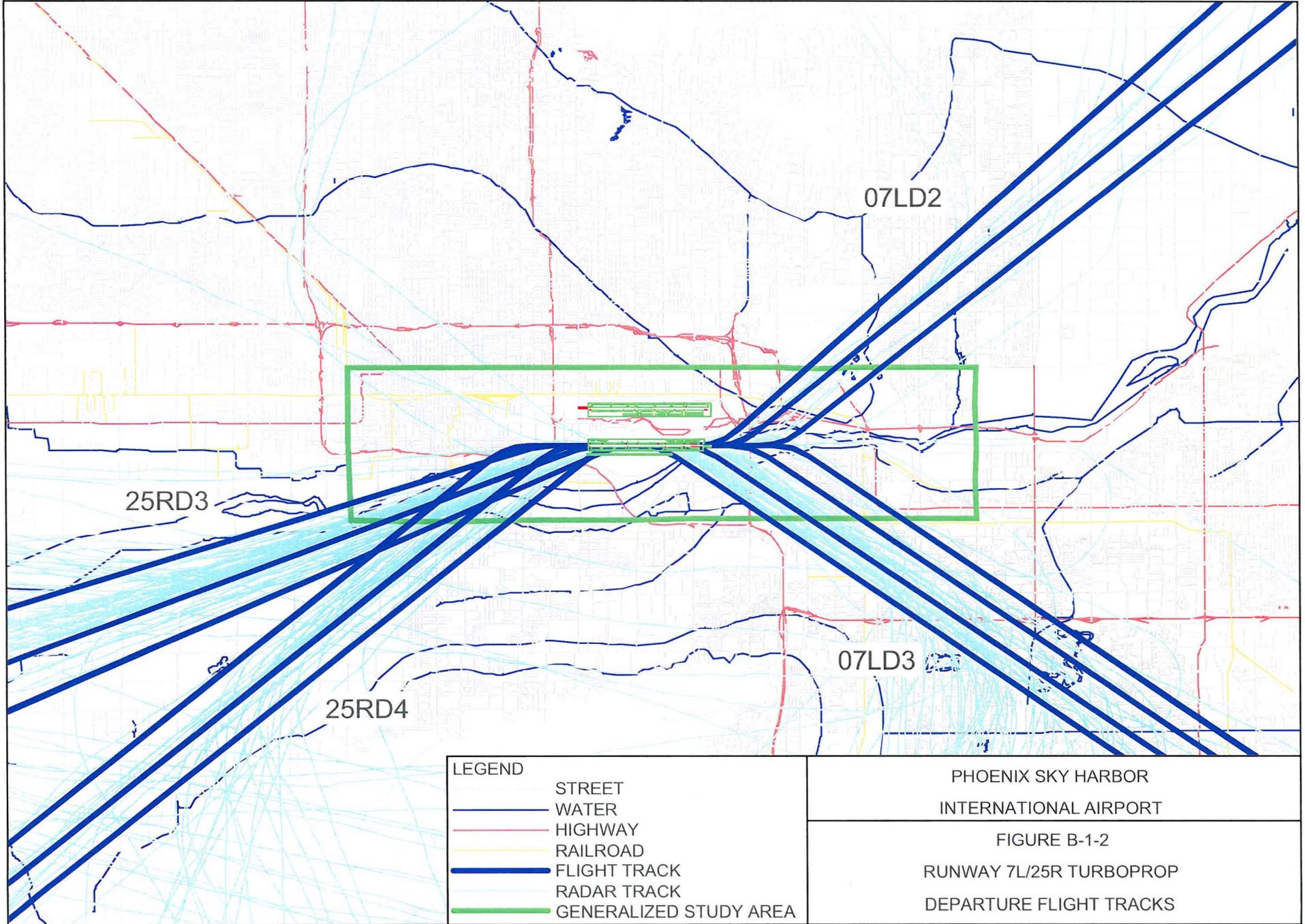
Runway	Arrival						Departure					
	Jet		Prop		Turboprop		Jet		Prop		Turboprop	
	Day	Night										
7L	2%	8%	2%	9%	0%	7%	13%	21%	10%	32%	7%	15%
25R	5%	16%	7%	24%	3%	16%	30%	9%	16%	8%	10%	7%
7R	15%	20%	20%	23%	15%	6%	11%	11%	14%	28%	13%	24%
25L	22%	12%	33%	15%	25%	5%	15%	13%	24%	11%	19%	6%
8	20%	19%	13%	12%	18%	29%	19%	29%	18%	14%	17%	32%
26	36%	25%	26%	16%	39%	37%	11%	18%	17%	7%	34%	15%
<b>Total</b>	<b>100%</b>											

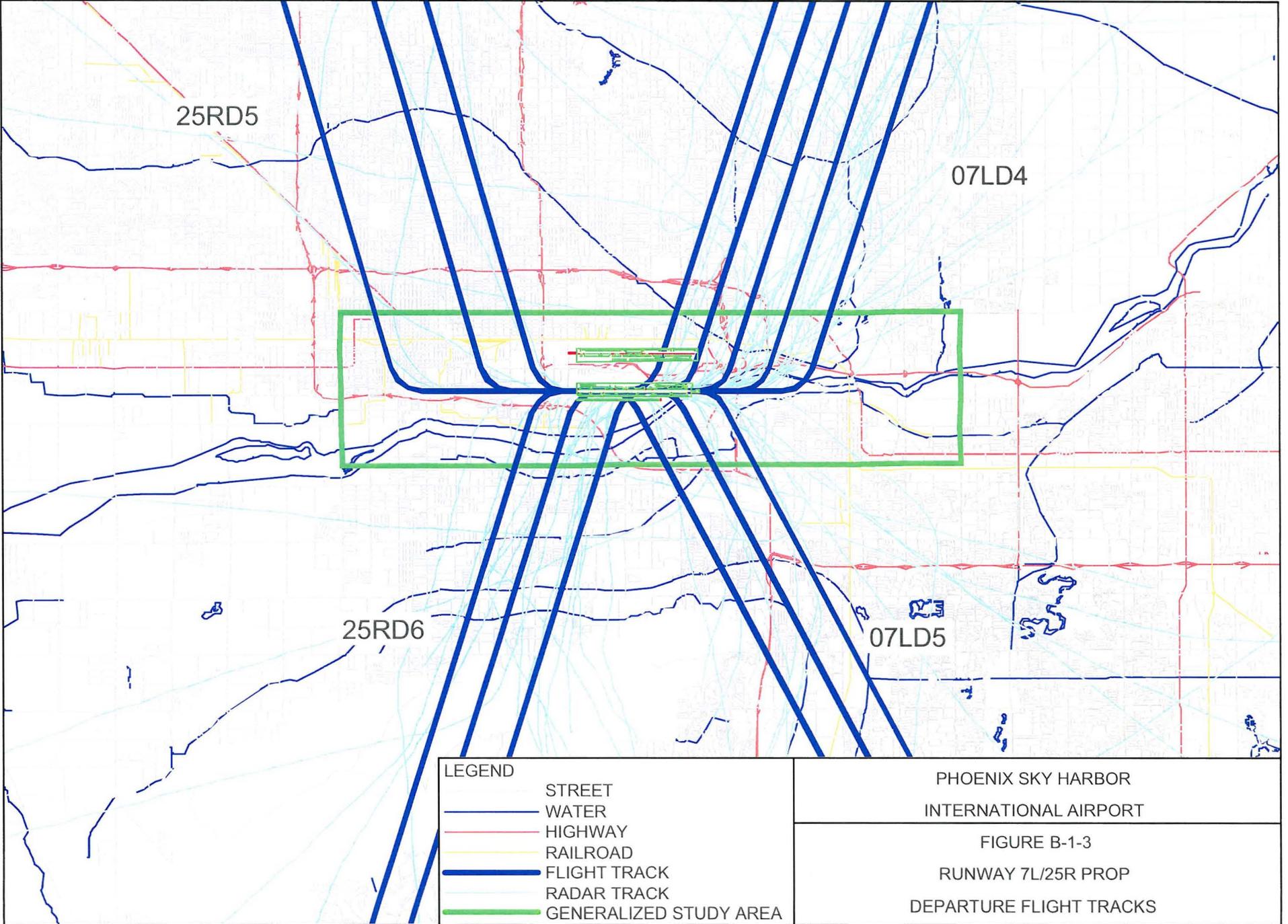
**Military**

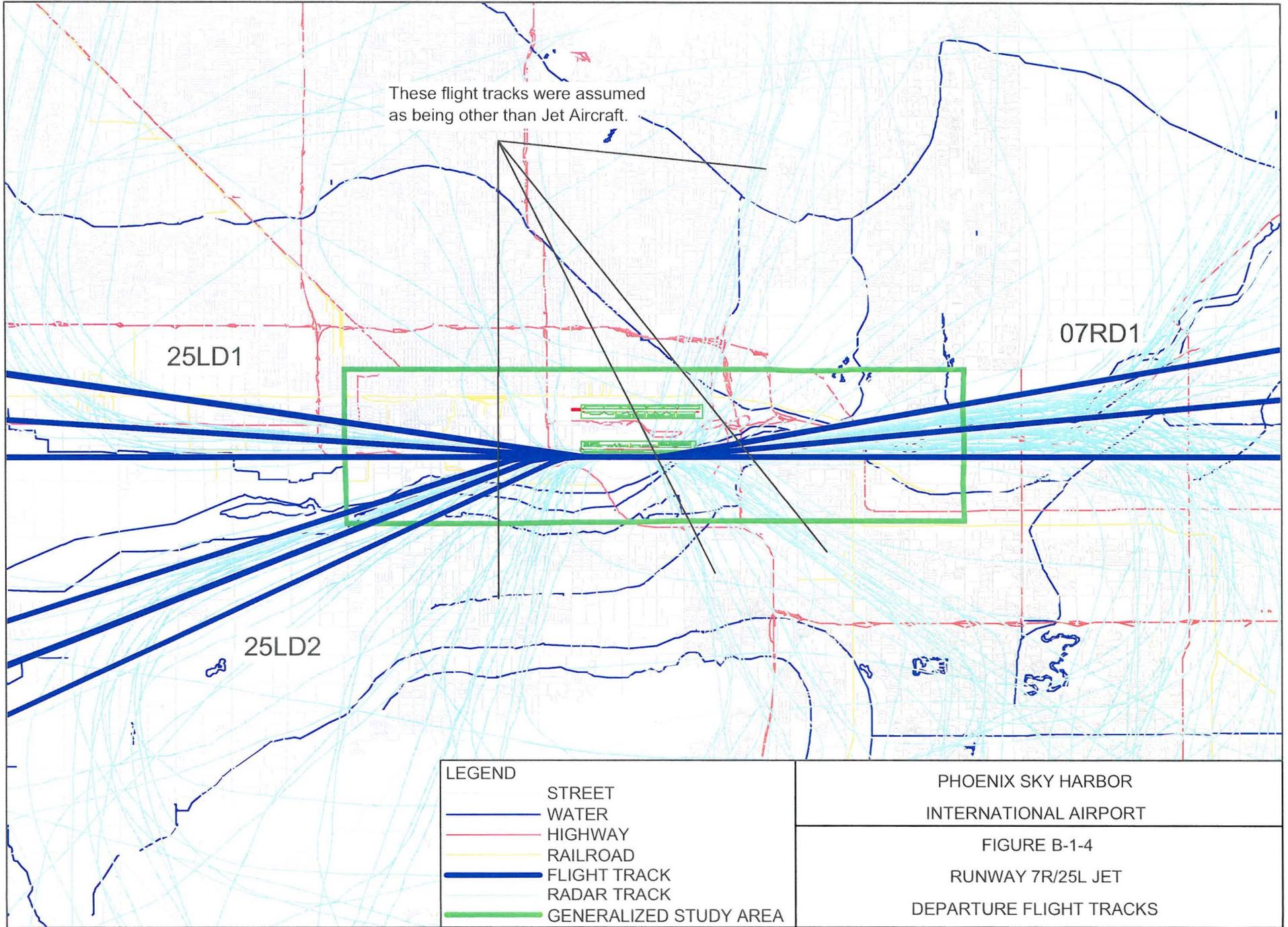
Runway	Arrival						Departure					
	Jet		Prop		Turboprop		Jet		Prop		Turboprop	
	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night
7L	2%	0%	0%	0%	0%	0%	31%	50%	0%	0%	3%	0%
25R	8%	25%	0%	0%	3%	0%	46%	0%	100%	0%	28%	0%
7R	17%	25%	0%	0%	15%	0%	7%	0%	0%	0%	14%	0%
25L	48%	0%	0%	0%	3%	0%	7%	0%	0%	0%	0%	0%
8	6%	0%	0%	0%	26%	0%	5%	0%	0%	0%	44%	67%
26	19%	50%	100%	0%	53%	100%	3%	50%	0%	0%	11%	33%
<b>Total</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>0%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>0%</b>	<b>100%</b>	<b>100%</b>

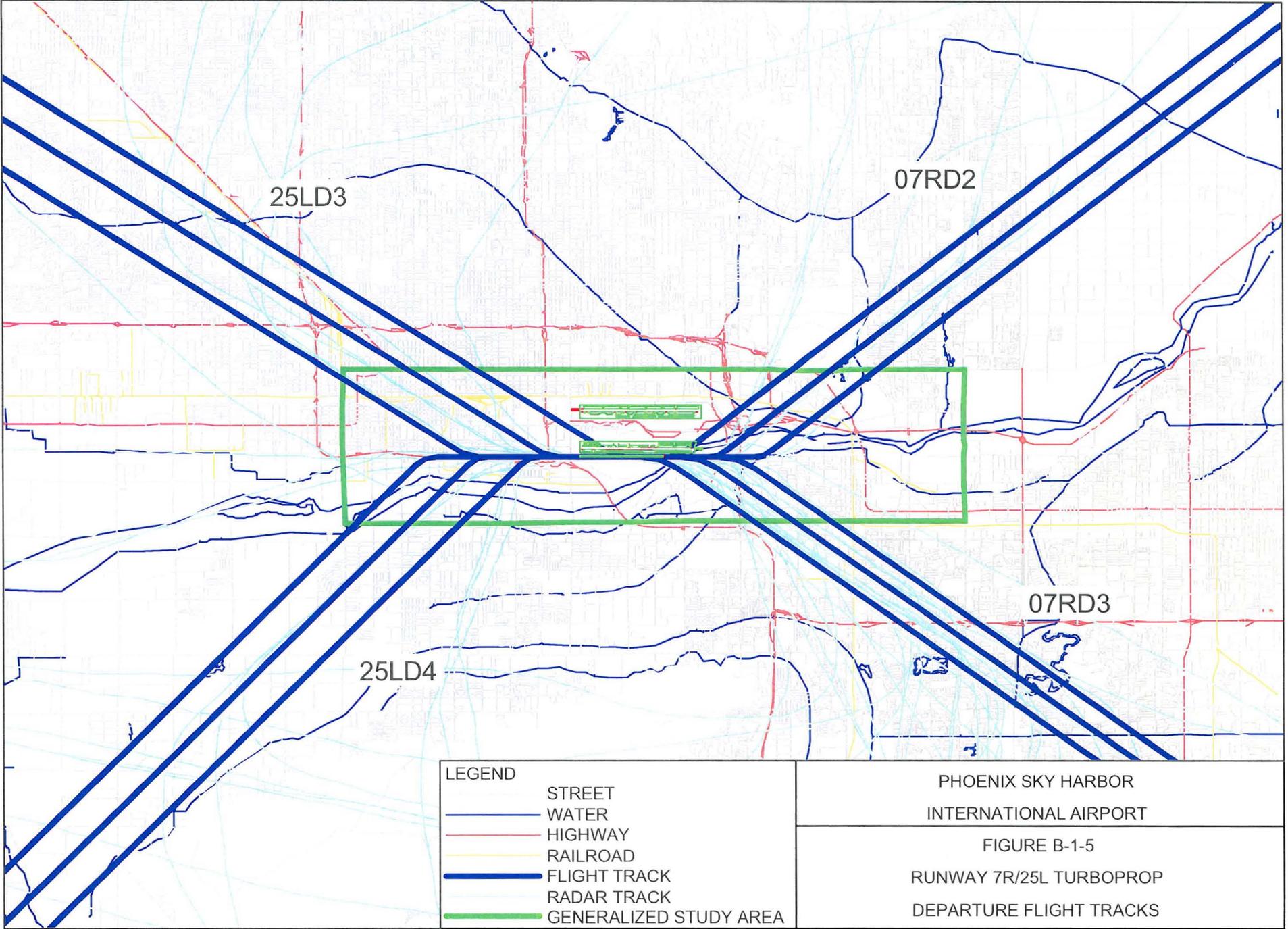
Source: Phoenix Sky Harbor International Airport, 2001.  
 URS Corporation, 2003.







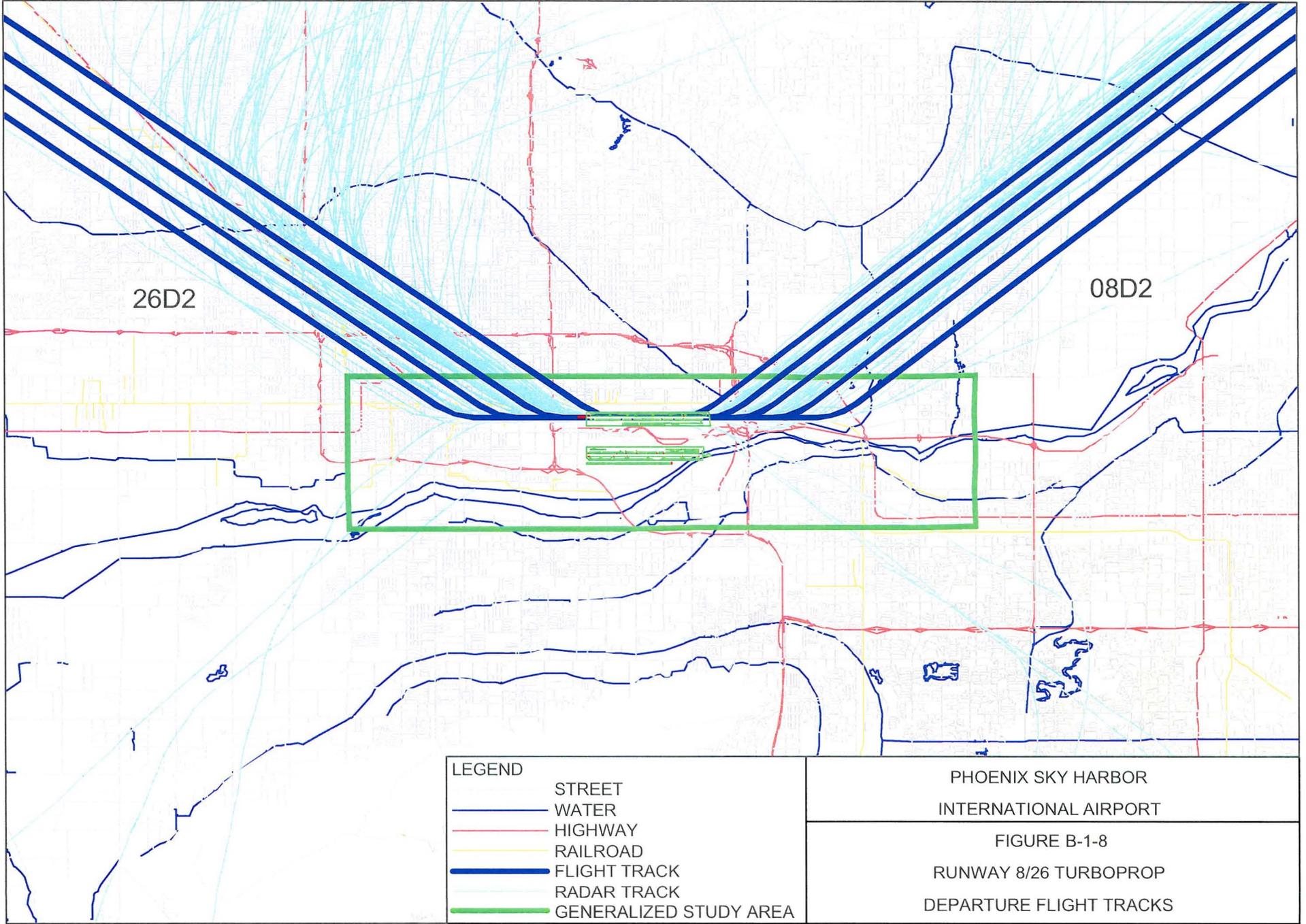


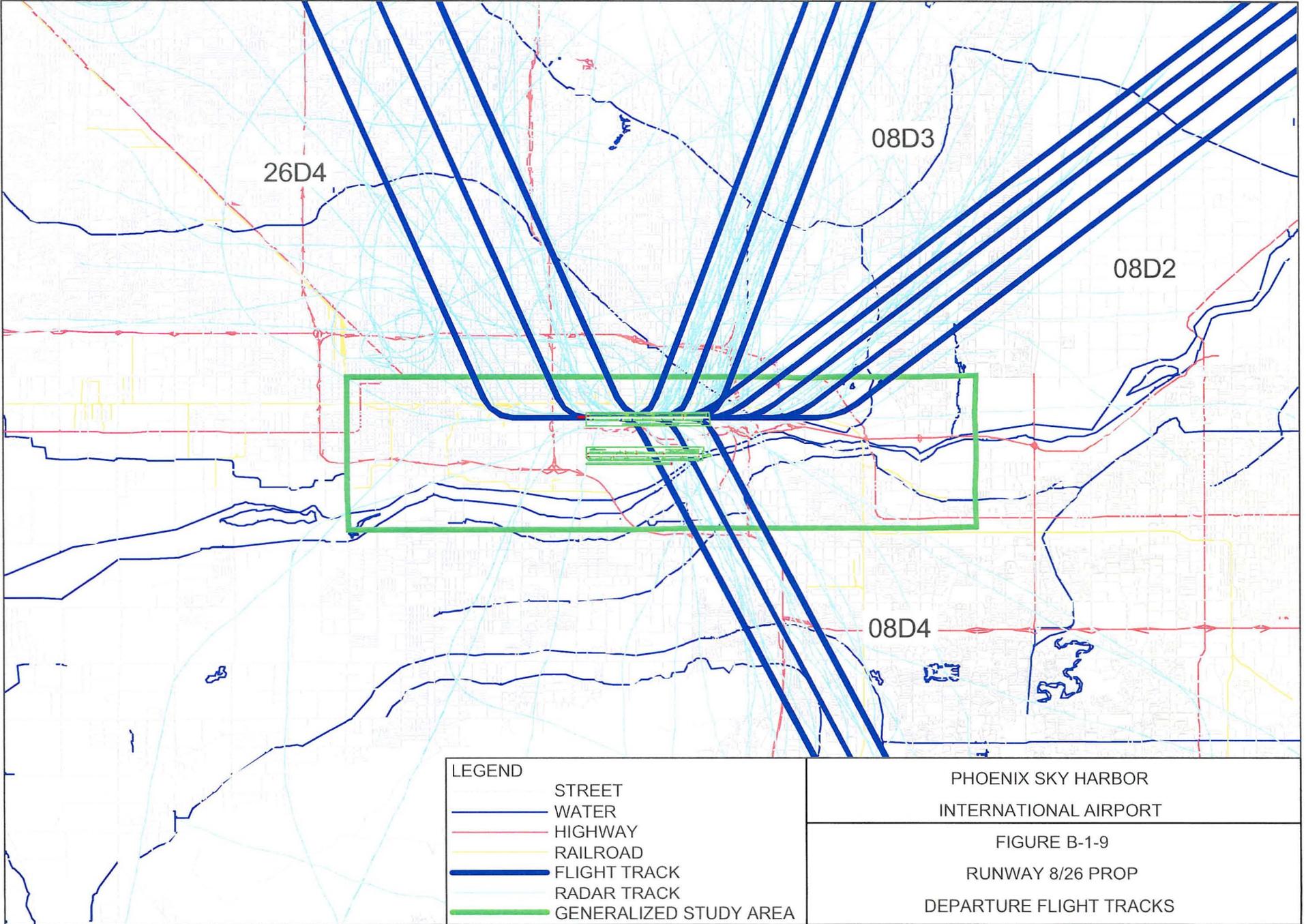


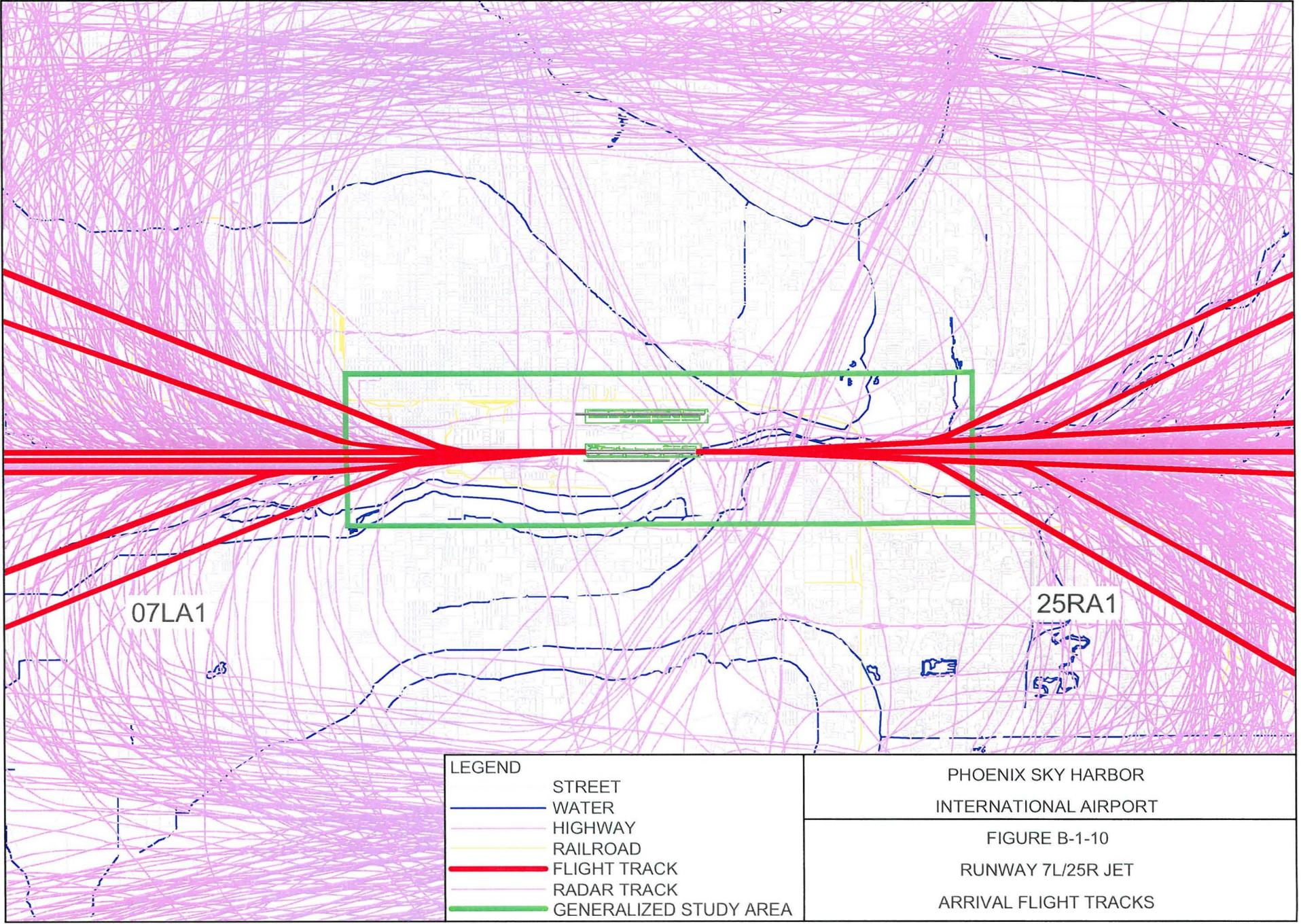
LEGEND	
	STREET
	WATER
	HIGHWAY
	RAILROAD
	FLIGHT TRACK
	RADAR TRACK
	GENERALIZED STUDY AREA

PHOENIX SKY HARBOR  
INTERNATIONAL AIRPORT

FIGURE B-1-5  
RUNWAY 7R/25L TURBOPROP  
DEPARTURE FLIGHT TRACKS

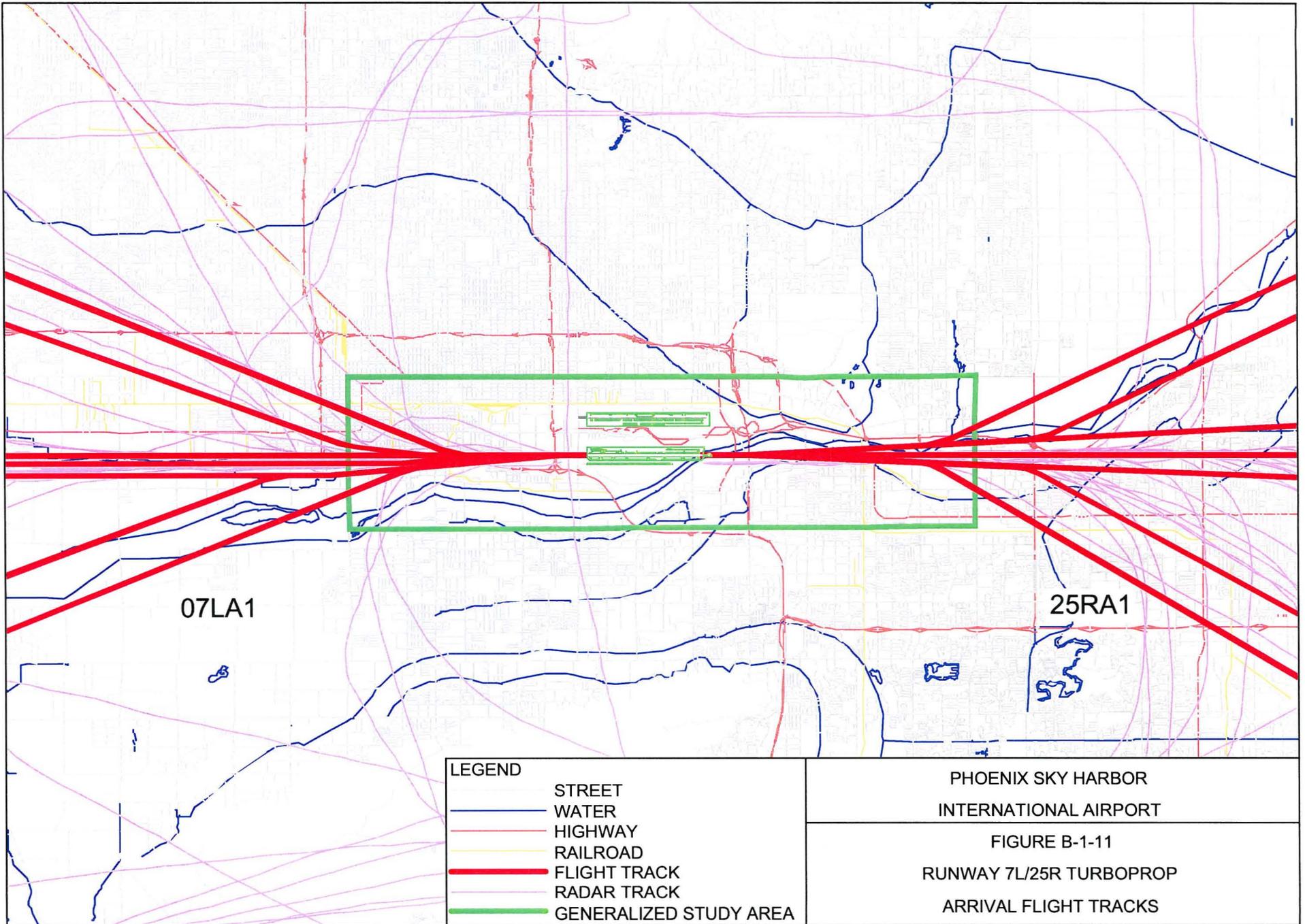


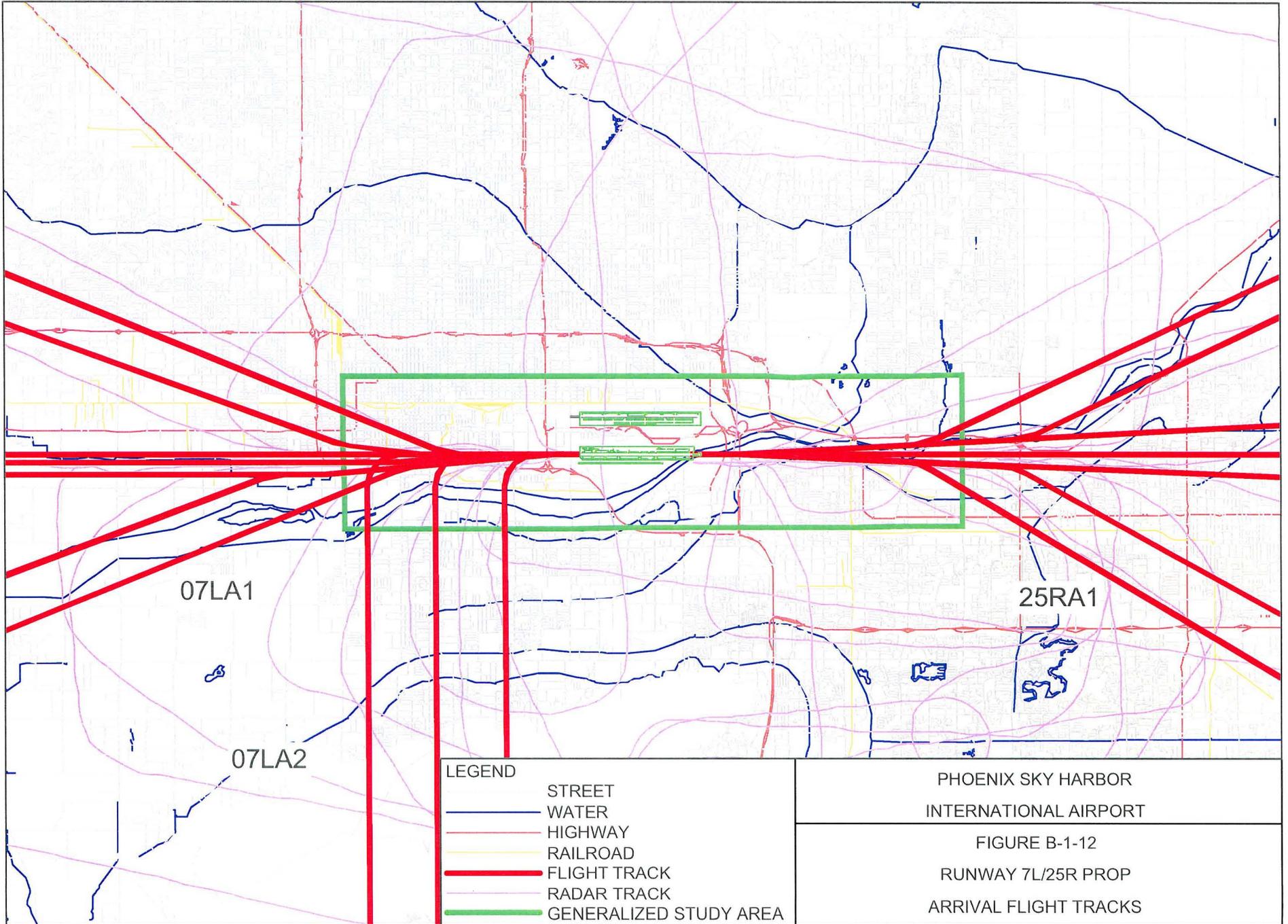


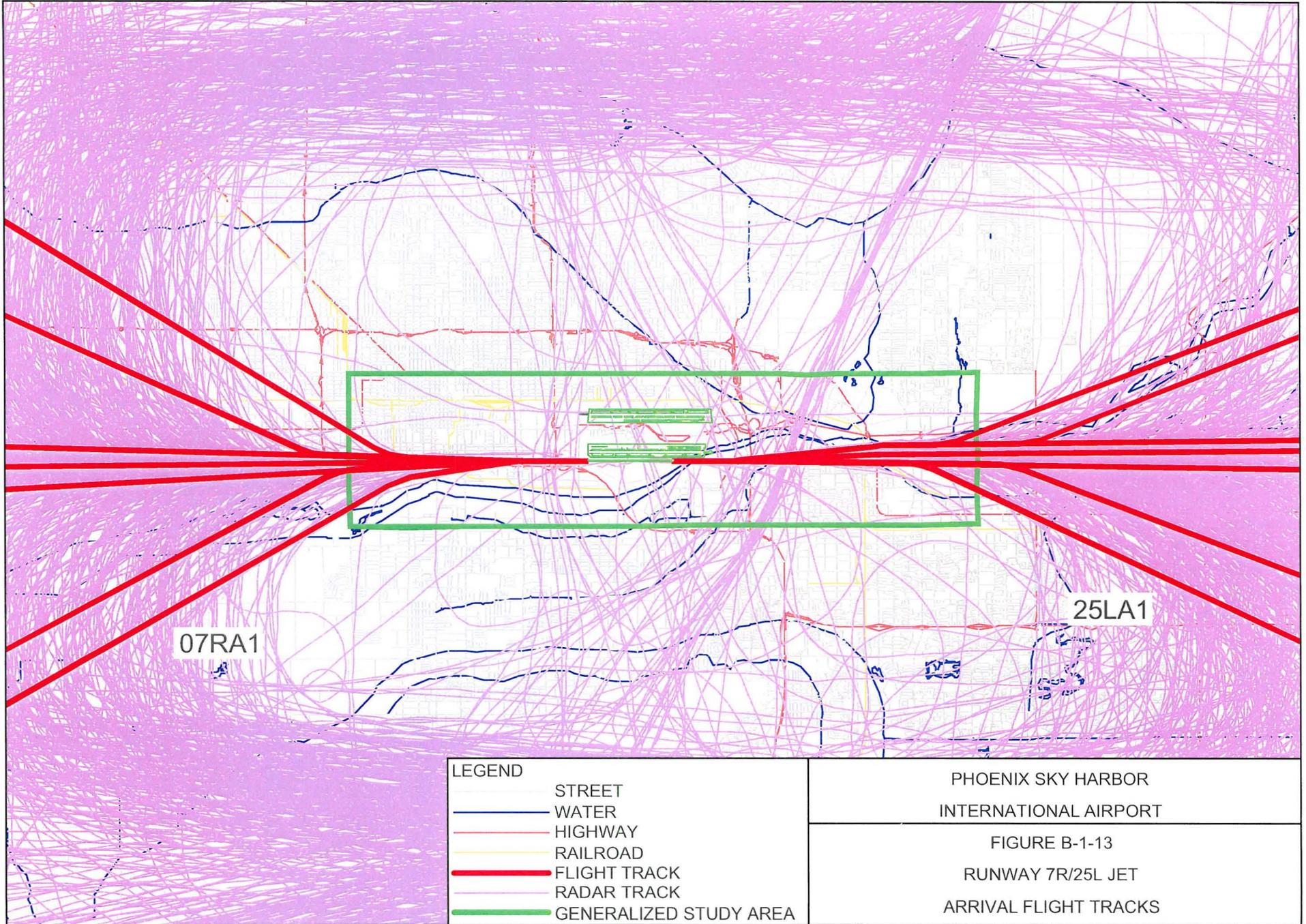


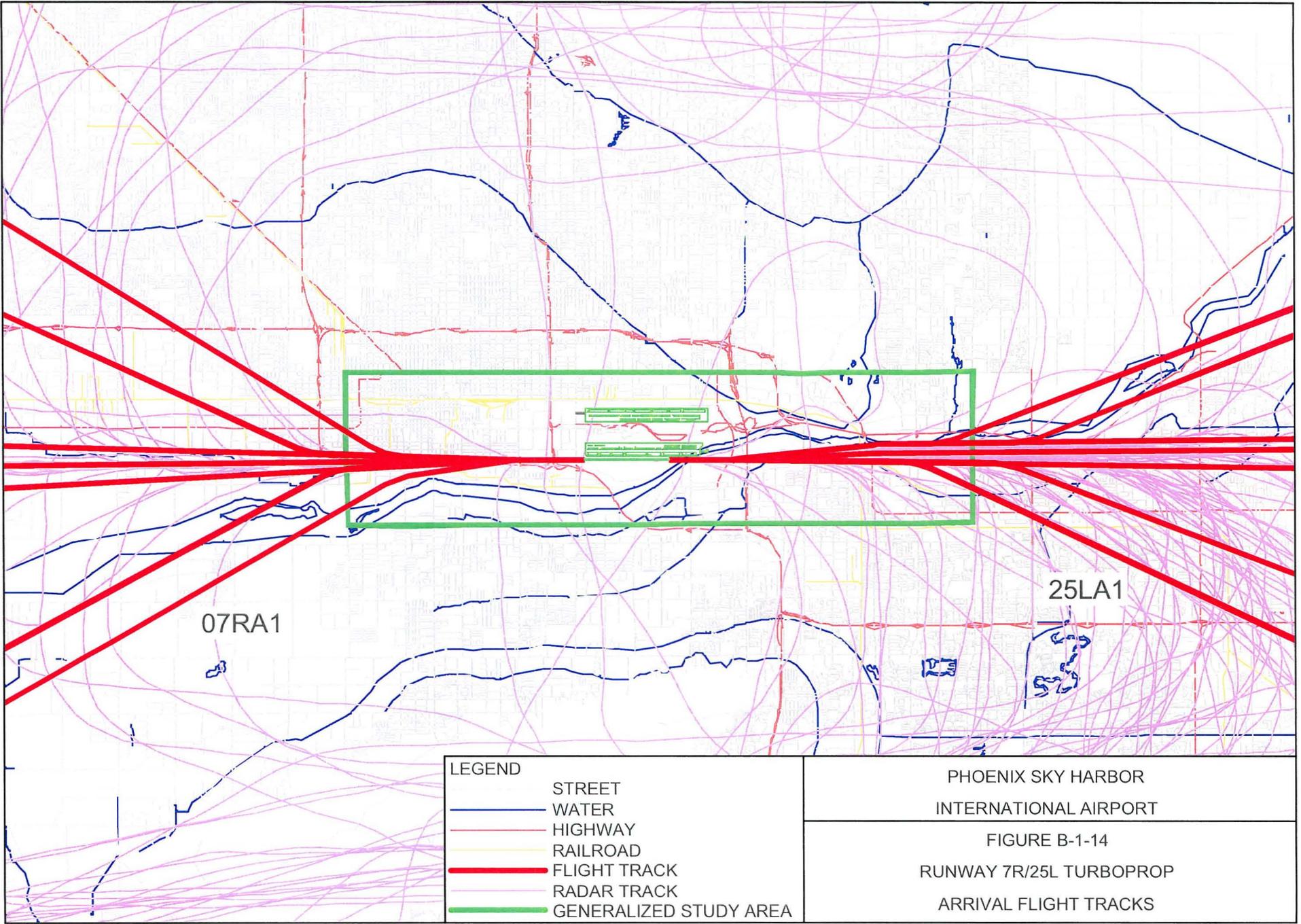
LEGEND	
	STREET
	WATER
	HIGHWAY
	RAILROAD
	FLIGHT TRACK
	RADAR TRACK
	GENERALIZED STUDY AREA

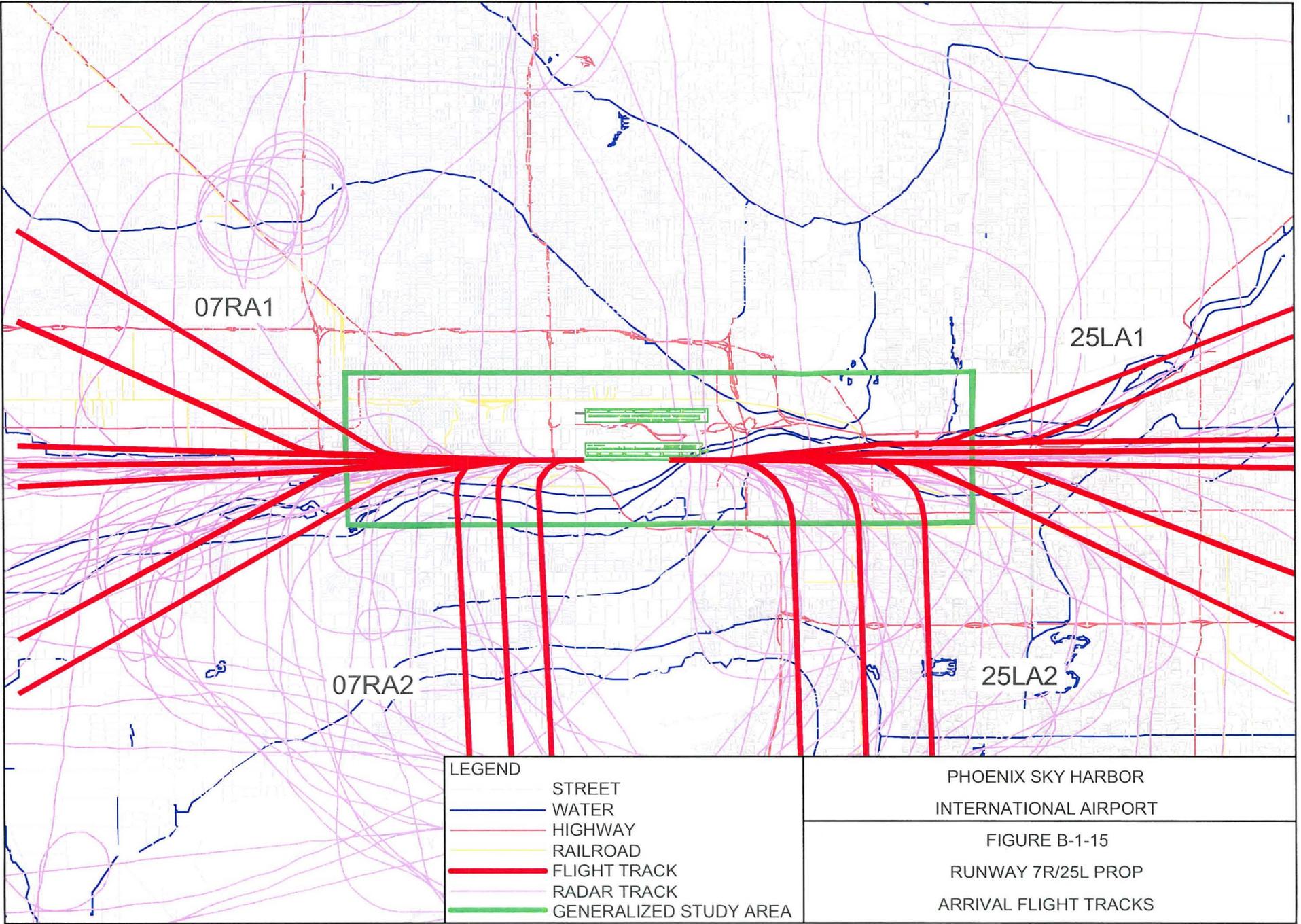
PHOENIX SKY HARBOR INTERNATIONAL AIRPORT
FIGURE B-1-10 RUNWAY 7L/25R JET ARRIVAL FLIGHT TRACKS





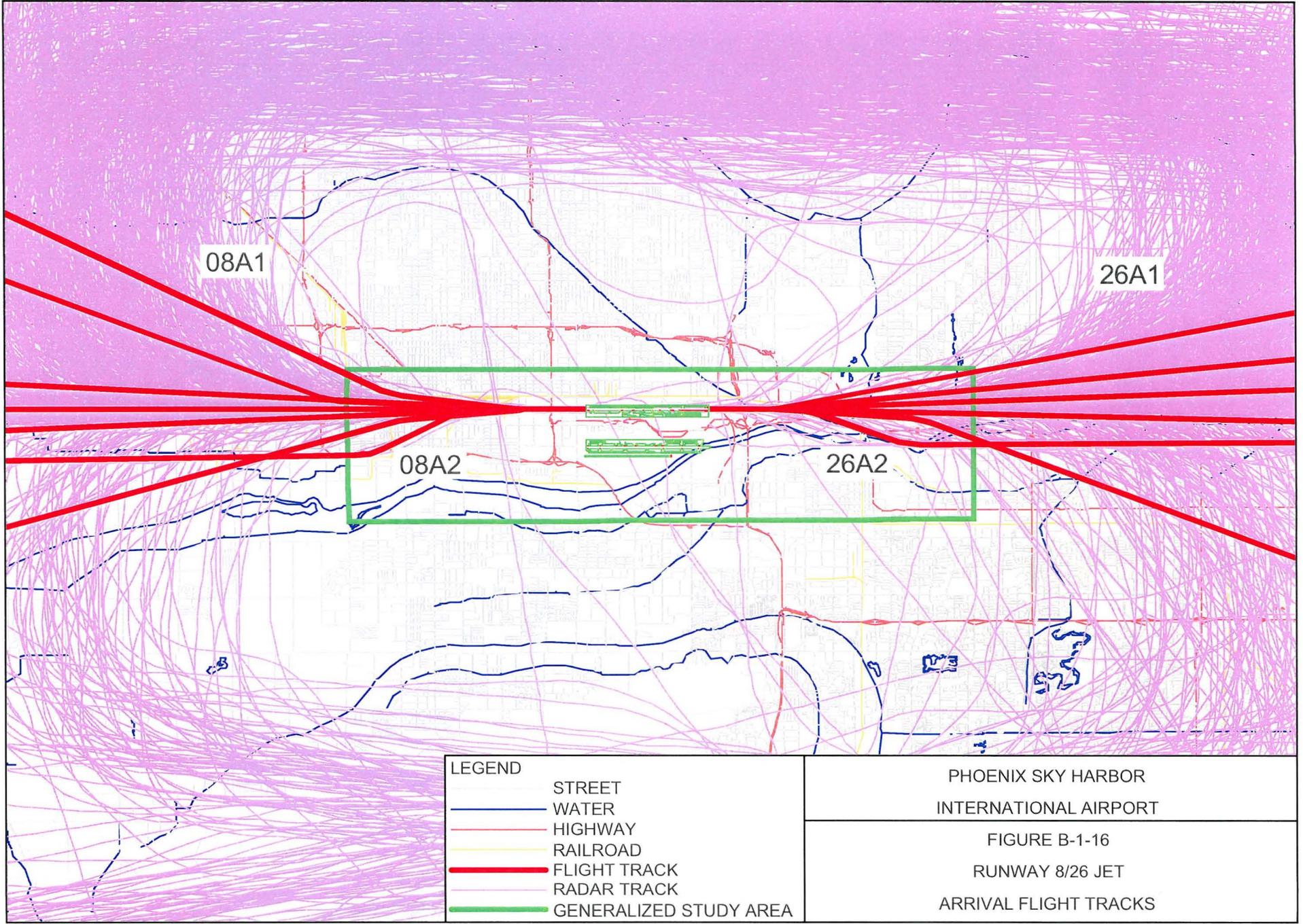


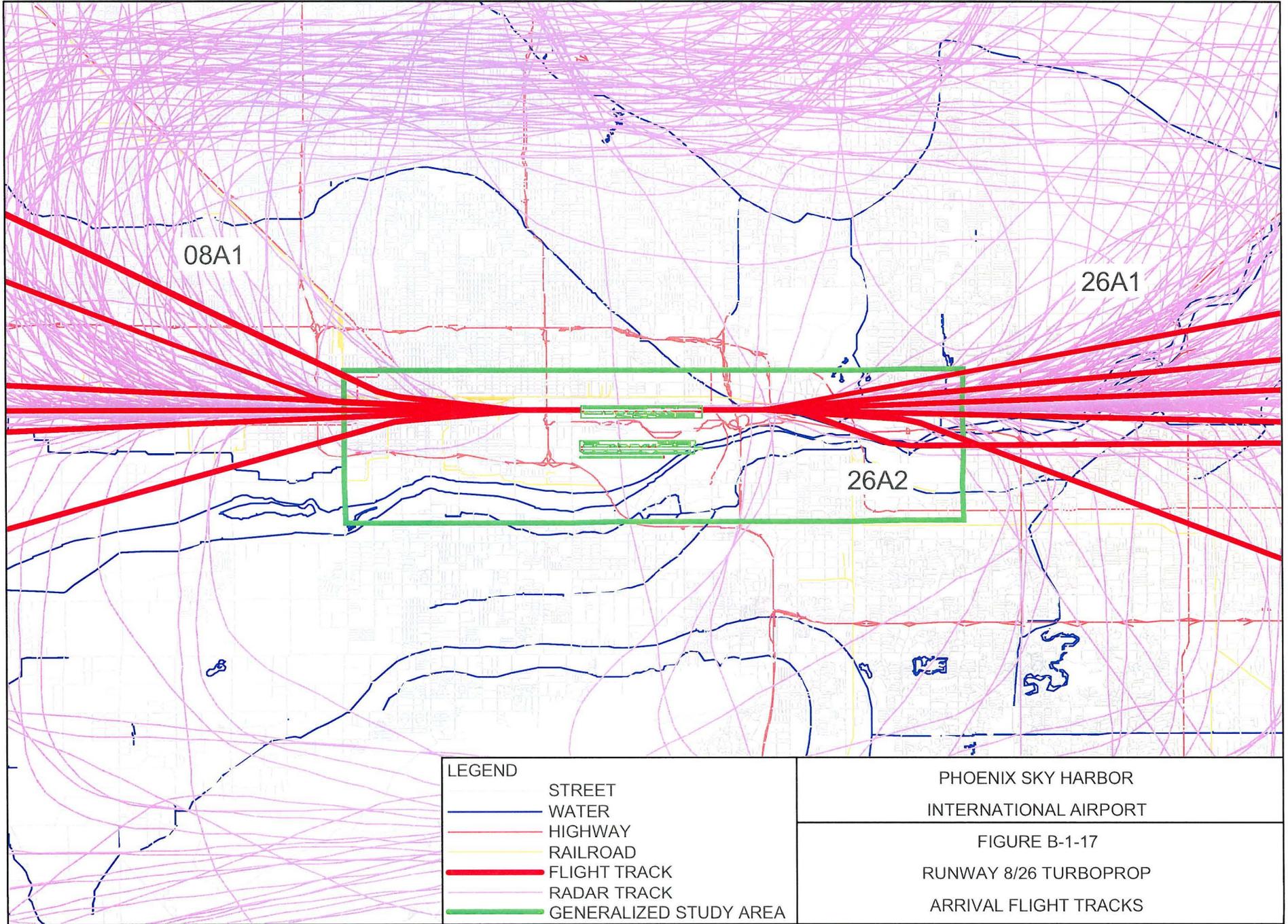


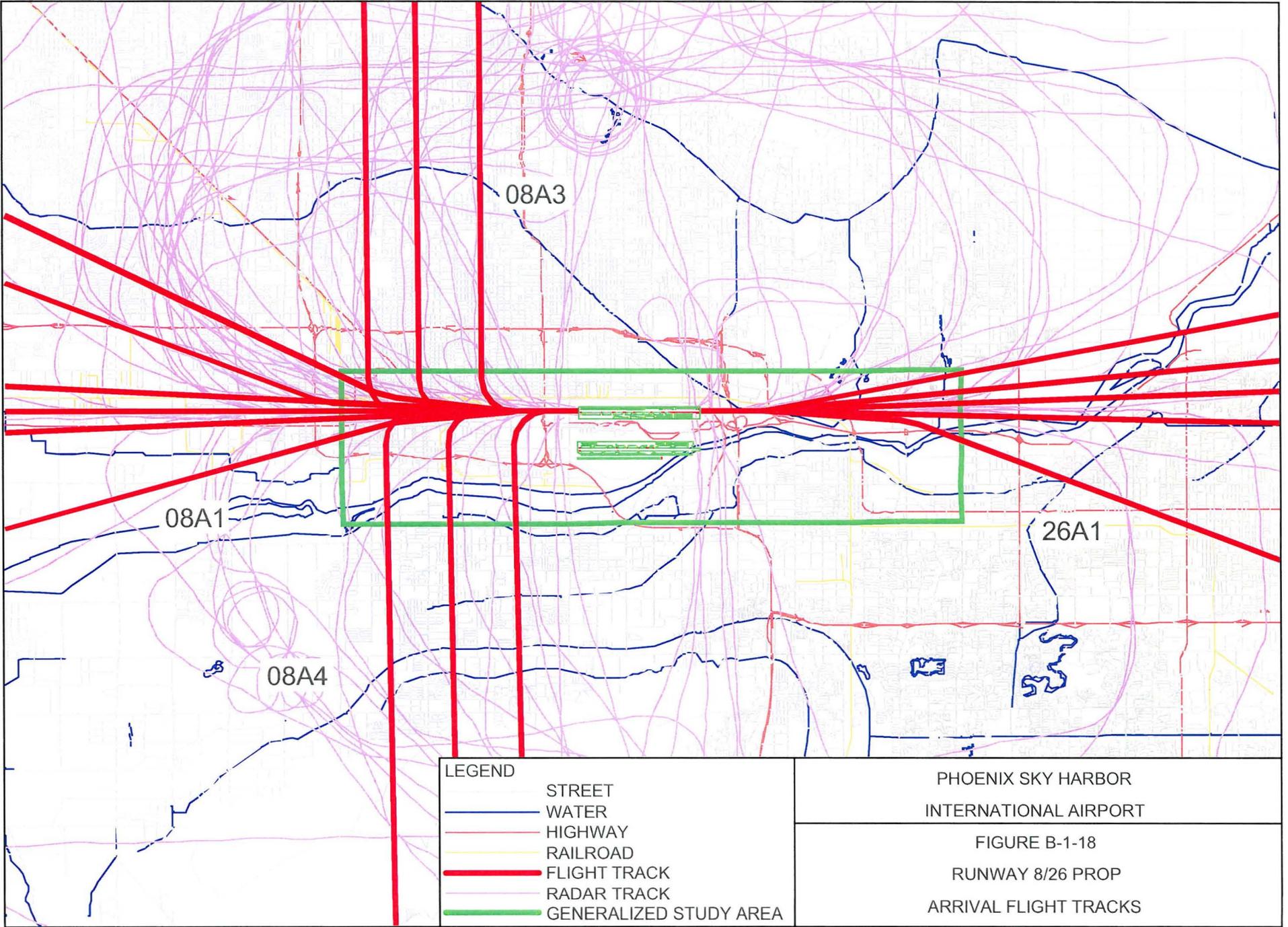


LEGEND	
	STREET
	WATER
	HIGHWAY
	RAILROAD
	FLIGHT TRACK
	RADAR TRACK
	GENERALIZED STUDY AREA

PHOENIX SKY HARBOR INTERNATIONAL AIRPORT
FIGURE B-1-15 RUNWAY 7R/25L PROP ARRIVAL FLIGHT TRACKS



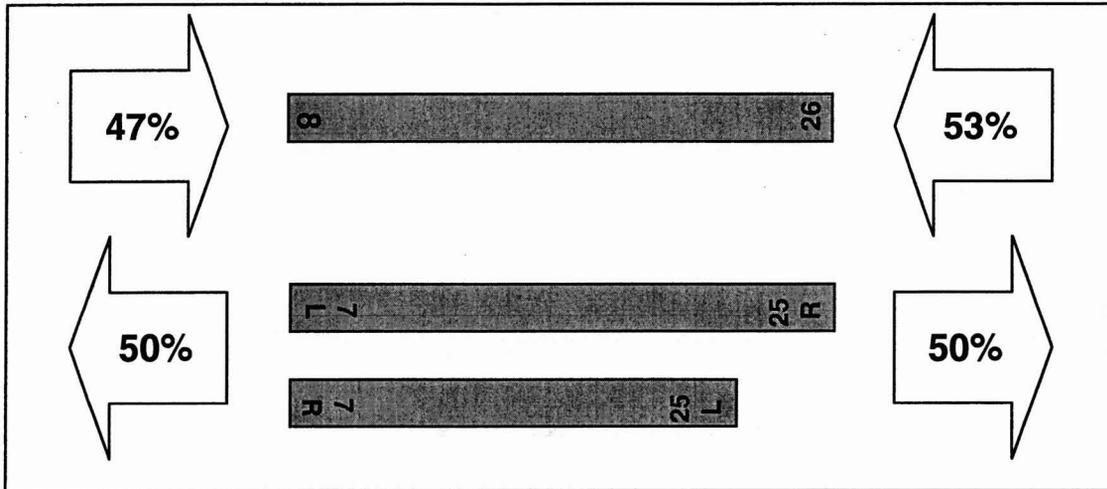




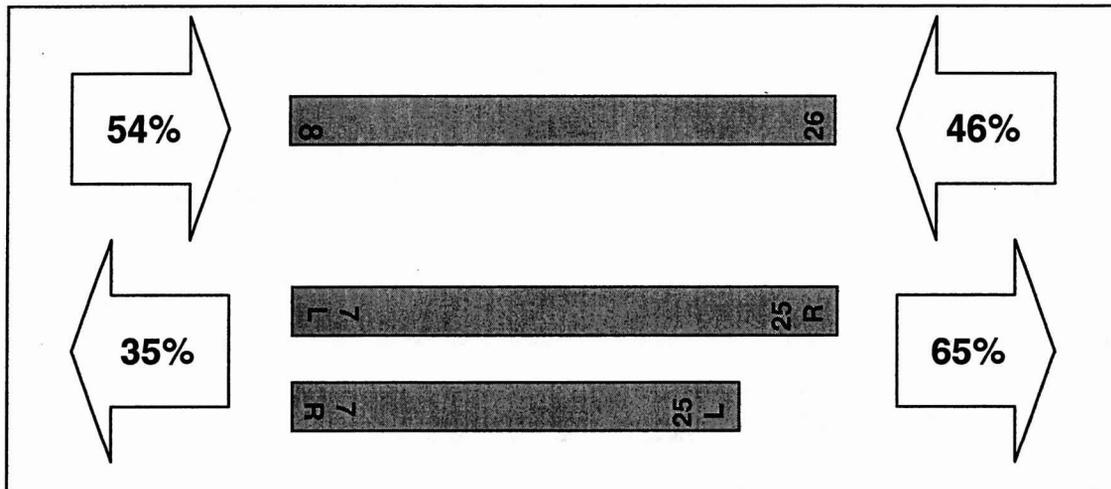
**FIGURE B-1-19**

**2001 Existing Condition East/West Flow Percentages  
Phoenix Sky Harbor International Airport  
Environmental Impact Statement**

**Daytime**



**Nighttime**



- Notes: 1. % Utilization of all aircraft types from TAMIS data recorded in CY2001.  
 2. % rounded to nearest number.  
 3. Daytime = 7AM – 10 PM, Nighttime = 10PM – 7AM

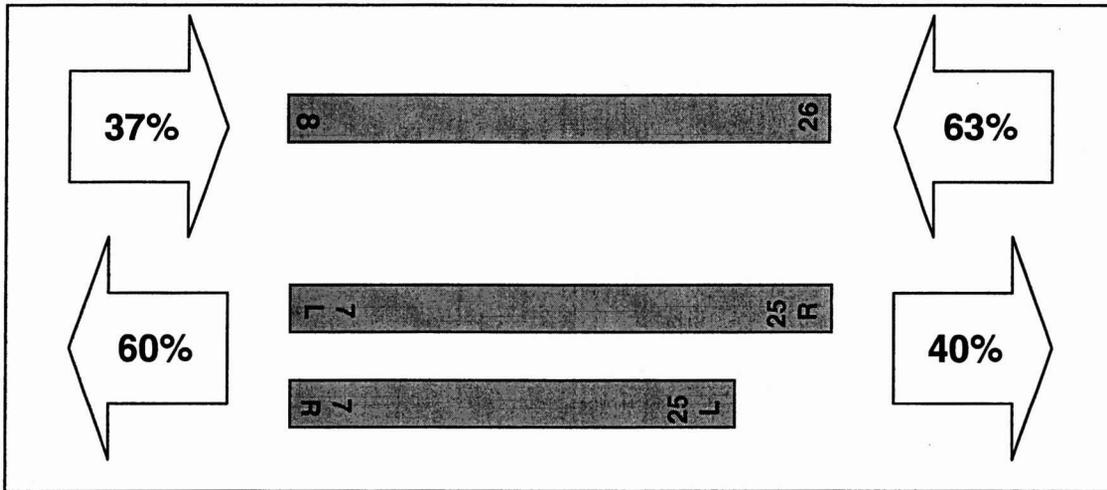
Arrival percentages add up to 100%.  
 Departure percentages add up to 100%.

Source: Phoenix Sky Harbor International Airport, 2001.

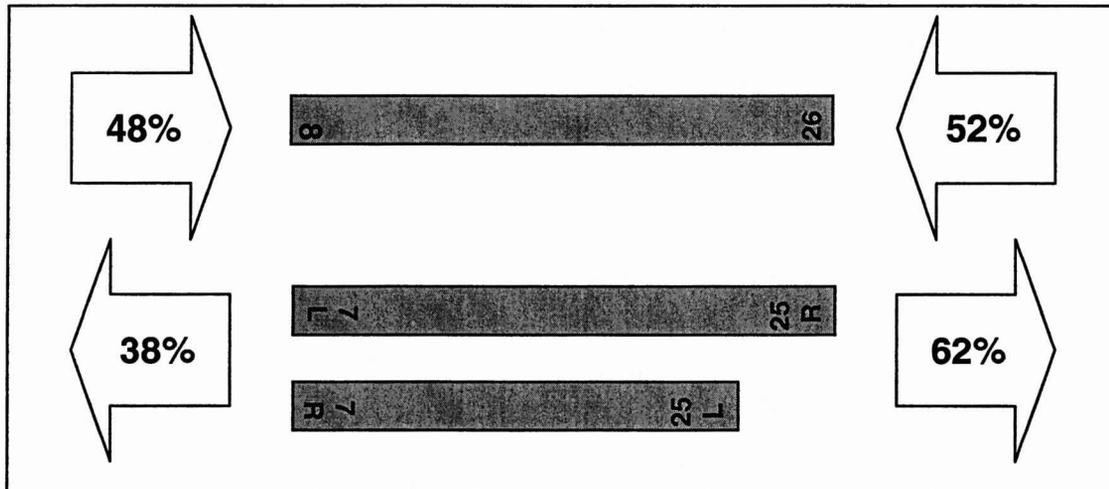
**FIGURE B-1-20**

**2001 Normalized Condition East/West Flow Percentages  
Phoenix Sky Harbor International Airport  
Environmental Impact Statement**

**Daytime**



**Nighttime**



Notes: 1. % Utilization of all aircraft types from TAMIS data recorded in CY2001.

2. % rounded to nearest number.

3. Daytime = 7AM – 10 PM, Nighttime = 10PM – 7AM.

Arrival percentages add up to 100%.

Departure percentages add up to 100%.

Source: Phoenix Sky Harbor International Airport, 2001.

## **2.0 2015 FUTURE CONDITION**

### **2.1 INTRODUCTION**

This section describes the methodology and assumptions to prepare for the 2015 Future Condition aircraft noise exposure contours for the operation at the Phoenix Sky Harbor International Airport (PHX). This aircraft noise analysis is based on the 2001 Existing Condition and Aviation Demand Forecasts provided by Leigh Fisher Associates.

#### **2.1.1 METHODOLOGY**

To estimate future noise levels at PHX, the same methodology of the 2001 Existing Condition was used to develop 2015 Future Condition noise contours (See **Section 1.1.1 Methodology**).

#### **2.1.2 DATA SOURCES**

The data collected and developed for the 2001 Existing Condition is the basis of the 2015 Future Condition. In addition, the following sources were reviewed for the future condition aircraft activity data development.

- Aviation Demand Forecasts by Leigh Fisher Associates
- World Airline Fleets 2002 – World Airline Reports July 2003
- North America Airlines Handbook – 2<sup>nd</sup> Edition
- Boeing and Airbus fleet order data – <http://surf.to/orders>

## **2.2 AIRCRAFT OPERATIONS AND FLEET MIX**

Airport operational factors that can significantly affected overall noise levels, as described by DNL, include the total number of operations, aircraft fleet mix, and the time of day when aircraft operations occur. The following paragraphs describe these factors in more detail.

### **2.2.1 NUMBER OF AIRCRAFT DEPARTURES AND ARRIVALS**

The Aviation Demand Forecasts were prepared by Leigh Fisher Associates and approved by the FAA in 2003. It provides the projected number of aircraft operations in 2015 by operational category and aircraft body type. According to the forecast, 670,000 operations are projected to occur in 2015 (an increase of 116,670 operations when compared to the 2001 existing condition).

**Table B-1-16** provides a summary of the 2015 aircraft operations by operational category derived from the Aviation Demand Forecasts.

## 2.2.2 AIRCRAFT TYPES

The most significant change projected to occur between the 2001 existing condition and the 2015 future condition is the air carrier fleet mix. Currently, air carriers have retired older aircraft types due to less demand and high maintenance cost. Benefits and advantages of replacing older and noisier aircraft with newer and quieter aircraft are lower maintenance costs, lower fuel costs, increased operational efficiency, and less noise impact.

The air carrier fleet mix assumptions are based on the age of the aircraft type, each airline's aircraft phase-out and order schedule obtained from North America Airlines Handbook – 2<sup>nd</sup> Edition, World Airline Fleets 2002 – World Airline Reports July 2003, and <http://surf.to/orders>. All three of these sources indicate aircraft order schedules by air carriers.

**Table B-1-17** presents replacement and retirement of air carrier aircraft types from 2001 to 2015. In general, it was assumed that the airlines operating at PHX in 2001 would still be in service in 2015. However, **Passenger and Activity Worksheets** and **Table B-1-2** (See **Section 1.1.2, Data Sources**) indicated that Air Jamaica and Allegro terminated their services at PHX at the end of 2001. American Airlines took over TWA's operations at PHX since December 2001. Thus, these three airlines were not included the fleet mix assumptions for 2015.

As **Table B-1-17** shows, older Boeing 727s and 737s would be phased out or replaced with newer aircraft types by 2015. Currently, most of the regional air carriers are replacing turbo-prop aircraft with regional jet, such as the Canadair Regional Jet and Embraer Jet.

A telephone interview was conducted to verify Casino Express' Boeing 737-200 replacement schedule. The carrier has decided to replace Boeing 737-200 with either Boeing 737-300 or –500 in next two years. For the purposes of noise analysis, it was conservative to use Boeing 737-300 because it is louder aircraft than Boeing 737-500.

Air Cargo and General Aviation fleet mix were remained unchanged from the 2001 Existing Condition. The assumptions and reasons why there are no changes in fleet mix in the 2015 Future Condition were described in below.

- Air cargo and general aviation aircraft are not operated as frequently as air carriers'. Thus, the useful life of air cargo and general aviation aircraft are generally longer than for air carriers.
- It could be assumed that a natural evolution of new general aviation and/or cargo aircraft would occur, but to be conservative, existing fleet mix would be appropriate to project future noise exposure.
- Future plans to upgrade or replace aircraft are unknown.

Louder and older aircraft might be replaced with newer and quieter aircraft in the future. However, it would be conservative to keep fleet mix as it was in 2001 to produce the worst case scenario noise contours.

According to the airport, the Arizona Air National Guard (Az ANG) will be replacing their existing KC-135s with the KC-135R model in October 2004. This aircraft will equip the CFM-56 engine. In the 2001 existing condition, there were KC-135E which were substituted to 707320 in the INM. All of them were replaced with KC-135R in the 2015 future condition.

### **2.2.3 AVERAGE ANNUAL DAY OPERATIONS**

**Tables B-1-18 through B-1-21** provide the detailed average daily operations by aircraft type, stage length, and time of day for air carrier, air cargo, general aviation, and military operations at PHX. These tables will be the basis of the INM input for 2015 future condition.

It should be noted that time of day and aircraft profiles described in **Sections 1.2.3 and 1.2.4** would not change in 2015 future condition.

### **2.3 FLIGHT TRACKS AND RUNWAY UTILIZATION**

This EIS is for the west terminal development. It does not include any changes to the current runway. Therefore, no modifications are anticipated to runway utilization in the 2015 future condition. However, an update was made to flight tracks due to the suspension of the Runway 25L Side Step Procedure. A categorical exclusion was conducted to identify the noise benefits of the side-step procedure. The result of the analyses indicated that the noise levels associated with a straight-in approach versus a side-step approach are not significant and likely unnoticeable to the human ear. Thus, as of March 27, 2002, the side-step procedure was suspended and replaced with a straight-in visual approach to Runway 25L. **Figures B-1-13, B-1-14, and B-1-15** were replaced with **Figures B-1-21, B-1-22, and B-1-23**, respectively, to identify the straight-in approach for the 2015 Future Condition. The categorical exclusion document is included in **Appendix B-3**.

As stated in **Section 1.3.2**, two runway utilization rates were established for the 2001 existing condition. It was assumed that the year 2015 would have typical aircraft activities throughout the year. Thus, the 2001 Normalized Condition runway utilization was used for the 2015 Future Condition noise modeling. **Table B-1-15** provides the runway utilization for air carriers, cargo, general aviation, and military aircraft operations by aircraft category and day/night. **Figure B-1-20** illustrates percentages for East and West flow for each runway during daytime and nighttime periods.

**Figures B-1-1 through B-1-12, B-1-16 through B-1-18, and B-1-21 through B-1-23** depict the departure and arrival flight tracks by runway ends and aircraft categories. **Tables B-1-12 and B-1-13** show detailed information regarding departure and arrival flight track utilization by jet, turboprop, and prop aircraft.

TABLE B-1-16

**2015 Future Condition Annual Aircraft Operations Summary  
Phoenix Sky Harbor International Airport Environmental Impact Statement  
Methodology and Assumptions Report**

<b>Operational Category</b>	<b>Body Type</b>	<b>Aircraft Type</b>	<b>Annual Operations</b>
Air Carrier	Widebody	B747-400, B767-200/-300, B777-200, A340	13,568
	Boeing 757	B757-200	40,693
	Narrowbody	B717-200, B737-500/-700/-800, A319, A320	388,688
	Regional Jet	Embraer 135, CRJ200	105,850
	Turboprop	Beech 1900, Cessna 421	23,200
<b>Total</b>			<b>572,000</b>
Cargo	Widebody	B767-200/-300, A300, A310, DC10, MD11	1,400
	Boeing 757	B757-200	2,800
	Narrowbody	B727-200, B737-300, A320, DC8, DC9	8,400
	Regional Jet	Lear Jet 35	4,600
	Turboprop	Cessna 208, Piper 28/32, Beech 1900, SW3	12,800
<b>Total</b>			<b>30,000</b>
General Aviation			63,000
Military			5,000
<b>Grand Total</b>			<b>670,000</b>

Source: Leigh Fisher Associates, 2003.  
URS Corporation, 2003.

TABLE B-1-17

2015 Future Condition Air Carrier's Aircraft Replacement / Retirement Summary  
 Phoenix Sky Harbor International Airport Environmental Impact Statement  
 Methodology and Assumptions Report

Airline Name	2001 Existing Condition Actual Aircraft Type	2001 Existing Condition INM Aircraft Type	2015 Future Condition INM Aircraft Type
Aeromexico	MD80	MD81	737700
	MD82	MD82	737700
	MD83	MD83	737700
Air Canada	A319	A319	A319
	A320	A320	A320
	B732	737N17	Retired
	B762	767JT9	767JT9
Air Jamaica	A320	A320	Out of Service at PHX
Alaska Air	B734	737400	737700
	B737/9	737700	737800
	MD80	MD83	737800
Allegro	B722	727EM2	Out of Service at PHX
America West	A319	A319	A319
	A320	A32023	A32023
	B733	737300	Retired
	B73Q	737N9	Retired
	B752	757RR	757RR
American	737	737700	737700
	B752	757RR	757RR
	B763	767300	767300
	F100	F10065	737700
	MD80	MD82	737700
American Eagle	E135	CL600	CL600
American Trans Air	B738	737700	737800
	B722	727EM2	737800
	B752	757RR	757RR
	L1011	L1011	Retired
Arizona Express	C421	BEC58P	BEC58P
British Airways	B772	777200	777200
Casino Express	B73Q	737N17	737500
Continental	B733	737300	737700
	B735	737500	737700
	B737/8/9	737700	737800
	B752	757RR	757RR
	MD80	MD81	Retired
	MD82	MD82	Retired
	MD83	MD83	Retired
Delta	B72Q	727EM2	737700
	B733	737300	737700
	B738	737700	737800
	B752	757PW	757PW
	B762	767CF6	767CF6
	B763	767300	767300
	MD80	MD83	Retired
	MD90	MD9025	Retired
Frontier	A319	A319	A319
	B733	737300	Retired
	B73Q	737N17	Retired

TABLE B-1-19

2015 Future Condition Air Cargo Average Daily Aircraft Operations Summary  
Phoenix Sky Harbor International Airport Environmental Impact Statement  
Methodology and Assumptions Report

INM Aircraft Type	Engine	Arrivals		Departures								Total
				Stage 1		Stage 2		Stage 3		Stage 4		
		Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	
727EM2	J	5.82	3.34	0.24	0.61	0.87	0.26	3.41	2.49	1.28	-	18.30
737300	J	-	0.05	-	-	-	-	-	0.05	-	-	0.11
757PW	J	2.25	1.59	0.07	1.60	1.02	-	0.78	0.34	0.03	-	7.67
767300	J	0.31	0.32	0.01	0.27	0.03	-	0.10	0.07	0.08	0.07	1.25
767CF6	J	0.15	0.18	-	-	-	-	0.24	0.09	-	-	0.66
A300	J	0.19	0.14	-	-	-	-	0.28	0.05	-	-	0.66
A310	J	0.02	0.01	-	-	-	-	0.02	0.01	-	-	0.04
A320	J	0.16	0.12	-	0.09	-	-	0.18	-	-	-	0.55
BEC58P	P	2.55	0.39	1.05	1.89	-	-	-	-	-	-	5.88
CNA441	T	0.05	0.47	0.52	-	-	-	-	-	-	-	1.05
DC1010	J	0.27	0.21	0.03	0.03	-	-	0.37	0.06	-	-	0.97
DC1030	J	0.07	0.04	-	-	-	-	0.07	0.04	-	-	0.23
DC870	J	0.09	0.09	-	-	0.02	-	0.04	0.13	-	-	0.37
DC93LW	J	0.95	0.89	-	-	-	-	1.28	0.56	-	-	3.68
DHC6	T	6.99	1.30	3.98	4.31	-	-	-	-	-	-	16.58
GASEPF	P	3.73	-	3.09	0.64	-	-	-	-	-	-	7.46
GASEPV	P	2.04	0.02	1.20	0.85	-	-	-	-	-	-	4.10
LEAR35	J	2.38	3.92	1.29	4.70	0.10	0.22	-	-	-	-	12.60
MD11GE	J	0.01	-	-	-	-	-	0.01	-	-	-	0.03
<b>Total</b>		<b>28.01</b>	<b>13.09</b>	<b>11.47</b>	<b>14.99</b>	<b>2.04</b>	<b>0.47</b>	<b>6.78</b>	<b>3.88</b>	<b>1.39</b>	<b>0.07</b>	<b>82.19</b>

Engine: J - Jet Day: 7:00 a.m. - 10:00 p.m.  
T - Turboprop Night: 10:00 p.m. - 7:00 a.m.  
P - Prop

Source: Leigh Fisher Associates, 2003.  
URS Corporation, 2003.

TABLE B-1-20

2015 Future Condition General Aviation Average Daily Aircraft Operations Summary  
 Phoenix Sky Harbor International Airport Environmental Impact Statement  
 Methodology and Assumptions Report

INM Aircraft Type	Engine	Arrivals		Departures														Total
				Stage 1		Stage 2		Stage 3		Stage 4		Stage 5		Stage 6		Stage 7		
		Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	
737300	J	-	0.04	-	-	-	-	-	-	-	0.04	-	-	-	-	-	-	0.08
737400	J	0.13	0.08	-	-	-	-	-	-	0.15	0.07	-	-	-	-	-	-	0.43
737700	J	0.08	-	-	-	-	-	-	-	-	-	-	-	0.08	-	-	-	0.16
747400	J	0.02	-	-	-	-	-	-	-	-	-	-	-	-	-	0.02	-	0.04
720B	J	0.20	-	-	-	-	-	-	-	-	-	0.20	-	-	-	-	-	0.40
727EM1	J	0.11	-	-	-	-	-	-	-	0.11	-	-	-	-	-	-	-	0.22
727EM2	J	0.43	0.21	-	-	-	-	-	-	-	-	0.62	0.02	-	-	-	-	1.28
737N17	J	0.15	0.04	-	-	-	-	-	-	0.12	0.08	-	-	-	-	-	-	0.38
74720B	J	0.04	-	-	-	-	-	-	-	-	-	-	-	-	-	0.04	-	0.08
757RR	J	0.13	0.13	-	-	-	-	-	-	-	-	0.19	0.07	-	-	-	-	0.51
A300	J	0.61	0.08	-	-	-	-	-	-	-	-	0.67	0.02	-	-	-	-	1.38
A319	J	0.04	-	-	-	-	-	-	-	0.04	-	-	-	-	-	-	-	0.08
A320	J	0.02	-	-	-	-	-	-	-	-	-	0.02	-	-	-	-	-	0.04
BEC58P	P	17.00	3.69	13.99	6.70	-	-	-	-	-	-	-	-	-	-	-	-	41.37
CIT3	J	1.51	0.04	1.35	0.20	-	-	-	-	-	-	-	-	-	-	-	-	3.10
CL600	J	1.36	0.04	1.23	0.16	-	-	-	-	-	-	-	-	-	-	-	-	2.79
CL601	J	0.87	0.10	0.90	0.06	-	-	-	-	-	-	-	-	-	-	-	-	1.92
CNA172	P	3.14	0.18	2.90	0.42	-	-	-	-	-	-	-	-	-	-	-	-	6.64
CNA206	P	4.56	0.27	4.31	0.52	-	-	-	-	-	-	-	-	-	-	-	-	9.68
CNA20T	P	0.06	-	0.06	-	-	-	-	-	-	-	-	-	-	-	-	-	0.12
CNA441	T	7.55	2.04	7.76	1.82	-	-	-	-	-	-	-	-	-	-	-	-	19.17
CNA500	J	1.21	0.04	1.20	0.04	-	-	-	-	-	-	-	-	-	-	-	-	2.49
CNA750	J	0.79	0.17	0.87	0.08	-	-	-	-	-	-	-	-	-	-	-	-	1.90
CVR580	T	-	0.02	-	-	-	-	0.02	-	-	-	-	-	-	-	-	-	0.04
DC1030	J	0.34	0.14	-	-	-	-	-	-	-	-	-	-	-	-	0.38	0.10	0.97
DC93LW	J	0.02	-	-	-	-	-	0.02	-	-	-	-	-	-	-	-	-	0.04
DC3	P	0.04	-	-	-	-	-	0.04	-	-	-	-	-	-	-	-	-	0.08
DHC6	T	7.61	1.24	6.49	2.36	-	-	-	-	-	-	-	-	-	-	-	-	17.69
EMB120	T	0.87	-	0.14	0.73	-	-	-	-	-	-	-	-	-	-	-	-	1.74
EMB145	J	0.73	0.10	-	-	-	-	-	-	0.79	0.04	-	-	-	-	-	-	1.66
FAL20	J	0.71	0.02	0.67	0.06	-	-	-	-	-	-	-	-	-	-	-	-	1.46
GASEPF	P	3.19	0.41	1.53	2.07	-	-	-	-	-	-	-	-	-	-	-	-	7.21
GASEPV	P	6.20	0.77	5.69	1.27	-	-	-	-	-	-	-	-	-	-	-	-	13.93
GIIB	J	0.83	-	0.76	0.07	-	-	-	-	-	-	-	-	-	-	-	-	1.66
GIV	J	1.07	0.10	1.10	0.06	-	-	-	-	-	-	-	-	-	-	-	-	2.33
GV	J	0.35	0.02	0.32	0.05	-	-	-	-	-	-	-	-	-	-	-	-	0.75
HS748A	T	0.36	-	0.33	0.04	-	-	-	-	-	-	-	-	-	-	-	-	0.73
IA1125	J	0.66	0.02	0.66	0.02	-	-	-	-	-	-	-	-	-	-	-	-	1.36
LEAR25	J	1.10	0.22	1.12	0.20	-	-	-	-	-	-	-	-	-	-	-	-	2.65
LEAR35	J	6.61	0.57	6.45	0.73	-	-	-	-	-	-	-	-	-	-	-	-	14.35
MD11GE	J	0.02	-	-	-	-	-	-	-	-	-	-	-	-	-	0.02	-	0.04
MD81	J	0.02	-	-	-	-	-	0.02	-	-	-	-	-	-	-	-	-	0.04
MU3001	J	4.47	0.28	4.42	0.33	-	-	-	-	-	-	-	-	-	-	-	-	9.49
SD330	T	0.04	-	0.04	-	-	-	-	-	-	-	-	-	-	-	-	-	0.08
SF340	T	0.02	-	-	-	0.02	-	-	-	-	-	-	-	-	-	-	-	0.04
<b>Total</b>		<b>75.24</b>	<b>11.06</b>	<b>64.30</b>	<b>18.00</b>	<b>0.02</b>	<b>-</b>	<b>0.10</b>	<b>-</b>	<b>1.20</b>	<b>0.22</b>	<b>1.69</b>	<b>0.11</b>	<b>0.08</b>	<b>-</b>	<b>0.47</b>	<b>0.10</b>	<b>172.60</b>

Engine: J - Jet Day: 7:00 a.m. - 10:00 p.m.  
 T - Turboprop Night: 10:00 p.m. - 7:00 a.m.  
 P - Prop

Source: Leigh Fisher Associates, 2003.  
 URS Corporation, 2003.

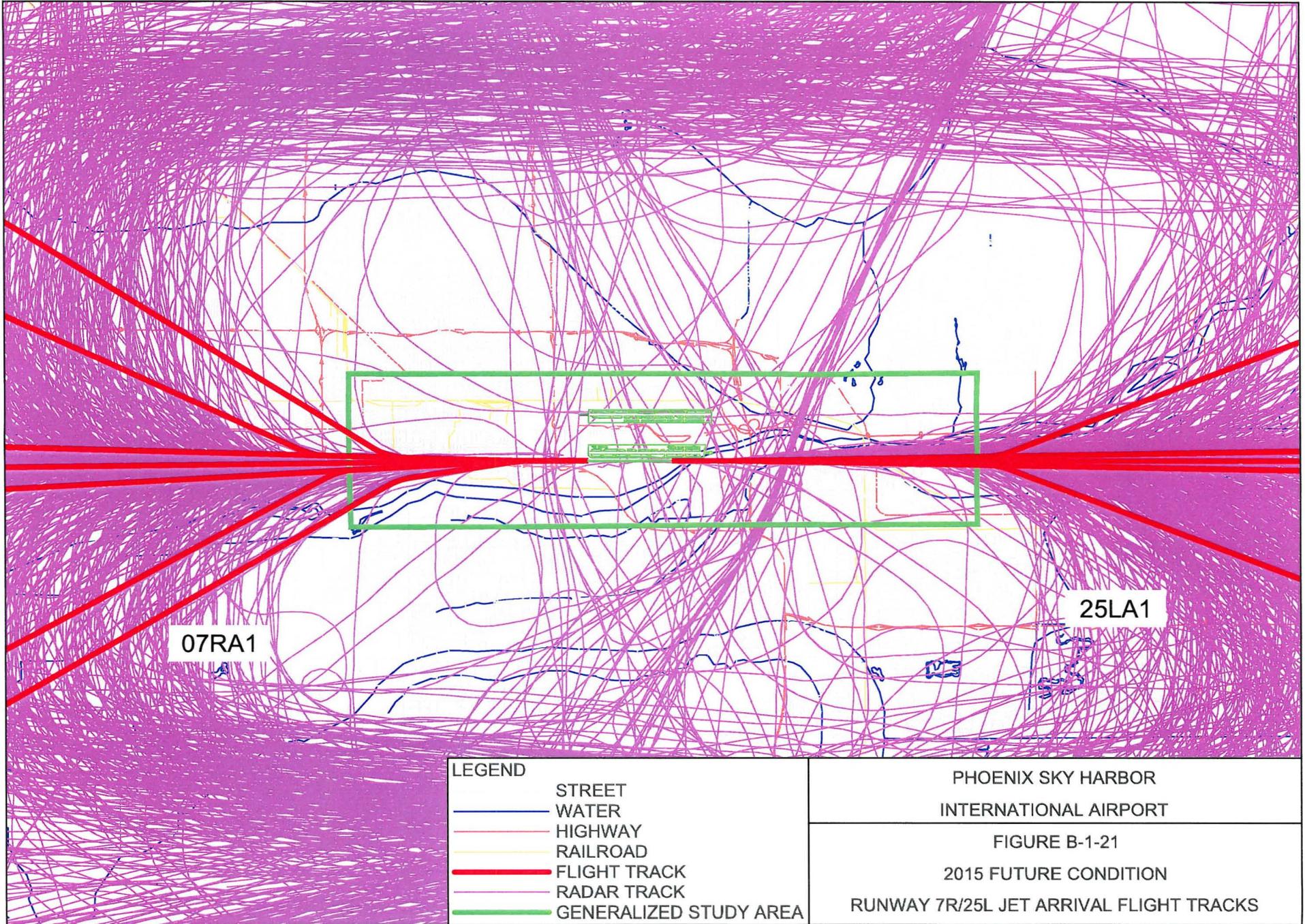
TABLE B-1-21

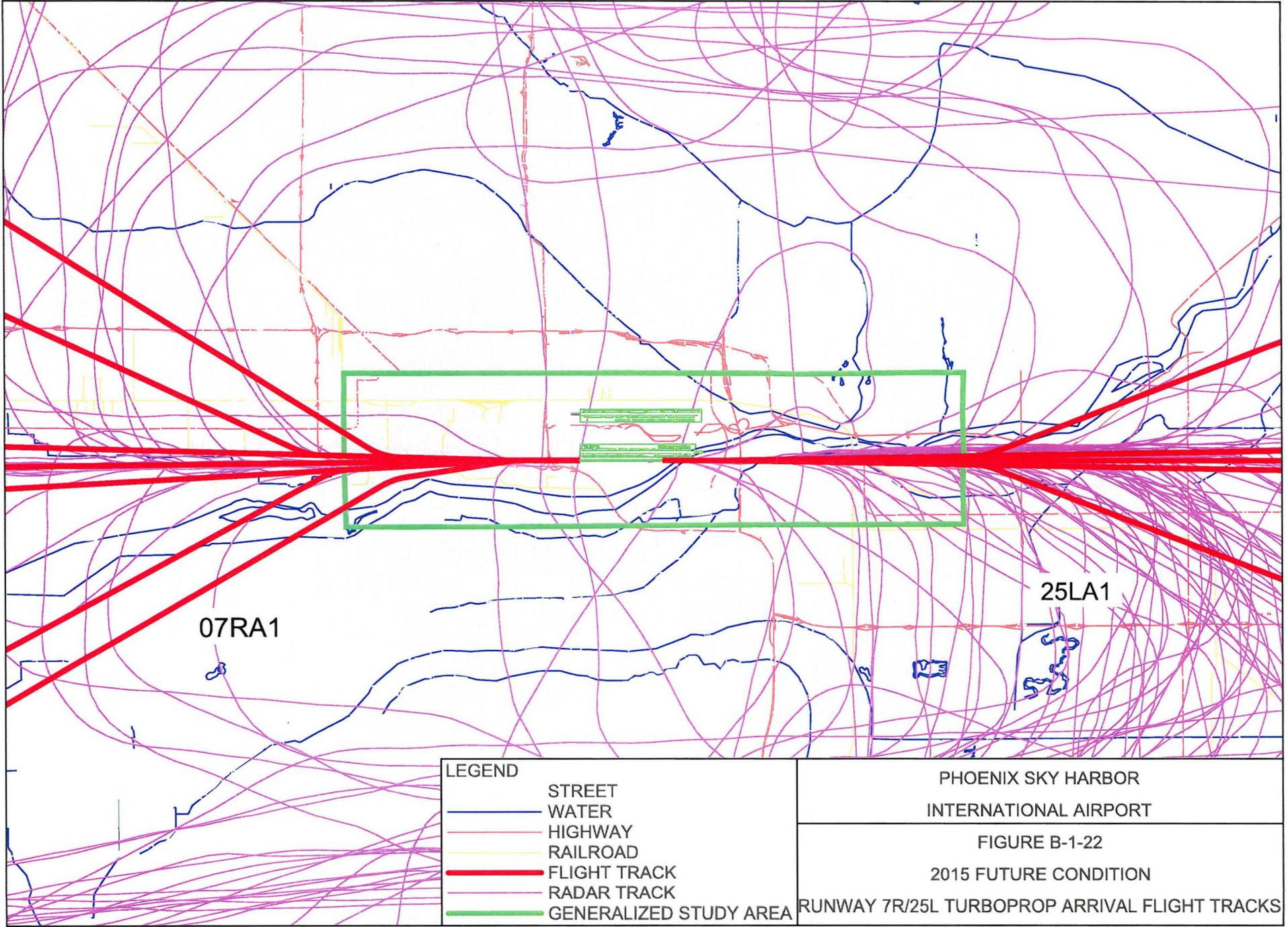
2015 Future Condition Military Average Daily Aircraft Operations Summary  
Phoenix Sky Harbor International Airport Environmental Impact Statement  
Methodology and Assumptions Report

INM Aircraft Type	Engine	Arrivals		Departures				Total
		Day	Night	Stage 1		Stage 2		
				Day	Night	Day	Night	
A4C	J	0.05	-	0.05	-	-	-	0.10
C141A	J	0.31	-	0.31	-	-	-	0.61
C5	J	0.05	-	0.05	-	-	-	0.10
C9A	J	0.10	-	0.10	-	-	-	0.20
CIT3	J	0.05	-	0.05	-	-	-	0.10
F-18	J	0.23	-	0.23	-	-	-	0.46
KC135R	J	4.14	0.06	4.15	0.04	-	-	8.38
LEAR35	J	0.10	-	0.10	-	-	-	0.20
MU3001	J	0.13	-	0.13	-	-	-	0.26
T37B	J	0.08	-	0.08	-	-	-	0.15
T-38A	J	0.15	-	0.15	-	-	-	0.31
BEC58P	P	0.05	-	0.05	-	-	-	0.10
CNA206	P	0.15	-	0.15	-	-	-	0.31
T34	P	0.05	-	0.05	-	-	-	0.10
C12	T	0.41	-	0.41	-	-	-	0.82
C130	T	0.08	-	-	-	0.08	-	0.15
DHC6	T	0.66	-	0.57	0.09	-	-	1.33
<b>Total</b>		<b>6.79</b>	<b>0.06</b>	<b>6.64</b>	<b>0.13</b>	<b>0.08</b>	<b>-</b>	<b>13.70</b>

Engine: J - Jet                      Day: 7:00 a.m. - 10:00 p.m.  
           T - Turboprop                Night: 10:00 p.m. - 7:00 a.m.  
           P - Prop

Source: Leigh Fisher Associates, 2003.  
           URS Corporation, 2003.





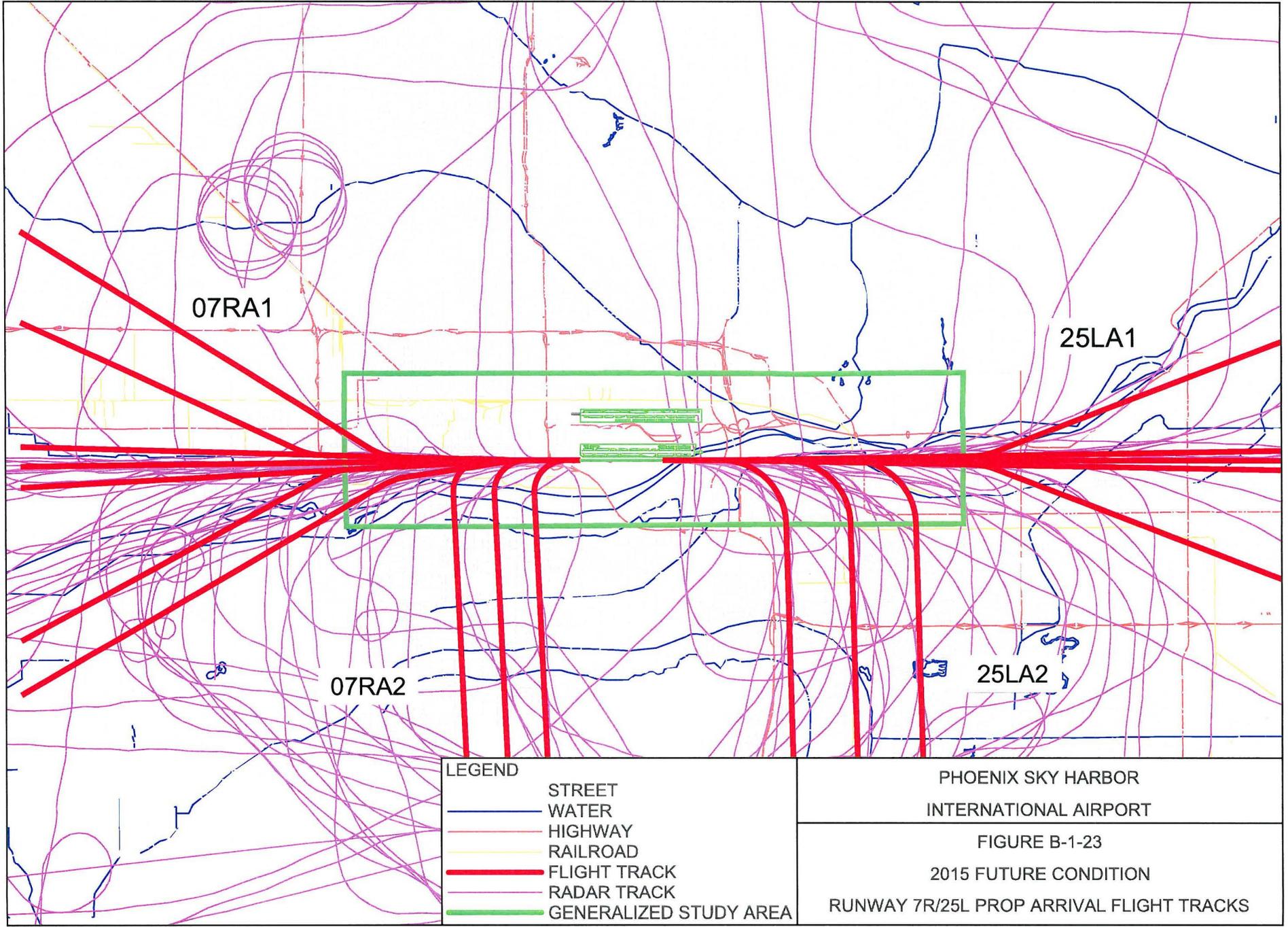
07RA1

25LA1

LEGEND	
	STREET
	WATER
	HIGHWAY
	RAILROAD
	FLIGHT TRACK
	RADAR TRACK
	GENERALIZED STUDY AREA

PHOENIX SKY HARBOR INTERNATIONAL AIRPORT
FIGURE B-1-22 2015 FUTURE CONDITION RUNWAY 7R/25L TURBOPROP ARRIVAL FLIGHT TRACKS

1"=12,000'



PHOENIX SKY HARBOR  
INTERNATIONAL AIRPORT  
FIGURE B-1-23  
2015 FUTURE CONDITION  
RUNWAY 7R/25L PROP ARRIVAL FLIGHT TRACKS

**PHOENIX SKY HARBOR  
INTERNATIONAL AIRPORT**

**AIRCRAFT NOISE**

**Prepared By:**

**URS**

**APPENDIX B-2**

## APPENDIX B-2

### AIRCRAFT NOISE

#### **INTRODUCTION**

This appendix describes several aircraft noise terms that are used throughout this EIS, aircraft noise on individuals and communities, and specific point analysis results.

#### **AIRCRAFT NOISE TERMINOLOGY**

**The Decibel, dB** - All sounds come from a sound source: a musical instrument, a voice, an airplane. The energy that produces these sounds is transmitted through the air in sound waves, or sound pressures, which impinge on the ear, creating the sound we hear.

Logarithms are used to express a ratio of two pressures; the first is the sound source and the second the reference pressure (the quietest sound we can hear). This ratio is referred to as a sound pressure level (SPL), which is expressed in decibels (dB). This logarithmic conversion means that the quietest sound we can hear has a SPL of 0 dB, while the loudest sounds we can hear have SPLs of about 120 dB. Most environmental sounds have SPLs ranging from 30 to 100 dB.

Because decibels are logarithmic, they do not behave like other numbers. For example, if two sound sources each produce 100 dB, when they are operated together they will produce 103 dB, not 200 dB. Four 100 dB sources operating together again double the sound energy, resulting in a total SPL of 106 dB, and so on. In addition, if one source is much louder than another, the two sources operating together will produce the same SPL as if the louder source were operating alone. For example, a 100 dB source plus an 80 dB source produce 100 dB when operating together. The louder source masks the quieter one.

Two useful rules of thumb to remember when comparing SPLs are: (1) most people perceive a 6 to 10 dB increase in SPL between two noise events to be about a doubling of loudness, and (2) changes in SPL of less than about 3 dB between two events are not easily detected outside of a laboratory.

**A-Weighted Decibel, dBA** - Frequency, or pitch, is an important characteristic of sound. When analyzing noise, it is of interest to know how much of the noise is low-, middle-, or high-frequency. This breakdown is important for two reasons. First, human ears are better equipped to hear middle and high frequencies; middle- and high-frequency noises are more annoying. High-frequency noise also produces more hearing loss. Second, engineering solutions to noise problems are different for different frequency ranges. The normal frequency range of hearing for most people extends from about 20 to 15,000 Hertz (Hz). The "A" weighting filter approximates the sensitivity of the human ear and helps in assessing the perceived loudness of various sounds.

**Maximum A-Weighted Noise Level,  $L_{max}$**  - A-weighted sound levels vary with time. For example, the sound increases as an aircraft approaches, then falls and blends into the background as the aircraft

recedes into the distance. Because of this variation, it is often convenient to describe a particular noise "event" by its maximum sound level ( $L_{max}$ ). For example, the aircraft noise level increases as the aircraft approaches and then decreases as the aircraft passes by. A lesser ambient A-weighted level is also measurable which is due to the background sounds that dominate before and after the aircraft passes. Note that  $L_{max}$  describes only one dimension of an event; it provides no information on the cumulative noise exposure generated by a sound source. In fact, two events with identical  $L_{max}$  may produce very different total exposures. One may be of very short duration, while the other may be much longer.

**Sound Exposure Level, SEL** - The most common measure of cumulative noise exposure for a single aircraft flyover is the SEL. SEL is a summation of the A-weighted sound energy at a particular location over the duration of a noise event. The duration is defined as the amount of time the noise event exceeds background levels. Mathematically, the SEL equation compresses (i.e., totals) this noise energy into a column one second wide. The height of the column is the SEL, measured in decibels.

Because the SEL is normalized to one second, it will almost always be larger in magnitude than the  $L_{max}$  for the event. In fact, for most aircraft events, the SEL is about 7 to 12 dB higher than the  $L_{max}$ . Also, the fact that it is a cumulative measure means that a higher SEL can result from either a louder or longer event, or some combination.

SEL provides a comprehensive way to describe noise events for use in modeling and comparing noise environments. Computer noise models base their computations on these SELs.

**Day-Night Average Sound Level** - The DNL represents noise as it occurs over a 24-hour period. It is the same as a 24-hour equivalent sound level ( $L_{eq}$ ), with one important exception: DNL treats nighttime noise differently from daytime noise. The equivalent sound level is the logarithm of the average value of the sound exposure during a stated time period. It is often used to describe sounds with respect to their potential for interfering with human activity. In calculating DNL, it is assumed that the A-weighted levels occurring at night (10:00 p.m. to 7:00 a.m.) are 10 dB louder than they really are. This penalty is applied to account for greater sensitivity to nighttime noise and because events at night are often perceived to be more intrusive.

## ***EFFECTS ON AIRCRAFT NOISE ON PEOPLE***

This section addresses the primary ways humans can be affected by airport noise: speech interference and sleep disturbance.

**Speech Interference** - A primary effect of aircraft noise is its tendency to drown out or "mask" speech, making it difficult to carry on a normal conversation. The sound level of speech decreases as the distance between a talker and listener increases. As an aircraft approaches and its sound level increases, it becomes harder to hear speech. As the background noise level increases, the talker must raise his/her voice, or the individuals must get closer together to continue talking.

For typical communication distances of 3 or 4 feet (1 to 1.5 meters), acceptable outdoor conversations can be carried on in a normal voice as long as the background noise outdoors is less than about 65 dBA.

If the noise exceeds this level, intelligibility would be lost unless vocal effort was increased or communication distance was decreased.

**Sleep Disturbance** - Research on sleep disruption from noise has led to widely varying observations. In part, this is because: (1) sleep can be disturbed without causing awakening, (2) the deeper the sleep the more noise it takes to cause arousal, (3) the tendency to awaken increases with age, and (4) other factors. In addition, most of the early sleep disturbance studies have been conducted under laboratory conditions, which minimizes the effect that habituation is believed to have on awakening. A field study of noise-induced sleep disturbance was conducted in residents' homes near Los Angeles International Airport (LAX), Castle Air Force Base (AFB), and control locations (non-aircraft influenced) in the Los Angeles area. The study supports the theory that habituation has a great influence on noise-induced sleep disturbance. The major findings of the study, which can be applied to long-term residents of areas with stable nighttime noise exposure, are as follows:

- A statistically reliable relationship between SEL and sleep disturbance (within 5 minutes of the event) was observed. That is, the higher the SEL, the greater the likelihood that the resident's sleep would be disturbed.
- Long-term noise exposure metrics, such as DNL, show no useful association with sleep disturbance.
- The average spontaneous (non-noise event related) awakening rate was approximately two per night, regardless of other noise sources (Fidell et al., August 1995).

Similar findings were found in a study of sleep disturbance near the Denver International Airport (DIA) before and after its opening in 1995 (Fidell et al., December 1995). A study in England (Ollerhead et al., December 1992) found that "very few people living near airports are at risk of any substantial sleep disturbance due to aircraft noise, even at the highest event noise levels."

**Vibration Resulting from Aircraft Operations** - Generally, fixed-wing subsonic aircraft do not generate vibration levels of the frequency or intensity to result in damage to structures. It has been found that exposure to normal weather conditions, such as thunder and wind, usually have more potential to result in significant structural vibration than aircraft (FAA, 1985b). Two studies that involved the measurement of vibration levels resulting from aircraft operations upon sensitive historic structures concluded that aircraft operations did not result in significant structural vibration.

For an EIS conducted at the Stinson Municipal Airport in San Antonio, Texas, vibration measurements were taken at several historic structures in the airport vicinity. At sites located between 1.1 and 2.5 miles from the airport, vibration of historic structures caused by aircraft operations were found to fall far below the most stringent structural damage criteria (Raba-Kistner Consultants, 1986).

At the Pueblo Grande Museum Culture Park located in Phoenix, Arizona, a vibration measurement analysis was accomplished to identify the source of vibration which appeared to be resulting in structural damage to ancient Hohokam Indian ruins located in the park. These ruins, constructed of adobe, are listed in the National Register of Historic Places and the area is designated as a National Historic

Landmark. Pueblo Grande is located in the vicinity of busy roadways, a railroad, and within 0.5 mile of the longest runway of the Phoenix Sky Harbor International Airport. The airport is one of the busiest in the U.S. and serves hundreds of large jet aircraft operations daily, including one of the largest aircraft in the world, the Boeing 747. The results of the vibration analysis indicated that activities at the Phoenix Sky Harbor International Airport create low or no risk of damage to the adobe ruins from vibration (King, 1991).

Given the conclusions reached in the studies cited above, significant vibration that has the potential to cause structural damage is not likely to result from the operation of PHX, with or without the airport improvements.

**Health Effects** - Regarding public health effects, the "Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety" stated, "At this time there is insufficient scientific evidence that non-auditory diseases are caused by noise levels lower than those that cause noise-induced hearing loss." That document identified an Leq not exceeding 70 dB (i.e. 8 hours per day) over a 40-year period for protection against noise-induced hearing loss (U.S. EPA, 1974). In 1981, the National Academy of Sciences, Committee on Hearing, Bioacoustics and Biomechanics (CHABA) was asked by the National Institute for Occupational Safety and Health (NIOSH) to consider research that might be performed to examine the effects on human health from long-term exposure to noise. The CHABA (Working Group 18), in their report, *The Effects on Human Health From Long-Term Exposure to Noise*, concluded that "evidence from available research is suggestive, but it does not provide definitive answers to the question of health effects other than to the auditory system of the long-term exposure to noise" (National Academy of Sciences, 1981). Consequently, the issue of whether significant non-auditory health effects results from aircraft noise still remains and requires additional research.

## **COMMUNITY RESPONSE**

Social survey data make it clear that individual reactions to noise vary widely for a given noise level. Nevertheless, as a group, people's aggregate response is predictable and relates well to measures of cumulative noise exposure such as DNL.

## **SPECIFIC POINT ANALYSIS**

Single point DNL noise exposure analysis was conducted for 169 locations shown on **Figures B-2-1** and **B-2-2** for 2001 Existing Condition and **Figure B-2-3** for 2015 Future Condition within the Generalized Study Area.

A detailed listing of the 2001 Existing Condition, 2001 Normalized Condition, and 2015 Future Condition DNL noise exposure levels for each of the 169 noise-sensitive locations is shown in **Table B-2-1**.

**TABLE B-2-1  
DNL AT SELECTED SITES**

Site #	Category	Name	2001 Existing Condition DNL	2001 Normalized Condition DNL	2015 Future Condition DNL
1	Church	First Hispanic Baptist Church	52.7	53.9	54.4
2	Church	First Presbyterian Church	52.7	54.3	54.6
3	Church	Unknown	60.9	61.6	61.8
4	Church	Tonto Church of Christ	61.3	61.7	61.3
5	Church	Unknown	61.2	61.7	61.6
6	Church	New Home Baptist Church	61.1	61.6	61.7
7	Church	Bethel CME	61.0	61.5	61.1
8	Church	Unknown	61.0	61.5	61.3
9	Church	Valley Christian Center	61.0	61.4	61.2
10	Church	Unknown	61.5	61.8	60.7
11	Church	Emmanuel Church Of God-Christ	61.2	61.5	60.6
12	Church	Unknown	61.1	61.5	60.8
13	Church	Unknown	61.1	61.5	60.9
14	Church	Unknown	61.4	61.7	60.5
15	Church	Our Lady Of Fatima	61.5	61.7	60.6
16	Church	Unknown	60.7	61.2	61.1
17	Church	Shiloh Baptist Church	61.8	62.2	61.5
18	Church	Berean Baptist Church	61.8	62.2	61.5
19	Church	Maricopa County Seventh Av	62.4	62.7	61.6
20	Church	Unknown	62.1	62.4	61.3
21	Church	House of Prayer-God In Christ	62.3	62.5	61.4
22	Church	St John Instnl Baptist Church	62.3	62.5	61.4
23	Church	Unknown	61.9	62.2	61.1
24	Church	Unknown	62.7	62.8	61.7
25	Church	Centro Cristiano De Alabanca	63.0	63.1	62.1
26	Church	Unknown	62.5	62.5	61.5
27	Church	Lone Star Baptist Church	63.9	63.4	62.8
28	Church	Unknown	63.5	63.0	62.9
29	Church	Unknown	63.8	63.5	63.2
30	Church	Hope Evangelistic Community Center	67.3	67.0	66.0
31	Church	Unknown	62.1	62.6	62.5
32	Church	St. Anthony Catholic Church	62.2	62.8	62.7
33	Church	New World Educational Center	61.6	62.2	62.2
34	Church	Primera Iglesia Metodista	63.2	63.9	64.0
35	Church	Catholic Diocese	54.0	56.0	55.5
36	Church	Unknown	56.0	58.3	57.1
37	Church	Immaculate Heart Church	56.5	58.4	57.8
38	Church	First Institutional Baptist	57.8	59.8	59.0
39	Church	Tanner Chapel	56.6	58.5	57.9
40	Church	Open Door Church	56.0	58.3	57.1
41	Church	Pentecost Church-Jesus Christ	56.3	58.6	57.4
42	Church	Bethlehem Baptist Church	56.3	58.4	57.5
43	Church	Phillips Memorial CME Church	56.6	58.8	57.8

**TABLE B-2-1 (CONTINUED)  
DNL AT SELECTED SITES**

Site #	Category	Name	2001 Existing Condition DNL	2001 Normalized Condition DNL	2015 Future Condition DNL
44	Church	Pilgrim Rest Baptist Church	58.6	60.8	59.6
45	Church	Unknown	57.1	59.0	58.4
46	Church	Unknown	65.1	66.4	65.9
47	Church	Unknown	65.0	65.9	65.8
48	Church	Unknown	67.8	67.8	66.5
49	Church	Unknown	68.7	68.4	67.4
50	Church	Unknown	70.1	69.6	68.6
51	Church	Unknown	70.7	70.2	69.1
52	Church	Unknown	69.8	69.6	68.5
53	Church	Unknown	70.4	70.1	69.0
54	Church	Sacred Heart Parish	66.9	67.3	65.9
55	Church	Mt Zion Baptist Church	68.4	68.6	67.2
56	Church	Greater Friendship Baptist Church	58.2	60.2	59.3
57	Church	Beautiful Savior Lutheran Church	55.6	55.0	56.0
58	Church	Tempe Third Lds Ward	54.8	54.2	55.2
59	Church	Church in Tempe	55.4	54.8	55.9
60	Church	Unknown	61.0	60.4	60.9
61	Church	City Of The Lord Church	58.7	58.1	58.8
62	Church	Unknown	59.6	58.9	59.5
63	Church	First Southern Baptist Church	52.2	51.5	52.8
64	Church	Unknown	52.2	51.6	52.9
65	Church	Arizona State University	57.1	56.5	57.4
66	Church	Newman Center At ASU	57.9	57.2	58.1
67	Church	Alleluia Lutheran Student	54.8	54.1	55.4
68	Church	Arizona State University	53.9	53.3	54.6
69	Church	Arizona State University	54.5	53.8	55.1
70	Church	Tempe Seventh Day Adventist	51.9	51.2	52.5
71	Church	Tempe Friends Meeting-Quaker	50.5	49.8	51.2
72	Church	University Lutheran Church	50.3	49.6	51.0
73	Church	City In The Desert Metro Church	51.8	51.2	52.5
74	Church	Sonrise Faith Community Church	51.3	50.7	52.1
75	Church	Unknown	62.0	62.0	61.6
76	Church	Unknown	54.0	54.1	55.1
77	Hospital	Memorial Hospital	62.5	62.9	61.9
78	Church	Unknown	66.1	66.5	65.1
79	Park	Bolin Memorial Park	54.1	55.2	55.8
80	Park	Carnegie Library Park	54.8	56.0	56.5
81	Park	Patriots Park	55.3	56.8	56.9
82	Park	Central Park	62.7	63.3	63.2
83	Park	Grant Park	62.4	63.1	63.2
84	Park	Harmon Park	63.1	63.4	62.3
85	Park	Alkire Park	61.9	62.0	60.9
86	Park	Nuestro Park	66.7	67.0	65.5
87	Park	University Park	51.8	53.2	53.8
88	Park	University Park	51.9	53.3	53.9
89	Park	University Park	51.9	53.5	53.9

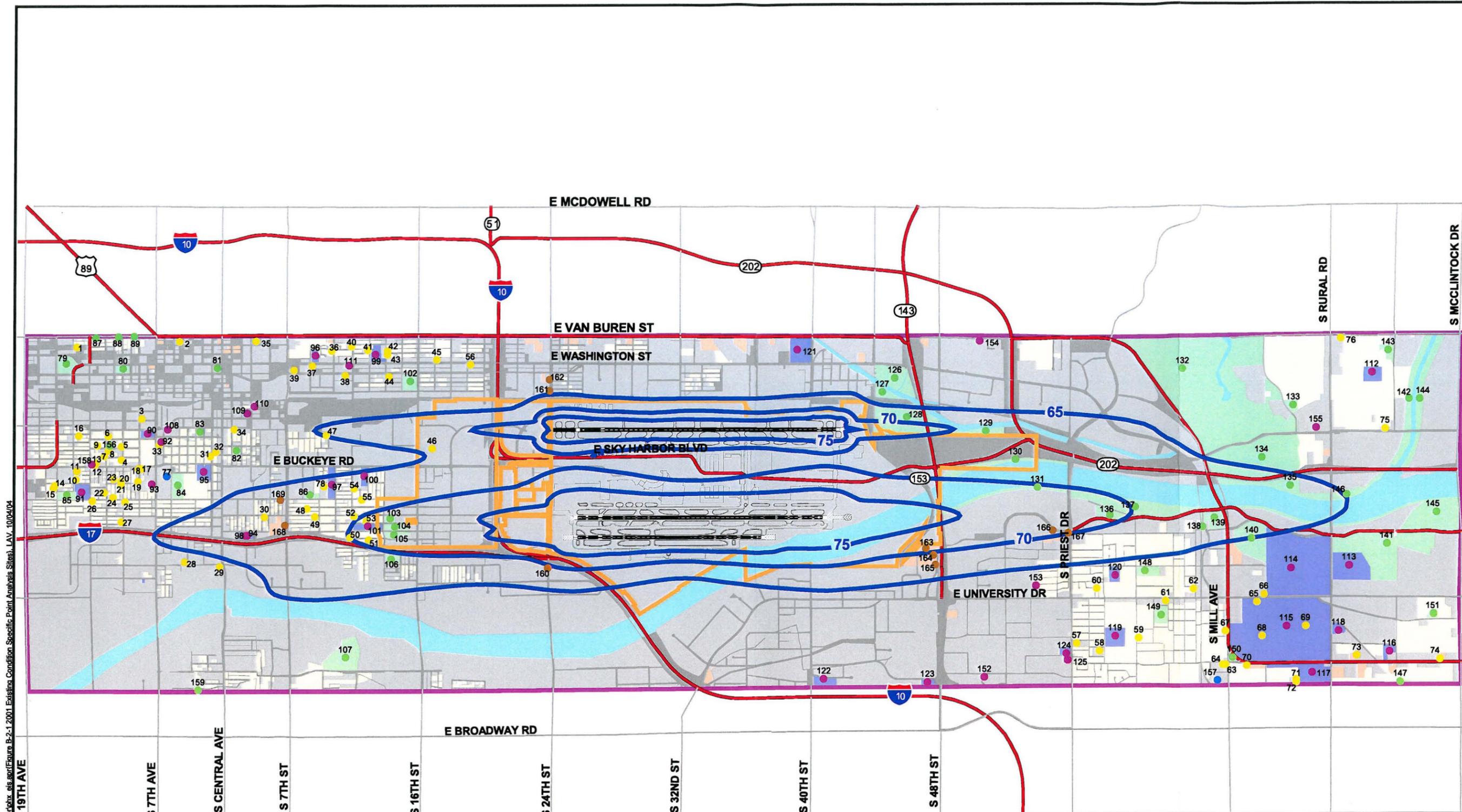
**TABLE B-2-1 (CONTINUED)  
DNL AT SELECTED SITES**

Site #	Category	Name	2001 Existing Condition DNL	2001 Normalized Condition DNL	2015 Future Condition DNL
90	School	Paul Lawrence Dunbar	61.6	62.3	62.4
91	School	Mary McLeod Bethune Elementary	62.0	62.2	61.0
92	School	Tertulia Elementary	61.7	62.3	62.4
93	School	Unknown	62.7	63.0	61.8
94	School	Friendly House Acad Del Pueblo El	67.4	66.6	66.0
95	School	Lowell Elementary	62.6	63.0	62.2
96	School	Faith North Montessori School	55.9	58.0	57.1
97	School	Silvestre S. Herrera	66.0	66.4	65.1
98	School	Friendly House Acad Del Pueblo El	67.3	66.6	66.0
99	School	Augustus H. Shaw, JR. High.	56.6	58.9	57.7
100	School	Maricopa Skill Center	65.4	65.9	64.9
101	School	Ann Ott Elementary	70.6	70.2	69.1
102	Park	Eastlake Park	59.3	61.5	60.2
103	Park	Barrios Unidos Park	71.2	70.9	69.7
104	Park	Barrios Unidos Park	71.5	71.2	70.0
105	Park	Barrios Unidos Park	71.8	71.3	70.2
106	Park	Green Valley Park	69.2	69.3	67.9
107	Park	Rio Salado Park	58.0	58.3	58.5
108	School	Enterprise Academy	61.8	62.5	62.7
109	School	Phoenix Job Corp Center	62.0	63.0	63.0
110	School	Unknown	61.0	62.2	62.2
111	School	Unknown	57.1	59.3	58.3
112	School	Laird School	57.2	57.3	58.3
113	School	Arizona State University	60.5	60.0	60.6
114	School	Arizona State University	60.8	60.2	60.8
115	School	Arizona State University	54.6	53.9	55.2
116	School	School UNDER CONSTRUCTION	52.0	51.3	52.7
117	School	Arizona State University	50.8	50.2	51.6
118	School	Arizona State University	53.9	53.2	54.5
119	School	Scalessel	55.9	55.2	56.3
120	School	Scales School	62.5	61.9	62.2
121	School	Gateway Community College	57.3	58.2	58.0
122	School	Phoenix Academy of Performing Arts	55.1	54.9	55.1
123	School	University of Phoenix	54.5	54.1	54.2
124	School	Collins College	55.0	54.4	55.3
125	School	Collins College	54.5	53.9	54.8
126	Park	Pueblo Grande Museum & Cultural Park	61.1	62.2	61.1
127	Park	Pueblo Grande Museum & Cultural Park	63.0	64.2	63.0
128	Park	Pueblo Grande Museum & Cultural Park	67.4	68.8	68.0
129	Park	Pueblo Grande Museum & Cultural Park	68.6	70.1	69.9
130	Park	Rio Salado Park	66.8	66.5	66.0
131	Park	Rio Salado Park	70.7	70.0	68.6

**TABLE B-2-1 (CONTINUED)  
DNL AT SELECTED SITES**

Site #	Category	Name	2001 Existing Condition DNL	2001 Normalized Condition DNL	2015 Future Condition DNL
132	Park	Canal Park	57.5	57.8	58.5
133	Park	Tempe Women's Club Park	61.2	61.7	62.1
134	Park	Papago Park	64.4	63.9	63.3
135	Park	Rio Salado Park	66.0	65.4	64.1
136	Park	Rio Salado Park	70.9	70.4	69.2
137	Park	Rio Salado Park	70.3	69.7	68.4
138	Park	Unknown	67.4	67.0	66.2
139	Park	Tempe Beach Park	67.6	67.2	66.2
140	Park	Hayden Butte Park	65.0	64.7	64.5
141	Golf Course	ASU-Karsten Golf Course	62.5	62.1	62.1
142	Golf Course	Rio Salado Golf Course	60.0	60.2	60.3
143	Park	Indian Bend Park	55.1	55.1	56.2
144	Golf Course	Rio Salado Golf Course	59.9	60.1	60.2
145	Golf Course	ASU-Karsten Golf Course	63.8	63.4	62.6
146	Park	Rio Salado Park	65.4	64.8	63.6
147	Park	Hudson Park	49.8	49.2	50.6
148	Park	Jaycee Park	62.8	62.2	62.5
149	Park	Mitchell Park	57.3	56.7	57.6
150	Park	Birchett Park	52.6	51.9	53.3
151	Park	Creamery Park	55.2	54.6	55.5
152	School	Rio Salado College	54.4	53.9	54.1
153	School	Unknown	62.0	61.4	61.8
154	School	Unknown	57.5	58.5	57.4
155	School	Unknown	62.5	62.7	62.5
156	Park	Unknown	61.1	61.6	61.4
157	Hospital	Unknown	51.3	50.7	51.8
158	School	Unknown	61.1	61.5	60.8
159	Park	Unknown	57.4	57.9	57.4
160	Hotel	Best Western Airport Inn	69.2	69.1	68.7
161	Hotel	Motel 6	64.2	66.0	64.8
162	Hotel	Howard Johnson Phoenix Airport	62.0	63.8	62.7
163	Hotel	Hilton Phoenix Airport	71.0	70.5	69.7
164	Hotel	Courtyard by Marriott Phoenix Airport	69.3	68.8	68.2
165	Hotel	Sleep Inn Airport	67.4	66.8	66.3
166	Hotel	Southwest Inn at Eagle Mountain	70.8	70.5	69.7
167	Hotel	Amerisuites Tempe Airport	70.1	69.8	69.1
168	Hotel	E-Z 8 Motels	68.2	67.6	66.9
169	Hotel	Pay Less Inn	66.5	66.5	65.3

Source: URS Corporation, 2002.



c:\516\c\1\_375-GIS Data 2\GIS\Phoenix\_eis\Applications\ap\obx\_eis\ap\Figure B-2-1 2001 Existing Condition Specific Point Analysis Sites.LAV\_10/04/04

**LEGEND**

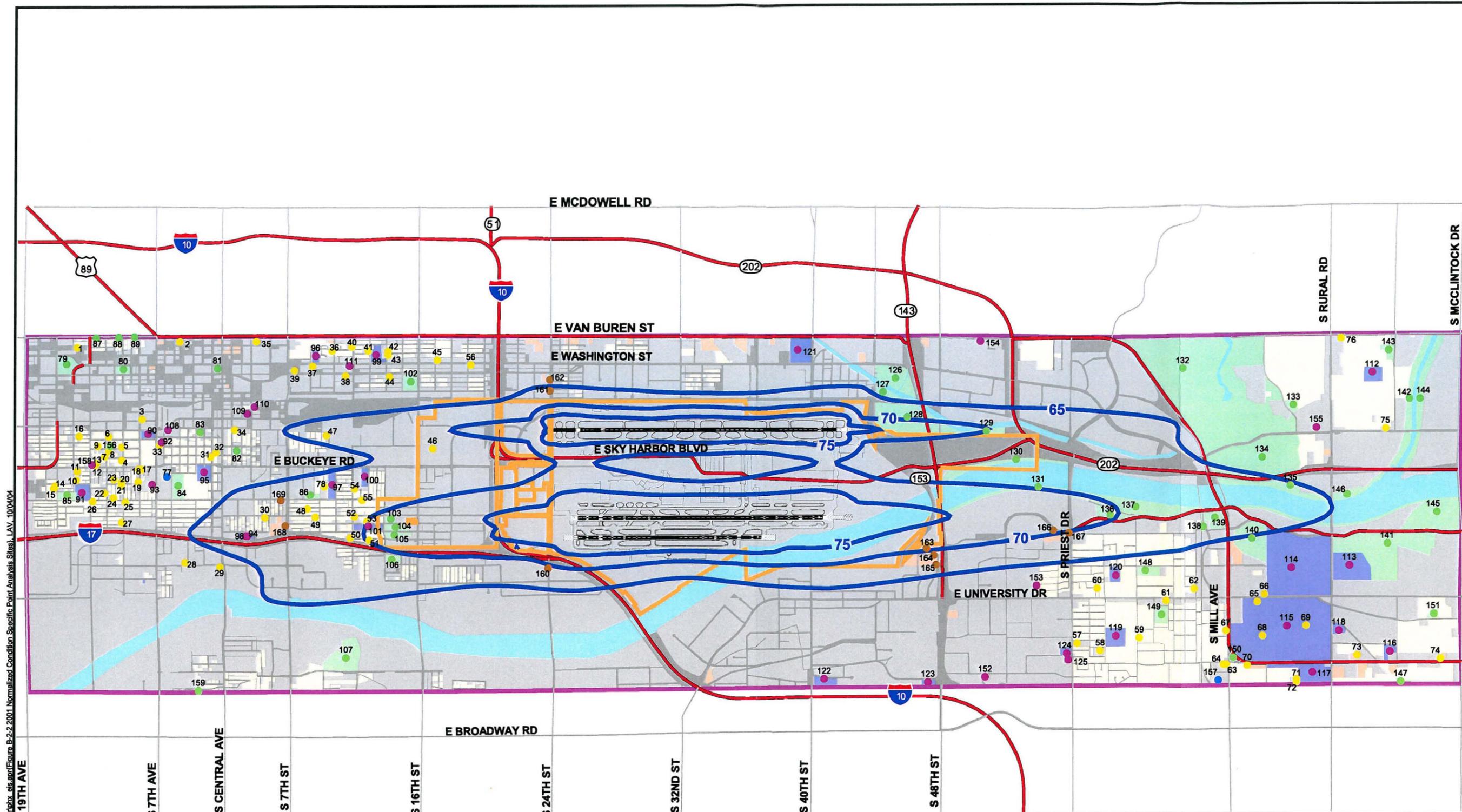
<b>Sites</b>	<b>2001 Existing DNL Contours</b>	<b>Generalized Study Area Land Use</b>	<b>Airport Property Boundary</b>
● Hospital	65 DNL	■ Parks and Recreation	□
● Church	70 DNL	■ Road Right of Way/Pavement	
● School	75 DNL	■ School	
● Park/Recreation	<b>Roadways</b>	■ Residential	
● Hotel	▬ Major Highways	■ Hotel/Transient Residential	
	▬ Other Roads	■ River Bottom	
		■ Others	

Scale: 1" = 4000'

2000 0 2000 4000 Feet

2001 Existing Condition  
Specific Point Analysis Sites

FIGURE  
B-2-1



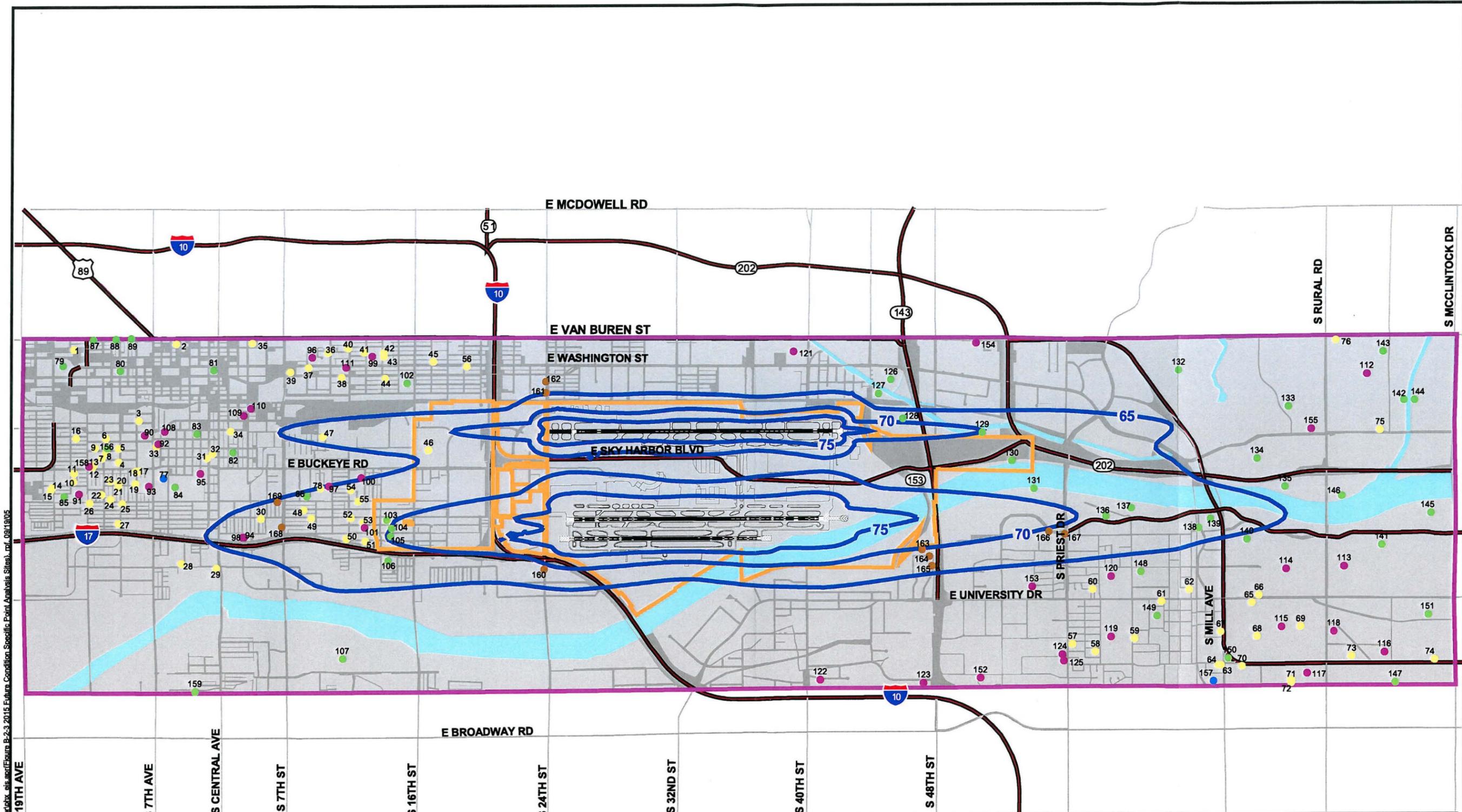
c:\516\c\c1\_375-GIS Data 2\GIS\Phoenix\_eis\Applications\mohobx\_eis\app\Figure B-2-2 2001 Normalized Condition Specific Point Analysis Sites.LAV\_10/04/04

**LEGEND**

<p><b>Sites</b></p> <ul style="list-style-type: none"> <li><span style="color: blue;">●</span> Hospital</li> <li><span style="color: yellow;">●</span> Church</li> <li><span style="color: purple;">●</span> School</li> <li><span style="color: green;">●</span> Park/Recreation</li> <li><span style="color: brown;">●</span> Hotel</li> </ul>	<p><b>2001 Normalized DNL Contours</b></p> <ul style="list-style-type: none"> <li><span style="color: blue;">/65/</span> 65 DNL</li> <li><span style="color: blue;">/70/</span> 70 DNL</li> <li><span style="color: blue;">/75/</span> 75 DNL</li> </ul> <p><b>Roadways</b></p> <ul style="list-style-type: none"> <li><span style="color: red;">—</span> Major Highways</li> <li><span style="color: grey;">—</span> Other Roads</li> </ul>	<p><b>Generalized Study Area Land Use</b></p> <ul style="list-style-type: none"> <li><span style="color: lightgreen;">■</span> Parks and Recreation</li> <li><span style="color: grey;">■</span> Road Right of Way/Pavement</li> <li><span style="color: purple;">■</span> School</li> <li><span style="color: yellow;">■</span> Residential</li> <li><span style="color: orange;">■</span> Hotel/Transient Residential</li> <li><span style="color: cyan;">■</span> River Bottom</li> <li><span style="color: lightgrey;">■</span> Others</li> </ul>	<p><span style="border: 1px solid orange; display: inline-block; width: 20px; height: 10px;"></span> Airport Property Boundary</p> <div style="text-align: center;"> </div> <p style="text-align: center;">2000 0 2000 4000 Feet Scale: 1" = 4000'</p>
--	--	---	--

2001 Normalized Condition Specific Point Analysis Sites

FIGURE B-2-2



c:\\_516\c\l\_375-GIS Data 2\GIS\Phoenix\_ais\applications\arc\dotx\_ais\_and\Figure B-2-3 2015 Future Condition Specific Point Analysis Sites1.mxd, 09/19/05

2015 Future Condition Specific Point Analysis Sites

FIGURE B-2-3

**PHOENIX SKY HARBOR  
INTERNATIONAL AIRPORT**

**SIDE-STEP  
CATEGORICAL EXCLUSION**

**Prepared By:**

**URS**

**APPENDIX B-3**

**DEPARTMENT OF TRANSPORTATION  
FEDERAL AVIATION ADMINISTRATION  
CATEGORICAL EXCLUSION DETERMINATION  
*Phoenix TRACON/Phoenix Sky Harbor Airport  
Straight-In Visual Approach to RWY25L Procedure***

**Description of Action:**

The Side Step procedure was implemented with the opening of the third runway at Phoenix Sky Harbor Airport in October of 2000 as a result of the Inter-Governmental Agreement, between the cities of Tempe and Phoenix. The Runway 25L Side Step Procedure requires aircraft landing on Runway 25L to make a straight in approach to Runway 25R (center), and at approximately Sun Devil Stadium (3 mile final) "side step" 800 feet left to align with the centerline of Runway 25L and land on Runway 25L. The Runway 25L landing threshold is located 2500 feet west of the Runway 25R landing threshold. After realigning with Runway 25L, the aircraft is below the glide path due to the displaced threshold. In addition to being below the glide slope, the side step procedure caused untimely communications between pilots and ATC, frequently requiring immediate action on the part of pilots, and led to uncertainty in the cockpit, inefficient runway utilization, and unplanned missed approaches. These significant safety concerns were identified by National Air Traffic Controllers Association (NATCA) and the Air Carrier community.

On March 27, 2002 following the failure of the flight check of the Charted Visual Side Step Procedure, the Runway 25L Side Step Procedure was suspended. The Side Step procedure was replaced with a straight-in Visual Approach to Runway 25L. The purpose of the straight-in procedure was to allow aircraft to be on glide path and for pilots to preplan their arrival to Runway 25L in a timely manner.

The City of Phoenix conducted two noise studies to evaluate the impact of the straight in procedure as compared to the side step procedure. The first analysis looked at the total noise of all operations comparing a two-week period with and without the side step procedure in use. The second analysis looked specifically at the side step as compared to the straight in procedure. Both analyses revealed increased sound levels of 1.35 to 1.42 decibels, when comparing the side step maneuver to the straight-in procedure. An increase of at least 3 decibels must be achieved before the human ear can register a change. Both analyses indicate that the noise levels associated with a straight in arrival versus a side step arrival are not technically significant and likely unnoticeable to the human ear.

**Declaration of Exclusion:** The above referenced action has been reviewed by the FAA, and it has been determined, by the undersigned, to be categorically excluded from further environmental documentation according to Order 1050.1D. The implementation of this action will not result in any of the following extraordinary circumstances:

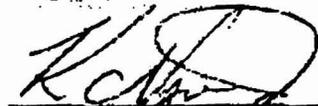
- Substantial controversy or substantial change to existing natural or human environmental conditions;
- Be inconsistent with any Federal, State, or local law or administrative determination relating to the environment;
- Have potentially significant impacts on: noise levels of noise sensitive areas, air and water quality standards, surface traffic congestion, availability of adequate relocation housing, and natural, ecological, or scenic resources of national, state, or local importance;
- Be an action that creates any hazardous materials, electro-magnetic or visual impacts on populated areas, or impacts minority and low income neighborhood populations, or is likely to disrupts existing or orderly planned community development;
- More than minimal effect properties protected under Section 106 of the Historic Preservation Act of 1966, as amended, or Section 4(f) of the Transportation Act.

**Basis for this Determination:** This determination is the result of applying the criteria contained in FAA Order 1050.1D, *Policies and Procedures for Considering Environmental Impacts*, and conforms to the requirements set forth in the President's Council on Environmental Quality (CEQ) regulations that implement the procedural provisions of the National Environmental Policy Act [Title 40, CFR 1500-1508].

The straight-in Visual Approach to Runway 25L procedure is not subject to environmental assessment because there are no new or revised air traffic control procedures which routinely route air traffic over noise sensitive areas at or less than 3000' AGL. All proposed changes occur over non-noise sensitive land use areas.

The appropriate citation designating the action as categorically excluded is FAA Order 1050.1D, Appendix 3, Paragraph 3. a.

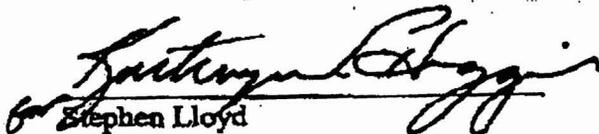
Prepared by:



Konstantine Nezer, Jr.  
Air Traffic Manager  
Phoenix TRACON

Date: 10/17/02

Recommended by:



Stephen Lloyd  
Manager, Operations Branch, AWP-530  
Western-Pacific Region

Date: 11/25/02

Approved by:



John Clancy  
Division Manager, Air Traffic Division, AWP-500  
Western-Pacific Region

Date: 12/2/02



OFFICIAL RECORDS OF  
MARICOPA COUNTY RECORDER  
HELEN PURCELL

94-0706551 09/28/94 11:10

LIBRARY 20 07 27

**BASKET - TEMPE**

**Intergovernmental Agreement  
On Noise Mitigation Flight Procedures**

**between City of Tempe  
and City of Phoenix**

**INTERGOVERNMENTAL AGREEMENT ON NOISE  
MITIGATION FLIGHT PROCEDURES**

69311

THIS INTERGOVERNMENTAL AGREEMENT, is made and entered into this 2ND day of SEPTEMBER, 1994, by and between the CITY OF TEMPE, ARIZONA, a municipal corporation of the state of Arizona ("Tempe"), and the CITY OF PHOENIX, ARIZONA, also a municipal corporation of the state of Arizona ("Phoenix") (sometimes jointly referred to as the "Parties").

**W I T N E S S E T H**

WHEREAS, Phoenix, the current owner and operator of Phoenix Sky Harbor International Airport (the "Airport" or "Sky Harbor"), currently proposes to expand the Airport by adding, among other things, additional terminal facilities and a 7,800-foot third parallel runway (the "Third Runway"); and

WHEREAS, Tempe has experienced for many years, and continues to experience, noise impacts resulting from the operation of aircraft using the Airport; and

WHEREAS, to lessen the noise impacts resulting from jet and large turboprop aircraft arriving from, and departing to, the east over Tempe, aircraft currently follow certain FAA-approved noise mitigation flight procedures, designed, in part, to restrict flights to the airspace over the Salt River riverbed; and

WHEREAS, Phoenix and Tempe agree that it is in the best interests of the citizenry and communities in the Phoenix metropolitan area to resolve differences with regard to the current use and proposed expansion of the Airport; and

WHEREAS, the Parties acknowledge and agree that maintaining and implementing noise mitigation flight procedures and measures at the Airport will facilitate compatible land use planning in communities near the Airport; and

WHEREAS, Phoenix and Tempe recognize the FAA's jurisdiction under Title III of the Federal Aviation Act of 1958, as amended, over navigable airspace, including aircraft flight paths and air traffic rules, regulations and procedures, and, accordingly, have sought from the FAA the strongest possible assurances of permanence of the noise mitigation procedures; and

WHEREAS, Tempe, the FAA and Phoenix have agreed to file a Stipulation and Dismissal to dismiss with prejudice the actions titled City of Tempe v. FAA (9th Circuit, Docket No. 94-70030, 1994) and City of Tempe v. Environmental Protection Agency (D.C. Circuit, Docket No. 94-1063, 1994) on the conditions (a) that the FAA will issue an amended Record of Decision ("ROD") reaffirming its commitment to the use of the noise mitigation procedures and

acknowledging that it will be reasonable for Tempe to rely upon the FAA's ordinary policy of not abandoning or changing flight procedures or the use of noise abatement procedures absent a formal request by the airport proprietor, and (b) that Tempe will not oppose the construction of the Third Runway or an application for a Passenger Facility Charge ("PFC") for such runway and other projects described in the Pinal Environmental Impact Statement issued by the FAA on November 5, 1993 ("FEIS"); and

WHEREAS, Tempe makes the commitments in this Agreement based upon Phoenix's commitments made herein, and upon the FAA's declaration and assurance that Tempe may reasonably rely upon the FAA's ordinary policy of not abandoning or changing flight procedures or the use of noise abatement procedures absent a formal request by the airport proprietor or operator;

NOW, THEREFORE, in consideration of the mutual covenants and agreements contained herein, Phoenix and Tempe hereby agree as follows:

#### ARTICLE I. LEGISLATIVE ENABLEMENT

Tempe enters into this Agreement pursuant to its powers under Title 9, Arizona Revised Statutes and Article I of the Tempe City Charter, and Phoenix enters into this Agreement pursuant to its powers under Title 9, Arizona Revised Statutes, Chapter 2 of the Phoenix City Charter and Chapter 4 of the Phoenix City Code.

#### ARTICLE II. DEFINITIONS

"Agreement" means this Intergovernmental Agreement by and between Tempe and Phoenix.

"Aircraft operation" means either a landing or a take off by a jet or large turboprop aircraft at the Airport.

"Aircraft Owner/Operator" means the commercial air carrier or other entity or person, including foreign entity or person, responsible for retaining the aircraft pilot and/or operating the aircraft which use the Airport.

"Airport" or "Sky Harbor" means Phoenix Sky Harbor International Airport.

"ATCT" means Phoenix Air Traffic Control Tower.

"Distance Measuring Equipment" or "DME" means navigational equipment used to measure in nautical miles the

slant range distance of an aircraft from ground-based equipment at a fixed location.

"Effective Date" means the first day upon which this Agreement is approved by the respective City Councils of Tempe and Phoenix, executed by the appropriate officials from Phoenix and Tempe and filed with the Recorder of Maricopa County.

"Federal Aviation Administration" or "FAA" means the United States Federal Aviation Administration or other authority, corporation or entity succeeding to the FAA's regulatory or operational powers and functions applicable to this Agreement.

"Large turboprop aircraft" means all turboprop aircraft required to be certified and operated pursuant to F.A.R. § 121 or § 135 or any general aviation turboprop aircraft with a gross weight exceeding 12,500 pounds.

"Modification" or "modify," as applied generally to flight procedures in use at the Airport and to the noise mitigation procedures referenced in Section 1.1 of this Agreement in particular, means to abandon, alter, vary, change, add provisions to or delete provisions from such flight procedures or the noise mitigation procedures in any way, except for temporary deviations made by the aircraft pilot, ordered by the ATCT or required by the FAA, because of an emergency, adverse weather conditions or temporary safety considerations.

"Noise and Flight Track Monitoring System" or "NFTMS" means the system to monitor noise from, and flight tracks of, aircraft using Sky Harbor which Phoenix has agreed by this Agreement to develop and implement at the Airport.

"Operations Commencement Date" means the date upon which aircraft operations are first commenced on the Third Runway.

"Phoenix" means the municipal corporation of Phoenix, Arizona, and its officials, representatives, agents, or attorneys.

"Tempe" means the municipal corporation of Tempe, Arizona, and its officials, representatives, agents, or attorneys.

ARTICLE III  
COVENANTS AND AGREEMENTS

1. Noise Mitigation Procedures

1.1 Procedures. The noise mitigation procedures pertinent to this Intergovernmental Agreement are as described on page 15 of the FAA's Record of Decision, dated January 18, 1994 (as amended by that agency's Amended Record of Decision which is described in Exhibit A attached hereto), consisting of the "4 DME," the "side-step" and the "equalization" of departing jet and large turboprop aircraft.

1.2 Modifications. Phoenix shall not request the FAA to abandon or modify these noise mitigation procedures and will affirmatively oppose any abandonment or modification by filing with the FAA Administrator an official written statement of opposition to any abandonment, modification or change of these noise mitigation procedures proposed for reasons other than safety.

1.3 No Restriction on Additional Noise Abatement or Mitigation Measures. Nothing in this Agreement shall be construed to in any way limit or restrict the Parties or the FAA from implementing additional noise abatement or mitigation measures.

2. Additional Studies

No later than the Operations Commencement Date, Phoenix shall submit to the FAA an update of the F.A.R. Part 150 Noise Compatibility Plan and Program for the Airport.

3. Land Use

Tempe and Phoenix agree to take all actions necessary, consistent with applicable laws and regulations, to implement the land use management strategies recommended in the F.A.R. Part 150 Noise Compatibility Plan and Program. Tempe, consistent with applicable laws and regulations, will take such measures as are necessary to ensure that new development undertaken in connection with the Rio Salado project or in noise sensitive environs within its jurisdiction will be compatible with the noise levels predicted in the F.A.R. Part 150 Noise Compatibility Plan and Program.

4. Noise and Flight Track Monitoring

4.1 Noise and Flight Track Monitoring System (NFTMS). Phoenix shall develop and install, and maintain and operate, on a permanent and continuing basis, noise and flight track equipment capable of monitoring compliance with the noise mitigation procedures by (a) specifically identifying by type and flight those aircraft which fail to comply with the noise mitigation procedures relating to the 4 DME and side step procedure, (b) specifically identifying the flight tracks of all non-military jet and large turboprop aircraft departing to and/or arriving from the east, and (c) measuring and reporting, using  $L_{max}$ , the single-event noise levels resulting from each noncomplying aircraft at predetermined monitoring locations within Tempe. The NFTMS shall measure noise, and monitor flight tracks, continuously and shall be capable of storing, for an eighteen (18) month period, all such data for immediate or future use.

4.2 Implementation Schedule. The Parties expressly acknowledge that there are substantial lead times for the procurement, development, installation, testing and complete implementation of a noise and flight track monitoring system at Sky Harbor. Accordingly, Phoenix shall use its best efforts to implement the procurement, development, installation, testing and operation of the Noise and Flight Track Monitoring System in accordance with the schedule set forth below.

<u>Implementation Date</u>	<u>Element</u>
Nine months (9) after the Effective Date	Issue bid invitations for procurement, development and installation of the NFTMS
Eighteen (18) months after the Effective Date	Implement operational test system capable of identifying specific aircraft violating the noise mitigation procedures
Twenty-four (24) months after the Effective Date	Implement a complete and fully operational NFTMS with data access availability

**4.3 Consultation with Tempe.** Phoenix shall consult with Tempe regularly throughout the procurement, development, installation, testing and operation of the Noise and Flight Track Monitoring System, and specifically with regard to: the selection of contractors and/or vendors; development and design of the NFTMS; installation and operation of the NFTMS; specifications for the components and capabilities of the NFTMS, including monitoring and external data acquisition components, the number and site selection of noise monitors located within Tempe, the noise monitoring technology and capability, the flight track monitoring and event correlation technology and capability, data access, acquisition and transfer technology and capability, and computer technology and capability. Phoenix shall be entitled to make all final decisions on all aspects of the NFTMS.

**4.4 Data and Software Access.** Phoenix shall install a NFTMS with a direct computer link to Tempe in order to provide Tempe with the data generated on a real time basis. Phoenix shall take all reasonable steps necessary (including, if needed, obtaining a license) to ensure Tempe's use of the computer technology and software needed to obtain and utilize data supplied through the computer link, and shall provide Tempe with reasonable training on all hardware and software required to access that computer link.

**4.5 Temporary Non-Operation.** Nothing contained herein shall restrict Phoenix, as operator of the NFTMS, from shutting the system down in whole or in part from time to time on a temporary basis, as may be required for maintenance, calibration, repairs or similar circumstances.

**4.6 Equalization Data.** Phoenix shall provide Tempe with data and related information needed to assess compliance with equalization (described in Section 1.1 of this Agreement) both on a twenty-four (24) hour basis and separately for nighttime hours. Phoenix shall monitor departures and use its best efforts to persuade the FAA to compensate for quarterly patterns which, if annualized, would not comply with equalization.

**4.7 Notification of Non-Compliance.** Within twenty-four (24) regular business hours of any aircraft's failure to comply with the noise mitigation procedures relating to the 4 DME and side-step procedures, Phoenix shall

provide written notice of such non-compliance to the Aircraft Owner/Operator with copies to the FAA Flight Standards District Office and Tempe.

**4.8 Publication of Data.** Nothing in this Agreement shall restrict or prohibit Tempe from publishing or otherwise making available to the public the NFMS data or related reports, in a form and manner Tempe chooses.

## **5. Opposition**

Tempe agrees not to oppose, or assist others in opposing the construction of the Third Runway or other projects described in the FEIS, or the imposition of a Passenger Facility Charge for any such other project or projects described in the FEIS.

## **6. General Provisions and Construction of the Agreement**

**6.1 Remedies.** The Parties may enforce this Agreement or compel performance of this Agreement and compliance with its conditions and terms by filing an action for specific performance of the terms of this Agreement, an action to enjoin a party from violating the terms of this Agreement, or mandamus or other appropriate actions to enforce the terms of the Agreement.

**6.2 Attorney's Fees.** The prevailing party in any lawsuit to enforce this Agreement, or any subsection of this Agreement, shall be entitled to recover reasonable attorney's fees and costs from the opposing party.

**6.3 Liability of Officials, Agents.** No elected or appointed officers, nor employees, agents or attorneys of Tempe or Phoenix shall be liable with respect to any action taken (or not taken) in good faith in connection with this Agreement.

**6.4 Merger.** The January 1994 Letter of Intent by and between Tempe and Phoenix shall merge into this final Intergovernmental Agreement.

**6.5 Time is of the Essence.** The Parties agree that in the performance of the covenants, agreements, terms and conditions under this Agreement, time is of the essence.

**6.6 Amendments, Modifications and Waivers.** Any and all amendments, waivers and modifications of this Agreement must be made in writing and signed by the party to be bound.

6.7 Singular and Plural. Whenever the context shall so require, the singular shall include the plural and the plural shall include the singular.

6.8 Validity and Enforceability. Phoenix and Tempe agree not to challenge the validity or enforceability of all or any part of this Agreement and will oppose any effort to challenge the validity or enforceability of all or any part of this Agreement.

6.9 Severability. If any provision of this Agreement shall be invalid, illegal or unenforceable, it shall not affect or impair the validity, legality or enforceability of any other provision of this Agreement, and there shall be substituted for the affected provision a valid and enforceable provision as similar as possible to the affected provision.

6.10 Actions Prohibited. Whenever this Agreement prohibits a particular action by any party hereto, the party also is prohibited from causing such action to be taken by a third party.

6.11 Binding on Successors and Conditions on Transfer of the Airport. This Agreement shall be binding upon and shall inure to the benefit of the successors of Phoenix, to the successors and assigns of the Airport and to the successors of Tempe. Phoenix shall expressly condition any transfer of the Airport to a new owner or operator upon such owner or operator accepting the Procedures and the obligations set forth in this Agreement.

6.12 Term of Agreement. The term of this Agreement shall be fifty (50) years.

6.13 Filing with County Recorder. Upon execution, Tempe shall file this Agreement with the Recorder of Maricopa County.

6.14 Interpretation of Agreement. This Agreement shall be interpreted and construed as though drafted by both Phoenix and Tempe. No question or issue of construction or interpretation of any provision of this Agreement shall be resolved by assertion of application of any rule or presumption that the language shall be construed against the drafting party.

6.15 Government Laws. The laws of the State of Arizona shall govern the interpretation and enforcement of this Agreement.

IN WITNESS WHEREOF, the Parties hereto have caused this Agreement to be executed the day and year first above written.

City of Phoenix,  
a municipal corporation  
FRANK A. FAIRBANKS, City Manager  
By: Frank Fairbanks

City of Tempe,  
a municipal corporation  
NEIL GIULIANO, Mayor  
By: Neil Giuliano

ATTEST:  
Ticky Meel  
City Clerk

ATTEST:  
Allen R. Fowler  
City Clerk

APPROVED AS TO FORM:

APPROVED AS TO FORM:

Michael S. Hoen  
City Attorney

David R. Maske  
City Attorney

REVIEWED AND APPROVED:

Thelda Williams  
THELDA WILLIAMS  
Mayor, City of Phoenix

1994 SEP - 1 AM 9:41 AM  
CITY CLERK DEPT.

EXHIBIT A

FAA'S PROPOSED REVISED SETTLEMENT LANGUAGE 8/3/94

The FAA agrees to issue an amended ROD for the Phoenix Sky Harbor Airport ("PHX") Expansion Project. The amended ROD will reaffirm the agency's commitment to the noise mitigation measures described at page 15 of the ROD of January 18, 1994 (referred to for purposes of this agreement as the "PHX Noise Mitigation Procedures"). The amended ROD will recite the FAA's understanding that the City of Phoenix is not expected to ask the FAA to change the PHX Noise Mitigation Procedures. It will also recite, that consistent with its ordinary policy, the FAA does not initiate changes to noise abatement flight procedures on its own, absent a request from an airport operator. In this context, the FAA would agree that it is reasonable for the City of Tempe to rely upon that ordinary practice. Further, the amended ROD will recite the FAA's commitment to consider the following factors, among others, in exercising its discretion to change or delete the PHX Mitigation Procedures purely for reasons of capacity enhancement: (1) the reasonable reliance by the City of Tempe upon the PHX Noise Mitigation Procedures and (2) the reasonable reliance by the City of Tempe upon the FAA's ordinary practice regarding the initiation of changes. Moreover, any such changes will be preceded by the application of FAA environmental review, including a public meeting, and consideration of mitigation measures and alternatives. Finally, any additions, deletions, or changes to the PHX Noise Mitigation Procedures that

require preparation of an environmental assessment or an environmental impact statement will be issued by the FAA as a final order pursuant to section 1006 of the Federal Aviation Act.

**- SUMMARY OF MEETING -**  
**PHOENIX AIRSPACE USERS WORK GROUP**  
**(PAUWG)**

**March 6, 2002**

**1. Opening:**

Gus Nezer opened the meeting by welcoming all in attendance. In light of the number of new attendees, the 47 participants briefly introduced themselves.

**2. Briefings:**

Steve Wyloge, Support Manager for Procedures, Phoenix TRACON, provided a briefing on the February 21, 2002 implementation of Northwest 2000. He advised that the RNAV procedures would be implemented at a later date and would be phased in. NATCA, America West and Southwest indicated that the implementation went smoothly and forwarded their compliments to the controllers and to those who provided the support for the transition. Dave Wingert, Support Manager for Procedures, Albuquerque, presented the views of Albuquerque ARTCC. There were several concerns expressed regarding the lack of RNAV and the added length of corporate inbound routes. These discussions were deferred to later in the meeting.

Greg Smith, Air Traffic Manager, Phoenix Tower, provided an overview of Sky Harbor's center runway construction. The scope of the project has been reduced from \$140 million to \$70 million. Current plans are to begin work on the electrical infrastructure for the center runway on midshifts this summer. There have also been discussions of overlaying taxiway Delta with blacktop during the July-August time frame. Center runway construction has been delayed until after the Fiesta Bowl, with the assigned start date of January 6, 2003. Plans call for the entire runway to be closed for 50 days. About February 25, 2003, the west 7500 feet will open with a 1000-foot overrun. About April 15, 2003, the entire 10,500 foot runway will open. Some peripheral construction issues will be concluded over the following four months. America West inquired about the lack of SIMOD data regarding the impact of these runway closures. The City of Phoenix will follow-up on that issue.

Steve Wyloge briefed that the runway 25L charted visual approach had been submitted to flight procedures. There were some issues that remain unresolved with the charting. NATCA expressed concern that the lack of a published side step maneuver creates undue workload on the local controllers and on the pilots. Phoenix TRACON will follow up on these issues.

**3. Update on Pending Initiatives:**

Brian Ready briefed on the status of "West Valley" satellite airport RNAV development. The draft procedures have been completed and submitted to Phoenix TRACON. They were designed to be compatible with Northwest 2000. The draft procedures are viewable on [www.awafst.com](http://www.awafst.com).

Greg Chenowith provided the update for the "East Valley" satellite airports. Williams Gateway's RNAV development has 3 departure procedures nearly complete. The work group has just started reviewing flight track data for Chandler and Falcon.

Jim Timm, President, Arizona Pilot's Association, provided comments on General Aviation's access to the local terminal airspace. He acknowledged improvements in accessing Class Bravo airspace and improved service from the TRACON. He said general aviation looked forward to working on means of improving ATC communications. Jim cited improvements at Gateway, but expressed concern that practice approaches are still

frequently denied. Jeri Carson, FAA Regional Office, was not present but did forward that the VFR GPS waypoints for the Phoenix area will not be published in May. Washington headquarters is not expected to finalize the criteria for VFR way points until August 2002. Jeri expressed optimism that the waypoints would make the November publication date.

Skip Paschke provided an update on additional radar coverage for the Phoenix area. The ASR-8 at Williams Gateway will be undergoing its final acceptance testing this spring and is anticipated to be on line this summer. Preliminary meetings have been held with Washington headquarters and Raytheon regarding the siting of the replacement radar for the ASR-8. Current emphasis is towards ensuring coverage for Deer Valley, Scottsdale, Gateway, Falcon and Phoenix airports. Depending on the site location, a second sensor may be needed to serve the South Valley/Casa Grande area. This opened discussions regarding tower enroute services to/from the Tucson area. Mike Tragarz will submit an agenda item to seek alternatives that would expedite this tower enroute service.

The discussion then focused on the new ATC facilities at Sky Harbor. The proposal calls for a new TRACON and a control tower that would enable visibility of all of the taxiways/alleyways.

Harry Wolfe provided an update on Maricopa Association of Governments (MAG) RASP update. The MAG study has adopted their set of forecasts, which are available on their web site: [www.mag.maricopa.gov](http://www.mag.maricopa.gov). Next, they will look at building new airports and/or improving existing facilities. MAG will also pursue new technologies for improved capacity; look at capacity, user convenience and land use. On 4/3/2002 MAG will host an open forum to receive input on their work.

The discussion then focused on the Governor's Aviation Advisory Counsel. According to the executive order, this Counsel is intended to improve aviation communications within the state. The Counsel will consist of 6 appointed members and will analyze regional issues. Concerns were expressed regarding the process of appointments and duplication of efforts. The Arizona Airport Association, the APA and the Arizona Business Aircraft Association have written the Governor's office expressing their concerns over this Counsel. This discussion highlighted the need for the PAUWG to remain abreast of Arizona legislative aviation issues. Executive Order/legislative issues will become a regular PAUWG agenda item and ADOT has agreed to present and track the issues.

The subject then returned to Northwest 2000's RNAV implementation. On February 21, 2002, the Rimm1 was turned on for the Dry Heat only. Other RNAV procedures are planned to be implemented incrementally. The MAHEM arrival is anticipated to be the first arrival. America West expressed their concern over the cost and labor involved in database management; especially if no firm implementation dates have been determined. Southwest Airlines echoed their concern, citing that pressing for RNAV and then delaying it sends mixed signals. Steve Wyloge briefed on the unresolved procedural issues regarding RNAV usage, especially on West departure flow. A meeting for March 18th was scheduled wherein representatives from FAA headquarters, the region, the TRACON, and Tower and the industry would meet to resolve the outstanding issues.

Brian Ready then presented the Northwest 2000 concerns from the business aircraft perspective. The center routings have increased the flying distance from Albuquerque to Scottsdale by 23%. He stated that the cost and time increases will encourage pilots to seek undesirable alternatives to these routes. Additionally, more arrivals are being routed inbound from the southeast; Brian estimated that 60% of the Scottsdale and Deer Valley arrivals are now routed from the southeast. Such a routing forces business jets into the East/West transition routes at low altitude.

A workgroup was formed to review the placement and use of a North/South transition. Brian Ready will head the group, which will include Scott Gray, Jim Timm, Stacey Howard, Mark Meyers, TRACON NATCA, and Steve Wyloge.

Ken Klessner spoke briefly to the issue of safety and efficiency. He indicated that he had retired from the ANG

and was on a temporary contract. He will seek a new ANG point of contact for this important issue.

Kelly McCollough, Maricopa County Department of Transportation, briefed on the goal of establishing approaches away from major airports. The landowners of Eagletail Airport (NW of Buckeye) have indicated a willingness to donate the airport property to the county. Preliminary review indicates that it would be a good location for an ILS. Kelly will pursue updated airport charting and report back.

Wayne Balmer provided an update on the committee reviewing technical alternatives to its 4DME. The group has met several times, with the next meeting scheduled for March 26, 2002. Several alternatives have been recommended, but the process is still in the early stages.

Mike Tragarz recommended that this workgroup also review the impact of the required 25R approach-side step to 25L. After some discussion, it was agreed that Wayne Balmer would take this recommendation back to the 4DME workgroup for consideration.

The meeting adjourned at 1:10 PM. The next PAUWG meeting will be on June 5, 2002 at the ANG facilities.

[Back](#)

# Phoenix Airspace Users Work Group (PAUWG)

*Agenda June 5, 2002 Meeting*

9:00 AM to 1:00 PM

161<sup>st</sup> Operations Group (Air National Guard)

3200 East Old Tower Road

On the south perimeter of Sky Harbor Airport

Accessible from 24<sup>th</sup> Street, just north of I-10

This meeting will focus on the following issues:

1. An update on pending Sky Harbor Airport construction. COP
2. Update on Runway 25L operations. TRACON
4. Arizona Aviation Legislative Update. ADOT
5. Status reports (and continued development of the program tool) for the pending PAUWG initiatives:
  - RNAV Procedures: P50/Wyloge.
  - Satellite RNAV development: East, and West Valley: Ready/ Chenoweth.
  - IWA Radar. P50
  - CHD Airport Review. P50
  - GA gaining greater access to the Class Bravo: AOPA/APA & AWP.
  - Safety and efficiency issues within the Phoenix area : 161 ANG.
  - Develop instrument approaches away from busy airports: Maricopa DOT & IWA.
  - Airspace criteria for airports: MAG RASP update: Harry Wolfe.
  - Technical committee report regarding 4 DME alternatives: Wayne Balmer.
  - Northwest 2000 review. P50

## **- SUMMARY OF MEETING -**

### **PHOENIX AIRSPACE USERS WORK GROUP (PAUWG)**

**June 5, 2002**

### 1. Opening:

Gus Nezer was unable to attend this PAUWG and requested Greg Smith, Air Traffic Manager, Phoenix Tower to represent him. Greg and PAUWG co-chairman Richard Cox, the Director of Western Regional Operations for ATA, opened the meeting. In light of the number of new attendees, the 41 participants introduced themselves.

### 2. Briefings:

Skip Paschke advised the attendees that the local Air Traffic facilities now have a WEB site and the home page address is [www.awp.faa.gov/phoenix/index.htm](http://www.awp.faa.gov/phoenix/index.htm). Once on the home page, there is a "menu" on the left side of the page and the "Phoenix Airspace Users Work Group" is the sixth item on that menu. The PAUWG section contains all of the past meeting summaries and the agenda for the pending meeting. Skip advised that meeting summaries would continue to be electronically distributed, as will the final agenda, which is released 7 days prior to any PAUWG meeting. There was a request that the form for submitting agenda items be made available on the web, and that feature will be available within a week.

Greg Smith provided an update on Sky Harbor's center runway construction. A construction contract has been awarded to overlay the center runway and to complete various taxiway and lighting improvements. Preliminary work will begin in July, with actual runway work scheduled to start on or about January 6, 2003. The runway work will be completed in phases and the entire 11,000-foot runway is projected to be opened in April, 2003.

Greg then provided an update on the runway 25 left operation, in particular the status of the sidestep. The requested charted visual approach to 25 right, with a maneuver to land on 25 left has met with a number of procedural issues and has not been published. Due to safety issues, the use of the sidestep maneuver has been suspended. The FAA, City of Phoenix, and City of Tempe have met to discuss this matter and the issue is still being worked. Mike Tragarz (AWA) and Phil Mullis (SWA) indicated that both ALPA and SWAPA have discussed the sidestep issue. Their pilots have a number of safety concerns, including being sidestepped onto a final approach course below the glideslope. Both ALPA and SWAPA have agreed to refuse the sidestep until their issues are resolved. It was agreed that the local FAA would be included in future ALPA/SWAPA dialog on this subject.

Kim Stevens, ADOT, gave a brief legislative update. He advised that the Governor's Aviation Advisory Counsel has had two meetings, during which they surveyed the scope of their assigned task. They are working on narrowing the focus of their immediate efforts. Their meetings are open and are currently scheduled for 6/21, 7/23 and 8/23. ADOT maintains a summary of their efforts on their WEB site: [www.dot.state.az.us](http://www.dot.state.az.us). Then select "more about ADOT", then "Aeronautics" and then "Governors Aviation Advisory Counsel".

Mike Tragarz expressed concern that while the board member's credentials appear academically qualified, they do not have a wealth of operational experience. From that discussion, a proposal was brought forward and affirmatively voted upon, that the co-chairmen of the PAUWG would coordinate with the FAA's Western Pacific Region's Administrator to write the Governor. The purpose of the letter would be to request that a cross sectional group of PAUWG members, composed of air carrier, business aviation, general aviation, military aviation, and air traffic representatives be afforded the opportunity to provide technical support regarding subject matter, airspace, and procedural issues. It was concluded that the PAUWG members would be kept apprised regarding this matter.

### 3. Update on Pending Initiatives:

Steve Wyloge, Phoenix TRACON Procedures Manager, briefed that the east flow and west flow RNAV departure procedures (DP's) were being consolidated into common DP's. These changes have been submitted

to the regional office. AVN advises that they will require 32 weeks for processing these changes. The MAHEM arrival was activated on 4/30/02 and, with rare exception, the results have been positive. The DBACK arrival has been resubmitted to add an additional waypoint. Upon publication, it too will be turned on. Mike Tragarz requested that we conduct a test and activate all of the current RNAV procedures for a short period of time. Steve Wyloge will investigate that possibility and provide feedback at the next PAUWG meeting.

Steve Wyloge also addressed West Valley RNAV development. The committee has submitted their initial draft procedures for all west valley airports. Luke has advised that they have some issues with portions of the proposed routes. Steve will coordinate a committee meeting to work out these remaining issues.

This led to a discussion regarding future NAR funding (the FAA's driver for many procedural and RNAV enhancements). There was concern expressed that funding limitations could reduce future progress. This was of particular concern as Las Vegas, and now Phoenix is setting the national pace for RNAV procedural implementation.

Walt Fix, from Williams Gateway Airport (IWA), briefed on East Valley RNAV development. Chandler and Falcon are continuing to gather data. IWA has scheduled an all day RNAV committee meeting to focus on Gateway procedures for 6/19/02. The IWA draft procedures are anticipated to be completed by early fall.

Skip Paschke briefed the status of the ASR-8 radar. The IWA DBRITE, which utilizes the ASR-8 radar, became operational in mid May. The end of June, the TRACON will begin an operational readiness demonstration (ORD) of the service into the radar room. Mike Tragarz inquired when the Phoenix-Tucson Tower enroute would be available. Additional services based on the ASR-8 will be dependent upon the system's performance and then procedural integration. This item will continue to be tracked by the PAUWG.

Skip Paschke then briefed on the Chandler (CHD) airport issue. This item had been kept open pending the correct charting of the Class Delta for CHD. That was accomplished on May 21<sup>st</sup>, and it was agreed that this item be closed. It was also briefed that CHD is scheduled to receive a DBRITE, and that issue will be tracked by the PAUWG.

The subject of VFR access to the Class Bravo was discussed. Skip Paschke briefed that Jeri Carson had provided information that the GPS VFR waypoints will be published on the TAC charts in November. The status of non-Class Bravo routes was unclear and Steve Wyloge will investigate that issue and report back at the next PAUWG. Beacon codes prior to departure are currently a limitation of radar coverage and will remain as long as that limitation exists. David Stock addressed VFR hand-offs to the Center as a workload issue; and indicated that as the TRACON's staffing has improved, so has this service. Jim Timm indicated that he had seen no improvement and will survey the general aviation (GA) community and provide a status report at the next PAUWG meeting. Additionally, Jim Timm will pole the GA community regarding communications /service improvements with the TRACON.

Safety and efficiency in the Phoenix airspace is an on-going PAUWG issue. Regarding safety, Mike Tragarz expressed concern about general aviation's continued use of V105. This airway has been NOTAM'd out between Phoenix and Drake, but continues to be heavily utilized. Mike indicated that there is a significant number of RA's being received along that route. Regarding efficiency, Major Dickmann, 161<sup>st</sup>, indicated that the route from Albuquerque NM to IWA was via the Jacobs arrival. He indicated that either the DBACK routing or some other route would be far more efficient. Steve Wyloge will discuss this matter with the Center. Skip Paschke briefed that the new ASR-11 radar system scheduled for the Phoenix area will be sited in the north valley to ensure comprehensive radar coverage for Scottsdale and Deer Valley.

Harry Wolfe, MAG, briefed on the need for MAG to gain the PAUWG's insight on airspace criteria. He distributed a summary report of the RASP update, which indicated that 8 out of 16 airports would exceed their capacity within the next 25 years. This leads to the need to develop alternatives, including new runways and

new airports. Harry requested that the PAUWG assist MAG in the evaluation of the impact and alternatives of pending aviation growth. A working group was established to develop an alternatives working paper. The volunteers included Phil Mullis (SWA), Mike Tragarz (AWA), Dean Edmonds (FAA), Kelly McMullen (Maricopa DOT), Jim Timm (APA) and Anne Quigley (GYR airport). They will meet in July and provide both MAG and the PAUWG with feedback.

Wayne Balmer, City of Mesa, presented three "philosophical" alternatives to the current 4-DME procedures. The City of Tempe has requested to submit an additional alternative. His committee will meet within the next two months to evaluate all alternatives and then conduct a wrap up meeting prior to the next PAUWG meeting. The PAUWG will be briefed on the results of this committee's work at the next PAUWG meeting.

Regarding Northwest 2000, there was a lengthy discussion regarding efficiency gains. Brian Ready will coordinate a meeting to discuss alternatives to the current North-South transition. Steve Wyloge briefed that initiatives to review the airspace south of Phoenix will begin this fall.

Greg Smith briefed that there will be an initiative to re-invite representatives from the industry and local communities to participate in the PAUWG. This will be accomplished prior to the next PAUWG meeting.

The meeting adjourned at 11:45 AM. The next PAUWG meeting will be on September 26, 2002, at the ANG facilities.

[Back](#)

**Appendix C**

---

**Historical/Architectural, Archaeological and Cultural Resources  
Supporting Materials**

## APPENDIX C

### HISTORICAL/ARCHITECTURAL, ARCHAEOLOGICAL AND CULTURAL RESOURCES SUPPORTING MATERIALS

This appendix contains supporting materials collected and developed in connection with the inventory and impact assessments provided in Sections 3.9 and 4.11 (Historical, Architectural, Archaeological and Cultural Resources) of this EIS:

- Historical, Archaeological and Traditional Cultural Places Technical Report for the Proposed Sky Harbor International Airport Development Program, Phoenix, Arizona, June 2005.
- Memorandum of Agreement

**HISTORICAL, ARCHAEOLOGICAL, AND  
TRADITIONAL CULTURAL PLACES TECHNICAL REPORT  
FOR THE PROPOSED SKY HARBOR INTERNATIONAL AIRPORT  
DEVELOPMENT PROGRAM, PHOENIX, ARIZONA**

prepared for

**Federal Aviation Administration**  
Western-Pacific Airports Division  
P.O. Box 92007  
Los Angeles, California 90009

prepared by

A.E. (Gene) Rogge  
Kirsten Erickson  
**URS Corporation**  
7720 N. 16<sup>th</sup> Street, Suite 100  
Phoenix, Arizona 85020

URS Cultural Resource Report 2005-1(AZ)

**Restrict Distribution**

To avoid vandalism, restrict information in this report about the location of archaeological sites, as provided for by Section 304 of the National Historic Preservation Act, Section 9(a) of the Archaeological Resources Protection Act, and Section 39-125 of the Arizona Revised Statutes.

**June 2005**

**HISTORICAL, ARCHAEOLOGICAL, AND  
TRADITIONAL CULTURAL PLACES TECHNICAL REPORT  
FOR THE PROPOSED SKY HARBOR INTERNATIONAL AIRPORT  
DEVELOPMENT PROGRAM, PHOENIX, ARIZONA**

prepared for

**Federal Aviation Administration**  
Western-Pacific Airports Division  
P.O. Box 92007  
Los Angeles, California 90009

prepared by

A.E. (Gene) Rogge  
Kirsten Erickson  
**URS Corporation**  
7720 N. 16<sup>th</sup> Street, Suite 100  
Phoenix, Arizona 85020

URS Cultural Resource Report 2005-1(AZ)

**Restrict Distribution**

To avoid vandalism, restrict information in this report about the location of archaeological sites, as provided for by Section 304 of the National Historic Preservation Act, Section 9(a) of the Archaeological Resources Protection Act, and Section 39-125 of the Arizona Revised Statutes.

**June 2005**

## TABLE OF CONTENTS

---

List of Appendices .....	ii
List of Figures .....	iii
List of Tables .....	iii
List of Photographs .....	iii
Abstract .....	iv
Introduction .....	1
Project Location and Description .....	1
Demolition of Terminal 2 and Ancillary Facilities .....	3
Construction of New West Terminal .....	5
Modifications of Terminal 4, Concourse N4 International Gates .....	5
Construction of Crossfield Taxiways Uniform (U) and Victor (V) .....	6
Sky Harbor Boulevard Modifications .....	6
Construction of Stage 2 of the APM .....	6
Stage 2–West APM .....	6
Stage 2–East APM .....	7
Regulatory Requirements .....	7
Federal Requirements .....	7
Section 106, National Historic Preservation Act .....	8
Section 4(f), Department of Transportation Act .....	8
State and Local Requirements .....	9
Coordination and Consultation .....	9
Environmental Setting .....	10
History of Human Occupation .....	11
Prehistoric Period .....	11
Historic Period .....	12
Indigenous Cultures .....	12
Euro-Americans .....	13
Phoenix .....	13
Phoenix Sky Harbor International Airport .....	15
History of the Portland Tract .....	16
Area of Potential Effects .....	23
Area of Potential Effects for Construction Impacts .....	23
Area of Potential Effects for Visual Impacts .....	25
Inventory Methods .....	25
Archaeological Resources .....	25
Historical Buildings and Structures .....	26
Traditional Cultural Places .....	27
Inventory of Archaeological Sites .....	27
Prior Cultural Resource Studies .....	27
1970s Studies .....	27
1980s Studies .....	31
1990s Studies .....	33
2000s Studies .....	34

## TABLE OF CONTENTS (continued)

---

Archaeological Sites in the Area of Potential Effects for Construction Impacts .....	36
Inventory of Historical Resources .....	41
Inventory Results On the Airport.....	42
Aviation Department Building.....	44
Four Maintenance Shops.....	44
Terminal 2 (East Terminal).....	44
<i>The Phoenix</i> , a Paul Coze Mural.....	53
Inventory Results Off the Airport (Stage 2–East APM).....	56
Resources in the Area of Potential Effects for Visual Impacts.....	59
Inventory of Traditional Cultural Places.....	61
Assessment of Section 106 Effects and Section 4(f) Impacts.....	61
Conclusion and Recommendations.....	66
References Cited .....	67

## LIST OF APPENDICES

---

- Appendix A - Inventoried Buildings and Parcels within the Area of Potential Effects for Construction Impacts
- Appendix B - State of Arizona Historic Property Inventory Forms
- Appendix C - Existing Facilities and Proposed Developments
- Appendix D - Agency and Tribal Coordination Documentation

## LIST OF FIGURES

---

1 General Project Location .....	2
2 Proposed Airport Development Program Projects.....	4
3 1923 Plat of Portland Tract.....	18
4 1958 Sanborn Map of Part of Portland Tract.....	22
5 Area of Potential Effects.....	24
6 Prior Cultural Resource Studies.....	28
7 Previously Recorded Archaeological Sites.....	37
8 Hohokam Canals in the Project Vicinity .....	40
9 Historical Properties Inventoried On the Airport.....	43
10 Terminal 2 Modifications .....	47
11 Historical Properties Inventoried Off the Airport.....	57

## LIST OF TABLES

---

1 Prior Cultural Resource Studies in the Area of Potential Effects .....	29
2 Archaeological Sites in the Area of Potential Effects for Construction Impacts.....	38
3 Inventoried Historical Resources .....	41
4 Resources within the Area of Potential Effects for Visual Impacts.....	60
5 Summary Assessment of Section 106 Effects and Section 4(f) Impacts.....	62

## LIST OF PHOTOGRAPHS

---

1 Circa 1954 Aerial Photograph of Portland Tract .....	20
2 Construction Contractor Herman Chanen in Terminal 2.....	45
3 Terminal 2 Lobby Shortly After Opening .....	46
4 Terminal 1 and 2 in the Late 1960s .....	48
5 Front Façade of Terminal 2 Circa 1970.....	48
6 Front Façade of Terminal 2 in 2004 .....	49
7 Terminal 2 Lobby and Paul Coze Mural Circa 1962.....	49
8 Terminal 2 Lobby and Paul Coze Mural in 2004 .....	50
9 Restaurant Located Beneath the Paul Coze Mural .....	50
10 South Wall and Stairway in the Southeast Corner of the Terminal 2 Lobby .....	51
11 Entrance to Concourse on the South Wall of Terminal 2 Circa 1970s.....	52
12 Entrance to Concourse and South Wall of Terminal 2 Lobby in 2004.....	52
13 <i>The Earth</i> , Left Panel of <i>The Phoenix</i> Mural.....	54
14 <i>Water and Fire</i> , Center Panel of <i>The Phoenix</i> Mural .....	54
15 <i>The Air</i> , Right Panel of <i>The Phoenix</i> Mural .....	55

## ABSTRACT

---

- Agency:** Federal Aviation Administration (FAA)  
U.S. Bureau of Reclamation
- Report Title and Date:** *Historical, Archaeological, and Traditional Cultural Places Technical Report for the Proposed Sky Harbor International Airport Development Program, Phoenix, Arizona.* June 2005
- Permit Number:** None required
- Project Number:** URS Job No. 12001287
- Project Description:** FAA is preparing an Environmental Impact Statement pursuant to the National Environmental Policy Act of 1969 to evaluate potential impacts of a proposed Airport Development Program at Phoenix Sky Harbor International Airport (Airport). The FAA is responsible for complying with the National Environmental Policy Act and FAA Orders 1050.1E, *Environmental Impacts: Policies and Procedures*, and 5050.4A, *Airport Environmental Handbook*, when an airport sponsor seeks approval for projects that require revisions to an airport layout plan. The FAA also is responsible for considering the effects of such undertakings on historic properties eligible for the National Register of Historic Places (National Register) in compliance with Section 106 of the National Historic Preservation Act. In addition, impacts on certain historical resources must be considered in compliance with Section 4(f) of the Department of Transportation Act [recodified at Title 49, U.S. Code, Section 303(c)].
- The proposed Airport Development Program includes the following components:
- Demolition of Terminal 2 and ancillary facilities
  - Construction of a new West Terminal (33-gate terminal)
  - Modification of Terminal 4, Concourse N4 International Gates
  - Construction of Crossfield Taxiways Uniform(U)and Victor (V)
  - Realignment of Sky Harbor Boulevard
  - Construction of Stage 2 of the Automated People Mover (APM)
- Location:** The Airport is located in Phoenix, Maricopa County, Arizona, approximately 5 miles east of the central business district. It is bounded approximately by State Route (SR) 143 on the east, the Salt River and Interstate 10 on the south, 16<sup>th</sup> Street on the west, and the Union Pacific Railroad on the north. The project area is located in Sections 10-15 of Township 1 North, Range 3 East, and Sections 7 and 18 of Township 1

North, Range 4 East. This area is as depicted on the Phoenix, Arizona, and Tempe, Arizona, U.S. Geological Survey 7.5-minute topographic quadrangles.

**Acreage and  
Jurisdiction:**

No archaeological survey was conducted. Fieldwork was limited to survey for inventorying historical resources. An area of potential effects for construction impacts encompasses about 432 acres. An area of potential effects for visual impacts encompasses about 5.3 square miles of land both within and outside the Airport. The land within the area of potential effects includes the Airport, the Pueblo Grande Museum and Archaeological Park, and street rights-of-way, which are owned by the City of Phoenix. The Grand Canal, which is owned by the federal government and administered by the Bureau of Reclamation, also crosses the area of potential effect. Other parcels within the area of potential effects are privately owned.

**Personnel and  
Date of Fieldwork:**

Kirsten Erickson was the historian for the project. Archaeologists J. Grace Ellis and Erin Schirtzinger assisted with the records review. Dr. A.E. (Gene) Rogge served as principal investigator. The study was conducted in conjunction with preparation of an environmental impact statement over a period of more than three years from 2002 to 2005.

**National Register-  
Eligible Resources:**

The following properties are located partially within the area of potential effects for construction impacts:

- Pueblo Salado, AZ T:12:47(ASM)
- Dutch Canal Ruin, AZ T:12:62(ASM)
- Pueblo Grande, AZ U:9:1(ASM), and Pueblo Grande Ruin and Irrigation Sites National Historic Landmark within the Pueblo Grande Museum and Archaeological Park
- AZ U:9:2(ASM) (11 Hohokam canals and Joint Head Canal)
- AZ U:9:28(ASM) (8 Hohokam canals)
- Hohokam canals of Systems 2 and 10
- *The Phoenix*, a mural by Paul Coze
- Grand Canal, AZ T:7:167(ASM)
- Phoenix main line of Southern Pacific Railroad, AZ T:10:84(ASM)

Two additional historical properties are within the area of potential effects for visual impacts:

- Sacred Heart Church
- Tovrea Castle

**National Register-  
Ineligible Resources**

Nineteen historic-age buildings (defined for this project as dating to 1965 or earlier) were inventoried as ineligible (refer to Table 3).

**Recommendations:**

In 2002, the FAA initiated Section 106 consultations with the Phoenix City Historic Preservation Officer, Phoenix City Archaeologist, and State Historic Preservation Officer when studies for the proposed Airport Development Program began (Appendix D). The studies have indicated that the proposed program could result in adverse effects as defined by regulations implementing Section 106, but the impacts are not expected to constitute use or constructive use of resources protected by Section 4(f) of the Department of Transportation Act.

The potential Section 106 adverse effects include disturbance of archaeological resources and visual effects on the Pueblo Grande Museum and Archaeological Park, which also is designated as the Pueblo Grande Ruin and Irrigation Sites National Historic Landmark. To address these potential adverse effects, the FAA plans to develop, in consultation with the SHPO and other interested parties, a Section 106 Memorandum of Agreement to define procedures for continuing to consider effects and for developing measures to avoid, reduce, or mitigate adverse effects through the project design and implementation process. Those procedures would stipulate that as project planning proceeds and final designs are prepared, the Phoenix Aviation Department will arrange to have archaeological testing or monitoring plans developed and implemented, with subsequent data recovery studies as warranted. Traditional cultural concerns about disturbance of human remains and funerary objects that might be associated with archaeological sites would be addressed in accordance with a 1995 burial agreement that the Arizona State Museum developed with the City of Phoenix and culturally affiliated tribes to comply with the Arizona Antiquities Act and Arizona Burial Law.

The Memorandum of Agreement also would stipulate that the Phoenix Aviation Department would consult with the Pueblo Grande Museum Director, Phoenix CHPO, and SHPO to address potential visual effects on the Pueblo Grande Museum and Archaeological Park. Those consultations would consider design criteria and involve review of developing designs of the Stage 2–East APM station, elevated sections of the Stage 2–East APM guideway, and the APM maintenance and operations facility. The goal would be to avoid any adverse visual effect on the museum and national historic landmark, and to enhance pedestrian access to the museum from the APM and Valley Metro Rail stations.

# **HISTORICAL, ARCHAEOLOGICAL, AND TRADITIONAL CULTURAL PLACES TECHNICAL REPORT FOR THE PROPOSED SKY HARBOR INTERNATIONAL AIRPORT DEVELOPMENT PROGRAM, PHOENIX, ARIZONA**

---

## **INTRODUCTION**

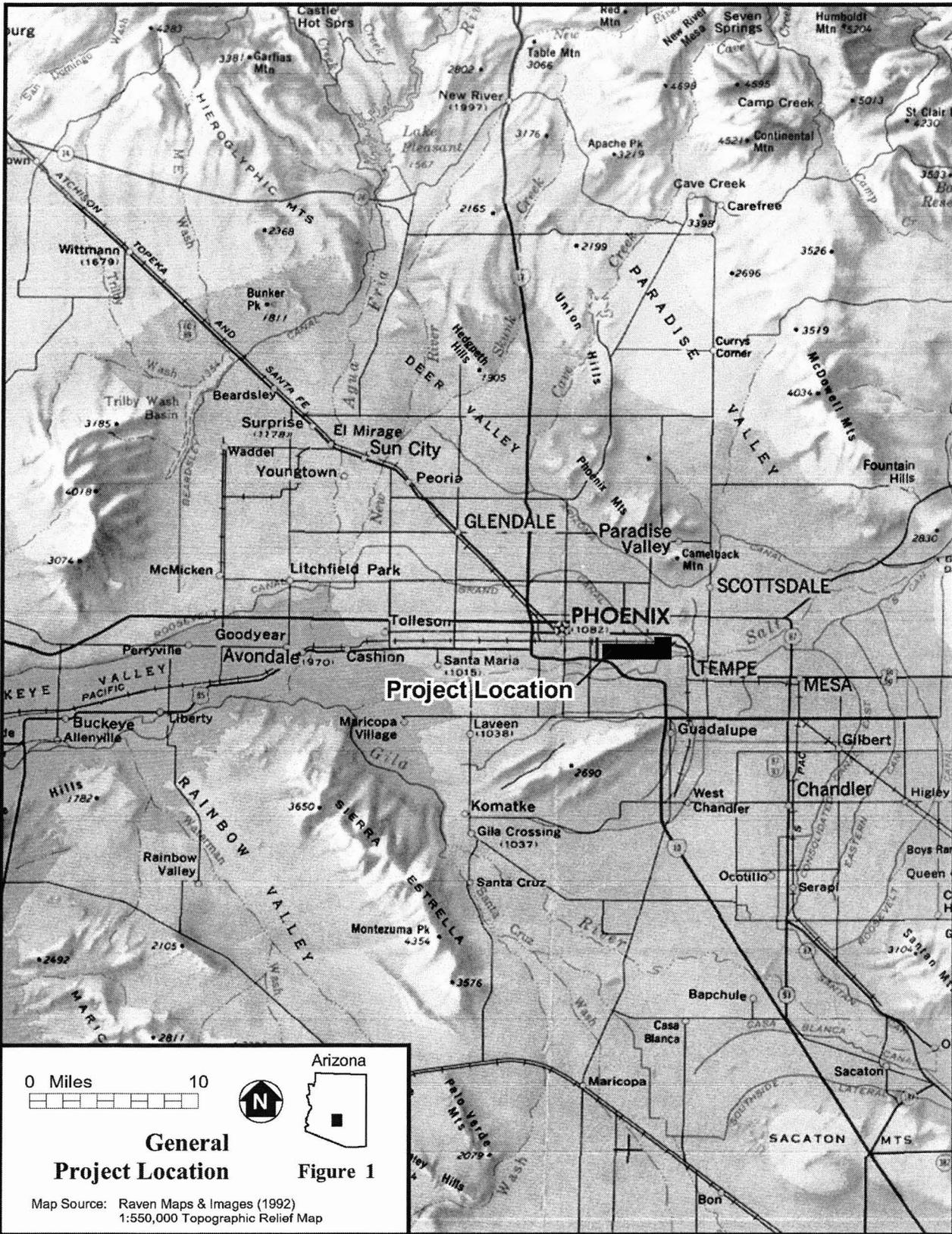
The Federal Aviation Administration (FAA) is preparing an Environmental Impact Statement (EIS) pursuant to the National Environmental Policy Act of 1969 (NEPA) to evaluate potential impacts of a proposed Airport Development Program and its reasonable alternatives at Phoenix Sky Harbor International Airport (Airport). The FAA is responsible for complying with NEPA and FAA Orders 1050.1E, *Environmental Impacts: Policies and Procedures* (U.S. Department of Transportation, FAA 2004), and 5050.4A, *Airport Environmental Handbook* (U.S. Department of Transportation, FAA 1985), when an airport sponsor seeks approval for projects that require revisions to an airport layout plan, such as the revisions being proposed by the City of Phoenix (Appendix C). The FAA also is responsible for considering the effects of such undertakings on historic properties eligible for the National Register of Historic Places (National Register) in compliance with Section 106 of the National Historic Preservation Act. In addition, impacts on certain historic resources must be considered in compliance with Section 4(f) of the Department of Transportation Act [recodified at Title 49, U.S. Code, Section 303(c)].

This technical report was prepared to support the EIS and Section 106 consultations by documenting the inventory of cultural resources—including historical buildings, structures, and objects; archaeological sites; and traditional cultural places—within the area of potential effects. This report also evaluates the eligibility of those inventoried resources for the National Register, and assesses effects of the proposed Airport Development Program on National Register-eligible resources. A draft copy of this report was submitted to the Arizona SHPO for review and comment on March 16, 2005. SHPO comments on the report were received on April 20, 2005 (see Appendix A for correspondence). The FAA concurs with SHPO's findings on the report and the potential impacts of the proposed project at PHX.

Kirsten Erickson was the historian for the project. Archaeologists J. Grace Ellis and Erin Schirtzinger assisted with the records review. Dr. A.E. (Gene) Rogge served as principal investigator. The study was conducted in conjunction with preparation of an EIS over a period of more than three years from 2002 to 2005.

## **PROJECT LOCATION AND DESCRIPTION**

The Airport is located in Phoenix, Maricopa County, Arizona, approximately 5 miles east of the central business district (Figure 1). It is bounded approximately by State Route (SR) 143 on the east, the Salt River and Interstate 10 (I-10) on the south, 16<sup>th</sup> Street on the west, and the Union Pacific Railroad on the north. The project area is located in Sections 10 through 15 of Township 1 North, Range 3 East, and Sections 7 and 18 of Township 1 North, Range 4 East. This area is as depicted on the Phoenix, Arizona, and Tempe, Arizona, U.S. Geological Survey 7.5-minute topographic quadrangles (photo revised 1982).



P:\COP Aviation\West\_Terminal\_EIS\Cultural\Graphics\Proj\_Locate\_WestTerm.ai

Recent forecasts of aviation demand indicated that passenger enplanements at the Phoenix Sky Harbor International Airport would increase from 18.6 million passengers in 2003 to approximately 25.2 million in 2015 (Leigh Fisher Associates 2003), but that estimate was already exceeded substantially in 2004 when 39.5 million passengers traveled through the Airport (Sagon 2005). In 1999, the City of Phoenix Aviation Department initiated a study to evaluate terminal facility requirements for serving projected increases in airline passenger activity. To meet projected demand, the Phoenix Aviation Department is proposing improvements to more effectively meet the needs of the traveling public. The proposed improvements would not increase the number of aircraft flights, but would provide additional facilities to balance the capacity of airfield and landside facilities, and improve the efficiency of Airport operations. The additional landside facilities would maintain a consistent level of service provided to passengers and tenant airlines, and continue to support the growth and development of the Phoenix/Maricopa County areas.

The proposed Airport Development Program includes the following components:

- demolition of Terminal 2 and ancillary facilities
- construction of a new West Terminal (33-gate terminal)
- modification of Terminal 4, Concourse N4 International Gates
- construction of Crossfield Taxiways Uniform (U) and Victor (V)
- realignment of Sky Harbor Boulevard
- construction of Stage 2 of the Automated People Mover (APM) (Figure 2)

Other ongoing projects at the Airport have been the subject of separate NEPA and Section 106 reviews, and they are not addressed in this document. These include the following:

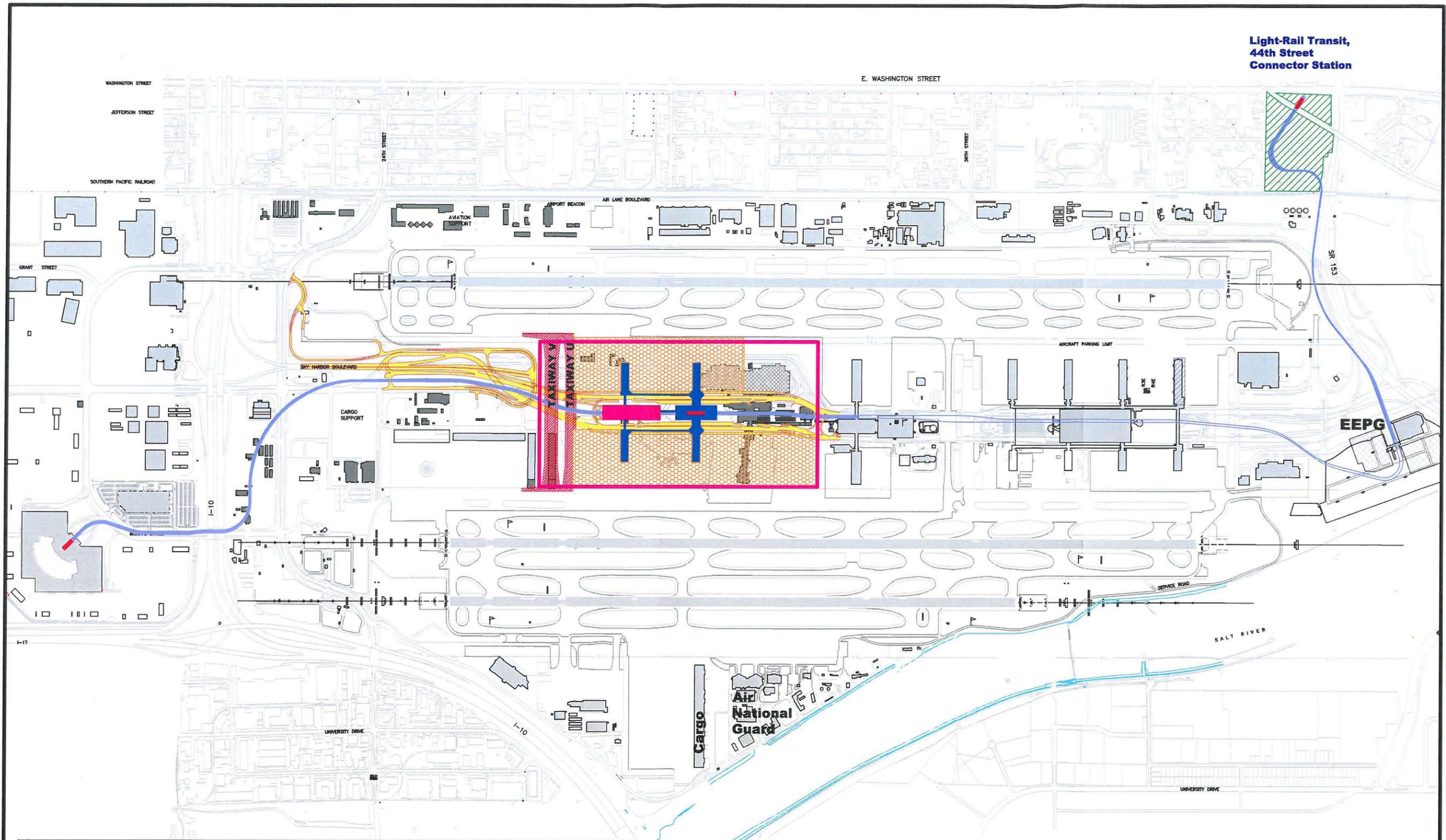
- development of the Rental Car Center
- development of the East Economy parking garages
- construction of Terminal 4 Concourses S1 and S2
- development of Stage 1 of the APM

### **Demolition of Terminal 2 and Ancillary Facilities**

This project would entail demolition of Terminal 2 (airport layout plan (ALP) building #247) and ancillary facilities. Terminal 2 was constructed in 1962 and is the oldest of the three terminals at the Airport. Extensively remodeled over the years, Terminal 2 has 14 gates and has a total terminal area of 330,000 square feet. In need of considerable repair and improvements, Terminal 2 would require significant modification to fully comply with the American Disabilities Act and to have adequate facilities for the new FAA passenger and baggage screening requirements. Even if these repairs were completed, the terminal facility would not meet the Airport's forecasted demand for terminal facilities at the Airport (DMJM Aviation/HDR 2004).

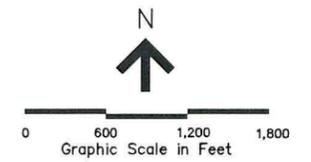
Construction of the proposed new West Terminal would provide sufficient space to meet the aviation forecast demands and provide additional space for current airline tenants. Demolition of

Light-Rail Transit,  
44th Street  
Connector Station



**LEGEND**

Area of Demolition	Crossfield Taxiways	APM Station Stage 2	Modification to Terminal 4, Concourse N4 International Gates
West Terminal Complex	Future APM Maintenance Facility	APM Stage 2	Modification/Realignment of Sky Harbor Blvd.
Apron	APM Stage 2		
Future Parking Garage			



Proposed Airport Development Program Projects

Figure 2

Source: West Terminal EIS Project Description, March 2004, DMJM Aviation/HDR.

P:\COP\_Aviation\West\_Terminal\_EIS\Cultural\Graphics\Develop\_Program\_WestTerm\_2fig.ai

Terminal 2 is required to make room for construction of the proposed West Terminal and for the realignment to Sky Harbor Boulevard. The terminal core, concourse, below grade utilities and baggage handling facilities, adjacent roadways, ground transportation facilities, and a parking garage would be removed (refer to Figure 2).

Development of the proposed West Terminal also would require removal of the Executive Terminal (currently occupied by the Phoenix Police, ALP #222), Airport Operations Center (former International Terminal, ALP #251), Swissport Fueling (formerly Dynair, ALP #242), and American Airlines GSE Maintenance building (ALP #241), as well as a covered fuel island, Gate 220, and the West Economy parking lot. The FAA TRACON building (ALP #221) is within the area of demolition for the Terminal 2 Demolition project, but will be removed in 2005 as part of the new Airport Traffic Control Tower/TRACON project, and its demolition is not part of the West Terminal Development Project.

### **Construction of New West Terminal**

Development of the West Terminal is needed to replace the gates lost through demolition of Terminal 2, provide a balance between airfield operations and terminal capacity, and to improve the level of service offered to passengers. The conceptual layout for the West Terminal consists of a central terminal with a 33-gate north/south concourse configuration. Concourses would be constructed and connected via bridges outfitted with moving sidewalks. Vehicular roadways would surround the terminal with loading and unloading activity on the north and south sides. These roadways would also connect with the improved Sky Harbor Boulevard west of the West Terminal and the existing Sky Harbor Boulevard on the east. A parking garage would be associated with the terminal building. Federal Inspection Services facilities for international passenger processing would be accommodated. An APM station would be located in the lower portion of the West Terminal complex. An aircraft parking apron and taxi lanes would be constructed to provide access to all West Terminal concourses.

### **Modifications of Terminal 4, Concourse N4 International Gates**

Currently, international arrivals and departures use gates located at the north end of Concourse N-4 in Terminal 4. The international operations of airlines other than America West would be relocated to the new international gates and passenger processing facilities in the West Terminal. The majority of the existing Federal Inspection Services and other international passengers processing facilities would remain to accommodate American West Airlines international operations. Concourse N4 would be modified to better accommodate the operations of America West. There would be minor changes to the configuration of the existing facilities on Concourse N4 that would involve no ground disturbance.

## **Construction of Crossfield Taxiways Uniform (U) and Victor (V)**

Crossfield Taxiways U and V are proposed to expand taxiway connections between the north and south sides of the Airport. Located west of the proposed new West Terminal, these taxiways would include two structural taxiway bridges over the realigned Sky Harbor Boulevard and modifications to existing utility and drainage systems. Construction of the taxiways would require the demolition of two Delta Air Lines maintenance shops (ALP #239 and #240) and the West Economy parking facilities. Construction of Taxiway V would require the demolition of Air Cargo Building A (ALP #229), removal of the southern 120 feet of Air Cargo Building B (ALP #229), and removal of the West Economy parking lot.

## **Sky Harbor Boulevard Modifications**

Modifications to Sky Harbor Boulevard are proposed to improve access to the terminals, cargo facilities, and parking facilities, and to improve circulation within the Airport roadway. The Sky Harbor Boulevard modifications are proposed from 24<sup>th</sup> Street eastward to the proposed new West Terminal and the existing Terminal 3. This project would include construction of several new roadway bridge structures, and the widening of one bridge. Numerous retaining walls and a storm drainage system also would be built. The proposed roadway system would include eastbound and westbound traffic, with arrival and departure curbs on separate levels to facilitate curbside passenger loading and unloading. Sky Harbor Boulevard would be realigned on the west side of the Airport to accommodate the planned crossfield taxiways. The proposed modifications would not increase the capacity of the roadway system.

## **Construction of Stage 2 of the APM**

The Phoenix Aviation Department requested FAA approval for the construction of an APM system at the Phoenix Sky Harbor International Airport. In August 2004, FAA issued a Finding of No Significant Impact for Stage 1 of the proposed APM system, which will connect the East Economy Parking Garage and Terminals 3 and 4. The current analysis addresses Stage 2 and an associated maintenance and operations facility.

### **Stage 2–West APM**

The Stage 2–West APM would connect to the APM Stage 1 at Terminal 3 and provide a westward connection to the proposed new West Terminal and the Rental Car Center that is under construction. The double guideways would be in tunnels at Terminal 3 and continue below grade for approximately 1 mile to the west, passing through the West Terminal site. The APM would then be elevated approximately 30 feet above grade for a distance of about 3,500 feet to cross over Copperhead Drive, Buckeye Road, and 24<sup>th</sup> Street. As the route turns to the south, the APM would descend to street level for approximately 1,000 feet turning west to cross beneath I-10 at the existing Mohave Street bridge. On the west side of the bridge, the APM again would be

elevated approximately 25 feet above grade for about 1,900 feet along the north side of Mohave Street and then turn south to terminate at the Rental Car Center.

## **Stage 2–East APM**

The Stage 2–East APM would leave the north side of the East Economy parking garage at the second floor level, and generally parallel the west side of SR 153 north to the Union Pacific Railroad. North of the railroad, the alignment would curve to the west and then back to the northeast across the Grand Canal. The Stage 2–East APM would terminate at the site of the planned light rail transit station on Washington Street just west of 44<sup>th</sup> Street.

The Stage 2–East APM would be elevated for approximately 1,000 feet north of the East Economy parking garage to cross over both eastbound and westbound Sky Harbor Boulevard and the SR 153 on-ramp. The top of the guideway structure would be approximately 45 feet above Sky Harbor Boulevard, which is depressed below normal grade. The APM guideways would enter tunnels south of the SR 153 off-ramp and would be below grade for a distance of approximately 3,000 feet. This buried section would parallel SR 153 and pass beneath the Union Pacific Railroad tracks under the bridge that carries the tracks over the depressed SR 153. The alignment would then turn to the west, and the APM would rise above grade approximately 250 feet north of the railroad. The alignment would then turn to the north to cross above the Grand Canal, and remain elevated to Washington Street, a distance of approximately 1,500 feet. The guideway structure, supporting piers, and station structure have yet to be designed, but the elevated guideway structure is expected to be approximately 11 feet deep and a maximum of approximately 27 feet above the existing grade. The height of the station structure could be the equivalent of a two- to four-story building or taller.

A maintenance and operations facility would be developed between the railroad tracks and the Grand Canal. This facility also has yet to be designed, but is unlikely to be substantially taller than the elevated guideway. Development of the facility would require acquisition of land and demolition of buildings on approximately 40 properties.

## **REGULATORY REQUIREMENTS**

The goals of the investigations documented in this report are to address the regulatory requirement for considering cultural resources as the proposed Airport Development Program projects are planned, constructed, and operated. The following section summarizes federal, state, and local regulatory requirements.

### **Federal Requirements**

NEPA stipulates that federal agencies work to preserve not only natural resources but also important historical and cultural aspects of our national heritage [Section 101(b)(4)]. FAA also must comply with Section 106 of the National Historic Preservation Act by considering the

effects of the agency's undertakings on historic properties in consultation with the State Historic Preservation Office (SHPO) and other interested parties.

### **Section 106, National Historic Preservation Act**

The Advisory Council on Historic Preservation issued regulations for the *Protection of Historic Properties* [Title 36, Code of Federal Regulations (CFR), Part 800] that implement Section 106 of the National Historic Preservation Act. These regulations establish a process for considering effects on historic properties, which are defined as those resources included in or eligible for inclusion in the National Register. The National Park Service administers the National Register and has defined criteria for listing properties of national, state, or local significance, as follows:

The quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association and

- (a) that are associated with events that have made a significant contribution to the broad patterns of our history; or
- (b) that are associated with the lives of persons significant in our past; or
- (c) that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
- (d) that have yielded, or may be likely to yield, information important to prehistory or history (36 CFR 60).

Unless historical and cultural resources have exceptional significance, they must be at least 50 years old to be considered for inclusion in the National Register. The National Park Service maintains the National Register, and the authority to list properties is vested with the Keeper of the National Register. For the purposes of Section 106 reviews, the lead federal agency (FAA for this project) and the SHPO can make eligibility determinations by consensus.

In accordance with regulations for the *Protection of Historic Properties*, the National Register eligibility of properties subject to impacts was evaluated, effects were assessed, and measures to avoid, reduce, or mitigate adverse effects were considered.

### **Section 4(f), Department of Transportation Act**

Section 4(f) of the Department of Transportation Act of 1966 [now codified as Title 49, U.S. Code, Section 303(c)] addresses historic resources. Section 4(f) allows for the "use" or impairment of a historic site of national, state, or local significance (or public park, recreation

area, or wildlife refuge) only if there is no feasible and prudent alternative and all possible planning has been undertaken to minimize harm to the property. A Section 4(f) use of a historic property occurs when land is incorporated into a transportation facility, or there is a temporary occupancy of land that is adverse in terms of the statute's preservationist purposes. A Section 4(f) "constructive use" occurs when a transportation project does not incorporate, permanently or temporarily, land from the resource, but the project's proximity impacts are so severe that the protected activities, features, or attributes that qualify a resource for protection under Section 4(f) are substantially impaired. Therefore, in compliance with FAA Orders 1050.1E, *Environmental Impacts: Policies and Procedures*, and 5050.4A, *Airport Environmental Handbook*, impacts on historic properties were inventoried and considered in compliance with Section 4(f). In addition to consideration of National Register-listed or eligible properties, properties listed in or eligible for the Arizona Register of Historic Places and Phoenix Register of Historic Places were considered. (The criteria for inclusion in all three registers are essentially identical.)

### **State and Local Requirements**

The Arizona Antiquities Act (Arizona Revised Statutes 41-841 through 41-847) prohibits excavation of historical or prehistoric sites on lands owned or controlled by the State of Arizona or local governments without a permit from the Arizona State Museum. The Act also directs those in charge of activities on such lands to notify the director of the Arizona State Museum of the discovery of any archaeological sites, historical resources, or human remains. State law (Arizona Revised Statutes 41-865) also stipulates that anyone finding human remains and funerary objects on private lands notify the director of the Arizona State Museum. Such remains are to be protected in place while consultations with appropriate American Indian groups are conducted. The City of Phoenix has executed a burial agreement with the Arizona State Museum for tribes having traditional cultural affiliations with the Phoenix area to stipulate procedures for consultation and treatment of any human remains, funerary objects, sacred objects, or objects of cultural patrimony discovered during City of Phoenix projects. That agreement would apply to any discoveries made as result of the proposed Airport Development Program projects.

The City of Phoenix is designated as a Certified Local Government (CLG) under the State Historic Preservation Program. The City has enacted a local historic preservation ordinance, designated a City Historic Preservation Officer (CHPO), and formed a Historic Preservation Commission. The local ordinance establishes procedures for designating historic overlay zoning as a measure to protect historic properties. Because the Phoenix CLG is an interested party as defined by Section 106 regulations, they were consulted about the resource inventory, evaluation of historical significance, and potential effects.

### **Coordination and Consultation**

FAA formally initiated consultation with SHPO in 2002 to define the area of potential effects, discuss an appropriate inventory strategy, obtain relevant information, and identify other interested parties that should be contacted. The FAA also involved the Phoenix CHPO and City Archaeologist in these consultations. In 2003, FAA contacted four American Indian communities to provide information, solicit comments, and invite the communities to participate in the Section 106 consultations. These tribes include the Salt River Pima-Maricopa Indian Community, Gila River Indian

Community, Fort McDowell Yavapai Nation, and the Hopi Tribe. Consultations with interested parties are ongoing. (See Appendix D for copies of the consultation documentation.) The FAA has notified the Advisory Council on Historic Preservation about any potential adverse effects of the project and invited the Council to participate in these consultations. The FAA also has notified the National Park Service about potential impacts on the Pueblo Grande Ruins and Irrigation Sites National Historic Landmark, and the Bureau of Reclamation about the proposed crossing of the Grand Canal, which is owned by the federal government and administered by the Bureau.

## **ENVIRONMENTAL SETTING**

The project area is located on the north side of the Salt River within the Phoenix Basin, which is part of the vast Basin and Range physiographic province of the interior western United States (Thornbury 1965). The local topography is a flat floodplain and valley floor that slopes gently to the southwest. Elevation ranges from 1,110 to 1,150 feet above mean sea level. Sediments in the project area are deep alluvial deposits eroded from the Phoenix Mountains, Papago Buttes, McDowell Mountains, and Utery Mountains (Abbott 2000). The project area has been highly modified from its natural condition by decades of agricultural development and then urban and Airport construction.

The Salt River crosses the project area from east to west as a braided stream. The floodplain on the north side of the Salt River varies from 1 to 2 miles wide and cuts into the toe of a pediment that ultimately originates from the Phoenix Mountains. Péwé (1978) identified a series of four late Quaternary terraces along the Salt River east of Tempe Butte. Downstream from that point, the terraces converge, and the sequence of terraces in the project area blur. Previous geologic investigations in the area (Nials and Anderson 1994) suggest that the current project area is located on the equivalent of either the late Pleistocene/early Holocene terrace (Blue Point) or the northern edge of the late Holocene/modern terrace (Lehi).

Life on the Salt River floodplain was influenced greatly by periodic flooding and sometimes dramatic channel migration. Prior to the construction of the upstream dams on the Salt River, bi-annual flood events were common (Nials and Anderson 1994). Winter or early spring flooding usually was more common and intense than the occasional summer monsoon floods. Tree-ring chronology studies suggest that the Salt River was subject to a series of long-term flood episodes that have greatly influenced the human occupation of the Phoenix Basin (Graybill 1989; Nials and others 1989).

Extremely high summer temperatures and mild winters, with considerable daily variation in temperatures, characterize the local climate. Average annual precipitation is less than 10 inches, and occurs primarily in a biseasonal pattern in the form of brief, violent summer thunderstorms and broader, gentler winter showers (Sellers and Hill 1974).

Natural vegetation is likely to have included a riparian gallery forest of cottonwood and willow, and perhaps mesquite bosques, along the margins of the Salt River. Creosotebush, bursage, scattered cacti, and saltbush characteristic of the Lower Colorado River Valley subdivision of the Sonoran desertscrub biotic community are likely to have dominated the natural vegetation

beyond the riparian zone (Turner and Brown 1982: 181-194). However, essentially all natural vegetation has been eliminated by urban development.

Small mammals such as rabbits, ground squirrels, rats, and mice probably were the most numerous species of fauna living in the vicinity (Lowe 1964). Reptiles such as lizards and snakes probably also thrived in this area. The presence of water in the Salt River and low-lying marshy areas may have supported fish, turtles, and amphibians, and also attracted large numbers of birds. Mule deer and coyote also may have been relatively abundant in the general vicinity.

The rich riparian zone attracted prehistoric and historic populations. Both prehistoric and historic-era farmers constructed extensive canal systems to transport water from the Salt River to their fields.

## **HISTORY OF HUMAN OCCUPATION**

### **Prehistoric Period**

Human occupation in Arizona began at least some 12,000 years ago as the cooler and wetter climate of the last Ice Age waned (Reid and Whittlesey 1997). For three-fourths of that time, aboriginal groups subsisted by hunting wild game and gathering indigenous edible plants. The first inhabitants, called Paleoindians, hunted now-extinct species of large game animals, such as mammoths. The people of the subsequent Archaic era moved seasonally through more restricted territories to hunt modern species of game and collect various types of native plant foods. They processed some of these food intensively. For example, various kinds of seeds were ground into flour. This stable adaptation reflected an intimate knowledge of the natural environment.

The first efforts to cultivate crops, particularly corn, were initiated in the region approximately 3,000 years ago. The Hohokam culture grew out of these early agricultural efforts about 1,500 years ago and developed into a dynamic farming economy that flourished for more than a millennium. The Hohokam became the premier irrigation farmers of North America.

The remains of Hohokam villages and canals dominate the archaeological record of the Salt River Valley. Abundant broken pottery, some of which is elaborately decorated, and other artifacts such as flaked and ground stone tools and pieces of shell jewelry mark Hohokam habitation sites. Much of this archaeological evidence has been masked by urban and suburban development, but early archaeologists mapped the major villages and canals, and recent investigations indicate that archaeological evidence of the Hohokam often lies shallowly buried beneath the modern cities.

The Hohokam have been the subject of relatively intensive study (Crown and Judge 1991; Dean 1991; Doyel 1981; Gladwin and others 1938; Haury 1976; Wilcox 1979, 1980; Wilcox and Sternberg 1983). Archaeologists have defined four major periods in the Hohokam chronology (Pioneer, Colonial, Sedentary, and Classic), which in turn, are divided into a number of phases based on differences in decorated pottery, other artifact styles, types of residential and public architecture, and mortuary practices. However, much remains to be documented and understood

about the origins, evolution, and demise of the Hohokam. Hohokam remains are well documented to about A.D. 1450 to 1500, but archaeological evidence of subsequent prehistoric periods is rare.

Archaeological evidence documents the demise of the pre-Columbian Hohokam culture, but provides little evidence of connections between the Hohokam and the traditional cultures encountered by the first European explorers. Some oral traditions of the modern Akimel O'odham and Tohono O'odham indicate that they are descendents of the Hohokam (but see Rea 1997), as do the traditions of more distant tribes, including the Hopi, who reside in northern Arizona today, and the Zuni, who live in west-central New Mexico. O'odham and Hopi oral traditions describe social class conflict during the later Hohokam period, providing some insight into why Hohokam villages and irrigation systems might have been abandoned approximately a half-century before the arrival of European explorers (Bahr and others 1994; Teague 1993).

## **Historic Period**

### **Indigenous Cultures**

The first Spanish explorers arrived in what is now Arizona more than 450 years ago. With the exception of a 1629-1680 mission among the Hopi villages, Spanish settlement never extended north of Tucson (Spicer 1962). Nevertheless, the introduction of European diseases and domesticated crops and animals, as well as the creation of a market for slaves, had a profound effect on the indigenous tribal cultures.

Beginning in the late 1600s, priests traveled among the native peoples along the Gila and lower Colorado Rivers. They found about a half dozen villages of Akimel O'odham (Pimas) established on the middle Gila River. Closely related groups lived along the San Pedro and Santa Cruz Rivers to the south (Sobaipuri) and in the desert uplands to the southwest (Tohono O'odham and Hia C-ed O'odham). Native peoples did not occupy the Salt River Valley at that time, because it was a contested zone between the territories of the Akimel O'odham villagers and their adversaries to the north and east—the Yavapais and Western Apaches.

During the nineteenth century, remnants of several Yuman-speaking groups were driven from the lower Gila River and Colorado River valleys by warfare with the Quechan and Mojave. These groups, including the Opas, Cocomaricopas, Kaveltcadom, Halchidhoma, Kohuana, and Halyikwamai, joined the Pimas along the middle Gila River Valley and became known collectively as the Pee Posh (Maricopa). The Akimel O'odham and Pee Posh adapted peacefully to the arrival of Europeans. They expanded their farms to supply food to the newcomers, and, by the mid-1800s, they were characterized as a nation that had become an economic force and virtually the only effective military resistance against the Apaches.

In 1859, the United States set aside a reservation for the Akimel O'odham and Pee Posh along the Gila River. As new settlers diverted the flow of the Gila River to their farms upstream of the reservation, the supply of water for the reservation farms dropped dramatically. The 1870s initiated a half-century of famine for the Akimel O'odham and Pee Posh and some moved to the

Salt River Valley, where another reservation was established in 1879. The Yavapais and Apaches were conquered in the 1870s and 1880s. A reservation for the Yavapais was established at the confluence of the Salt and Verde rivers in 1903.

Today, Akimel O'odham and Pee Posh reside on the Gila River Reservation to the south of the Salt River Valley, and on the Salt River Reservation near Scottsdale and Mesa. Yavapais reside on the Fort McDowell Reservation to the northeast of the Salt River reservation, as well as on small reservations in the Verde Valley and near Prescott.

## **Euro-Americans**

Prior to the 1860s, Euro-Americans had not established permanent settlements in the Salt River Valley, which the Hohokam had abandoned approximately four centuries earlier. The United States acquired the region in 1848 with the signing of the Treaty of Guadalupe Hidalgo negotiated at the end of the War with Mexico. Additional land south of the Gila River was acquired by the Gadsden Purchase that was ratified in 1854. Seventeen years later, in 1865, the U.S. Army established Fort McDowell in the lower Verde River Valley. The Army stimulated settlement by affording protection to miners and farmers from the Apaches and Yavapais and by creating a market for food and supplies.

For agriculture to be viable in the arid desert of southern Arizona, irrigation was required. Jack Swilling, with backing of some residents of Wickenburg, a mining community 50 miles northwest of the Salt River Valley, organized the Swilling Irrigating and Canal Company and in 1867 began digging a canal following the traces of long-abandoned Hohokam canals. Swilling's ditch was at the northeastern edge of the current location of Sky Harbor International Airport. The success of the first settlers along the canal brought others to the valley, and the population of the valley grew. Swilling often is referred to as the Father of Phoenix because of his efforts in restoring the agricultural splendor of the aboriginal Hohokam culture.

## **Phoenix**

To accommodate homesteading and settlement, the U.S. General Land Office began surveying Arizona Territory in 1867. In 1870, citizens in the Salt River Valley selected the north half of Section 8 of Township 1 North, Range 3 East, as demarcated by the General Land Office, for a town they named Phoenix. Van Buren Street defined the northern edge of the town site, Harrison Street the southern, and Yavapai (modern-day 7th Avenue) and Apache (modern-day 7th Street) Streets were the western and eastern boundaries, respectively.

Although Phoenix was not initially a boomtown, it had the advantage of a central location with respect to the many different territorial settlements, which helped it to grow in both size and importance. Phoenix not only served the expanding farming community in the Salt River Valley, but also supplied the mining town of Wickenburg, Fort McDowell, and the railroad community of Maricopa Wells to the south. While the settlers of the valley worked to establish homesteads and livelihoods for themselves, the town served as a central meeting and market place.

of modern airports of the time. The 4.1 million dollar building included stores, restaurants, offices, and an observation deck. Artwork in the terminal lobby consisted of a three-panel mural depicting Arizona's past, present, and future. The northeast-southwest runway was abandoned at this time because the East Terminal was constructed on top of part of it, leaving Sky Harbor with two east-west runways (Jones 1997:23; Peplow 1980: SH-5).

In the late 1960s and 1970s, Sky Harbor continued to expand. A parking lot with capacity for 400 vehicles opened opposite the East Terminal in 1965, and construction of new general aviation facilities began the same year. Two baggage carousels were added to the East Terminal. In 1972, after an international terminal was completed east of the East Terminal, Sky Harbor was renamed Phoenix Sky Harbor International Airport. Incidences of airplane hijackings at some airports led to increased security measures across the country. TWA installed metal detectors in the East Terminal for the first time in 1970, and soon after, baggage X-ray machines were installed (Jones 1997:24, 26).

Again faced with problems of inadequate capacity in the mid-1970s, the Aviation Department embarked on a new capital improvement plan that proposed construction of another terminal, renovation of the East Terminal, and closure of the West Terminal. The plan also included the expansion of Airport clear zones by relocating residents who lived under the flight path west of the Airport, and constructing a new fire station and taxiways. In 1977, two major construction projects benefited the Airport—the Hohokam Expressway (SR 143) was completed, which provided residents of the eastern Salt River Valley with more efficient access to the Airport, and as the first stage in the new terminal construction, a taller control tower was built to replace the old West Terminal tower (Jones 1997:28).

In the late 1970s, the number of airlines operating out of Sky Harbor increased dramatically due to the passage of the Federal Deregulation Act of 1978. As a result, the West Terminal was kept in service. After the new sixty-five million dollar, 16-gate terminal was opened, the terminals were numbered and color-coded to avoid confusion. The West Terminal became Terminal 1, the East Terminal was designated Terminal 2, and the new terminal became Terminal 3 (Jones 1997:48-49).

In the 1980s, America West, Phoenix's first hometown airline in 40 years, was established. Its rapid growth, along with the addition of Northwest Airlines and United Airlines to the carriers that used Sky Harbor led to expansion of Terminal 3 from 16 to 26 gates. In 1988, construction started on a new terminal that would become Terminal 4. The Barry M. Goldwater Terminal 4 was completed in 1990, along with a new north-south crossfield taxiway. One year later a new international concourse opened in Terminal 4, and the original international terminal near Terminal 2 was converted to an Airport operations center. With the opening of Terminal 4, Terminal 1 was closed and later demolished in 1991 (Jones 1997:51, 55, 90).

## **History of the Portland Tract**

The northern end of the proposed Stage 2–East APM and the APM maintenance and operations facility would be within an area that Joseph S. Drew purchased from the federal government on

15 July 1890. Through a cash entry sale, Drew acquired the NW1/4 of Section 7 of Township 1 North, Range 4 East. (This parcel is bordered today by Van Buren Street on the north, 40th and 44th Streets on the west and east, respectively, and approximately the northern edge of the Airport on the south.) Drew owned the Culling's Well stage station between Wickenburg and La Paz and operated a livery stable at Central Avenue and Washington Street in Phoenix (Bentz nd; General Land Office 1890).

Part of the parcel purchased by Drew was platted in 1923 as the Portland Tract and planned for mixed residential, commercial, and industrial development. The plat was recorded at the request of a local realtor, Marshall H. Shelton, on behalf of owner Edward L. Minsoh, who lived in Los Angeles (Figure 3). Shelton was an African American who had come to Phoenix from Seattle and had an office on West Washington Street (Maricopa County Recorder 1923; Mawn nd; R.L.S. 1922).

Discrimination was common in Phoenix at that time and residential areas were racially segregated. White real estate agents commonly refused to sell property to African Americans in predominantly White residential areas, and banks did not provide mortgages to African Americans for such purchases. In response, Shelton and other local realtors and developers created subdivisions and neighborhoods exclusively for African Americans. In 1900, African Americans made up three percent of the city's population, increasing to four percent of the population by 1920. In the 1920s, there were three main African American communities in the east, west, and south portions of Phoenix (Dean and Reynolds 2004).

In 1913, a decade before the Portland Tract was platted, Shelton initiated planning for an African American subdivision located along the National Highway (Van Buren Street) between Phoenix and Tempe. Originally called Acre City and later renamed Pacific City, the irregularly shaped subdivision was bounded by Van Buren and Washington Streets on the north and south. The western boundary of Acre City was on the east side of 32<sup>nd</sup> Street and the eastern boundary ended with the lots on the east side of 32<sup>nd</sup> Place. Shelton envisioned Acre City as a planned community with residential lots, and also a hotel, stores, and a meatpacking house. In 1918 Shelton incorporated the Acre City Mining and Development Company to manage the project (Maricopa County Recorder 1914; Mawn nd; R.L.S. 1922).

Shelton's efforts to establish successful African American communities were lauded in the *Phoenix Tribune*, which was an African American publication in the 1910s and 1920s. He was referred to as "one of the most successful real estate dealers in the city" and reportedly "sold hundreds of homes to members of the race" (R.L.S. 1922:2). The article identified Shelton as the owner of the townsite of Pacific City (previously known as Acre City) and discussed his plans to make the community "an exclusive colored settlement" by attracting prominent African American citizens, and constructing a big industrial school, a factory building, and other commercial and industrial ventures (R.L.S. 1922:2). The extent of the growth and development of the community is unclear, but reports indicate that in 1920 an amusement park with a pool and dancing pavilion was located within the community and in 1924 the American Legion circulated a petition in favor of a boxing match to be held at Pacific City to benefit disabled African American veterans (*Phoenix Tribune* 1924; R.L.S. 1922:2).



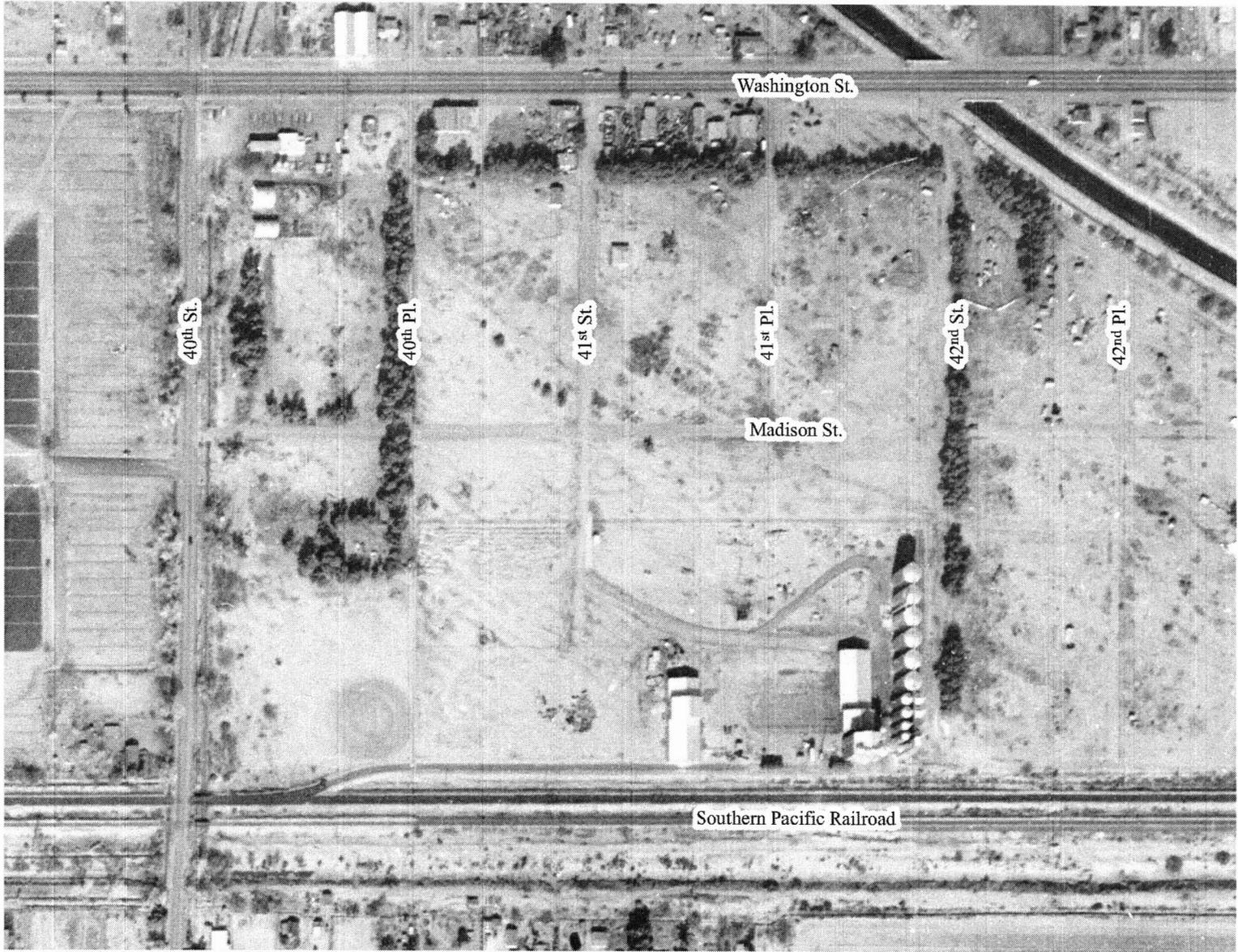
By 1923, Shelton had experienced some success with Pacific City and hoped to develop the Portland Tract in much the same way. The Portland Tract was promoted as “the first restricted district for colored people ever offered for sale in America” (*Arizona Republican* 1924:1:3). Advertisements appeared in the *Phoenix Tribune* beginning in 1923 and continued at least through 1926, urging subscribers to “Watch Portland Tracts Grow” and emphasizing the industrial potential of the property (*Phoenix Tribune* 1923). The ad described the lots as 52 by 147.5 feet, with gas, electricity, and water, that could be purchased for \$265 and up with a payment plan of \$15 down and \$5 monthly. Shelton’s ad also pointed out that the tract was in the vicinity of a packing company (possibly the meat packing house in Acre/Pacific City) and that a cement plant also was planned. In 1924, prominent African American educator and national president of the Colored Federation of Women’s Clubs, Ms. Hattie Q. Brown, purchased a lot in the Portland Tract for her winter home (*Arizona Republican* 1924; *Phoenix Tribune* 1923; Whitaker 2000).

When the Portland Tract was platted in 1923, 40<sup>th</sup> Street was known as Four Mile Road and 44<sup>th</sup> Street as Chicago Avenue. Madison Street was known as Genevra Street, having been named after Mr. Shelton’s wife. Shelton assigned female names (Edna, Leola, Maria, Elvira, and Zelda) to the streets that are now numbered (refer to Figure 3). Little is known about the early history of the Portland Tract, which was outside of the Phoenix city limits at that time, but most of the subdivision seems never to have been developed.

Commercial development along Washington Street likely increased around 1925 when Washington Street was extended and paved to the Tempe Bridge over the Salt River. As-built construction plans for improvements made to Washington Street in 1937 depict a club, grandstand, and race track on the south side of Washington between 40<sup>th</sup> Street and 40<sup>th</sup> Place, and two houses north of Washington Street near 40<sup>th</sup> Place (Luckingham 1989; Phoenix City Engineer 1937). Robert Walker, who leases property within the area, said that the Portland Tract was mostly vacant property when he came to Phoenix in the late 1940s, and he remembers that squatters often inhabited the area, living in trailers, cars, and tents, until the County Sheriff ordered them to leave.

Unfortunately, city directories did not include entries for this area until the mid-1940s because it was outside the city limits, and the City of Phoenix apparently did not require building permits before the late 1950s. The first descriptions of the streets in the Portland Tract appeared in the 1946-1947 Phoenix city directory, but no individual addresses were listed. By 1950, the only city directory listings within the subdivision were on Edna Street (40<sup>th</sup> Place) and Leola Street (41<sup>st</sup> Street) north of Washington Street, outside of the proposed APM area. In 1953, two residential properties were listed on Anna Street (42<sup>nd</sup> Street) south of Washington Street within the project area, and two additional residential properties were listed in the 1955 city directory on Leola Street (41<sup>st</sup> Street). These four houses may have been the only residential development within the portion of the Portland Tract south of Washington Street.

An aerial photograph taken around 1954 indicates that most of the tract was vacant and cleared (Photograph 1). The streets depicted on the 1923 plat are clearly visible in the aerial photograph, but they were not paved. Tamarisk or cottonwood trees appear on the aerial planted in rows



Photograph 1 Circa 1954 Aerial Photograph of Portland Tract

down 40<sup>th</sup> Place, 42<sup>nd</sup> Street, and behind the commercial properties that front onto Washington Street indicating planned landscaping and an effort to separate commercial and residential areas.

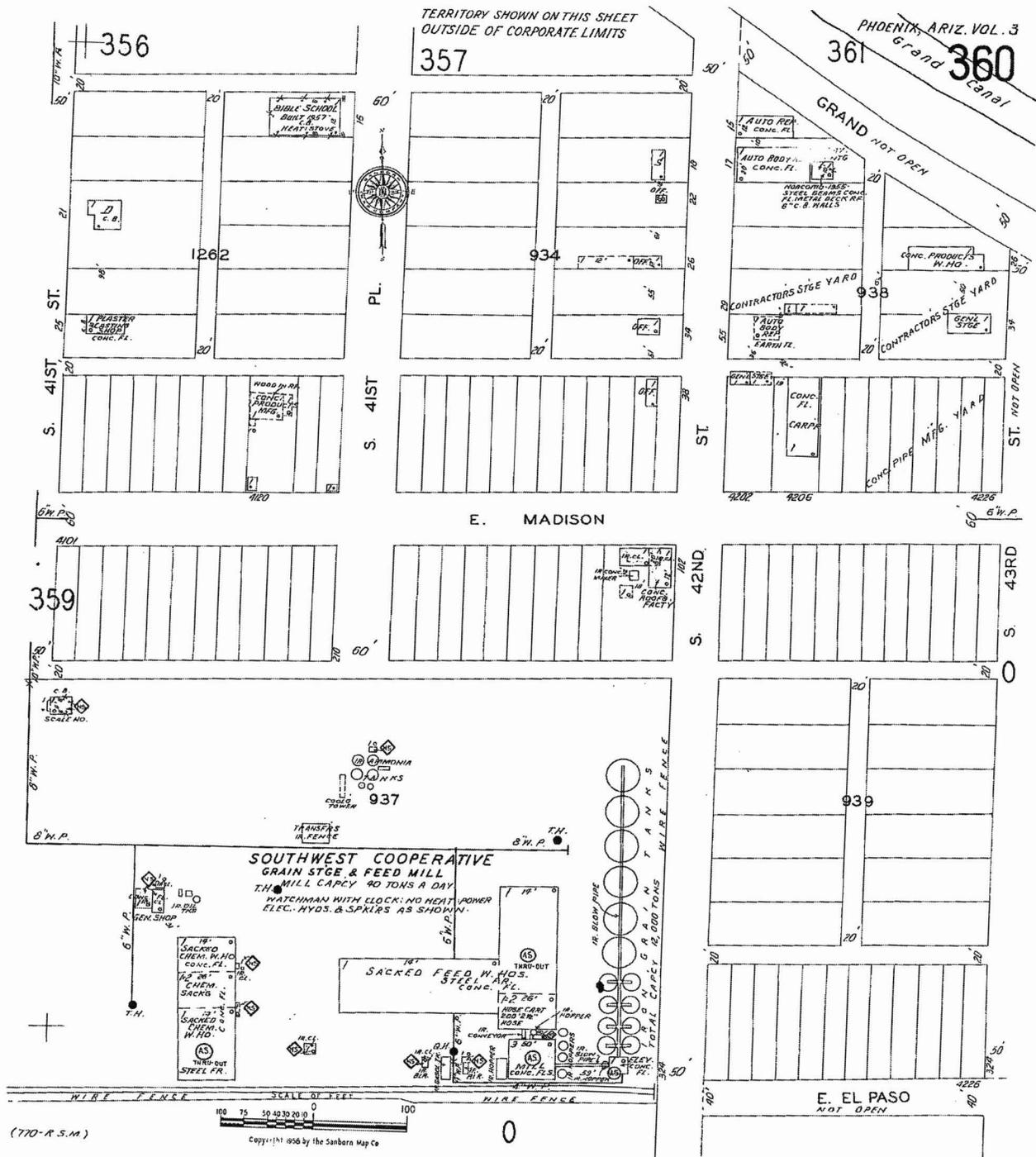
The African American neighborhood on the east side of Phoenix was concentrated between Van Buren Street and the Southern Pacific Railroad tracks between Central Avenue and 24<sup>th</sup> Street (Dean and Reynolds 2004). The Portland Tract may have been too far outside of town to attract many families, and poor economic conditions during the Great Depression may have thwarted Shelton's plans to develop the Portland Tract, and perhaps the Acre/Pacific City subdivision as well.

The circa 1954 aerial photograph depicts the area in transition from mostly vacant parcels to a commercial and light industrial area. The photograph shows commercial properties along Washington Street, and the Southwest Cooperative Wholesale, a large grain storage and feed mill, is visible between 40<sup>th</sup> and 42<sup>nd</sup> Streets, south of Madison Street adjacent to the railroad. The construction of this large facility may have been the impetus that instigated the transformation of the neighborhood.

The two residential properties that were listed in the 1955 city directory on Leola Street (41<sup>st</sup> Street) south of Washington Street are the only houses on the aerial photograph. There were other residential properties in the portion of the Portland Tract north of Washington Street between 40<sup>th</sup> Street and 41<sup>st</sup> Place, as well as outside of the Portland Tract south of the railroad tracks. The house on the west side of Leola Street was subsequently demolished, and the house on the east side of the street has been integrated into another building and converted to commercial use. Two residential properties within the Portland Tract north of Washington Street on the east side of 40<sup>th</sup> Place date from 1925 and are extant. All three of the extant residential buildings are outside of the APM area of potential effects.

Today, commercial and light industrial businesses occupy the part of the Portland Tract south of Washington Street. The first Sanborn-Perris fire insurance map of the area, which was prepared in 1958, documents the development of light industry in the Portland Tract during the late 1950s (Figure 4). Fred Smith, the operator of a business called Arizona House Movers, acquired several vacant parcels in the area and moved many buildings onto those parcels and those of other landowners in the Portland Tract. Mr. Smith was the late husband of Mrs. Marla Smith Ewart, who owns multiple properties in the area. According to Mrs. Ewart, the streets within the Portland Tract were not paved until the late 1960s or early 1970s, and many of the properties still have not been connected to the city sewer system.

In summary, M.H. Shelton initially platted the Portland Tract to be an exclusive development for African Americans in 1923, but very little of the subdivision was developed and most of the tract remained vacant in 1954. In the late 1950s, Portland Tract transitioned to a light industrial area and any buildings constructed prior to 1954 were moved in from other locations. None of the extant buildings within the area of potential effects are associated with the early history of the Portland Tract.



1958 Sanborn Map of Part of Portland Tract Figure 4

## **AREA OF POTENTIAL EFFECTS**

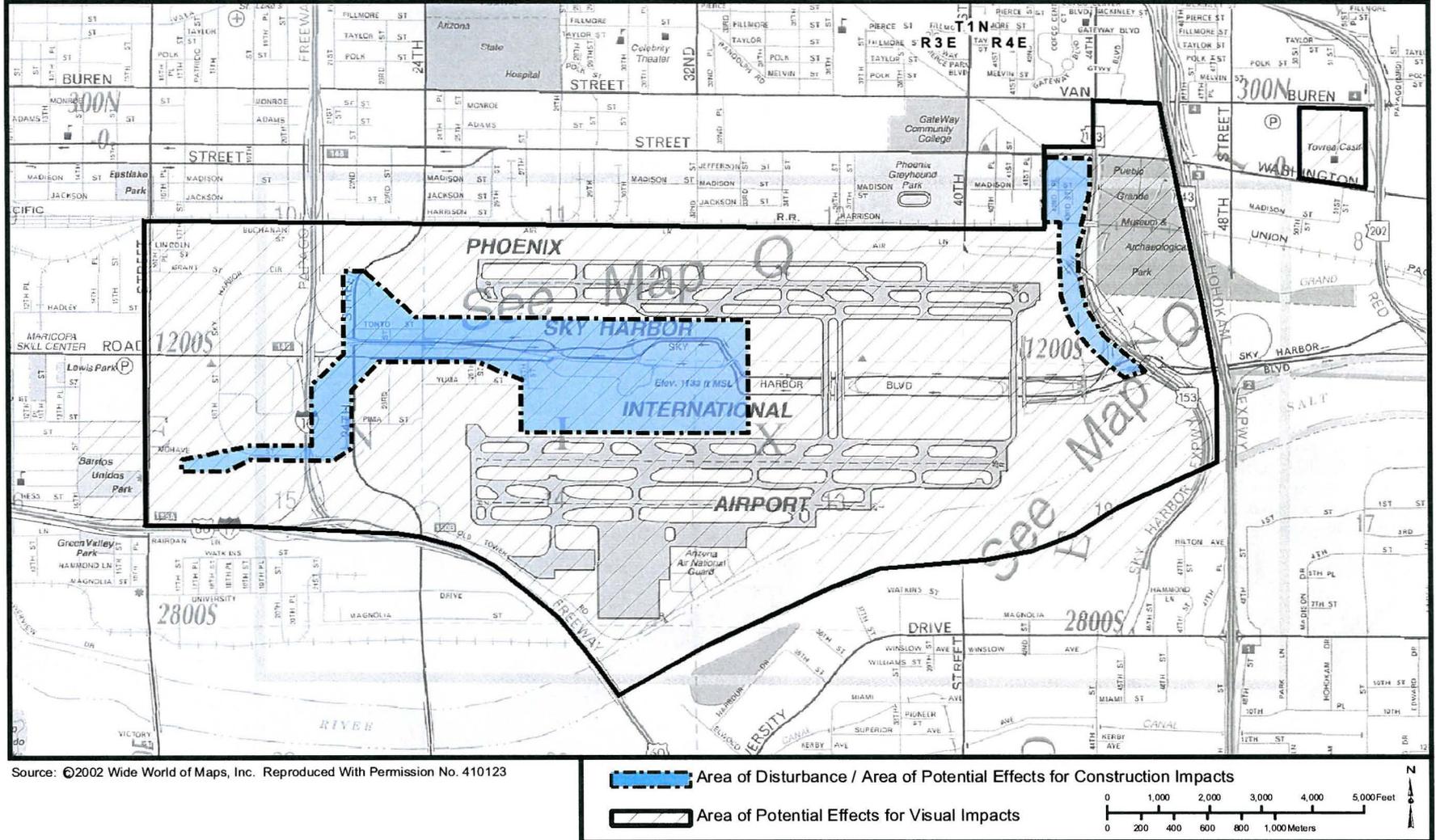
The proposed Airport Development Program could result in impacts on historical buildings and structures, archaeological resources, and traditional cultural places from (1) ground disturbance and demolition associated with construction of the proposed Airport Development Program, and (2) visual changes to the settings of historical properties. Direct construction impacts could damage or destroy archaeological resources or traditional cultural places, or require demolition of historical buildings and structures eligible for the National Register. Visual impacts also could degrade the integrity of National Register-eligible properties whose settings are an important part of their historic significance. Areas of potential effects were defined for the two identified types of impacts (Figure 5), and inventory strategies were specifically designed for each.

Potential for construction-induced ground vibration to damage the archaeological ruins beyond the area of direct construction impacts also was considered for one special resource—the Pueblo Grande Ruin. A previous study recommended restricting use of heavy equipment within 150 feet of the platform mound and surrounding residential compound (King and others 1991). The Stage 2–East APM would be no closer than approximately 1,000 feet, and therefore construction-induced ground vibration is not expected to threaten the ruin. The study did recommend that the museum evaluate any blasting or pile driving within 3,000 feet of the ruin on a case-by-case basis. If subsequent final design should determine that construction would require blasting, pile driving, or other techniques that might create high levels of vibration, the threat should be reassessed in consultation with the Phoenix City Archaeologist. If warranted, a vibration-monitoring program should be implemented to avoid damage to the ruin.

Construction activities also would result in short-term increases in noise levels, but construction noise would conform to City of Phoenix ordinances and be restricted to the immediate vicinity of the construction zones and within the existing Airport. In an urban setting such noise is not projected to have potential adverse effects. The proposed Airport Development Program would not alter Airport operations, and would therefore not result in any change in noise exposure to onsite and offsite properties.

### **Area of Potential Effects for Construction Impacts**

The area of disturbance was defined to facilitate analysis of ground disturbance and demolition impacts related to construction of the proposed Airport Development Program. The defined area of disturbance encompasses approximately 432 acres (refer to Figure 5). The area of disturbance was generously defined and not all of it might be disturbed. This area includes about 372 acres on the Airport, encompassing construction zones for demolition of Terminal 2, building the new West Terminal, constructing crossfield Taxiways U and V, realigning Sky Harbor Boulevard, and constructing the Stage 2–West APM and the segment of Stage 2–East APM that is on the Airport. The Airport land is owned by the City of Phoenix. About 60 additional acres would be subject to construction disturbance outside the Airport within the Stage 2–East APM corridor and APM maintenance and control facility. The City of Phoenix owns some of this land and the street rights-of-way. The Grand Canal, which is owned by the federal government and administered by the Bureau of Reclamation, crosses this area. Other parcels are privately owned.



Source: ©2002 Wide World of Maps, Inc. Reproduced With Permission No. 410123

Figure 5 Area of Potential Effects

## **Area of Potential Effects for Visual Impacts**

The descriptions of the proposed Airport Development Program and a field reconnaissance provided the basis for defining the area of potential effects for visual impacts. Modifications of the Concourse N4 International Gates would be within the existing Terminal 4 building and have no potential for visual impacts. Construction of the West Terminal, Crossfield Taxiways U and V, and the realignment of Sky Harbor Boulevard would be within the core of the Airport, and these elements of the project have no potential for adverse visual effects beyond the limits of the Airport property. The one element of the project that has potential for visual effects beyond the Airport property is the Stage 2–East APM.

The area of potential effects for visual impacts was defined to encompass about 5.3 square miles of land both within and outside the Airport, including the following areas:

- the Airport east of 16th Street and west of the Hohokam Expressway (SR 143)
- an area extending north from the Airport boundary between 42<sup>nd</sup> Street and the Hohokam Expressway (SR 143) and encompassing the first row of parcels north of Washington Street between 42<sup>nd</sup> Street and 44<sup>th</sup> Street and extending farther north to Van Buren Street between 44<sup>th</sup> Street and the Hohokam Expressway (SR 143)
- noncontiguous Tovrea Castle property, a National Register-listed property situated on a prominent hill northeast of the Airport (refer to Figure 5)

The City of Phoenix owns the Pueblo Grande Museum and Archaeological Park, the Tovrea Castle property, as well as street rights-of-way. The Grand Canal, owned by the federal government, crosses this area. Other parcels are privately owned.

## **INVENTORY METHODS**

### **Archaeological Resources**

The results of prior studies were used to inventory archaeological resources within the area of potential effects for construction impacts. No archaeological field survey was conducted because the area of disturbance is so highly developed that virtually no natural ground surface is visible for inspection. Disruption of ongoing land uses to conduct archaeological testing is not warranted at this time because of the preliminary stage of project design and the considerable extent of prior investigations for prior projects, such as development of the Sky Harbor Center, construction of the Papago Freeway, and previous improvements at the Phoenix Sky Harbor International Airport.

Digital information about prior cultural resource studies and previously recorded archaeological and historical sites was obtained from the AZSITE Cultural Resource Inventory (AZSITE Consortium 2002). AZSITE is a computerized geographic information system database that includes information from the files of the Arizona State Museum, Arizona State University,

impacts. The collected information was used to formulate recommendations regarding National Register eligibility.

### **Traditional Cultural Places**

The FAA contacted the leaders and cultural preservation offices of four tribal communities to provide them information about the project (Salt River Pima-Maricopa Indian Community, Gila River Indian Community, Fort McDowell Yavapai Nation, and Hopi Tribe, see Appendix D). The tribes were offered an opportunity to provide information about places that may have traditional cultural values for their communities, and to express their concerns about impacts on such places.

## **INVENTORY OF ARCHAEOLOGICAL SITES**

### **Prior Cultural Resource Studies**

The records and literature review identified 33 prior studies that have encompassed parts of the area of potential effects for construction impacts (Figure 6, Table 1). These studies involved a variety of records reviews, surveys, and archaeological monitoring, testing, and data recovery projects. The most substantial studies have been conducted in support of planning prior improvements on the Airport and freeways adjacent to the Airport.

### **1970s Studies**

Two studies were conducted in the 1970s. One of these was a survey undertaken in response to proposals to expand the boundaries of the Pueblo Grande Ruin National Historic Landmark (Johnson 1974). The City of Phoenix acquired the core of a large Hohokam village site known as Pueblo Grande [designated as AZ U:9:1(ASM)], and developed it as the Pueblo Grande Museum and Archaeological Park. The village was occupied from the Pioneer through Classic periods (circa A.D. 500 to 1450). The archaeological site extends well beyond the city park but its exact boundaries are not well defined because urban development masks the site. The part of the site within the park is listed in the National Register under Criteria A and D, and also is designated as the Pueblo Grande Ruin and Irrigation Sites National Historic Landmark. The portion of the site outside the park is considered eligible for the National Register under Criterion D.

The studies conducted in the 1970s were in response to a proposed addition of approximately 60 acres on the west side of 44th Street to the National Historic Landmark designation. The National Park Service concluded there was insufficient evidence to expand the landmark. Although the National Park Service has never formally defined the landmark boundaries, it is generally accepted that the landmark does not extend beyond the city park.



**TABLE 1  
PRIOR CULTURAL RESOURCE STUDIES IN THE AREA OF POTENTIAL EFFECTS**

Project		Type of Study	Site	Results	Reference
1	Pueblo Grande National Historic Landmark boundary	survey	Pueblo Grande [AZ U:9:1(ASM)]	low artifact density; recommended against expanding landmark boundary to the west	Johnson 1974
2	Hohokam Expressway (now Sky Harbor Expressway)	testing, data recovery	AZ U:9:2(ASM), AZ U:9:28(ASM)	AZ U:9:2(ASM): identified 11 Hohokam canals and historical Joint Head; AZ U:9:28(ASM): 8 Hohokam canals	Masse 1976; Bradley 1999
3	Arizona Diversion Channel, Area 7 Spoil Area	survey	Pueblo Salado [AZ T:12:47(ASM)]	discovered the Pueblo Salado site and 10 artifact concentrations within it	Ahlstrom and Phillips 1983
4	I-10 (Papago Freeway)	testing	Pueblo Salado [AZ T:12:47(ASM)], Areas 1, 2, 5 and 7	Area 5: probable pit house, ash lens, activity area with 5 fire pits, small canal, possible occupation surface with scattered human bone; Area 7: roasting pit, canal, and human burial	Euler and Sires 1984
5	I-10/ Sky Harbor Boulevard interchange	survey	none	no further study recommended	Rosenberg 1985 (described in BRW 1986)
6	Sky Harbor south access road	survey, testing	Pueblo Salado [AZ T:12:47(ASM)]	identified Classic period Hohokam artifacts in Area 11 of Pueblo Salado, no archaeological features found	Cable 1985a, 1985b
7	north runway expansion	data recovery	Swilling's Ditch	identified first historic-era canal built in Phoenix	Cable and Doyel 1986
8	Sky Harbor Center	survey	Pueblo Salado [AZ T:12:47(ASM)], Dutch Canal Ruin [AZ T:12:62(ASM)]	identified 3 artifact concentrations in Pueblo Salado (Areas 12, 13, 14) and 6 in Dutch Canal Ruin	BRW 1986
9	Hohokam Expressway (SR 143) survey	survey	Pueblo Grande [AZ U:9:1(ASM)], Grand Canal, Southern Pacific Railroad, Maricopa & Phoenix Railroad	testing recommended within Pueblo Grande sites adjacent to city park and further consideration of historical structures	Stone 1987a
10	Sky Harbor Boulevard (SR 153) survey	survey	AZ U:9:2(ASM), AZ U:9:28(ASM)	testing recommended	Stone 1987b
11	Salt River channelization survey	survey	three historical bridges (east of Airport)	recommended avoidance	Stone 1987c
12	Hohokam Expressway (SR 143) and Red Mountain Freeway (SR 202) spoil areas	survey	Pueblo Grande [AZ U:9:1(ASM)], AZ U:9:2(ASM)	testing recommended	Stone 1987d
13	I-10 (Papago Freeway)	testing, data recovery	Dutch Canal Ruin [AZ T:12:62(ASM)]	identified prehistoric canals, temporary habitation features, and a human burial	Greenwald and Ciolek-Torrello 1988
14	Sky Harbor remote parking lot	monitoring	Dutch Canal Ruin [AZ T:12:62(ASM)]	two concentrations of pre-Classic and Classic period Hohokam artifacts documented as Areas 9 and 10 of Dutch Canal Ruin	Bostwick 1988; Greenwald and others 1994

**TABLE 1  
PRIOR CULTURAL RESOURCE STUDIES IN THE AREA OF POTENTIAL EFFECTS**

	<b>Project</b>	<b>Type of Study</b>	<b>Site</b>	<b>Results</b>	<b>Reference</b>
15	Sky Harbor Center, MeraBank parcel	testing	Pueblo Salado [AZ T:12:47(ASM)]	identified a canal, possible house floor, possible trash midden, horno (cooking pit), 3 human inhumations and 2 cremations	BRW 1989
16	burial discovery	excavation, repatriation	Pueblo Salado [AZ T:12:47(ASM)]	excavated single juvenile inhumation with associated grave goods	Schroeder 1994
17	Phoenix Sky Harbor Center	testing, data recovery	Pueblo Salado [AZ T:12:47(ASM)], Dutch Canal Ruin [AZ T:12:62(ASM)]	excavated 47 human burials, a large compound, and several small farming hamlets at Pueblo Salado (Areas 8, 9, and 14), and identified 2 human burials, and scattered field houses and farmsteads at Dutch Canal Ruin	Greenwald 1994; Greenwald and Ballagh 1996; Greenwald and others 1994, 1995
18	Sky Harbor master plan update	records review, testing, data recovery	Pueblo Salado [AZ T:12:47(ASM)]	Pueblo Salado (Areas 6, 15, 16): excavated 13 adobe structures, 2 pit houses, 18 pit structures, 117 human burials, numerous pits and artifact concentrations, and a bald eagle burial	Greenwald and others 1996; Greenwald, Ballagh, and Zyniecki 1996; Greenwald and Zyniecki 1993;
19	Salt River Project canals	survey	AZ T:7:167(ASM)	Grand Canal, constructed 1878	Aguila 1998
20	Williams fiber optic line	survey	AZ T:10:84(ASM)	Phoenix & Eastern/Southern Pacific Railroad spur line ca 1926	Ellis and others 1999
21	Sky Harbor central runway improvements	testing, monitoring, data recovery	Pueblo Salado [AZ T:12:47(ASM)]	103 archaeological features identified to date; additional monitoring, testing data recovery studies ongoing	Boston and others 2001; ACS in preparation
22	Sky Harbor Yuma parking lot	testing	Pueblo Salado [AZ T:12:47(ASM)]	only 24 isolated artifacts found	Lindly 2001
23	Sky Harbor car rental center	testing	Pueblo Salado [AZ T:12:47(ASM)]	identified a single prehistoric canal, previously documented, no further study recommended	North and others 2002
24	Sky Harbor master plan update, Fire Station No. 29	testing, data recovery	AZ U:9:237(ASM)	two Hohokam canals (late Sedentary or early Classic period) and adjacent field investigated	Rogge and others 2002
25	Phoenix Neighborhood Services project	monitoring	Dutch Canal Ruin [AZ T:12:62(ASM)]	no artifacts or features found	Stubing 2002
26	I-10, I-17, SR 143 upgrade planning	records review	Dutch Canal Ruin [AZ T:12:62(ASM)]	recommended monitoring and discovery plan be prepared	Stubing 2003
27	Sky Harbor master plan update, North Runway extension	testing, data recovery	Dutch Canal Ruin [AZ T:12:62(ASM)]	Phase 2: excavated 7 pit houses, 1 ramada, 1 horno, 2 extramural hearths, 8 ash pits, 2 bell-shaped pits, 19 non-thermal pits, 1 extramural post hole, 2 cremations, and 2 historic pits Phase 3: excavated 28 pit houses, 4 possible pit houses, 3 extramural surfaces, 38 pits, 1 horno, 4 extramural hearths, and 2 secondary cremations	Henderson 2003, 2004
28	Stage 1B APM geotechnical investigation	records review	Pueblo Grande [AZ U:9:1(ASM)], AZ U:9:2(ASM), AZ U:9:28(ASM)	prehistoric canals and the historic Joint Head canal of sites AZ U:9:2 and 28(ASM) are likely to extend into project area	Stokes and Jones 2003

**TABLE 1  
PRIOR CULTURAL RESOURCE STUDIES IN THE AREA OF POTENTIAL EFFECTS**

	<b>Project</b>	<b>Type of Study</b>	<b>Site</b>	<b>Results</b>	<b>Reference</b>
29	Stage 1 APM electrical power supply	records review	Pueblo Grande [AZ U:9:1(ASM)], AZ U:9:2(ASM), AZ U:9:28(ASM)	recommended testing in vicinity of sites	Aguila and others 2004
30	Cutter Aviation terminal utilities	monitoring	near Pueblo Salado [AZ T:12:47(ASM)]	no artifacts or features found, deposits were construction fill materials	Hackbarth 2004
31	Swift hangars demolition and tank removal	monitoring	near Dutch Canal Ruin [AZ T:12:62(ASM)]	no artifacts or features found	Lindly 2004a
32	potholing to test for fuel contamination	monitoring	near Dutch Canal Ruin [AZ T:12:62(ASM)]	no artifacts or features found	Lindly 2004b
33	utility conduit installation	monitoring	near Dutch Canal Ruin [AZ T:12:62(ASM)], and Pueblo Salado [AZ T:12:47(ASM)]	no artifacts or features found	Walsh 2004

Sources: AZSITE Consortium (2002) and other referenced reports

The other study conducted in the 1970s involved testing and data recovery for development of what was then called the Hohokam Expressway but is now known as the Sky Harbor Expressway (SR 153). [Confusingly, SR 143, which is approximately one-half mile to the east of the Sky Harbor Expressway, is now designated as the Hohokam Expressway.] That study investigated three sites immediately adjacent to the Stage 2–East APM corridor north of the Airport—AZ U:9:2 and 27(ASM) south of the Union Pacific Railroad and site AZ U:9:28(ASM) north of the railroad (Bradley 1999; Masse 1976). Sites AZ U:9:2 and 27(ASM) were later combined into a single site under the designation AZ U:9:2(ASM).

Eleven Hohokam canals, dated to the Sedentary and Classic periods, were documented at site AZ U:9:2(ASM), along with one hearth, and a pocket of flood deposited Hohokam sherds and flaked stone artifacts. The historic-era Joint Head Canal also was found, along with two pockets of historic-era trash that had been deposited in the abandoned Hohokam canals. Seven Hohokam canals were found at site AZ U:9:28(ASM) between the railroad and the Grand Canal, and another Hohokam canal was found on the north side of the canal, for a total of 19 canal segments. Two Hohokam activity areas and three historic-era trash pits also were excavated.

### 1980s Studies

Thirteen studies were conducted during the 1980s. Most of these were related to construction of the Papago Freeway (I-10 inner loop) and development of the Sky Harbor Center on the west side of the Airport, and the Hohokam Expressway (SR 143) along the eastern edge of the Airport. However, the earliest study was a survey of a location considered as a spoil area for the Arizona Diversion Channel that the U.S. Army Corps of Engineers was planning to build as a flood control facility along the Arizona Canal several miles to the north (Ahlstrom and Phillips

1983). The survey of approximately 200 acres north of I-10 and west of 24th Street, which overlaps part of the Stage 2–West APM corridor, resulted in the discovery of a large Hohokam village that was designated as site AZ T:12:47(ASM) and has come to be known as Pueblo Salado. Ten concentrations of artifacts were mapped at the site. The potential for archaeological evidence of historic era occupation also was recognized, mostly on the basis of historic maps.

The recommendation to avoid impacts on Pueblo Salado by selecting another spoil area for the Arizona Diversion Channel project was adopted, but subsequently the Arizona Department of Transportation sponsored archaeological testing of parts of the site in conjunction with planning the Papago Freeway (I-10 inner loop). This testing focused on four areas of the site within the Papago Freeway right-of-way (Euler and Sires 1984). Eight archaeological features related to the Hohokam occupation were found. These included a probable pit house (with some human bone), an ash lens, an activity area with five fire pits, two small canals, a possible occupation surface, a roasting pit, and a human burial. Impacts of the freeway construction involved placement of fill materials on parts of the site rather than excavation, and no further studies were conducted at Pueblo Salado prior to construction of the freeway.

Additional studies for the Papago Freeway were conducted to the north of Pueblo Salado. A survey along the Papago Freeway and Sky Harbor Boulevard traffic interchange identified no significant archaeological or historical resources (Rosenberg 1985, described in BRW 1986:12). Much of this area appears to be within a now filled-in erosion channel known as Turney's Gully (see Greenwald and others 1994:2, 19), which might account for the lack of archaeological sites.

Additional studies farther north in the Papago Freeway corridor involved testing and data recovery within the Dutch Canal Ruin, a Hohokam site designated as AZ:T:12:62(ASM). These investigations documented two main canals dated to the late Pioneer and early Colonial periods of the Hohokam era. They are some of the earliest documented irrigation features found in the Salt River Valley (Greenwald and Ciolek-Torrello 1988). The northern canal appears to be Canal Patricio as identified by early archaeological researchers. Other excavated features include five small pit structures that appear to be remnants of seasonal shelters, three fire pits, an ash-filled pit, and three pits of undetermined function, as well as two use surfaces. All of these resources, which were located in the central area of the Dutch Canal Ruin, were interpreted as reflecting seasonal Hohokam farming activities on the first terrace on the north side of the Salt River.

Twenty-nine historic-era or modern archaeological features also were found, including trash deposits, trash-filled pits, outhouse pits, cesspool/septic tanks, house foundation slabs, house subfloor pits, river-cobble walls, utility trenches, a fire pit, a posthole, and pits of unknown function. Historical records indicated that the Dutch Ditch was excavated in the project vicinity around 1868. Although the canal was not conclusively identified, one of the documented canals may be the Dutch Ditch or a lateral of it. Most of the historic archaeological features appear to reflect residential development, primarily dating to the post–World War II period.

Several studies have been conducted in support of the City of Phoenix redevelopment of an area on the west side of the Airport as Sky Harbor Center, and two of these were conducted during the 1980s. The archaeological investigation of the area began with a survey of approximately 800 acres west of 24th Street between I-10 and Jefferson Street (BRW 1986). Six artifact

concentrations were identified within the Dutch Canal Ruin, and the 10 concentrations previously recorded at Pueblo Salado were found along with four additional concentrations. The survey was followed by archeological excavations, which began with testing in a 60-acre parcel leased for the MeraBank development southwest of the intersection of Buckeye Road and the Papago Freeway (BRW 1989). A Hohokam canal, probable house floor, probable trash midden, hornos (cooking pit), three inhumations, and two cremations were found.

In conjunction with those investigations, archaeological monitoring also was conducted within a parking lot developed north of Sky Harbor Boulevard between the realigned 24<sup>th</sup> Street and the original alignment (Bostwick 1988). Two concentrations of pre-Classic and Classic period Hohokam artifacts and features were documented as Area 9 and 10 of the Dutch Canal Ruin (Greenwald and others 1994: 187-206).

Sky Harbor Airport sponsored two other investigations for smaller improvements during the 1980s. One was a survey along a new access road in the southwestern part of the Airport. An artifact concentration was identified within Area 11 of the Pueblo Salado archaeological site (Cable 1985a). The roadway corridor was previously disturbed and subsequent testing did not identify any archaeological features (Cable 1985b). Another study was conducted in 1985 prior to construction of a bypass holding pad at the eastern end of the North Runway. Four trenches were excavated to document what was identified as the heading of the original Swilling's Ditch excavated in 1867-1868—one of the earliest Euro-American irrigation canals excavated in the Salt River Valley (Cable and Doyel 1986).

Four other surveys were conducted in the 1980s in conjunction with the planning of the Hohokam Expressway (SR 143) along the eastern edge of the Airport. The surveys encompassed the expressway right-of-way (Stone 1987a), modifications of Sky Harbor Boulevard (Stone 1987b), channelization of the Salt River (Stone 1987c), and numerous potential spoil areas, including four within the vicinity of the Airport (Stone 1987d). These surveys noted three previously recorded sites in the Airport vicinity: Pueblo Grande [AZ U:9:1(ASM)], AZ U:9:2 and 28(ASM). Other historical structures identified included the Grand Canal and Southern Pacific Railroad (now Union Pacific) that remain in use, and part of the abandoned Maricopa & Phoenix Railroad. [In the 1990s, major archaeological testing and data recovery studies were conducted to mitigate impacts of the Hohokam Expressway along the eastern margin of the Pueblo Grande Museum and Archaeological Park (Abbott 1994, 2003; Cable 1988; Foster 1994a, 1994b, 1994c; Kwiatkowski 1994; Mitchell 1992, 1994a, 1994b; Van Gerven and Sheridan 1994). Rogge and others (2005) provide a recent summary of the archaeological investigations within the Pueblo Grande site.]

## **1990s Studies**

Five studies were completed in the 1990s. The most substantial of these involved continuing investigations within the Sky Harbor Center, and other studies for updating the Airport master plan. Another study involved excavation of a human burial discovered on the Airport, and two other studies were long linear surveys for projects off the Airport.

An extensive testing and data recovery program was undertaken to investigate much of the Sky Harbor Center between the Union Pacific Railroad tracks on the north and I-10 to the south, between 16<sup>th</sup> Street and the original 24<sup>th</sup> Street alignment. These investigations involved excavation of large parts of the Dutch Canal Ruin and Salado Pueblo (Greenwald 1994; Greenwald and Ballagh 1996; Greenwald and others 1994, 1995). A farmstead and two human burials were excavated within the Dutch Canal Ruin (Areas 1 through 10). A large residential compound, several small farming hamlets, scattered field houses, and 47 human burials were excavated at Pueblo Salado (primarily in Areas 8/9, 14, and 20 in the western part of the site).

The other major studies were conducted to support a previous update of the Airport master plan. These studies were initiated with a records check of four parcels (A, B, C and D) and archaeological testing in Parcel A (Greenwald and Zyniecki 1993). Subsequently, data recovery studies were conducted within parcels A and D to mitigate impacts on Areas 6 and 15/16 of Salado Pueblo (Greenwald, Ballagh, and Zyniecki 1996; Greenwald and others 1996). These investigations identified 229 archaeological features including 13 adobe structures, an adobe compound wall, 2 pit houses, 18 pit structures (seasonal shelters), 54 inhumation burials and 62 cremations, a variety of thermal and non-thermal pits, 5 canals, numerous artifact concentrations, and a bald eagle burial. These represent a large habitation locus dating to the Soho, Civano, and Polvorón phases.

The other study conducted on the Airport in the 1990s involved the excavation of an isolated human burial discovered south of the South Runway (Schroeder 1994). Airport personnel noted ceramic vessels eroding from a graded surface between the South Runway and the Foxtrot Taxiway. Investigations recovered the skeleton of a child, estimated to be three to four years old, and six ceramic vessels. The only decorated vessel was identified as a Casa Grande Red-on-beige pitcher dating from the Soho period of the early Classic period. A shell bead, shell bracelet, and basalt scraper also were recovered from the burial pit, and azurite pigment also was noted. It was assumed that the burial was related to the Pueblo Salado site, located about 2,000 feet to the west.

Another survey off the Airport involved survey along the Salt River Project system of canals in the Salt River Valley (Aguila 1998). In the vicinity of the Airport, this involved survey along the Grand Canal, which is a historic resource. No other cultural resources were noted in the Airport vicinity other than the Pueblo Grande archeological site. Another survey off the Airport involved survey of the Union Pacific Railroad right-of-way (Ellis and others 1999). The survey identified 138 sites, including the railroad itself. Pueblo Grande was the only archaeological site in the Airport vicinity.

## **2000s Studies**

Thirteen studies have been undertaken since 2000. Almost all of these were conducted in support of continuing development of the Sky Harbor Center and other Airport improvements.

Three of the projects involved testing and data recovery studies. One of these studies investigated the eastern margin of the Dutch Canal Ruin, as well as canals within the Canal

Patricio system [AZ T:12:131(ASM)] at the west end of the North Runway (Area B of the revised master plan). A total of 138 archaeological features were identified, including more than 30 pit houses, two cremations, canals, and various other types of pits (Henderson 2003, 2004). The features were interpreted as reflecting seasonal farming during the Colonial and Sedentary periods of the Hohokam occupation. A few insignificant features dated to the historic era.

A second testing and data recovery project undertaken in conjunction with Central Runway improvements is ongoing. To date, this work has resulted in identification of approximately 75 archaeological features, including one human burial (Aguila, 2005; Boston and others 2001). Most of the features are scattered canals, pits, and organic stains that are interpreted as fields that were farmed by inhabitants of Pueblo Salado. Some historic-era features, primarily canals and trash pits, also have been recorded. The boundaries of Pueblo Salado have been extended to the east to incorporate these features. A historical canal identified as a lateral of the Grand Canal also was designated with a separate number, AZ T:7:167(ASM).

Archaeological testing and data recovery was conducted within a limited area for a new fire station on the north edge of the Airport (near Area C of the revised master plan). Two Hohokam canals and an adjacent field area (originally thought to be another canal), dating to the late Sedentary or Classic period, were investigated (Rogge and others 2002).

Two of the projects involved archaeological testing of parts of Pueblo Salado. One project involved testing prior to construction of the Yuma parking lot. Although this area was just east of Area 6 of Pueblo Salado where numerous habitation and burial features had been found, no additional archaeological features were found within the 360 meters of backhoe trenches that were excavated (Lindly 2001). The following year, test excavations were conducted in the western part of Pueblo Salado within the parcel where the rental car center is now under construction. Although 2,165 meters of archaeological test trenches were excavated, only one archaeological feature—a Hohokam canal—was found (North and others 2002). Analyses of the canal cross-section and sediment samples concluded the ditch was a main distribution lateral within the Canal Salado system.

Five of the projects completed since 2000 involved archaeological monitoring of limited areas in the vicinity of the Dutch Canal Ruin and Pueblo Salado (Hackbarth 2004, Lindly 2004a, 2004b; Stubing 2002; Walsh 2004). None of these projects discovered any artifacts or archaeological features.

Three of the projects involved only records reviews. One was conducted to support planning upgrades of I-10 through the western part of the Airport, which passes through the Dutch Canal Ruin and Pueblo Salado (Stubing 2003). The other two records reviews were compiled in support of the planning for the APM. One was for geotechnical testing along the Stage 2–East APM corridor (Stokes and Jones 2003). The other was for a similar corridor for the Stage 1 APM electrical supply corridor (Aguila and others 2004). The archaeological resources identified as mostly likely to occur in the Stage 2–East APM corridor are the western margin of the Pueblo Grande site, and canals of sites AZ U:9:2 and 28(ASM). The review for the electrical supply recommended no further study in the southern end of the corridor within a zone that has been scoured by flooding of the Salt River. Archaeological testing was recommended for the relatively

undeveloped area north of the scour zone and south of the Union Pacific Railroad, and archaeological monitoring was recommended within developed areas to the north.

### **Archaeological Sites in the Area of Potential Effects for Construction Impacts**

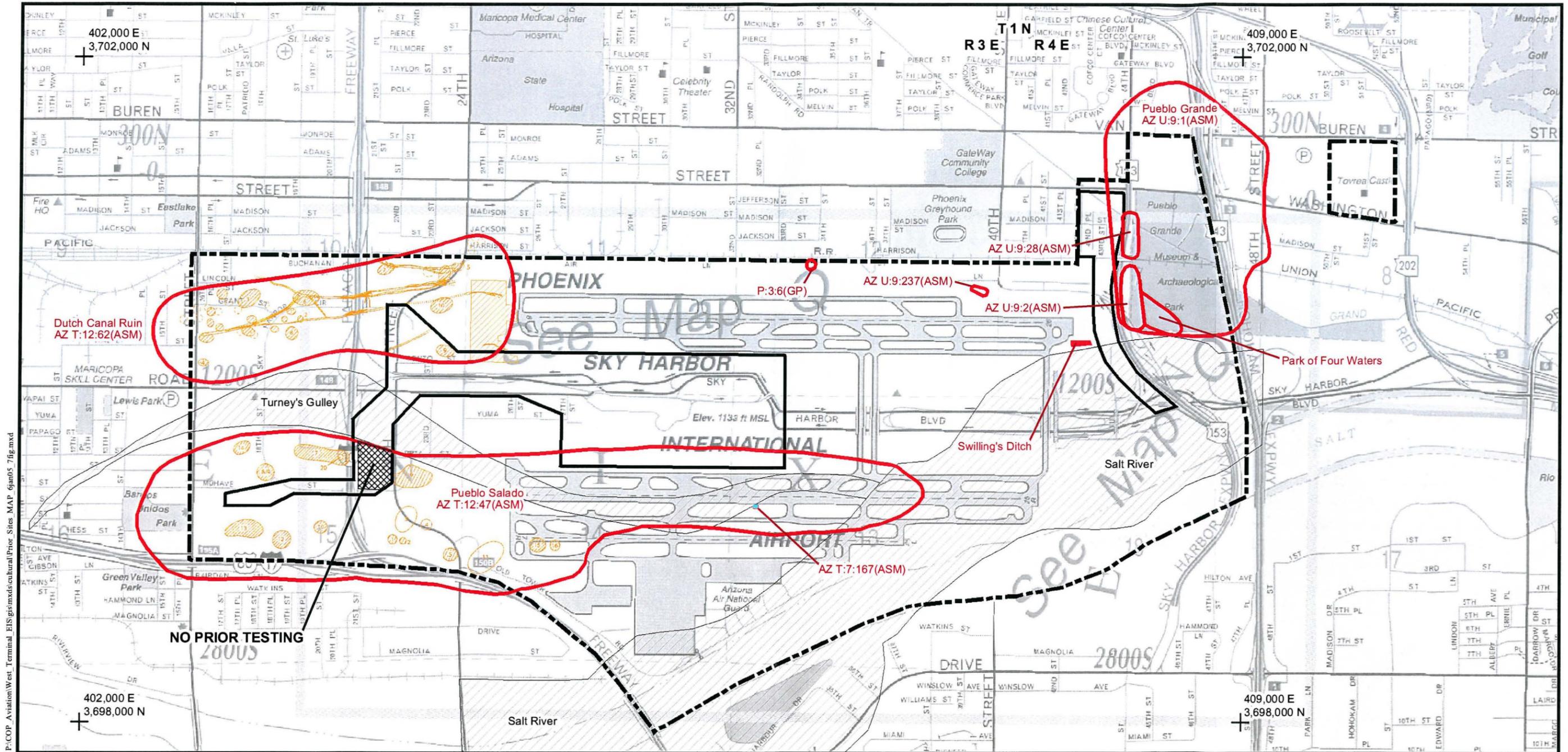
Prior studies have identified six archaeological resources that may extend into the area of potential effects for construction impacts (Figure 7, Table 2). These include three large Hohokam habitation sites and the other three are remnants of Hohokam or early historic-era irrigation canals.

Four other sites have been documented on the Airport, but are not in the area of potential effects for construction impacts. The Gila Pueblo Archaeological Foundation recorded a Hohokam canal segment about 300 feet long [P:3:6(GP)] in 1928. There is almost no other information about this site, which was mapped near what is now the northern edge of the Airport (refer to Figure 7). Two Hohokam canals were documented at site AZ U:9:237(ASM), located a little more than one-half mile to the southeast. Another resource is the remnant of Swilling's Ditch, which was documented at the eastern end of the North Runway, and the other was identified as a lateral of the Grand Canal [AZ T:7:167(ASM)].

The Dutch Canal Ruin was not a large Hohokam village, but instead a floodplain agricultural site, occupied primarily on a seasonal basis. The area was farmed from the Red Mountain through the Polvorón phases, but habitation was usually limited to seasonal field houses. A gap in seasonal occupation during the late Sedentary to early Classic period has been interpreted as abandonment of the area, but may instead reflect a shift in land tenure from individual households to larger groups because it is unlikely that the rich arable soils of the floodplain would not have been farmed during a period of growing population (Henderson 2004:182-184).

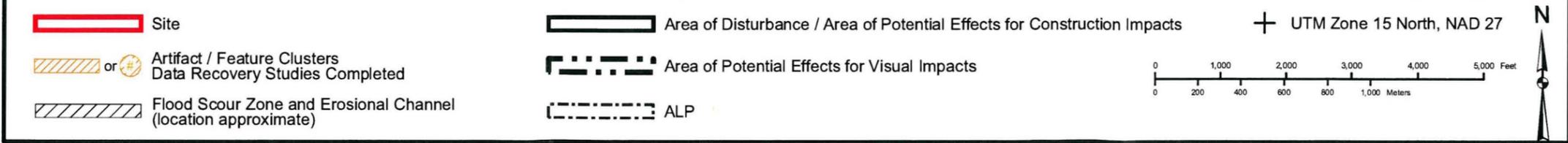
The Dutch Canal Ruin is considered eligible for the National Register for its potential to yield important information, and data recovery studies have been conducted across most of site to mitigate the impacts of prior projects (refer to Figure 7). The limits of the site are not precisely defined, and an edge of the site could extend into the corridor of Sky Harbor Boulevard that would be modified by the Airport Development Program.

Pueblo Salado was established in the late Sedentary or early Classic period and occupied through the end of the Hohokam sequence. Canal Salado had a heading separate from the canals of System 2 near Pueblo Grande. Initial settlement began when seasonal field houses were built along Canal Salado. By the late Soho phase, farmsteads and hamlets were occupied on a more permanent basis. During the late Classic period Civano phase, populations aggregated into at least two walled adobe compounds, with a few seasonal field shelters used beyond the compounds. The Hohokam culture changed drastically and population declined at the end of the Classic period, but Pueblo Salado continued to be occupied during the terminal or post-Classic period Polvorón phase, evidenced by the abandonment of surface adobe buildings and reintroduction of pit houses. One excavated feature may be the remnants of a protohistoric Pima house, indicating even later use of the site probably during the A.D. 1600s or early 1700s.



P:\COP\_Aviation\West\_Terminal\_BIS\gis\mxd\cultural\Prior\_Sites\_MAP\_6jan05\_7fig.mxd

Source: ©2002 Wide World of Maps, Inc. Reproduced With Permission No. 410123



Previously Recorded Archaeological Sites Figure 7

**TABLE 2  
ARCHAEOLOGICAL SITES IN THE AREA OF POTENTIAL EFFECTS FOR  
CONSTRUCTION IMPACTS**

<b>Site Name / Number</b>	<b>Location</b>	<b>Description</b>	<b>National Register Status</b>	<b>Potential Impact</b>
1 Pueblo Salado AZ T:12:47(ASM)	southwest part of Airport	Hohokam habitation site, Classic period, pit houses, adobe compounds, field houses, canals, pits, burials	eligible, Criterion D	Stage 2–West APM may disturb unstudied part of site.
2 Dutch Canal Ruin AZ T:12:62(ASM)	northwest part of Airport	Hohokam (mostly seasonal) habitation site, pre-Classic and Classic periods, pit houses, canals, pits, burials	eligible, Criterion D	Sky Harbor Boulevard realignment may disturb part of site.
3 Pueblo Grande AZ U:9:1(ASM)	northeast of Airport	primary Hohokam village with ballcourts and platform mound, many habitation and burial areas, canals, pits	inside park is listed Criteria A and D and eligible Criterion C National Historic Landmark; part outside park is eligible, Criterion D	Stage 2–East APM may disturb western edge of site and alter visual setting of museum and archaeological park
4 AZ U:9:2(ASM)	northeast of Airport	11 Hohokam canals, Sedentary and Classic periods, 1884 Joint Head Canal	eligible, Criterion D	Stage 2–East APM may disturb buried canal remnants that extend west of site.
5 AZ U:9:28(ASM)	northeast of Airport	8 Hohokam canals, Sedentary and Classic periods, 2 activity areas, 3 historical trash pits	eligible, Criterion D	Stage 2–East APM may disturb buried canal remnants that extend west of site.
6 Hohokam Canal Systems 2 and 10	Airport and vicinity	Hohokam irrigation canals	intact segments likely to be eligible, Criterion D	construction may disturb buried canal remnants.

Note: National Register eligibility evaluations made in consultation with the SHPO; refer to Page 8 for definitions of the criteria.

Pueblo Salado is considered eligible for the National Register for its potential to yield important information. Data recovery studies have been conducted across much of the site, including the major localities identified in the construction corridor for the Stage 2–West APM (refer to Figure 7). However, a part of the site within the APM corridor east of the Papago Freeway has not been archaeologically tested. Data recovery studies have been conducted in those parts of the site designated as Area 6 to the east and Area 7 to the west of this untested area. Buried archaeological features, not detected during earlier surveys, could be present in this part of the site.

Pueblo Grande is a large primary village situated at the headings of the canals in System 2. Features interpreted as ballcourts and platform mounds used for ceremonies or residences for community leaders identify the most important settlements within the area occupied by the Hohokam. The multiple ballcourts and platform mound at Pueblo Grande, which is one of the largest documented, attest to the importance of this village. The core of the site is preserved within the Pueblo Grande Museum and Archaeological Park, which also is designated as the Pueblo Grande Ruin and Irrigation Sites National Historic Landmark. This part of the site is listed in the National Register under Criteria A and D. The National Register nomination identified the site’s eligibility under Criterion A as due to its association with the development of prehistoric and early historic-era irrigation. The SHPO also considers the site to be historically important for its association with the history of Phoenix because it was the first archaeological

site set aside as a city park, for its importance in the history of Southwestern archaeology, and as a place of importance in the history of several Indian tribes. The SHPO considers the architectural ruins of the site to be eligible under Criterion C as well because they embody the distinctive characteristics of a type of aboriginal construction. In addition to being designated as a city park, the Pueblo Grande Museum and Archaeological Park is listed in the Phoenix Register of Historic Places.

The part of the site within the park is listed in the National Register under Criterion D for having yielded important information and for its potential to yield additional important information. The site extends well beyond the park boundaries, but is masked by urban development. Studies prior to construction of the Hohokam Expressway (SR 143) and various private developments north and east of the park have encountered substantial archaeological remains representing numerous habitation and burial areas. The part of the site outside the park is considered eligible under Criterion D.

How far the site might extend to the west of the park boundary into the Stage 2–East APM construction corridor is unknown. Available evidence indicates that Hohokam canals rather than habitation and burial areas are more likely to be present west of the park. Studies at sites AZ U:9:2 and 28(ASM) along the western margin of the archaeological park documented 19 Hohokam canals, as well as the historical Joint Head Canal (Bradley 1999, Masse 1976). Many of these canals are likely to extend into the Stage 2–East APM corridor.

The entire Airport and adjacent areas are located within fields that the Hohokam farmed, and other unrecorded irrigation canals could be present. Maps based primarily on observations made during the first half of the twentieth century prior to urban development indicate that main canals called Canal Patricio (the southernmost major canal of Canal System 2), and Canal Salado (Canal System 10) crossed the area (Figure 8). Ongoing investigations in conjunction with improvements of the Center Runway have documented numerous archaeological features related to the fields that probably were farmed by the inhabitants of Pueblo Salado. Unless prior construction or erosion (including the Salt River flood scour zone and Turney’s Gully) has disturbed sediments below a depth of 4 to 5 feet, similar features might be found within the area of potential effects for construction impacts even though archaeological sites have not been previously recorded in those areas.

Prior studies also have encountered archaeological features dating from the historical period. These include irrigation canal laterals and ditches, as well as remains of urban development. These resources commonly have been evaluated as warranting no data recovery investigations other than their initial recording. The core of the Airport was farmed but no urban development occurred prior to the establishment of the Airport. Urban development occurred west of 24th Street as early as the 1920s. Although the area at the northern end of the Stage 2–East APM corridor was platted in the 1920s, there was little development in the area until after the 1950s (refer to earlier discussion of the Portland Tract). The Stage 2–East APM crosses two historical structures that remain in use—the Grand Canal and the Union Pacific Railroad (formerly Southern Pacific). Those resources are discussed in the following section.

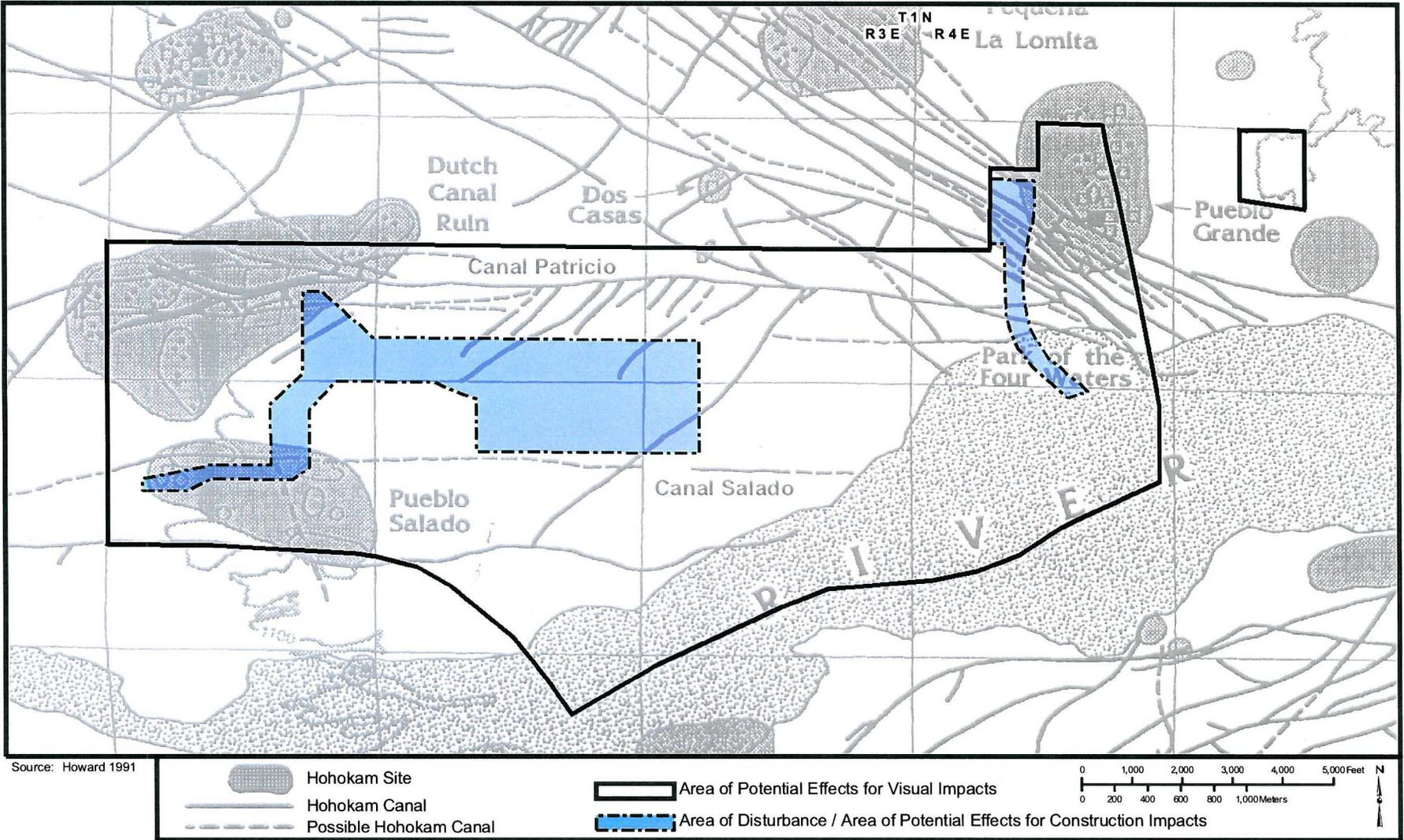


Figure 8 Hohokam Canals in the Project Vicinity

## INVENTORY OF HISTORICAL RESOURCES

A total of 30 buildings and structures on the Airport and 92 parcels located within the proposed Stage 2–East APM corridor and APM maintenance and operations facility off the Airport are within the area of potential effects for construction impacts (Appendix A). Research determined that 21 of these buildings and structures, as well as one art object, were constructed in 1965 or earlier, and these resources were inventoried and evaluated for National Register eligibility (Table 3). Seven of these historic-age buildings and one object are located on the Airport, and 14 other historic-age buildings and structures are within the Stage 2–East APM corridor off the Airport. As discussed in the previous section, prior studies had identified two other National Register–eligible properties—the Grand Canal [AZ T:7:167(ASM)] and the Phoenix main line of the Southern Pacific Railroad [AZ T:10:84(ASM)]—that cross the northern end of the Stage 2–East APM corridor off the Airport.

	Name	Location	Date of Construction	National Register Status	Impact
<b><i>On the Airport</i></b>					
1	FAA/TRACON Building 121-56-001 (ALP #221)	2801 E. Sky Harbor Blvd.	1958, modified 1996, 1997	ongoing project determined not eligible, no form completed	will be demolished prior to demolition for West Terminal
2	Aviation Department (121-52-058) (ALP #227)	southwest corner of Buckeye Road and 25 <sup>th</sup> Place	1965-1966	recommended ineligible	south of Stage 2– West APM corridor
3	Dynair Fueling Maintenance Shop (121-49-002A) (ALP #242)	south of parking area west of Terminal 2	ca. 1955-1960	recommended ineligible	to be demolished for West Terminal
4	American Airlines Maintenance Shop (121-49-002A) (ALP #241)	south of parking area west of Terminal 2	ca. 1964-1965	recommended ineligible	to be demolished for West Terminal
5	Delta Maintenance Shop (121-49-002A) (ALP #240)	south of parking area west of Terminal 2	ca. 1965-1968	recommended ineligible	to be demolished for West Terminal
6	Delta Maintenance Shop (121-49-002A) (ALP #239)	south of parking area west of Terminal 2	ca. 1965-1968	recommended ineligible	to be demolished for West Terminal
7	Terminal 2 (East Terminal) (ALP #248, 249, 250)	2908 East Sky Harbor Blvd.	1962	recommended ineligible	to be demolished for West Terminal
8	<i>The Phoenix</i> mural by Paul Coze (in Terminal 2)	2908 East Sky Harbor Blvd.	1962	recommended eligible, Criterion C	to be relocated
<b><i>In Stage 2–East APM Corridor Off the Airport</i></b>					
9	Union Pacific Railroad (originally Phoenix main line of Southern Pacific Railroad)	south of Jackson St.	1924-1926	previously determined eligible, Criterion A	Stage 2–East APM would cross beneath railroad under existing SR 153 bridge
10	Grand Canal	south of Washington St.	1878	previously determined eligible, Criterion A	Stage 2–East APM would cross over canal
11	Arizona Aerosol Corporation Chemical (124-06-001)	15 S. 42 <sup>nd</sup> St.	1965	recommended ineligible	to be demolished for Stage 2–East APM

**TABLE 3  
INVENTORIED HISTORICAL RESOURCES**

	<b>Name</b>	<b>Location</b>	<b>Date of Construction</b>	<b>National Register Status</b>	<b>Impact</b>
12	Valley National Bank/ Bell Paint and Body Shop (124-06-002)	17 S. 42 <sup>nd</sup> St.	1940s; moved to current location in the late 1950s; modified in 1973	recommended ineligible	to be demolished for Stage 2–East APM
13	Parcel 124-06-003	23 S. 42 <sup>nd</sup> St.	1960	recommended ineligible	to be demolished for Stage 2–East APM
14	Colonial Duntex Tile Contractor (124-06-004)	27 S. 42 <sup>nd</sup> St.	1959	recommended ineligible	to be demolished for APM Stage 2– East
15	Parcel 124-06-006	55 S. 42 <sup>nd</sup> St.	late 1950s	recommended ineligible	to be demolished for Stage 2–East APM
16	Parcel 124-06-008	26 S. 42 <sup>nd</sup> Pl.	1939; moved to current location in the late 1950s	recommended ineligible	to be demolished for Stage 2–East APM
17	Stewart Concrete & Pipe (124-06-022)	4218 E. Madison St.	1965	recommended ineligible	to be demolished for Stage 2–East APM
18	Parcel 124-06-23B	31 S. 42 <sup>nd</sup> Pl.	1960	recommended ineligible	to be demolished for Stage 2–East APM
19	Parcel 124-06-024B	37 S. 42 <sup>nd</sup> Pl.	1940s; moved to current location in the late 1950s	recommended ineligible	to be demolished for Stage 2–East APM
20	J.T. Richmond Tool & Die (124-06-037C)	4302 E. Madison St.	1961	recommended ineligible	to be demolished for Stage 2–East APM
21	Western Sealant Company (124-06-042A)	4209 E. Madison St.	1960-1970	recommended ineligible	to be demolished for Stage 2–East APM
22	Parcel 124-06-059A	126 S. 42 <sup>nd</sup> Pl.	1962	recommended ineligible; integrated into modern building and no longer visible, no form completed	to be demolished for Stage 2–East APM

### **Inventory Results On the Airport**

At the initiation of the EIS study in 2002, a review of the airport layout plan and field reconnaissance identified 29 buildings and one art object on the Airport within the area of potential effects for construction impacts. Seven of these buildings were subsequently demolished. Only one of those buildings was 50 years old at the time of demolition. Demolition of an eighth building (FAA/TRACON building) has been approved and scheduled for 2005 in conjunction with the construction of a new air traffic control tower. Fifteen other buildings were built after 1965, and none of these have exceptional significance that would make them eligible for the National Register at this time.

The six other buildings and the one art object date from 1965 or before and were considered to be of historic age for this analysis (Figure 9, refer to Table 3). Historic property inventory forms were completed in coordination with the SHPO for those seven resources and their National Register eligibility was evaluated (Appendix B).



# - Refer to Table 3

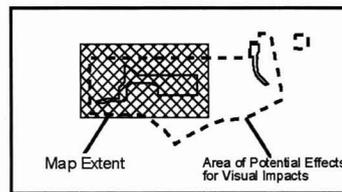


Figure 9 Historical Properties Inventoried On the Airport

## **Aviation Department Building**

The Aviation Department building was built between 1965 and 1966. The building was once privately owned and housed a machining company called Mech-Tronics. When the Airport expanded, the city of Phoenix purchased and adapted the building for Airport purposes. The building has been modified and several additions have been built since its original construction. It is an example of a common type of large, combination office and warehouse building. No significant associations or other historic values worthy of preservation were identified, and it is recommended that the building be considered ineligible for the National Register. The Aviation Department building is adjacent to the Stage 2–West APM corridor, but would not be directly affected.

## **Four Maintenance Shops**

Four of the buildings are maintenance shops located west of Terminal 2. The Dynair Fueling Maintenance Shop is the oldest, having been built around 1955 to 1960. The American Airlines Maintenance Shop was built around 1964 to 1965, and the other two maintenance shops occupied by Delta Airlines were constructed around 1965 to 1968. All four of these buildings are simple, utilitarian buildings with no significant historic values, and it is recommended that they be considered ineligible for the National Register. All four maintenance shops would be demolished to accommodate the new West Terminal.

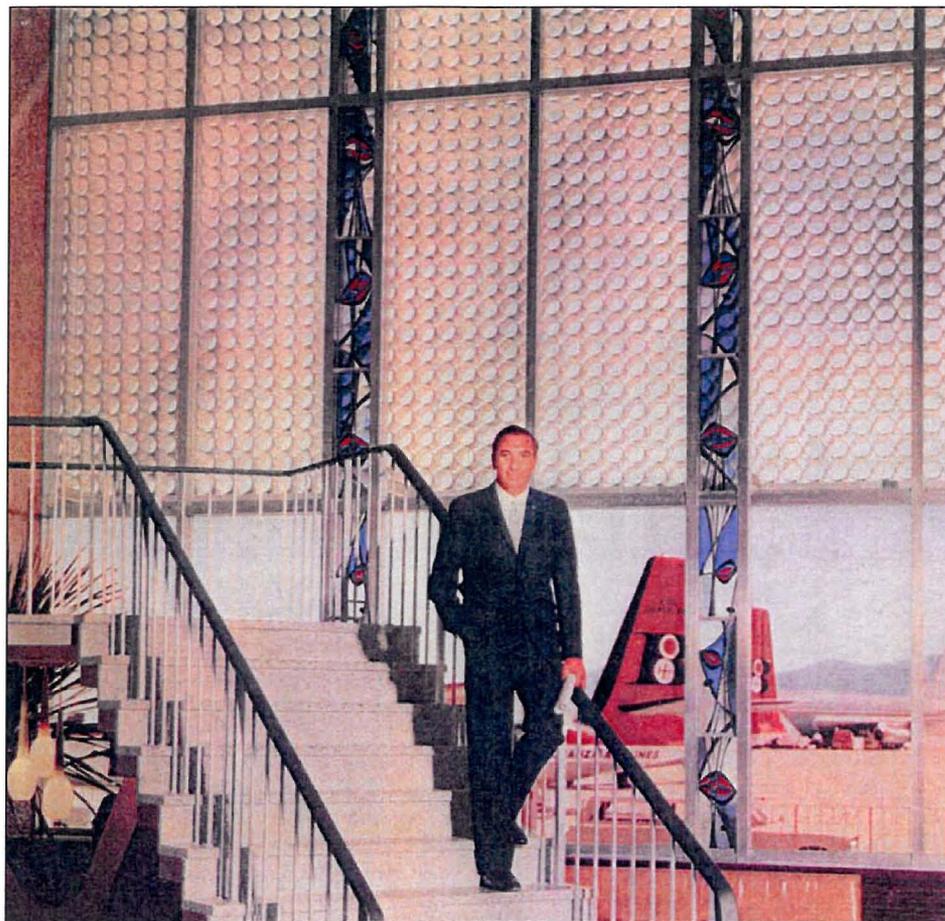
## **Terminal 2 (East Terminal)**

Terminal 2, or the East Terminal as it was originally called, was completed in 1962. By this time, Sky Harbor hosted 66 major carrier flights daily for American, Western, TWA, Frontier, Continental, and Bonanza Airlines. Prominent Phoenix architects Lescher and Mahoney and Weaver and Drover designed the terminal, which was built by the Herman Chanen Construction Company of Phoenix. The approximately 135,000 square foot building included a basement, lobby, a ticketing area, and a non-contact concourse wing. Funding for the terminal came from Airport income, federal aid, and the sale of revenue bonds (*Arizona Republic* 1962).

At the time of its construction, Terminal 2 represented the cutting edge of airport terminal design, and was the seventh largest commercial airline terminal in the country (Clark 1962). The terminal was described as “a monument to achievement, transcending from old to new amid a burst of pride and glory” (*Arizona Republic* 1962). It was also characterized as “more than a terminal, a building of beauty to be used and enjoyed by residents of Phoenix” (Clark 1962). [However, the terminal did not warrant a mention in a recent review of a century of airport architecture (Pearman, 2004).]

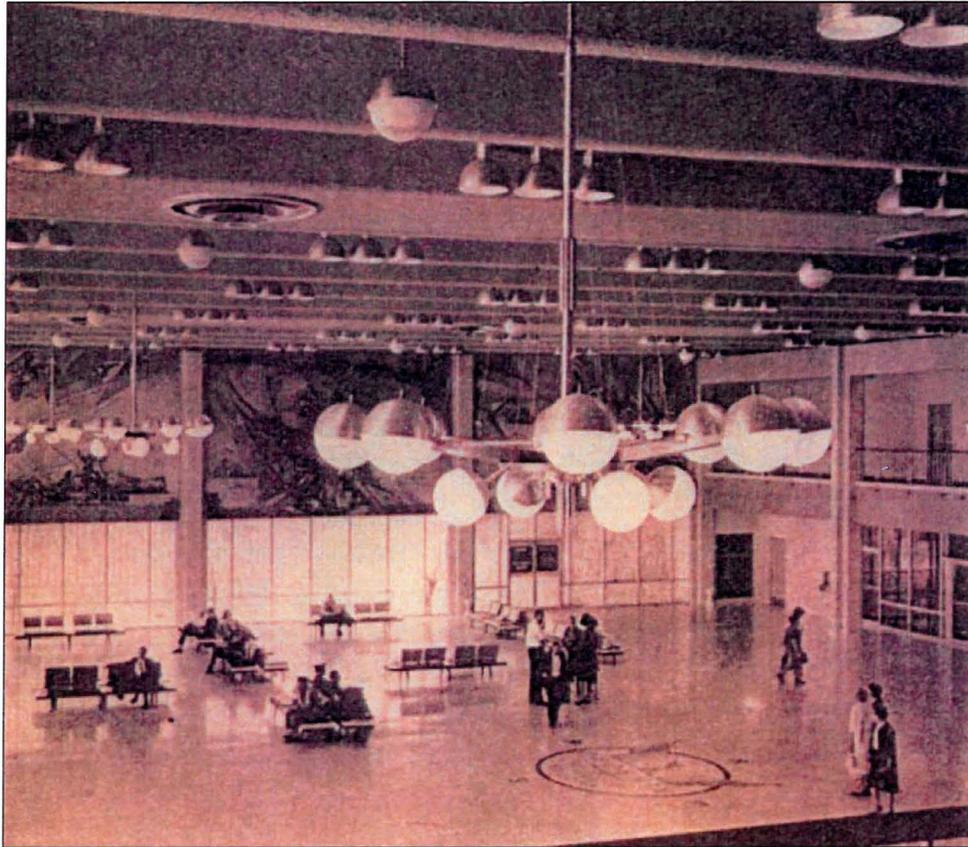
In the 1960s, commercial air travel was still a fairly new mode of transportation and was limited primarily to the wealthy and business travelers. The contemporary design of Terminal 2 expressed the newness of air travel and an image of Phoenix as an up and coming center of business. The terminal’s concourses reflected the newest trend in airport design, reducing or eliminating the need for passengers to walk outside to board their planes (Krugger 2004; Rumerman 2004).

The terminal was designed during a time when new technologies were being introduced, and the space age inspired Americans to look to the future. The architects designed the terminal with 60 percent glass to bring the outside in, and the interconnection of the building's sections and the high ceiling of the main lobby inspired an open and spacious effect. The interior of the original lobby especially reflected the contemporary streamlined and futuristic themes. Fifteen-foot-tall columns of stained glass were located on the south wall of the terminal and "solar screens" were mounted on the exterior south wall (Photograph 2).



**Photograph 2. Construction Contractor Herman Chanen in Terminal 2 (view southeast). This photograph was taken in 1962 soon after the terminal opened (*Arizona Republic* 1962). The rear window and stairway have been modified.**

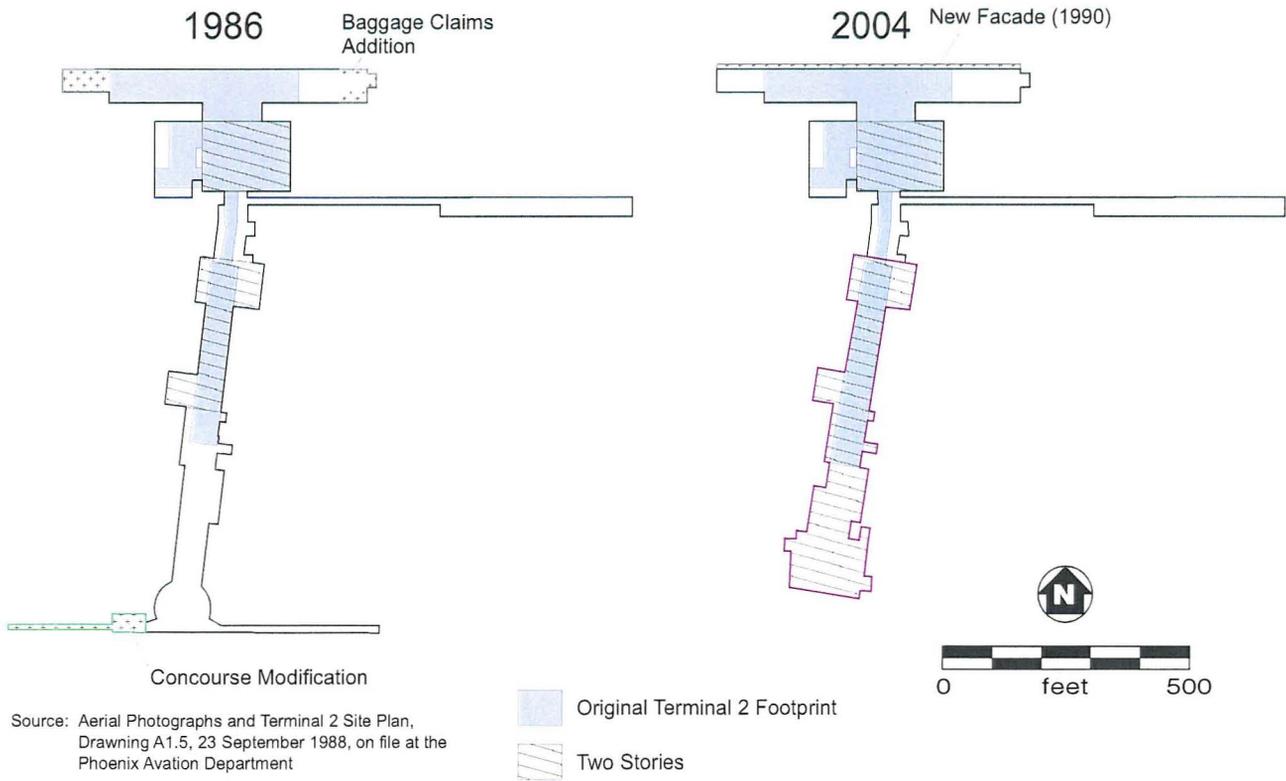
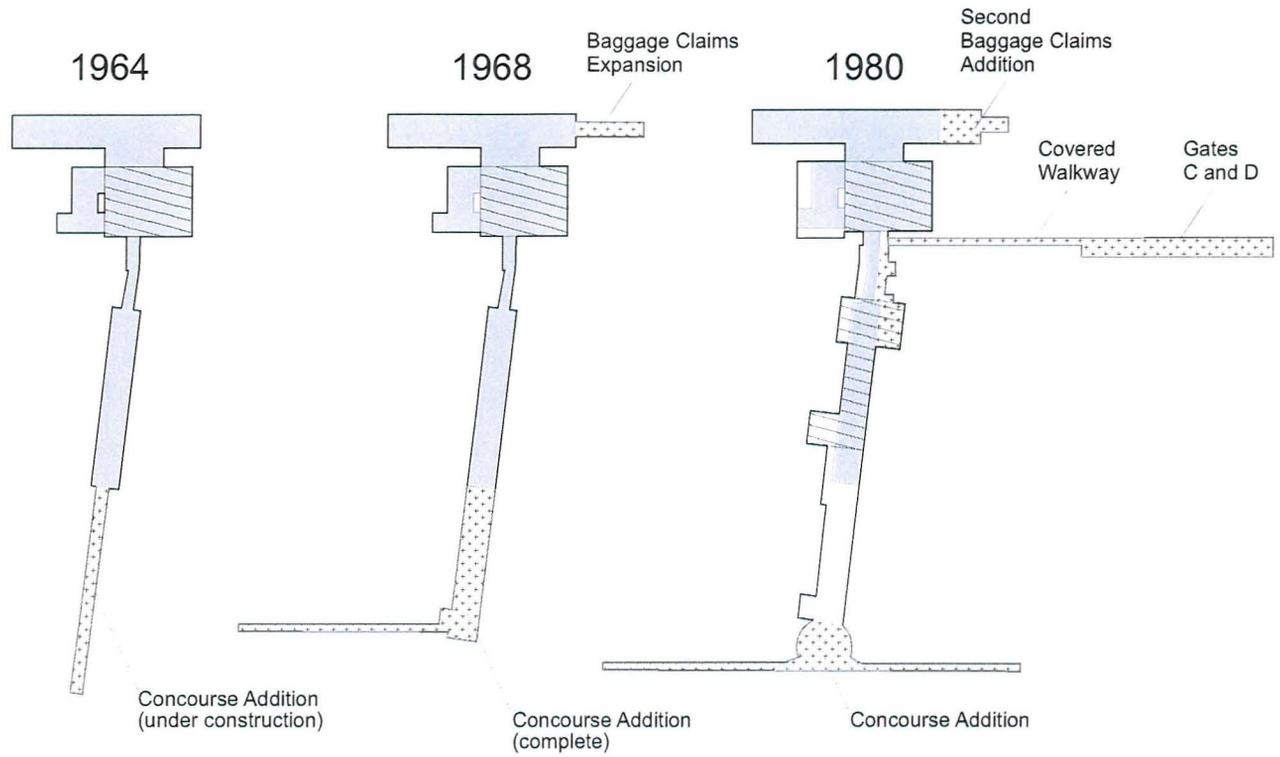
The 30-foot high ceilings held six large chandeliers and 56 units of 3-bank lights that lit the lobby area (Photograph 3). Seating in the lobby included plastic seats in pumpkin, mustard, aqua, and black. Guest services included a snack bar, a restaurant with a glass-enclosed terrace, seven concession stands, and a cocktail lounge. A patio outside the terminal held a fountain and the adobe mission arch with a bell that was used as the wedding chapel in the early years of the Airport (Clark 1962).



**Photograph 3. Terminal 2 Lobby Shortly After Opening (Clark 1962). The ceiling, light fixtures, and other lobby features have been modified and a restaurant has been installed beneath the Coze mural in the background.**

The building has been substantially altered in conjunction with subsequent upgrades, and the footprint of Terminal 2 has changed considerably since its construction in 1962 (Figure 10; Photograph 4). The ticketing and baggage area on the front of the building was expanded in 1968 and twice in the 1980s. The concourse has also undergone substantial changes, beginning with an initial expansion in the mid-1960s. Other modifications were made in the 1980s, including the addition of a second story to part of the concourse as it was modified into a contact gate facility. In the 1990s the wings that had been added to the south end of the concourse were removed and the second story was expanded to the south end of the concourse. After the construction of Terminal 4 in the 1990s, a new façade was added to the front of the terminal to mirror the Southwest design elements of the new terminal (Photographs 5 and 6). The gap between what had been a detached shade structure across the front of the building was filled in, reducing the natural lighting and openness of the ticket counter and baggage claim area of the terminal.

When it was constructed in 1962, the lobby of Terminal 2 was the showcase of modern airport architecture. The lobby has also undergone numerous modifications and much of the open spacious feeling of the original 1960s has been lost (Photographs 7, 8, and 9). The exterior solar



Source: Aerial Photographs and Terminal 2 Site Plan, Drawing A1.5, 23 September 1988, on file at the Phoenix Aviation Department

Terminal 2 Modifications Figure 10



**Photograph 4. Terminal 1 and 2 in the Late 1960s (view northwest). The first concourse expansion was already constructed at the time of this photograph, but the lobby and ticketing/baggage areas had not yet been modified. Today, the footprint of Terminal 2 is much larger.**



**Photograph 5. Front Façade of Terminal 2 Circa 1970 (view southeast)**



**Photograph 6. Front Façade of Terminal 2 in 2004 (view southeast).**



**Photograph 7. Terminal 2 Lobby and Paul Coze Mural Circa 1962 (view west)**

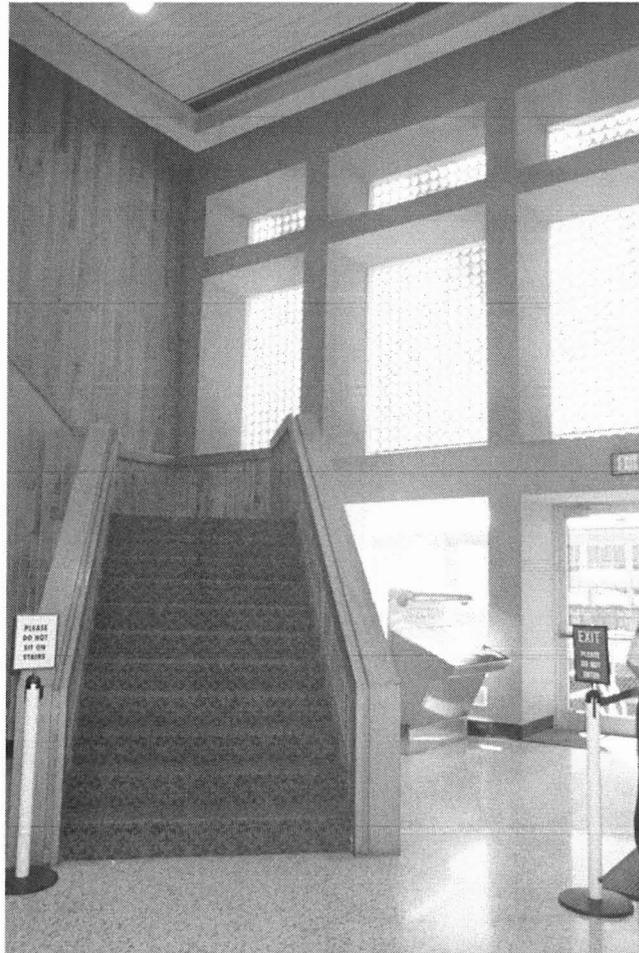


**Photograph 8. Terminal 2 Lobby and Paul Coze Mural in 2004 (view west).  
A restaurant is now located in the area beneath the mural. Modifications to the terminal since its construction have eliminated the open and spacious effect originally present in the terminal lobby.**



**Photograph 9. Restaurant Located Beneath the Paul Coze Mural (view southwest).  
This 2004 photograph shows how the columns between the mural panels have been widened and rounded, and that the windows on the south wall of the terminal have been altered.**

screens installed on the south wall of windows to reduce heat and glare remain in place, but all of the 15 stained glass columns have been removed, and the south windows have been altered with the addition of thick muntins and mullions (Photograph 10). The windows on the west wall have all been removed, and some of the windows above the entrance to the concourse on the south wall have been covered or removed (Photographs 11 and 12). The original stairway to the mezzanine offices also has been modified and has lost its original airy feeling (refer to Photograph 10).

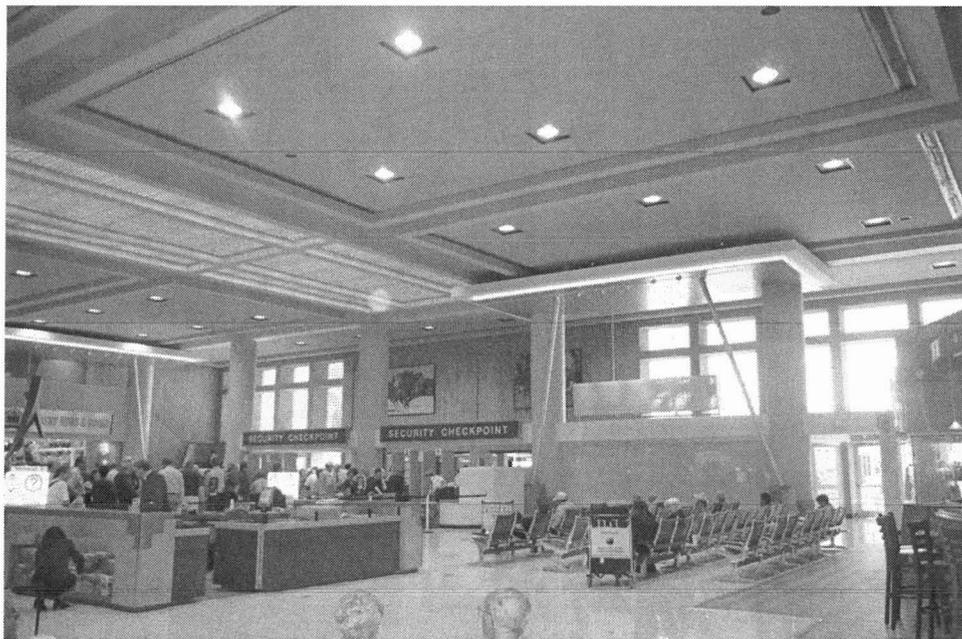


**Photograph 10. South Wall and Stairway in the Southeast Corner of the Terminal 2 Lobby. The windows have been altered and the stained glass columns have been removed (view southeast). Compare to Photograph 2.**

Both the interior and exterior of Terminal 2 have been substantially modified since the terminal was constructed in 1962. These modifications have compromised the historic integrity of the terminal so much that it is recommended that Terminal 2 be considered ineligible for the National Register. Terminal 2 would be demolished to make room for construction of the proposed new West Terminal.



**Photograph 11. Entrance to Concourse on the South Wall of Terminal 2 Circa 1970s (view southeast)**



**Photograph 12. Entrance to Concourse and South Wall of Terminal 2 Lobby in 2004 (view southeast)**

## ***The Phoenix, a Paul Coze Mural***

The Paul Coze mural, titled *The Phoenix*, is a historic-age art object mounted on the upper west wall of the Terminal 2 lobby. The large three-paneled mural depicting Phoenix's past, present, and future is 16 feet high and 75 feet long. The panels are titled Earth, Water and Fire, and Air (Photographs 13, 14, and 15). The mural is assembled from 15 interlocking pieces of canvas with specially prepared vinyl bond paints. Fifty-two different types of materials were used in the multimedia mural, including various types of earth, sand, rocks, metal, glass, ceramics, shells, plastics, fabrics, and plants.

About one year before the completion and dedication of the East Terminal (Terminal 2), the Phoenix City Council held a competition to determine who would create a mural for the lobby of the new building. Three finalists were chosen, including Paul Coze and two other local artists, Jay Datus and Clinton Hill. Each finalist presented to the city council his version of a three-paneled mural depicting the Renaissance, the Air Age, and the Space Age. After a week of deliberations, the city council voted 5 to 1 for Coze's mural. He was paid \$10,000 for his creation (*Arizona Republic* 1961).

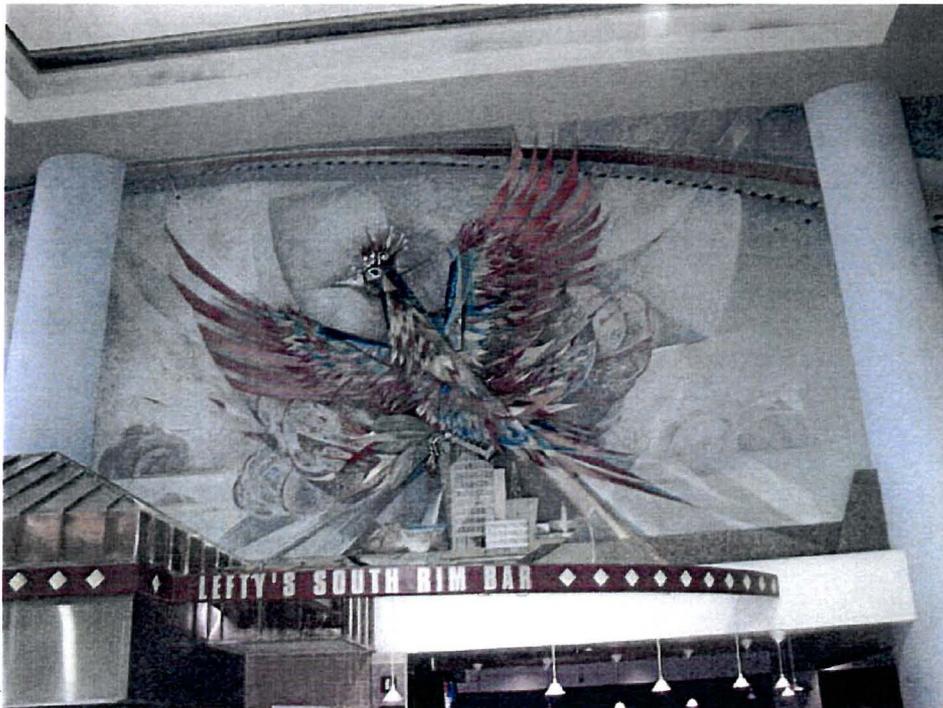
Paul Coze (1903-1975) was an artist, author, lecturer, anthropologist, and educator well known in Phoenix and throughout the state. Born in Syria to a French father and Russian mother, Coze went to art school in France and served in the French army after World War I. Coze developed an interest and respect for American Indians, and co-authored a book (*Moeurs et histoire des Indiens peaux-rouges*) on American Indians in 1928. Between 1928 and 1934, Coze traveled across western Canada collecting ethnographic objects for the Heye Foundation in New York and the Musee d'Ethnographie (Trocadero) in Paris. He also organized a group of Parisian "hobbyists" who produced theatrical productions with aboriginal themes. Photographs, paintings, and writings collected and created by Coze during his trip across Canada are currently housed in the ethnology collections at the Provincial Museum of Alberta.

Coze moved to the United States in the 1930s, and spent summers residing on American Indian reservations in Arizona and New Mexico, becoming an honorary member of seven tribes. In addition to writing books, Coze taught art in France; Pasadena, California; and Phoenix. He also worked as a technical director for 20<sup>th</sup> Century Fox and was the French Consul for Arizona (Aronowitz 2002; Provincial Museum of Alberta 2004; Steckner 1996).

Coze created many pieces of public art in Phoenix including a four-story medicine-man mural for the former Blue Cross/Blue Shield Building at 331 W. Indian School Road (demolished), murals inside Veterans Memorial Coliseum (partially hidden), and a stained glass *Phoenix* outside of the Town & Country Shopping Center at 20<sup>th</sup> Street and Camelback Road (altered). In 1971, Coze constructed a fountain and large screen at the Phoenix Indian Hospital at 4212 N. 16<sup>th</sup> Street, which were removed after one year because some thought the symbols would bring bad luck. Other Coze works include *Stations of the Cross* and murals at St. Thomas the Apostle Church at 2312 E. Campbell Avenue. The Stations have been restored but the murals remain covered with wallpaper. In 1963, Coze hung a mural in the City Council chambers at 200 W. Jefferson Street.



Photograph 13. *The Earth*, Left Panel of *The Phoenix Mural*



Photograph 14. *Water and Fire*, Center Panel of *The Phoenix Mural*



**Photograph 15. *The Air*, Right Panel of *The Phoenix Mural***

It was later removed and stored until Coze's widow urged its installation at St. Mary's High School (Steckner 1996).

Other artwork by Coze is located in Prescott. *Prelude to Modern Prescott* is an 8-panel mural located in the large conference room of the Phippen Museum. Using materials similar to those used in *The Phoenix* mural such as local stones, gravel, sand, and mosaic pieces, the *Prelude to Modern Prescott* mural illustrates Prescott's history. Focused on the era from 1840 to 1900, the mural portrays prospectors, trappers, soldiers, mountain men, and residents of the area. Two additional Coze pieces are located in Prescott City Hall. One is a large mural on canvas and the other is an oil painting of William Hickling Prescott. In addition to his work in Phoenix and Prescott, Coze also completed illustrations for National Geographic and Arizona Highways (Aronowitz 2002).

*The Phoenix* was likely the most well known of all of Coze's artwork. In 1962, Dr. F.M. Hinkhouse, director of the Phoenix art museum, stated that the mural "exemplifies the vibrant and exciting growth of the City and State" (Phoenix Sky Harbor Municipal Airport 1962). When the East Terminal (Terminal 2) opened it was thought of as a "monument to achievement" and that the new terminal was "as emblematic as the gaudy Phoenix bird which themes Paul Coze's lobby mural, transcending from the old to the new amid a burst of pride and glory" (*Arizona Republic* 1962). After fourteen months of planning and construction, the mural was mounted on pre-cast concrete wall panels that were installed in the west wall of the terminal lobby (Phoenix Sky Harbor Municipal Airport 1962). It took five days to install the mural.

Coze made significant contributions to the promotion of interest in local art and *The Phoenix* mural served as a recognizable piece of art that visitors to the Airport associated with Phoenix. Thirty years later in 1992, the Phoenix Art Museum's director Jim Ballinger credited Paul Coze with helping to "galvanize a lot of interest in art," and characterized the mural as being "of greater value as a kind of Phoenix artistic monument rather than as a great piece of art" (Webb 1992).

Based on the mural's association with prominent local artist Paul Coze and the history of commercial aviation in Phoenix, it is recommended that *The Phoenix* mural be considered eligible for the National Register of Historic Places under Criterion C. The Phoenix Aviation Department would remove the mural prior to demolition of the terminal, and remount the three panels of the mural together in an appropriate public location on the Airport in a timely manner. Before removal, the mural would be photo-documented, and the Airport art curator would ensure that the mural is carefully removed to avoid damage to the multimedia mural. The history of the mural would be documented and publicly interpreted when it is remounted.

### **Inventory Results Off the Airport (Stage 2–East APM)**

There are 39 buildings on 92 parcels within the portion of the Stage 2–East APM area of potential effects for construction impacts that is off the Airport. Twelve of these buildings were constructed in 1965 or earlier (Figure 11, refer to Table 3). In addition, the Grand Canal [AZ T:7:167(ASM)] and the Phoenix main line of the Southern Pacific Railroad [AZ T:10:84(ASM)], which have previously been determined eligible for the National Register, cross this area.

The Phoenix main line of the Southern Pacific Railroad was built in 1924 to 1926. The SHPO has previously evaluated this railroad as eligible for the National Register under Criterion A. The Union Pacific Railroad continues to operate the line, and the section of the railroad within the area of potential effects retains little historic integrity other than its location. There are no historical materials and it has the appearance of a modern railroad. The setting of the railroad has been highly altered by urban development. The proposed Stage 2–East APM would cross beneath the tracks under the bridge that carries the railroad across the depressed SR 153, and an APM maintenance and control facility would be built north of the tracks. No land within the right-of-way of the railroad would be acquired and the use of the line would not be affected. The changes to the current visual setting would not be substantial.

The Stage 2–East APM corridor also crosses the Grand Canal, which was originally constructed in 1878. The canal has been maintained and upgraded over the years, and continues to function as a major component of the modern irrigation network of the Salt River Project (Anderson and



57

# - Refer to Table 3

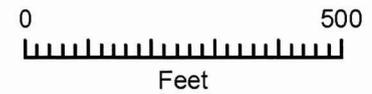
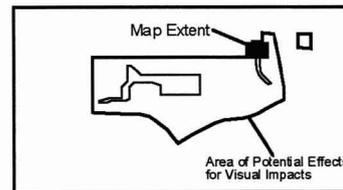


Figure 11 Historical Properties Inventoried Off the Airport

Noland 1990). The canal has been determined to be eligible for the National Register under Criterion A. At the APM crossing, the Grand Canal has the appearance of a modern irrigation canal. The proposed Stage 2–East APM would span the canal on an elevated guideway, and a station would be built at the terminus of the guideway on the north side of the canal. An APM maintenance and control facility would be constructed south of the canal. An easement is required to cross the canal, which is owned by the federal government and administered by the Bureau of Reclamation, but no land within the right-of-way of the canal would be acquired and the use of the canal would not be affected. The APM facilities would alter the setting of this section of the Grand Canal, but the original rural agricultural landscape was converted to urban uses decades ago. The visual changes in the current commercial and light industrial setting of the canal would not be substantial.

The twelve other buildings are located outside the Airport within an area that would be acquired for development of the APM guideway and maintenance and operations facility. These buildings are located within an area bounded by Washington Street on the north, the Union Pacific Railroad on the south, 42<sup>nd</sup> Street on the west, and Sky Harbor Expressway (SR 153) on the east.

The Arizona Aerosol Corporation Chemical building was constructed in 1965 at 15 S. 42<sup>nd</sup> Street (#11 on Figure 11). The building is constructed of concrete block and is an example of a common type. This building possesses no significant associations or other historic values, and it is recommended that it be considered ineligible for the National Register.

The Valley National Bank/Bell Paint and Body Shop building was constructed in 1948, but was moved to its current location at 17 S. 42<sup>nd</sup> Street in the late 1950s (#12 on Figure 11). The building is a Quonset hut that may have been originally used as a drive-thru bank. After it was moved, it was converted to an auto body shop. The drive-thru window has been removed, an addition has been constructed on the back of the building, and modifications were made to the building after a fire. The Quonset has lost its historic integrity, and it is recommended that it be considered ineligible for the National Register.

Three additional historic-age buildings are located on the east side of 42<sup>nd</sup> Street. The building at 23 S. 42<sup>nd</sup> Street (Parcel 124-06-003) is a small, utilitarian building constructed in 1960 (#13 on Figure 11), and the Colonial Duntex Tile building at 27 S. 42<sup>nd</sup> Street is a frame and metal building constructed in 1959 (#14 on Figure 11). The building at 55 S. 42<sup>nd</sup> Street (Parcel 124-06-006) is a frame and metal shed that was built in the late 1950s (#15 on Figure 11). All of these buildings appear to have been modified since their original construction. None of these buildings possess significant associations or historic values, and it is recommended they be considered ineligible for the National Register.

Originally constructed in 1939, the building at 26 S. 42<sup>nd</sup> Place (Parcel 124-06-008) was moved to its current location in the late 1950s (#16 on Figure 11). The combination office and warehouse building is no longer within its original context and has also been modified since its construction. The Stewart Concrete and Pipe building, located at 4218 E. Madison Street, was constructed on site in 1965 by a tenant (#17 on Figure 11). The building was installed on piers so it could be moved. The building at 31 S. 42<sup>nd</sup> Place (Parcel 124-06-23B) was constructed in 1960 and is a utilitarian concrete block building (#18 on Figure 11). None of these buildings possess

significant associations or historic values, and it is recommended that they be considered ineligible for the National Register.

The building located at 37 S. 42<sup>nd</sup> Place (Parcel 124-06-24B) is a one-story, frame structure that was built in the 1940s (#19 on Figure 11). It was moved onto its current site in the late 1950s. It is likely that this building was constructed for military purposes during World War II and later adapted for light industrial use. Although this building was originally thought to be a barracks building, closer inspection and comparison to U.S. Army construction plans indicate that the design of this building more closely resembles a storehouse or company administration building (Wasch and others 1988). This building is no longer in its original setting, has been modified since its original construction, and is no longer representative of its earlier history. It is recommended that it be considered ineligible for the National Register.

The J.T. Richmond Tool and Die building is located at 4302 E. Madison Street and was constructed in 1961 (#20 on Figure 11). The building has multiple additions and is an example of a common type of commercial or light industrial building. The Western Sealant Building located at 4209 E. Madison Street is a small frame shed constructed circa 1960 to 1970 (#21 on Figure 11). Neither of these buildings possesses significant associations or other historic values, and it is recommended that they be considered ineligible for the National Register.

County assessor records indicate that a building at 126 S. 42<sup>nd</sup> Place (Parcel 124-06-59A) was constructed in 1962 (#22 on Figure 11). If it remains intact, it has been integrated into a large modern building, and is no longer visible. It is recommended that it be considered ineligible for the National Register.

## **RESOURCES IN THE AREA OF POTENTIAL EFFECTS FOR VISUAL IMPACTS**

Airport files and County Assessor records were reviewed to identify historic-age buildings and structures outside the area of potential effects for construction impacts but within the area of potential effects for visual impacts (Table 4). Two historic-age resources were identified on the Airport, and two properties listed in the National Register were identified outside the Airport. The Grand Canal and Phoenix main line of the Southern Pacific Railroad also continue from the area of potential effects for construction impacts across the area of potential effects for visual impacts.

The 1952 Airport control tower and the Sacred Heart Church were identified on the Airport. Originally located near Terminal 1, the old control tower was moved in 1991. Part of the old tower was re-erected near the southern edge of the Airport (refer to Figure 9). Because the tower has been moved from its original setting and modified, it is recommended that it be considered ineligible for the National Register. The proposed new Airport facilities would be a minor change in the current setting of the old tower.

**TABLE 4  
RESOURCES WITHIN THE AREA OF POTENTIAL EFFECTS FOR VISUAL IMPACTS**

	<b>Name</b>	<b>Location</b>	<b>Construction Year</b>	<b>National Register Status</b>	<b>Impact</b>
<i>On the Airport</i>					
1	Terminal 1 Traffic Control Tower	2802 E. Old Tower Road	1952, moved and modified 1991	ineligible	minor change in setting
2	Sacred Heart Church	900 S. 17 <sup>th</sup> Street	1956	eligible, Criterion A	minor change in setting
<i>Off the Airport</i>					
3	Pueblo Grande Museum and Archaeological Park, AZ U:9:1(ASM)	4619 E. Washington Street	Prehistoric ruin	listed, Criteria A and D, eligible Criterion C; National Historic Landmark, Phoenix Register and City Park	change in setting
4	Tovrea Castle and Carraro Cactus Garden (El Castillo)	5041 E. Van Buren Street	1928-1930	listed, Criteria A and C, Phoenix Register and Historic Landmark	minor change in setting

The Sacred Heart Church, located at 900 S. 17<sup>th</sup> Street, was constructed in 1956 (refer to Figure 9). Originally located within the Golden Gate Barrio, the church is now located on Airport property. The City of Phoenix has acquired the building and removed the original street grid in the area. The church had a significant role in the civic and religious life of the residents of one of the oldest barrios in southeast Phoenix. All of the Golden Gate Barrio except for the Sacred Heart Church was demolished when the property was integrated into the Airport. SHPO staff review has concluded that the property is eligible for the National Register under Criterion A. The church currently is located within a highly altered setting, and the proposed new Airport facilities would be a minor change in the current setting of the church.

The Pueblo Grande Ruin National Historic Landmark within the Pueblo Grande Museum and Archaeological Park is located just east of the northern end of the Stage 2–East APM corridor (refer to Figure 11 and the prior discussion in the area of potential effects for construction impacts). The landmark within the park is listed in the National Register under Criteria A and D, and the SHPO also considers the architectural ruins eligible under Criterion C. The project would not require acquisition of land from the park but would alter its setting. Elevated segments of the Stage 2–East APM, the APM station at the Valley Metro Rail Light Rail Transit interconnection, and the APM maintenance and control facility would be visible from parts of the park.

Tovrea Castle and Carraro Cactus Garden, located at 5041 E. Van Buren Street, was historically known as El Castillo (refer to Figure 5). Built between 1928 and 1930 as a resort and real estate development venture, the structure is a four-story, octagonal folk-art tower, constructed in stepped tiers. The building and the surrounding 44-acre cactus garden are listed in the National Register under Criteria A and C. The property also is listed on the Phoenix Register and designated as a historic landmark, and the city is developing the property as a heritage tourism attraction. The property is a Section 4(f) resource. Tovrea Castle is almost 1 mile east of the proposed Stage 2–East APM station and maintenance and operations facility, and on the opposite

side of the elevated Hohokam Expressway. The proposed APM facilities would result in only minor changes of the highly developed urban landscape around the Tovrea Castle, which has been substantially altered by the elevated Hohokam Expressway (SR 143) as well as the elevated Red Mountain Freeway (SR 202), and other modern multistory buildings.

## **INVENTORY OF TRADITIONAL CULTURAL PLACES**

Traditional cultural places are locations that have significance for traditional cultural groups. The FAA consulted with American Indian communities that have traditional cultural affiliations with the Salt River Valley. The Salt River Pima-Maricopa Indian Community, on behalf of the Four Southern Tribes (which also include the Gila River Indian Community, Ak-Chin Indian Community, and Tohono O'odham Nation), and the Hopi Tribe confirmed their cultural affiliations to the project area. The tribes that were contacted have concerns about the treatment of human remains, funerary objects, sacred objects, and objects of cultural patrimony that may be buried in archaeological sites within the area of potential effects. The tribes did not identify any other places of traditional cultural significance within the area of potential effects.

## **ASSESSMENT OF SECTION 106 EFFECTS AND SECTION 4(f) IMPACTS**

Eleven significant historic properties were identified as subject to potential construction or visual impacts of the project (Table 5). These impacts were assessed using criteria for adverse effect as defined by regulations that implement Section 106 of the National Historic Preservation Act (36 CFR 800.5). In addition, the impacts were assessed to determine whether they would involve permanent acquisition or direct taking of a Section 4(f) resource, temporarily occupy a Section 4(f) resource in a manner that is adverse to the Section 4(f) preservationist purposes, or result in proximity impacts so severe that the protected activities, features, or attributes that qualify a resource for protection under Section 4(f) would be substantially impaired [Environmental Impact and Related Procedures, 23 CFR 771.135(p)(2)]. (These are Federal Highway Administration regulations that FAA uses in assessing Section 4(f) impacts.

The proposed Airport Development Program has the potential to adversely affect parts of three archaeological sites that are remnants of large Hohokam habitation sites. These include Pueblo Salado [AZ T:12:47(ASM)] and Dutch Canal Ruin [AZ T:12:62(ASM)] on the western part of the Airport, and Pueblo Grande [AZ U:9:1(ASM)] northeast of the Airport. In addition, buried remnants of many of the 19 Hohokam canals and the historical Joint Head Canal recorded in sites AZ U:9:2 and 28(ASM) are likely to extend into the Stage 2–East APM corridor northeast of the Airport. Other unrecorded Hohokam canals of Systems 2 and 10 as well as early

**TABLE 5  
SUMMARYASSESSMENT OF SECTION 106 EFFECTS AND SECTION 4(f) IMPACTS**

Site Name / Number	Location	Description	National Register Status	Section 106 Effect	Section 4(f) Impact
1 Pueblo Salado AZ T:12:47(ASM)	southwest part of Airport	Hohokam habitation site, Classic period, pit houses, adobe compounds, field houses, canals, pits, burials	eligible, Criterion D	Stage 2–West APM may disturb unstudied part of site, adverse effect <sup>1</sup>	not a Section 4(f) resource
2 Dutch Canal Ruin AZ T:12:62(ASM)	northwest part of Airport	Hohokam (mostly seasonal) habitation site, pre-Classic and Classic periods, pit houses, canals, pits, burials	eligible, Criterion D	Sky Harbor Boulevard realignment may disturb unstudied margin of site, adverse effect <sup>1</sup>	not a Section 4(f) resource
3 Pueblo Grande AZ U:9:1(ASM) (outside park)	northeast of Airport	primary Hohokam village with many habitation and burial areas, canals, pits	eligible, Criterion D	Stage 2–East APM may disturb unstudied part of site, adverse effect <sup>1</sup>	not a Section 4(f) resource
4 Pueblo Grande Museum and Archaeological Park AZ U:9:1(ASM)	4619 E. Washington St.	museum and park to interpret platform and ballcourt of Pueblo Grande site	listed, Criteria A and D; eligible, Criterion C; National Historic Landmark	elevated section of Stage 2–East APM and APM maintenance and control facility would be within 300 to 800 feet of park boundary, potential adverse visual effect <sup>2</sup>	no use or constructive use
5 AZ U:9:2(ASM)	northeast of Airport	11 Hohokam canals, Sedentary and Classic periods, 1884 Joint Head Canal	eligible, Criterion D	Stage 2–East APM may disturb buried canal remnants that extend west of site, adverse effect <sup>1</sup>	not a Section 4(f) resource
6 AZ U:9:28(ASM)	northeast of Airport	8 Hohokam canals, Sedentary and Classic periods, 2 activity areas, 3 historical trash pits	data recovery studies completed	Stage 2–East may disturb buried canal remnants that extend west of site, adverse effect <sup>1</sup>	not a Section 4(f) resource
7 Hohokam Canal Systems 2 and 10	Airport and vicinity	Hohokam irrigation canals	intact segments eligible, Criterion D	construction may disturb buried canal remnants, adverse effect <sup>1</sup>	not a Section 4(f) resource
8 <i>The Phoenix</i> mural	2908 East Sky Harbor Blvd.	mural by Paul Coze installed in Terminal 2 when it was built	recommended eligible, Criterion C	to be relocated, no adverse effect if photo documented, moved and remounted carefully, and publicly interpreted	no use or constructive use
9 Grand Canal	southwest of 44th Street/ Washington St. intersection	canal built in 1878	eligible, Criterion A	APM would cross canal on elevated structure, APM maintenance and control facility would be next to canal, no adverse effect	no use or constructive use
10 Phoenix Main Line of Southern Pacific Railroad (now Union Pacific)	south of Jackson St.	railroad built in 1924-1926	eligible, Criterion A	APM would cross beneath tracks under existing bridge, APM maintenance and control facility would be next to tracks, no adverse effect	no use or constructive use
11 Sacred Heart Church	900 S. 17th Street	church built in Golden Gate Barrio in 1956	eligible, Criterion A	about one-half mile from Stage 2–West APM, minor change to setting, no adverse effect	no use or constructive use
12 Tovrea Castle (El Castillo)	5041 E. Van Buren St.	four-story, folk-art tower built in 1928-1930	listed, Criteria A and C	about one mile east of Stage 2–East APM, minor change to setting, no adverse effect	no use or constructive use

<sup>1</sup> Traditional cultural concerns about any human remains, funerary objects, sacred objects, and objects of cultural patrimony would be addressed in accordance with a 1995 burial agreement.

<sup>2</sup> Phoenix Aviation Department will work to avoid an adverse visual effect through sensitive design of APM facilities. No potential for damage from construction vibrations was identified, but will be reassessed after construction techniques are determined.

historic-era archaeological sites could be encountered on and off the Airport. Intact archaeological resources that could yield important information about the history of Hohokam or early Euro-American settlement systems and subsistence strategies would be eligible for the National Register under Criterion D. Construction disturbance of these sites would be an adverse effect that would be mitigated through data recovery studies. Traditional cultural concerns about any human remains, funerary objects, sacred objects, and objects of cultural patrimony that might be associated with these archaeological sites would be addressed in accordance with a 1995 burial agreement that the Arizona State Museum developed with the City of Phoenix and affiliated tribes in compliance with the Arizona Antiquities Act and Arizona Burial Law. The archaeological sites that would be adversely affected are significant primarily for their information, which can be recovered and preserved, and therefore they are not Section 4(f) resources.

There is one property recommended as eligible for the National Register (under Criterion C) within the area of potential effects for construction impacts on the Airport. It is an art object—*The Phoenix*, a mural by Paul Coze. The mural is within Terminal 2, which would be demolished as part of the proposed Airport Development Program. In consultation with the SHPO and Phoenix CHPO, the Phoenix Aviation Department would photo document the mural in its current location, carefully remove and remount it, and publicly interpret it at a new location to be selected on the Airport. Removal of a historic property from its historic setting usually is an adverse effect, but as an art object, the mural is inherently moveable, and its relocation is not expected to adversely affect the historic qualities of the mural that make it eligible for the National Register. The project would not require acquisition of the mural or substantially diminish its historic values, and therefore it would not result in a Section 4(f) use or constructive use.

Two previously identified historic properties are also located within the area of potential effects for construction impacts off the Airport—the Grand Canal [AZ T:7:167(ASM)] and the Phoenix main line of the Southern Pacific Railroad [AZ T:10:84(ASM)]. Both are considered eligible under Criterion A. The Stage 2–East APM would cross beneath the railroad under the existing SR 153 bridge, and cross over the Grand Canal on an elevated structure, and an APM maintenance and operations facility would be constructed between the railroad and canal. The canal and railroad would not be altered, and the proposed project is not expected to adversely affect the historic qualities of the structures that make them eligible for the National Register. The project would not require acquisition of right-of-way from the canal or railroad, would not affect their ongoing uses, and would not substantially diminish their historic values. Therefore the project would not result in a Section 4(f) use or constructive use.

In addition to the potential for construction activities to adversely affect part of the Pueblo Grande site outside the Pueblo Grande Museum and Archaeological Park and Pueblo Grande Ruin and Irrigation Sites National Historic Landmark, the potential for construction-induced ground vibration to damage the archaeological ruin within the park also was evaluated. A previous study recommended restricting use of heavy equipment within 150 feet of the platform mound and surrounding residential compound (King and others 1991). The Stage 2–East APM would be no closer than approximately 1,000 feet, and therefore construction-induced ground vibration is not expected to threaten the ruin. The study did recommend that the museum

evaluate any blasting or pile driving within 3,000 feet of the ruin on a case-by-case basis. If subsequent final design should determine that construction would require blasting, pile driving, or other techniques that might create high levels of vibration, the threat should be reassessed in consultation with the Phoenix City Archaeologist. If warranted, a vibration-monitoring program should be implemented to avoid damage to the ruin.

Construction activities also would result in short-term increases in noise levels, but construction noise would conform to City of Phoenix ordinances and be restricted to the Airport and immediate vicinity of the construction zones that are beyond the Airport. In an urban setting, such noise is not projected to have potential adverse effects. The proposed project would not alter operations at Sky Harbor International Airport, and therefore would not result in any change in noise exposure to the Pueblo Grande Museum and Archaeological Park.

The proposed project would alter the setting of the Pueblo Grande Museum and Archaeological Park. The elevated Stage 2 – East APM station at the Valley Metro Rail Light Rail Transit interconnection and approximately 1,500 feet of elevated APM guideway to the south would be built west of the park, on the opposite side of Sky Harbor Expressway (State Route 153). The APM station has yet to be designed, but it could be the equivalent of a two- to four-story building or taller. The station would be about 600 feet west of the park boundary. The guideway structure for the elevated section south of the station also has yet to be designed, but is expected to be approximately 11 feet deep and a maximum of approximately 27 feet above the existing grade. This elevated guideway would be about 400 to 1,000 feet west of the park boundary. After crossing the Grand Canal, the elevated section of the APM would descend below grade approximately 250 feet north of the Union Pacific Railroad.

An APM maintenance and control facility would be built on the west side of Sky Harbor Expressway between the canal and railroad, replacing commercial and light industrial buildings that currently occupy the area. This facility also has yet to be designed, but is unlikely to be substantially taller than the elevated guideway. The parcel on which the APM maintenance and control facility would be built is approximately 250 to 1,000 feet west of the western edge of the park

Approximately 3,000 feet south of the railroad, the Stage 2 – East APM would rise above grade, and approximately 1,000 feet of the guideway would be elevated until reaching the East Economy Parking Garage. The top of this section of the guideway would be approximately 45 feet above Sky Harbor Boulevard, which is depressed below normal grade at this location at the eastern end of the Airport. This elevated segment would be within approximately 1,000 feet of the southern boundary of the Pueblo Grande Museum and Archaeological Park.

The elevated Hohokam Expressway (State Route 143) clearly demarcates the eastern side of the park. The broad Washington Street marks the northern edge. Several multi-story commercial and office buildings have been developed north of the park. The Crowne Plaza Hotel on the northwest corner of Washington Street and 44<sup>th</sup> Street, just north of the proposed interconnection of the APM and the Light Rail Transit station, is one of the tallest at approximately 10 stories. Although the land immediately north of the park has been cleared and currently is vacant, it too is planned for commercial development. Views to the south of the park are more open because

the clear zone at the eastern end of the Airport runways borders the southern park boundary. The Sky Harbor Boulevard and East Economy Parking Garage are visible in that direction. The Salt River, which was an important feature of the setting of the Pueblo Grande site when it was occupied, is now dry except during floods and has been shifted south of Sky Harbor Boulevard and confined to an engineered channel. The Sky Harbor Expressway (State Route 153) defines the western border of the park, and the area beyond, where the proposed Stage 2 – East APM and APM maintenance and control facility would be built, is occupied by light industrial and commercial properties, mostly with one-story buildings. Views in this direction include power lines, tall metal storage tanks, and billboards. From many places within the park, museum buildings, walls, and trees screen views to the west. A canal and railroad cross through the park, but those features have attained their own historic values.

The park has been expanded from the original 5 acres acquired in 1924 to more than 100 acres. The expanse of the park and use of sensitively designed museum buildings, perimeter walls, and natural vegetation creates a sense of place appropriate for interpreting a prehistoric ruin. Nevertheless, the urban development surrounding the park and the noise of traffic and airplanes make it obvious to visitors standing on the platform mound that the park is in the middle of a large metropolitan area.

The extent of the visual changes cannot be fully assessed until the proposed facilities are designed in more detail, and although they could adversely affect the park's setting, there is good potential that any adverse effect could be avoided through sensitive design, which would consider factors such as massing, style, color, texture, glare, and potential for screening with vegetation.

FAA is consulting with the National Park Service and the Advisory Council on Historic Preservation about the potential adverse effects on the Pueblo Grande Ruin and Irrigation Sites National Historic Landmark (Appendix D). The Airport Development Program would not require acquisition of land from the Pueblo Grande Ruin and Irrigation Sites National Historic Landmark within the Pueblo Grande Museum and Archaeological Park, and the changes in the setting of the park are not expected to substantially impair the preservation and public interpretation purposes of the museum and park, nor interfere with the public use and enjoyment of the facility. Because the proximity impacts would not be so severe that they would substantially impair the features and activities of the park and landmark that qualify it for protection under Section 4(f), the impacts would not constitute a Section 4(f) constructive use.

The closest elevated project components would be approximately 0.5 mile from the Sacred Heart Church and 1 mile from the Tovrea Castle. These facilities would result in only minor changes to the setting of these properties and would not result in adverse effects to the historic values that make these properties eligible for the National Register. The project would not acquire land from these properties and the minor visual changes to their setting would not substantially impair or diminish their historic values. Therefore, the project would not result in a Section 4(f) use or constructive use.

## CONCLUSION AND RECOMMENDATIONS

In 2002, the FAA initiated Section 106 consultations with the CHPO, Phoenix City Archaeologist, and SHPO when studies for the proposed Airport Development Program began (Appendix D). The studies have indicated that the proposed program could result in adverse effects as defined by regulations implementing Section 106, but the impacts are not expected to constitute use or constructive use of resources protected by Section 4(f) of the Department of Transportation Act.

The potential Section 106 adverse effects include disturbance of archaeological resources and visual effects on the Pueblo Grande Museum and Archaeological Park, which also is designated as the Pueblo Grande Ruin and Irrigation Sites National Historic Landmark. To address these potential adverse effects, the FAA plans to develop, in consultation with the SHPO and other interested parties, a Section 106 Memorandum of Agreement to define procedures for continuing to consider effects and for developing measures to avoid, reduce, or mitigate adverse effects through the project design and implementation process. Those procedures would stipulate that as project planning proceeds and final designs are prepared, the Phoenix Aviation Department will arrange to have archaeological testing or monitoring plans developed and implemented, with subsequent data recovery studies as warranted. Traditional cultural concerns about disturbance of human remains and funerary objects that might be associated with archaeological sites would be addressed in accordance with a 1995 burial agreement that the Arizona State Museum developed with the City of Phoenix and culturally affiliated tribes to comply with the Arizona Antiquities Act and Arizona Burial Law.

The Memorandum of Agreement also would stipulate that the Phoenix Aviation Department would consult with the Pueblo Grande Museum Director, Phoenix CHPO, and SHPO to address potential visual effects on the Pueblo Grande Museum and Archaeological Park. Those consultations would consider design criteria and involve review of developing designs of the Stage 2–East APM station, elevated sections of the Stage 2–East APM guideway, and the APM maintenance and operations facility. The goal would be to avoid any adverse visual effect on the museum and national historic landmark, and to enhance pedestrian access to the museum from the APM and Valley Metro Rail stations.

## REFERENCES CITED

Abbott, David R.

- 2000 *Ceramics and Community Organization among the Hohokam*. University of Arizona Press, Tucson

Abbott, David R. (editor)

- 1994 *The Pueblo Grande Project: Ceramics and the Production and Exchange of Pottery in the Central Phoenix Basin*. Publications in Archaeology 20, Vol. 3. Soil Systems, Phoenix.

- 2003 *Centuries of Decline during the Hohokam Classic Period at Pueblo Grande*. University of Arizona Press, Tucson.

Aguila, Lourdes

- 1998 *Cultural Resources Survey of the Salt River Project Canals, Maricopa County, Arizona (revised)*. Cultural Resources Report 100. Archaeological Consulting Services, Tempe.

- 2005 Personal communication regarding *Archaeological Investigations along Phoenix Sky Harbor International Airport Center Runway (7L-25R)*, 10 January, Archaeological Consulting Services, Tempe.

Aguila, Lourdes, Robert J. Stokes, and Thomas E. Jones

- 2004 *Literature Review for the Proposed Automated People Mover Stage 1 Electrical Power Supply Corridor, from the 40th Place Substation to the East Economy Parking Lot, City of Phoenix, Maricopa County, Arizona*. Archaeological Consulting Services, Tempe.

Ahlstrom, Richard V. N., and David A. Phillips Jr.

- 1983 *Archaeological Survey and Cultural Resources Evaluations for Various Properties in Phoenix and Vicinity, Maricopa County, Arizona*. New World Research, Tucson.

Anderson, Fred, and Carol Noland

- 1990 *Grand Canal and Crosscut Hydro Plant, North Side of Salt River, Tempe and Phoenix, Maricopa County, Arizona*. HAER Document Numbers AZ-17 and AZ-30. Salt River Project Archives, Phoenix.

Arizona Republic

- 1961 Coze to Decorate New Sky Harbor Walls. *Arizona Republic*, 15 March. On file, Phoenix Sky Harbor International Airport.

- 1962 Ready for the Space Age. *Arizona Days & Ways Magazine*, 20 May. On file, Phoenix Sky Harbor International Airport.

*Arizona Republican*

- 1924 Colored Educator Purchases Lot in Tract Near City. 30 March, 1:3, Sunday morning edition. On file, Hayden Library, Arizona State University, Tempe.

Aronowitz, Marguerite Madison

- 2002 Past Local Artists Share their Dreams with Today. *Sharlot Hall Museum Days Past*, 8 September. Electronic document, [www.sharlot.org/archives/history/dayspast/text/2002\\_09\\_08.shtml](http://www.sharlot.org/archives/history/dayspast/text/2002_09_08.shtml), accessed 9 September 2004.

AZSITE Consortium

- 2002 *AZSITE Cultural Resource Inventory*. Arizona State Museum, Arizona State University, Museum of Northern Arizona, State Historic Preservation Office. <http://azsite.asu.edu>, data acquired on 3 July 2002.

- Bahr, Donald, Juan Smith, William Smith Allison, and Julian Hayden  
 1994 *Short Swift Time of Gods on Earth: The Hohokam Chronicles*. University of California Press, Berkeley.
- Bentz, Donald N.  
 nd *The Light in the Desert. The West*. On file, Luhrs Reading Room, Arizona State University, Tempe.
- Boston, Richard L., M.S. Droz, K. Melaniphy, B.G. Phillips, S. Powell, and K. Redman  
 2001 *Preliminary Results of Archaeological Testing and Recommendations for Monitoring, Additional Testing and Data Recovery: Phoenix Sky Harbor International Airport Center Runway (7L-25R) Reconstruction Project*. Archaeological Consulting Services, Tempe.
- Bostwick, Todd W.  
 1988 *An Archaeological Assessment of a Remote Parking Lot at Sky Harbor International Airport*. Report PGM-88-16. Pueblo Grande Museum, Phoenix.
- Bradley, Bruce A.  
 1999 *A Soho Phase Canal Adjacent to Pueblo Grande, Phoenix, Arizona*. *Kiva* 65(1):35-62.
- BRW  
 1986 *Sky Harbor Center Pedestrian Survey and Cultural Resource Program*. BRW, Phoenix  
 1989 *Phase II Testing of Cultural Resources in the Combined MeraBank Phase 2-3 Properties, Southwest Loop Road, and Adjoining Properties between 18<sup>th</sup>, 20<sup>th</sup>, Mohave, and Yuma Streets in the Sky Harbor Center, Phoenix, Arizona*. BRW, Phoenix.
- Cable, John S.  
 1985a *An Archaeological Survey of the Southside Access Road at Sky Harbor Airport, Phoenix*. Report PGM-85-2. Pueblo Grande Museum, Phoenix.  
 1985b *Archaeological Testing of the Southside Access Road at Sky Harbor Airport, Phoenix*. Report PGM-85-3. Pueblo Grande Museum, Phoenix.
- Cable, John S. (editor)  
 1988 *Archaeological Testing Along the Hohokam Expressway Corridor East of Pueblo Grande, Phoenix, Arizona: Results and Preliminary Research Design for Data Recovery*. Technical Report 88-21. Soil Systems, Phoenix.
- Cable, John S., and David E. Doyel  
 1986 *The Archaeology of Swilling's Ditch: Phoenix's First Historic Canal*. Pueblo Grand Museum, Phoenix.
- Clark, Esther  
 1962 *The Construction Story: An Engineering Masterpiece*. *Arizona Days & Ways Magazine*, 20 May. On file, Phoenix Sky Harbor International Airport.
- Crown, Patricia L., and James Judge (editors)  
 1991 *Chaco and Hohokam: Prehistoric Regional Systems in the American Southwest*. School of American Research Press, Santa Fe.
- Dean, David R., and Jean A. Reynolds  
 2004 *City of Phoenix African American Historic Property Survey*. Athenaeum Public History Group, Mesa.

Dean, Jeffrey S.

- 1991 *Thoughts on Hohokam Chronology*. In *Exploring the Hohokam: Prehistoric Desert Peoples of the American Southwest*, edited by George J. Gumerman, pp. 61-150. Amerind Foundation, Dragoon, Arizona, and University of New Mexico Press, Albuquerque.

DMJM Aviation/HDR

- 2004 *Phoenix Sky Harbor International Airport West Terminal EIS Project Description*. DMJM Aviation, Tampa, and HDR, Phoenix.

Doyel, David E.

- 1981 *Late Hohokam Prehistory in Southern Arizona*. Contributions to Archaeology 2. Gila Press, Scottsdale.

Ellis, J. Grace, S. R. Copeland, J.L. Lavris, J.A. Smith, I.G. Thompson, and R. Weahkee

- 1999 *A Cultural Resources Survey of the Williams Communication Group Fiber Optic Cable Line Right-of-way, Yuma, Arizona to the New Mexico Border: Yuma, Maricopa, Pinal, Pima and Cochise counties, Arizona*. Technical Report 99-17. Soil Systems, Phoenix.

Euler, R. Thomas, and Earl W. Sires, Jr.

- 1984 *Archaeological Testing at AZ T:12:47, a Hohokam Site in Phoenix, Arizona*. Cultural Resource Management Division, Arizona State Museum. University of Arizona, Tucson.

Foster, Michael S. (editor)

- 1994a *The Pueblo Grande Project, Volume 1: Introduction, Research Design, and Testing Results*. Publications in Archaeology 20. Soil Systems, Phoenix.

- 1994b *The Pueblo Grande Project, Volume 4: Material Culture*. Publications in Archaeology 20. Soil Systems, Phoenix.

- 1994c *The Pueblo Grande Project, Volume 8: Household and Synthetic Studies*. Publications in Archaeology 20. Soil Systems, Phoenix.

General Land Office

- 1890 *Joseph S. Drew Sale-Cash Entry*. Accession/Serial AZAZAA 015922. Electronic document, [www.glorerecords.blm.gov/PatentSearch/Detail.asp?Accession=AZAZAA+015922&Index=2&QryID=59517.38&DetailTab=1](http://www.glorerecords.blm.gov/PatentSearch/Detail.asp?Accession=AZAZAA+015922&Index=2&QryID=59517.38&DetailTab=1), accessed 16 November 2004.

Gladwin, Harold S, Emil W. Haury, E.B. Sayles, and Nora Gladwin

- 1938 *Excavations at Snaketown I: Material Culture*. Gila Pueblo Archaeological Foundation, Globe, Arizona.

Graybill, Donald A.

- 1989 *The Reconstruction of Prehistoric Salt River Streamflow*. In *The 1982-1984 Excavations at Las Colinas: Environment and Subsistence*, edited by Lynn S. Teague, pp. 24-38. Archaeological Series 162. Arizona State Museum, University of Arizona, Tucson.

Greenwald, David H. (editor)

- 1994 *Early Desert Farming and Irrigation Settlements. Archaeological Investigations in the Phoenix Sky Harbor Center. Volume I*. Anthropological Research Paper 4. SWCA Environmental Consultants, Flagstaff.

Greenwald, David H., and Jean H. Ballagh

- 1996 *Early Desert Farming and Irrigation Settlements. Archaeological Investigations in the Phoenix Sky Harbor Center. Volume 4*. Anthropological Research Paper 4. SWCA Environmental Consultants, Flagstaff.

- Greenwald, David H., Jean H. Ballagh, Douglas R. Mitchell, and Richard A. Anduze  
 1996 *Life on the Floodplain: Further Investigations at Pueblo Salado for Phoenix Sky Harbor International Airport. Volume 2, Data Recovery and Re-evaluation.* Anthropological Papers 4. Pueblo Grande Museum, Phoenix.
- Greenwald, David H., Jean H. Ballagh, and M. Zyniecki (editors)  
 1996 *Life on the Floodplain: Further Investigations at Pueblo Salado for Phoenix Sky Harbor International Airport. Volume I, Preliminary Investigations and Research Design.* Anthropological Papers 4. Pueblo Grande Museum, Phoenix.
- Greenwald, David H., Mark L. Chenault, and Dawn M. Greenwald  
 1995 *Early Desert Farming and Irrigation Settlements. Archaeological Investigations in the Phoenix Sky Harbor Center. Volume 3.* Anthropological Research Paper 4. SWCA Environmental Consultants, Flagstaff.
- Greenwald, David H., and Richard Ciolek-Torrello (editors)  
 1988 *Archaeological Investigations at the Dutch Canal Ruin, Phoenix, Arizona.* Research Paper 38. Museum of Northern Arizona, Flagstaff.
- Greenwald, David H., and M. Zyniecki  
 1993 *Archaeological Investigation in the Phoenix Sky Harbor International Airport: A Class I and II Survey for the Master Plan Improvements Projects.* Archaeological Report 92-36. SWCA Environmental Consultants, Flagstaff.
- Greenwald, David H., M. Zyniecki, and Dawn M. Greenwald (editors)  
 1994 *Early Desert Farming and Irrigation Settlements. Archaeological Investigations in the Phoenix Sky Harbor Center. Volume 2.* Anthropological Research Paper 4. SWCA Environmental Consultants, Flagstaff.
- Hackbarth, Mark R.  
 2004 *A Cultural Resources Monitoring Report of Five Utility Trenches near Cutter Aviation Terminal at Sky Harbor Airport Center, Phoenix, Maricopa County, Arizona.* Technical Report 045269. Logan Simpson Design, Tempe.
- Haury, Emil W.  
 1976 *The Hohokam, Desert Farmers and Craftsmen: Excavations at Snaketown, 1964-1965.* University of Arizona Press, Tucson.
- Henderson, Kathleen T.  
 2003 *Hohokam Farming on the Salt River Floodplain: Excavations at the Sky Harbor Airport North Runway.* Anthropological Papers 42. Center for Desert Archaeology, Tucson.  
 2004 *Hohokam Farming on the Salt River Floodplain: Refining Models and Analytical Methods.* Anthropological Papers 43. Center for Desert Archaeology, Tucson.
- Johnson, Alfred E.  
 1974 *Recommendations on the Boundaries of Pueblo Grande Ruin and Irrigation Sites National Landmark, Maricopa County, Arizona.* On file, Pueblo Grande Museum Archives, Phoenix.
- Jones, Michael D.  
 1997 *Desert Wings, a History of Phoenix Sky Harbor International Airport.* Jetblast Publications, Tempe.
- King, K., D. Carver, D. Worley, and T. Bostwick  
 1991 *Induced Ground-Vibration Study at Pueblo Grande, Phoenix, Arizona.* Open-File Report 91-332. U.S. Geological Survey, Department of the Interior, Denver, Colorado.

- Krugel, James C.  
 2004 *Air Travel: It's Impact on the Way We Live and the Way We See Ourselves*. U.S. Centennial of Flight Commission. Electronic document, [www.centennialofflight.gov/essay/Social/impact/SH3.htm](http://www.centennialofflight.gov/essay/Social/impact/SH3.htm), accessed 9 September.
- Kwiatkowski, Scott M. (editor)  
 1994 *The Pueblo Grande Project, Volume 5: Environment and Subsistence*. Publications in Archaeology 20. Soil Systems, Phoenix.
- LaBar, James, and Shelly Dudley  
 2003 *Central Phoenix/East Valley Light Rail Transit Project: Historical Documentation of the Joint Head Dam and Joint Head Canal*. Valley Metro Rail, Phoenix.
- Leigh Fisher Associates  
 2003 Final Report: Aviation Demand Forecasts, West Terminal EIS, Phoenix Sky Harbor International Airport. Tampa.
- Lindly, John M.  
 2001 Archaeological Testing for the "Yuma Sky Harbor Parking Lot" at Sky Harbor Airport, Phoenix, Maricopa County, Arizona. Archaeological Report 01-349. SWCA Environmental Consultants, Phoenix.  
 2004a Archaeological Monitoring of Hanger Demolition at the Swift Property, Sky Harbor Airport, Phoenix, Maricopa County, Arizona. Cultural Resources Report 04-222. SWCA Environmental Consultants, Phoenix.  
 2004b Archaeological Monitoring of Potholing at 2400 East Buckeye Road, Phoenix, Maricopa County, Arizona. Cultural Resources Report 04-369. SWCA Environmental Consultants, Phoenix.
- Lowe, Charles H.  
 1964 *Arizona's Natural Environment: Landscapes and Habitats*. University of Arizona Press, Tucson.
- Luckingham, Bradford  
 1989 *Phoenix: A History of a Southwestern Metropolis*. University of Arizona Press: Tucson.
- Maricopa County Recorder  
 1914 *Subdivision Plat of Acre City*. Filed 9 November 1914, Book 7, Page 30. Maricopa County Recorder, Phoenix.  
 1923 *Subdivision Plat of the Portland Tract*. Filed 10 December, Book 11, Page 33. Maricopa County Recorder, Phoenix.
- Masse, W. Bruce  
 1976 *The Hohokam Expressway Project: A Study of Prehistoric Irrigation in the Salt River Valley, Arizona*. Contributions to Highway Salvage Archaeology in Arizona 43. Arizona State Museum, University of Arizona, Tucson.
- Mawn, Geoffrey P.  
 nd *Blacks of Phoenix, 1890-1930*. On file, Arizona Historical Foundation, Arizona State University, Tempe.
- Mitchell, Douglas R.  
 1992 Burial Practices and Paleodemographic Reconstructions at Pueblo Grande. *Kiva* 58:89-105.

Mitchell, Douglas R. (editor)

1994a *The Pueblo Grande Project, Volume 2: Feature Descriptions, Chronology, and Site Structure*. Publications in Archaeology 20. Soil Systems, Phoenix.

1994b *The Pueblo Grande Project, Volume 7: An Analysis of Classic Period Mortuary Patterns*. Publications in Archaeology 20. Soil Systems, Phoenix.

Nials, Fred L., and Kirk C. Anderson

1994 Physiography, Geology, and Natural Stratigraphy of the Project Area: Natural and Cultural Relationships. In *Early Desert Farming and Irrigation Settlements: Archaeological Investigations in the City of Phoenix Sky Harbor Center, Vol. 1, Testing Results and Data Recovery Plan*, edited by D.H. Greenwald, pp. 21-35. Anthropological Research Paper 4. SWCA Environmental Consultants, Flagstaff and Tucson.

Nials, Fred L., D.A. Gregory, and D.A. Graybill

1989 Salt River Streamflow and Hohokam Irrigation Systems. In *The 1982-1984 Excavations at Las Colinas: Environment and Subsistence* by Donald A. Graybill, D.A. Gregory, F.L. Nials, S.K. Fish, R.E. Gasser, C.H. Miksicek and C.R. Szuter, pp. 59-76. Archaeological Series 162(5). Arizona State Museum, University of Arizona, Tucson.

North, Chris, John M. Lindly, and Michael S. Foster

2002 *Archaeological Testing for the Consolidated Rental Car Facility at 16<sup>th</sup> Street and Buckeye Road, Phoenix, Maricopa County, Arizona*. Archaeological Report 02-353. SWCA Environmental Consultants, Phoenix.

Pearman, Hugh

2004 *Airports; A Century of Architecture*. Harry N. Abrams, New York.

Peplow, Edward H. Jr.

1980 *Sky Harbor Meets the Eighties: Phoenix Magazine Surveys the History, Highlights, and Future of Sky Harbor International Airport*. Phoenix Magazine, Phoenix.

Péwé, Troy L.

1978 Terraces of the Lower Salt River Valley in Relation to the Cenozoic History of the Phoenix Basin, Arizona. In *Guidebook to the Geology of Central Arizona*, edited by D. Burt and Troy L. Péwé, pp. 1-45. Special Paper 2. Arizona Bureau of Geology and Mineral Technology, Tucson.

Phoenix City Engineer

1937 *As Built Plans for the Improvements to Washington Boulevard 16th Street to Van Buren Junction*. Dated 3-11-37. On file, Central Records, City Hall, Phoenix.

Phoenix Sky Harbor Municipal Airport

1962 *Phoenix Sky Harbor Municipal Airport Terminal*. Brochure describing the Paul Coze Mural. On file, Phoenix Sky Harbor International Airport.

*Phoenix Tribune*

1923 For Sale: Watch Portland Tracts Grow. 8 June, 6(5). On file, Arizona State Library, Archives, and Public Records, Arizona State Capitol, Phoenix.

1924 Boxing at Pacific City. 30 March. On file, Arizona State Library, Archives, and Public Records, Arizona State Capitol, Phoenix.

Provincial Museum of Alberta

2004 *The Paul Coze Collection*. Electronic document, [www.pma.edmonton.ab.ca/human/ethno/collects/collects.htm](http://www.pma.edmonton.ab.ca/human/ethno/collects/collects.htm), accessed 10 September.

- Raven Maps & Images  
1992 *Arizona* (map, scale 1:550,000). Allan Cartography, Medford, Oregon.
- Rea, Amadeo M.  
1997 *At the Desert's Green Edge: An Ethnobotany of the Gila River Pima*. University of Arizona Press, Tucson.
- Reid, Jefferson, and Stephanie Whittlesey  
1997 *The Archaeology of Ancient Arizona*. University of Arizona Press, Tucson.
- R.L.S., Society Editor  
1922 Personal, Local, and Society News of the State Capital: Real Estate Dealer. *Phoenix Tribune*, Saturday 25 November, 5(35):2. On file, Arizona State Library, Archives, and Public Records, Arizona State Capitol, Phoenix.
- Rogge, A.E. (Gene), Eric S. Cox, and Erin E. Schirtzinger  
2005 *Archaeological Excavations in the Northwest Field at Pueblo Grande, Phoenix*. Occasional Papers 5, Pueblo Grande Museum, Phoenix.
- Rogge, A.E. (Gene), Bruce G. Phillips, and Michael S. Droz  
2002 *Two Hohokam Canals at Sky Harbor International Airport: Archaeological Data Recovery at Site AZ U:9:237(ASM), Phoenix, Arizona*. Anthropological Papers 12. Pueblo Grande Museum, Phoenix.
- Rosenberg, Bettina  
1985 *Cultural Resource Survey for Interstate 10 and Sky Harbor Boulevard Interchange*. Arizona Department of Transportation, Phoenix.
- Rumerman, Judy  
2004 *Airport Design*. U.S. Centennial of Flight Commission. Electronic document, [www.centennialofflight.gov/essay/Social/architecture/SH15.htm](http://www.centennialofflight.gov/essay/Social/architecture/SH15.htm), accessed 8 September.
- Sagon, Erica  
2005 Sky Harbor Handled Record 39.5 Mil in 2004. *Arizona Republic* 29 January 2005, D:1. Phoenix.
- Schroeder, K. J.  
1994 *Sky Harbor International Airport South Runway Project*. Publications in Anthropology 4. Roadrunner Archaeology & Consulting, Phoenix.
- Sellers, William D., and Richard H. Hill (editors)  
1974 *Arizona Climate, 1931-1972*. Revised 2nd edition. University of Arizona Press, Tucson.
- Spicer, Edward H.  
1962 *Cycles of Conquest: The Impact of Spain, Mexico, and the United States on the Indians of the Southwest, 1533-1960*. University of Arizona Press, Tucson.
- Steckner, Susie  
1996 Fading Art: Eclipse of Works Would Have Hurt Creator. *Arizona Republic*, 5 April. On file, Phoenix Sky Harbor International Airport.
- Stein, Pat H.  
2001 *Land Use History of the Sky Harbor Project Area*. Desert Archaeology, Tempe.

Stokes, Robert J., and Thomas E. Jones

- 2003 *Literature Review for the Geotechnical Testing Phase of the Proposed Stage 1B Airport People Mover Section, From the East Economy Parking Lot North to Washington Street, City of Phoenix, Maricopa County, Arizona.* Archaeological Consulting Services, Tempe.

Stone, Lyle M.

- 1987a *A Cultural Resource Survey of Selected Parcels within Anticipated East Papago and Hohokam Freeway Rights-of-way.* Cultural Resources Memorandum 2 (to DMJM). Archaeological Research Services, Tempe.
- 1987b *Cultural Resources Evaluation of Proposed Sky Harbor Access (between University Drive and Southern Pacific Railroad).* Cultural Resources Memorandum 3 (to DMJM). Archaeological Research Services, Tempe.
- 1987c *Cultural Resources Evaluation of Proposed Salt River Channelization (Mill Avenue to 40th Street).* Cultural Resources Memorandum 4 (to DMJM). Archaeological Research Services, Tempe.
- 1987d *Partial Archaeological Surveys of "Potential" Landfill Locations. East Papago and Hohokam Freeways.* Cultural Resources Memorandum 7 (to DMJM). Archaeological Research Services, Tempe.

Stubing, Michael

- 2002 *Cultural Resource Monitoring of Two Utility Excavations at a Private Residence Located at 1730 East Jacob Street, Phoenix, Maricopa County, Arizona.* Report 2002-010. Entranco, Phoenix.
- 2003 *A Class I Cultural Resources Inventory of Approximately 9.7 Miles for the Extended Limits of the Interstate 10 Corridor Improvement Study, Including Portions of Interstate 10, Interstate 17, and State Route 143, Maricopa County, Arizona.* Report 2003-005. Carter-Burgess, Phoenix.

Teague, Lynn S.

- 1993 *Prehistory and the Traditions of the O'odham and Hopi.* *Kiva* 58(4):435-454.

Thornbury, William D.

- 1965 *Regional Geomorphology of the United States.* John Wiley & Sons, New York.

Turner, Raymond M., and David E. Brown

- 1982 *Sonoran Desertscrub.* In *Desert Plants*, edited by D.E. Brown, pp. 181-221. University of Arizona for the Boyce Thompson Southwestern Arboretum, Superior, Arizona.

U.S. Department of Transportation, Federal Aviation Administration (FAA)

- 1985 *Airport Environmental Handbook.* Order 5050.4A. Washington, D.C.
- 2004 *Environmental Impacts: Policies and Procedures.* Order 1050.1E. Washington, D.C.

Van Gerven, Dennis, and Susan Guise Sheridan (editors)

- 1994 *The Pueblo Grande Project, Volume 6: The Bioethnography of a Classic Period Hohokam Population.* Publications in Archaeology 20. Soil Systems, Phoenix.

Walsh, Mary-Ellen

- 2004 *Results of Archaeological Monitoring During Ground-Disturbing Activities near Pueblo Salado and Dutch Canal Ruin between Mohave Street and Buckeye Road, Phoenix, Maricopa County, Arizona.* Technical Report 045247. Logan Simpson Design, Tempe.

Wasch, Diane Shaw, P. Bush, K. Landreth, R. Hayes, D.R. Lapp, J. Bowman, S. Turner, and J. Glass

- 1988 *World War II and the U.S. Army Mobilization Program: A History of 700 and 800 Series Cantonment Construction.* Legacy Resources Management Program, U.S. Department of Defense and Department of the Interior, National Park Service, Washington, D.C.

Webb, Dewey

- 1992 Flight of the Phoenix: The Big Bird at Terminal 2 Needs Somewhere to Roost. *New Times*, 10-16 June. On file, Phoenix Sky Harbor International Airport.

Whitaker, Matthew C.

- 2000 The Rise of Black Phoenix: African-American Migration, Settlement and Community Development in Maricopa County, Arizona 1868-1930. *Journal of Negro History* 85(3):197-209.

Wilcox, David R.

- 1979 The Hohokam Regional System. In *An Archaeological Test of Sites in the Gila Butte-Santan Region, South-Central Arizona* by Glenn E. Rice, David R. Wilcox, Kevin Rafferty and James Schoenwetter, pp. 77-116. Anthropological Research Papers 18. Arizona State University, Tempe.
- 1980 The Current Status of the Hohokam Concept. In *Current Issues in Hohokam Prehistory: Proceeding of a Symposium* edited by David E. Doyel and Fred Plog, pp. 236-242. Anthropological Research Papers 23. Arizona State University, Tempe.

Wilcox, David R., and Charles Sternberg

- 1983 *Hohokam Ballcourts and Their Interpretation*. Archaeological Series 160. Arizona State Museum, University of Arizona, Tucson.

**APPENDIX A**

---

---

**Inventoried Buildings and Parcels within the  
Area of Potential Effects for Construction Impacts**

**APPENDIX A**

**INVENTORIED BUILDINGS AND PARCELS WITHIN THE AREA OF POTENTIAL EFFECTS FOR CONSTRUCTION IMPACTS**

	Name / Parcel Number	Location	Construction Year	Status/Criteria	Effect
<b>Inventoried Buildings On the Airport</b>					
1	City of Phoenix Traffic Signal Shop	2141 E. Jefferson Street	1997 / 1998	not eligible due to insufficient age; no exceptional features	partial acquisition of parking lot
2	McEwen Lumber Company	2113 E. Jackson Street	1977 / 1985	not eligible due to insufficient age; no exceptional features	demolition of building
3	Hertz Rental Car Complex	500 S. 24th Street	1973 / 1991/ 1997 / 1998	not eligible due to insufficient age; no exceptional features	demolition of building
4	Greyhound Bus Terminal	2115 E. Buckeye Road	ca. 1997	not eligible due to insufficient age; no exceptional features	partial acquisition of parking lot
5	National Rental Car Complex (ALP Bldg # 203, 204, 205)	1402 S. 24th Street	late 1970s-early 1980s	not eligible due to insufficient age; no exceptional features	partial acquisition of parking lot
6	Budget Rental Car Complex (ALP Bldg #302, 303, 304)	1400 S. 24th Street	late 1970s-early 1980s	not eligible due to insufficient age; no exceptional features	partial acquisition of parking lot; one building may be demolished
7	Gannon & Scott/ Old Motorola Building (115-26-005A)	2113 E. Mohave Street	1970 / 1972	not eligible due to insufficient age; no exceptional features	people mover alignment to north of property
8	Charlie Case Auto Repair and tire (115-14-178)	north side of Buckeye Road, west of 23rd Street	ca. 1995	not eligible due to insufficient age; no exceptional features	demolition of buildings
9 <sup>a</sup>	Aviation Department (121-52-058; ALP Bldg #227)	southwest corner of Buckeye Road and 26th Street	1965-1966	not eligible due to insufficient significance and integrity	people mover alignment to north of property
10	Air Cargo Complex, West (121-52-058, ALP Bldg #229)	1248 S. 25th Place, 1/8 mile south of Buckeye Road between 26th and 27th Streets	ca. 1987	not eligible due to insufficient age; no exceptional features	people mover alignment to the north of property; possibly demolished for new taxiways
11	Air Cargo Complex, West, Bldg. B (121-52-058, ALP Bldg #229)	1248 S. 25th Place, 1/8 mile south of Buckeye Road, east of 27th Street	ca. 1975	not eligible due to insufficient age; no exceptional features	possibly demolished for new taxiways
12	Air Cargo Complex, West, Bldg. A (121-52-058, ALP Bldg #229)	1248 S. 25th Place, 1/8 mile south of Buckeye Road, east of 27th Street	ca. 1975	not eligible due to insufficient age; no exceptional features	demolished for new taxiways
13 <sup>a</sup>	Delta Maintenance Shop (121-49-002A, ALP Bldg #239)	south of parking area to the west of Terminal 2	ca. 1965-1968	not eligible due to insufficient significance	within Terminal 2 Demolition Area
14 <sup>a</sup>	Delta Maintenance Shop (121-49-002A, ALP Bldg #240)	south of parking area to the west of Terminal 2	ca. 1965-1968	not eligible due to insufficient significance	within Terminal 2 Demolition Area
15 <sup>a</sup>	American Airlines Maintenance Shop (121-49-002A, ALP Bldg #241)	south of parking area to the west of Terminal 2	ca. 1964-1965	not eligible due to insufficient significance; (storm damaged on 7/14/02, being repaired)	within Terminal 2 Demolition Area
16 <sup>a</sup>	Dynair Fueling Maintenance Shop (121-49-002A, ALP Bldg #242)	south of parking area to the west of Terminal 2	ca. 1955-1960	not eligible due to insufficient significance	within Terminal 2 Demolition Area
17	TWA Maintenance Shop (121-49-002A, ALP Bldg #243)	south of parking area to the west of Terminal 2	ca. 1955-1960	demolished within last two years	within Terminal 2 Demolition Area

**APPENDIX A**  
**INVENTORIED BUILDINGS AND PARCELS WITHIN THE AREA OF POTENTIAL EFFECTS FOR CONSTRUCTION IMPACTS**

	<b>Name / Parcel Number</b>	<b>Location</b>	<b>Construction Year</b>	<b>Status/Criteria</b>	<b>Effect</b>
18	TWA Maintenance Shop (121-49-002A, ALP Bldg #244)	south of parking area to the west of Terminal 2	ca. 1975-1977	demolished within last two years	within Terminal 2 Demolition Area
19	TWA Maintenance Shop (121-49-002A, ALP Bldg #245)	south of parking area to the west of Terminal 2	ca. 1952-1954	demolished within last two years	within Terminal 2 Demolition Area
20	Gatehouse (ALP Bldg #246)	southwest of Terminal 2	1980	not eligible due to insufficient age; no exceptional features	within Terminal 2 Demolition Area
21 <sup>a</sup>	Terminal 2/ former East Terminal (ALP Bldg #248, 249, 250)	2908 E. Sky Harbor Boulevard	1962	not eligible due to insufficient integrity	within Terminal 2 Demolition Area
22	Airport Operations Center/ Former International Terminal (ALP Bldg #251)	2908 E. Sky Harbor Boulevard	1972	not eligible due to insufficient age; no exceptional features	within Terminal 2 Demolition Area
23	Terminal 2 Parking Structure (ALP Bldg #247)	2908 E. Sky Harbor Boulevard	1986	not eligible due to insufficient age; no exceptional features	within Terminal 2 Demolition Area
24	FAA Building/ Tracon Building (121-56-001, ALP Bldg #221)	2801 E. Air Lane (Sky Harbor Boulevard)	1958; improved 1996 & 1997	to be demolished in 2005 by separate project	within Terminal 2 Demolition Area
25	Executive Terminal (121-56-001, ALP Bldg #222)	2801 E. Air Lane (Sky Harbor Boulevard)	1972-1973	not eligible due to insufficient age; no exceptional features	within Terminal 2 Demolition Area
26	FBO Hangar Offices/ Swift (121-56-001, ALP Bldg #220)	2801 E. Air Lane (Sky Harbor Boulevard)	1976	removed in 2004	within Terminal 2 Demolition Area
27	FBO Hangar Offices/ Swift (121-56-001, ALP Bldg #219)	2801 E. Air Lane (Sky Harbor Boulevard)	unknown	removed in 2004	within Terminal 2 Demolition Area
28	FBO Hangar Offices/ Swift (121-56-001, ALP Bldg #218)	2801 E. Air Lane (Sky Harbor Boulevard)	unknown	removed in 2004	within Terminal 2 Demolition Area
29	FBO Hangar Offices/ Swift (121-56-001, ALP Bldg #217)	2801 E. Air Lane (Sky Harbor Boulevard)	unknown	removed in 2004	within Terminal 2 Demolition Area
30 <sup>a</sup>	The Phoenix, a mural by Paul Coze (inside Terminal 2)	2908 E. Sky Harbor Boulevard	1962	eligible, Criterion C	within Terminal 2 Demolition Area
<b>Inventoried Properties Off the Airport (APM Stage II-East)</b>					
31 <sup>a</sup>	Arizona Aerosol Chemical Corporation (124-06-001)	15 S. 42nd Street	1965	not eligible due to insufficient significance	within Stage 2-East APM demolition area
32 <sup>a</sup>	Valley National Bank/ Bell Paint and Body Shop (124-06-002)	17 S. 42nd Street	late 1940s; moved to current location in the late 1950s; modified in 1973	not eligible due to insufficient integrity	within Stage 2-East APM demolition area
33 <sup>a</sup>	124-06-003	23 S. 42nd Street	1960	not eligible due to insufficient significance	within Stage 2-East APM demolition area
34 <sup>a</sup>	Colonial Duntex Tile Contractor (124-06-004)	27 S. 42nd Street	1959	not eligible due to insufficient significance	within Stage 2-East APM demolition area
35	124-06-005	31 S. 42nd Street	1974, 1980	not eligible due to insufficient age; no exceptional features	within Stage 2-East APM demolition area

**APPENDIX A**

**INVENTORIED BUILDINGS AND PARCELS WITHIN THE AREA OF POTENTIAL EFFECTS FOR CONSTRUCTION IMPACTS**

	<b>Name / Parcel Number</b>	<b>Location</b>	<b>Construction Year</b>	<b>Status/Criteria</b>	<b>Effect</b>
36 <sup>a</sup>	124-06-006	55 S. 42nd Street	late 1950s	not eligible due to insufficient significance	within Stage 2–East APM demolition area
37	124-06-007	22 S. 42nd Place	1980	not eligible due to insufficient age; no exceptional features	within Stage 2–East APM demolition area
38 <sup>a</sup>	124-06-008	26 S. 42nd Place	1939; moved to current location in the late 1950s; modified in 1970	not eligible due to insufficient significance and integrity	within Stage 2–East APM demolition area
39	124-06-009	30 S. 42nd Place	1980	not eligible due to insufficient age; no exceptional features	within Stage 2–East APM demolition area
40 <sup>a</sup>	124-06-010	36 S. 42nd Place	1980	not eligible due to insufficient age; no exceptional features	within Stage 2–East APM demolition area
41 <sup>a</sup>	124-06-011	4202 E. Madison Street	1985	not eligible due to insufficient age; no exceptional features	within Stage 2–East APM demolition area
42	124-06-012	4206 E. Madison Street	1985	not eligible due to insufficient age; no exceptional features	within Stage 2–East APM demolition area
43	124-06-013	4206 E. Madison Street	1985	not eligible due to insufficient age; no exceptional features	within Stage 2–East APM demolition area
44	124-06-014	4208 E. Madison Street	1985	not eligible due to insufficient age; no exceptional features	within Stage 2–East APM demolition area
45	124-06-015	4206 E. Madison Street	1974	not eligible due to insufficient age; no exceptional features	within Stage 2–East APM demolition area
46	124-06-016	4212 E. Madison Street	1974	not eligible due to insufficient age; no exceptional features	within Stage 2–East APM demolition area
47	124-06-017	4214 E. Madison Street	1974	not eligible due to insufficient age; no exceptional features	within Stage 2–East APM demolition area
48	124-06-018	4216 E. Madison Street	1974	not eligible due to insufficient age; no exceptional features	within Stage 2–East APM demolition area
49 <sup>a</sup>	Stewart Concrete & Pipe (124-06-019)	4218 E. Madison Street	1965	not eligible due to insufficient significance and integrity	within Stage 2–East APM demolition area
50 <sup>a</sup>	Stewart Concrete & Pipe (124-06-020)	4218 E. Madison Street	1965	not eligible due to insufficient significance and integrity	within Stage 2–East APM demolition area
51 <sup>a</sup>	Stewart Concrete & Pipe (124-06-021)	4218 E. Madison Street	1965	not eligible due to insufficient significance and integrity	within Stage 2–East APM demolition area
52 <sup>a</sup>	Stewart Concrete & Pipe (124-06-022)	4218 E. Madison Street	1965	not eligible due to insufficient significance and integrity	within Stage 2–East APM demolition area
53 <sup>a</sup>	124-06-023B	31 S. 42nd Place	1960	not eligible due to insufficient significance	within Stage 2–East APM demolition area
54 <sup>a</sup>	124-06-023C	31 S. 42nd Place	1960	not eligible due to insufficient significance	within Stage 2–East APM demolition area

**APPENDIX A**  
**INVENTORIED BUILDINGS AND PARCELS WITHIN THE AREA OF POTENTIAL EFFECTS FOR CONSTRUCTION IMPACTS**

	Name / Parcel Number	Location	Construction Year	Status/Criteria	Effect
55 <sup>a</sup>	124-06-024B	37 S. 42nd Place	1940s	not eligible due to insufficient integrity	within Stage 2–East APM demolition area
56 <sup>a</sup>	124-06-024C	37 S. 42nd Place	1940s	not eligible due to insufficient integrity	within Stage 2–East APM demolition area
57	124-06-025A	4232 E. Madison Street	1987	not eligible due to insufficient age; no exceptional features	within Stage 2–East APM demolition area
58	124-06-031A	4244 E. Madison Street	no date	not eligible due to insufficient age; no exceptional features	within Stage 2–East APM demolition area
59	124-06-032A	4244 E. Madison Street	no date	not eligible due to insufficient age; no exceptional features	within Stage 2–East APM demolition area
60	124-06-033A	no address	no date	not eligible due to insufficient age; no exceptional features	within Stage 2–East APM demolition area
61	124-06-034A	4250 E. Madison Street	1955, 1960, 1979, 1987	vacant	within Stage 2–East APM demolition area
62 <sup>a</sup>	J.T. Richmond Tool & Die (124-06-037C)	4302 E. Madison Street	1961	not eligible due to insufficient significance	within Stage 2–East APM demolition area
63 <sup>a</sup>	J.T. Richmond Tool & Die (124-06-037D)	4302 E. Madison Street	1961	not eligible due to insufficient age; no exceptional features	within Stage 2–East APM demolition area
64	124-06-038A	4203 E. Madison Street	1989	not eligible due to insufficient age; no exceptional features	within Stage 2–East APM demolition area
65	124-06-040A	4207 E. Madison Street	no date	not eligible due to insufficient age; no exceptional features	within Stage 2–East APM demolition area
66 <sup>a</sup>	Western Sealant Company (124-06-042A)	4209 E. Madison Street	1960-1970	not eligible due to insufficient significance	within Stage 2–East APM demolition area
67	124-06-044	4221 E. Madison Street	1970	not eligible due to insufficient age; no exceptional features	within Stage 2–East APM demolition area
68	124-06-045	4813 E. Madison Street	no date	not eligible due to insufficient age; no exceptional features	within Stage 2–East APM demolition area
69	124-06-046	4217 E. Madison Street	no date	not eligible due to insufficient age; no exceptional features	within Stage 2–East APM demolition area
70	124-06-047	4219 E. Madison Street	no date	not eligible due to insufficient age; no exceptional features	within Stage 2–East APM demolition area
71	124-06-048	4221 E. Madison Street	no date	not eligible due to insufficient age; no exceptional features	within Stage 2–East APM demolition area
72	124-06-049	4225 E. Madison Street	1966, 1974	not eligible due to insufficient age; no exceptional features	within Stage 2–East APM demolition area
73	124-06-050D	126 S. 42nd Street	no date	not eligible due to insufficient age; no exceptional features	within Stage 2–East APM demolition area

**APPENDIX A**  
**INVENTORIED BUILDINGS AND PARCELS WITHIN THE AREA OF POTENTIAL EFFECTS FOR CONSTRUCTION IMPACTS**

	<b>Name / Parcel Number</b>	<b>Location</b>	<b>Construction Year</b>	<b>Status/Criteria</b>	<b>Effect</b>
74	124-06-054F	no address	1975	not eligible due to insufficient age; no exceptional features	within Stage 2–East APM demolition area
75	124-06-054G	119 S. 42nd Street	1988	not eligible due to insufficient age; no exceptional features	within Stage 2–East APM demolition area
76	124-06-054H	123 S. 42nd Street	1969	not eligible due to insufficient age; no exceptional features	within Stage 2–East APM demolition area
77	124-06-054J	127 S. 42nd Street	1974, 1988	not eligible due to insufficient age; no exceptional features	within Stage 2–East APM demolition area
78	124-06-056A	114 S. 42nd Place	1978	not eligible due to insufficient age; no exceptional features	within Stage 2–East APM demolition area
79	124-06-058A	122 S. 42nd Place	1969	not eligible due to insufficient age; no exceptional features	within Stage 2–East APM demolition area
80	124-06-059A	126 S. 42nd Place	1962	not eligible due to insufficient integrity	within Stage 2–East APM demolition area
81	124-06-060A	130 S. 42nd Place	no date	not eligible due to insufficient age; no exceptional features	within Stage 2–East APM demolition area
82	124-06-061A	136 N. 42nd Place	1974	not eligible due to insufficient age; no exceptional features	within Stage 2–East APM demolition area
83	124-06-062B	4202 E. El Paso Street	no date	not eligible due to insufficient age; no exceptional features	within Stage 2–East APM demolition area
84	124-06-064B	4206 E. El Paso Street	no date	not eligible due to insufficient age; no exceptional features	within Stage 2–East APM demolition area
85	124-06-066B	4210 E. El Paso Street	no date	not eligible due to insufficient age; no exceptional features	within Stage 2–East APM demolition area
86	124-06-066C	201 S. 42nd Street	1980	not eligible due to insufficient age; no exceptional features	within Stage 2–East APM demolition area
87	124-06-068	4214 E. El Paso Street	no date	not eligible due to insufficient age; no exceptional features	within Stage 2–East APM demolition area
88	124-06-069	4216 E. El Paso Street	no date	not eligible due to insufficient age; no exceptional features	within Stage 2–East APM demolition area
89	124-06-070	4218 E. Jackson Street	no date	not eligible due to insufficient age; no exceptional features	within Stage 2–East APM demolition area
90	124-06-071	4220 E. Jackson Street	no date	not eligible due to insufficient age; no exceptional features	within Stage 2–East APM demolition area
91	124-06-072	4222 E. El Paso Street	no date	not eligible due to insufficient age; no exceptional features	within Stage 2–East APM demolition area
92	124-06-073	4224 E. Jackson Street	1974	not eligible due to insufficient age; no exceptional features	within Stage 2–East APM demolition area

**APPENDIX A**  
**INVENTORIED BUILDINGS AND PARCELS WITHIN THE AREA OF POTENTIAL EFFECTS FOR CONSTRUCTION IMPACTS**

	<b>Name / Parcel Number</b>	<b>Location</b>	<b>Construction Year</b>	<b>Status/Criteria</b>	<b>Effect</b>
93	124-06-074D	132 S. 42nd Place	no date	not eligible due to insufficient age; no exceptional features	within Stage 2–East APM demolition area
94	124-06-076	4225 E. Madison Street	1967, 1973, 1974	not eligible due to insufficient age; no exceptional features	within Stage 2–East APM demolition area
95	124-06-077	4225 E. Madison Street	no date	not eligible due to insufficient age; no exceptional features	within Stage 2–East APM demolition area
96	124-06-078	4225 E. Madison Street	no date	not eligible due to insufficient age; no exceptional features	within Stage 2–East APM demolition area
97	124-06-079	4225 E. Madison Street	no date	not eligible due to insufficient age; no exceptional features	within Stage 2–East APM demolition area
98	124-06-080	4225 E. Madison Street	no date	not eligible due to insufficient age; no exceptional features	within Stage 2–East APM demolition area
99	124-06-081	4225 E. Madison Street	no date	not eligible due to insufficient age; no exceptional features	within Stage 2–East APM demolition area
100	124-06-082	4225 E. Madison Street	no date	not eligible due to insufficient age; no exceptional features	within Stage 2–East APM demolition area
101	124-06-083	4225 E. Madison Street	no date	not eligible due to insufficient age; no exceptional features	within Stage 2–East APM demolition area
102	124-06-084	4251 E. Madison Street	1984	not eligible due to insufficient age; no exceptional features	within Stage 2–East APM demolition area
103	124-06-085	123 S. 42nd Place	no date	not eligible due to insufficient age; no exceptional features	within Stage 2–East APM demolition area
104	124-06-086	4249 E. Madison Street	no date	not eligible due to insufficient age; no exceptional features	within Stage 2–East APM demolition area
105	124-06-087	4251 E. Madison Street	no date	not eligible due to insufficient age; no exceptional features	within Stage 2–East APM demolition area
106	124-06-088	115 S. 42nd Place	1983	not eligible due to insufficient age; no exceptional features	within Stage 2–East APM demolition area
107	124-06-089C	201 S. 42nd Place	1983, 1984, 1986, 1987	not eligible due to insufficient age; no exceptional features	within Stage 2–East APM demolition area
108	124-06-089E	119 N. 43rd Street	no date	not eligible due to insufficient age; no exceptional features	within Stage 2–East APM demolition area
109	124-06-089F	118 N. 43rd Street	no date	not eligible due to insufficient age; no exceptional features	within Stage 2–East APM demolition area
110	124-06-089G	127 S. 43rd Street	1974, 1990	not eligible due to insufficient age; no exceptional features	within Stage 2–East APM demolition area
111	124-06-089J	127 S. 43rd Street	1974	not eligible due to insufficient age; no exceptional features	within Stage 2–East APM demolition area

**APPENDIX A**

**INVENTORIED BUILDINGS AND PARCELS WITHIN THE AREA OF POTENTIAL EFFECTS FOR CONSTRUCTION IMPACTS**

	<b>Name / Parcel Number</b>	<b>Location</b>	<b>Construction Year</b>	<b>Status/Criteria</b>	<b>Effect</b>
112	124-06-089K	127 S. 43rd Street	1984	not eligible due to insufficient age; no exceptional features	within Stage 2–East APM demolition area
113	124-06-094B	no address	no date	not eligible due to insufficient age; no exceptional features	within Stage 2–East APM demolition area
114	124-06-113	105 S. 43rd Street	no date	not eligible due to insufficient age; no exceptional features	within Stage 2–East APM demolition area
115	124-06-114	105 S. 43rd Street	no date	not eligible due to insufficient age; no exceptional features	within Stage 2–East APM demolition area
116	124-06-115	4301 E. Madison Street	no date	not eligible due to insufficient age; no exceptional features	within Stage 2–East APM demolition area
117	124-06-116	4301 E. Madison Street	no date	not eligible due to insufficient age; no exceptional features	within Stage 2–East APM demolition area
118	124-06-117	4311 E. Madison Street	1975	not eligible due to insufficient age; no exceptional features	within Stage 2–East APM demolition area
119	124-06-118	132 S. 42nd Place	no date	not eligible due to insufficient age; no exceptional features	within Stage 2–East APM demolition area
120	124-06-119	134 S. 42nd Place	no date	not eligible due to insufficient age; no exceptional features	within Stage 2–East APM demolition area
121	124-06-120	136 S. 42nd Place	no date	not eligible due to insufficient age; no exceptional features	within Stage 2–East APM demolition area
122	124-06-121	137 S. 42nd Place	no date	not eligible due to insufficient age; no exceptional features	within Stage 2–East APM demolition area
123	124-06-122	135 S. 42nd Place	no date	not eligible due to insufficient age; no exceptional features	within Stage 2–East APM demolition area
124	124-06-123	133 S. 42nd Place	no date	not eligible due to insufficient age; no exceptional features	within Stage 2–East APM demolition area
125	124-06-129B	131 S. 42nd Place	no date	not eligible due to insufficient age; no exceptional features	within Stage 2–East APM demolition area
126	124-06-130	4335 E. Madison	no date	not eligible due to insufficient age; no exceptional features	within Stage 2–East APM demolition area
127	124-06-148A	4207 E. Washington Street	1977	parking	within Stage 2–East APM demolition area
128	124-06-149	131 S. 42nd Place	1978, 1984	not eligible due to insufficient age; no exceptional features	within Stage 2–East APM demolition area
129	124-09-050	4210 E. Washington Street	no date	parking	within Stage 2–East APM demolition area

<sup>a</sup> Inventory forms were completed for these parcels (see Appendix B).

**APPENDIX B**

---

---

**State of Arizona Historic Property Inventory Forms**

STATE OF ARIZONA

HISTORIC PROPERTY INVENTORY FORM

Please type or print clearly. Fill out each applicable space accurately and with as much information as is known about the property. Use continuation sheets where necessary. Send completed forms to City of Phoenix Historic Preservation Office, 200 W. Washington, 17th Floor, Phoenix, AZ 85003 for listing on Phoenix Historic Property Register, or Arizona State Historic Preservation Office, 1300 W. Washington, Phoenix, AZ 85007 for listing on Arizona/National Register of Historic Places.

PROPERTY IDENTIFICATION

Phoenix Sky Harbor International Airport Development
For properties identified through survey: Site No: 2-ADP Survey Area: Program
Historic Name(s): Aviation Department Building (Airport Facilities and Services Complex)
(Enter the name(s), if any, that best reflects the property's historic importance.)
Address: Southwest corner of Buckeye Road and 25th Place
City or Town: Phoenix vicinity County: Maricopa Tax Parcel No.:
Township: 1N Range: 3E Section: 14 Quarter Section: NW1/4 SW1/4 Acreage: 1
Block: Lot(s): Plat (Addition): Year of Plat:
UTM reference: Zone: Easting: Northing: USGS 7.5' quad map: Phoenix

Architect: not determined known source:
Builder: not determined known source:
Construction Date: 1965-1966 estimated known source: 1964-1968 Phoenix city directories

STRUCTURAL CONDITION:

Good (Well-maintained; no serious problems apparent)
Fair (Some problems apparent) Describe:
Poor (Major problems; imminent threat) Describe:
Ruin/Uninhabitable

USES/FUNCTIONS

Describe how the property has been used over time, beginning with the original use:
Originally Mech-Tronics machining company. Now used as airport facilities and services complex.
Sources:

PHOTO INFORMATION

Date of photo: 19 November 2004
View Direction (looking towards): Southwest
Negative No.: 416



**SIGNIFICANCE**

To be eligible for the Phoenix/Arizona/National Register, a property must represent an important part of the history or architecture of an area. Note: a property need only be significant under one of the areas below to be eligible.

- A. HISTORIC EVENTS/TRENDS (Describe how the property is associated either with a significant historic event or with a trend or pattern of events important to the history of the nation, the state, or the local community.) SEE CONTINUATION SHEET
- B. PERSONS (Describe how the property is associated with the life of a person significant in the past.) SEE CONTINUATION SHEET
- C. ARCHITECTURE (Describe how the property embodies the distinctive characteristics of a type, period, or method of construction, or represents the work of a master, or possesses high artistic values.) SEE CONTINUATION SHEET

**INTEGRITY**

To be eligible for the Phoenix/Arizona/National Register, a property must have integrity, that is, it must be able to visually convey its importance. Provide detailed information below about the property's integrity. Use continuation sheets if necessary.

- 1. LOCATION  Original Site  Moved date: \_\_\_\_\_ Original Site: \_\_\_\_\_
- 2. DESIGN (Describe alterations from the original design, including dates—known or estimated—when alterations were made)  
Combination office and warehouse facility. Several additions and modifications since original construction—dates unknown.
- 3. SETTING (Describe the natural and/or built environment around the property)  
Located south of Sky Harbor Boulevard, west of Terminal 2 at Phoenix Sky Harbor International Airport  
Describe how the setting has changed since the property's period of significance:  
Airport has expanded and more warehouse, maintenance, and service buildings have been constructed in the surrounding area.
- 4. MATERIALS (Describe the materials used in the following elements of the property)  
Walls (structure): Masonry Foundation: Concrete slab or wall Roof: Flat with eaves  
Windows: Fixed and single hung  
Wall Sheathing: Brick and textured concrete panels
- 5. WORKMANSHIP (Describe the distinctive elements, if any, of craftsmanship or method of construction)

**NATIONAL REGISTER STATUS (if listed, check the appropriate box)**

Individually listed  Contributor  Non-contributor to \_\_\_\_\_ Historic District  
Date Listed: \_\_\_\_\_  Determined eligible by keeper of National Register date: \_\_\_\_\_

**RECOMMENDATIONS OF ELIGIBILITY (opinion of HPO staff or survey consultant)**

Property  is  is not eligible individually.  
Property  is  is not eligible as a contributor to a potential historic district.  
 More information needed to evaluate  
If not considered eligible, state reason: SEE CONTINUATION SHEET

**FORM COMPLETED BY**

Name and Affiliation: Kirsten Erickson, URS Corporation Date: 5 January 2005  
Mailing Address: 7720 N. 16<sup>th</sup> Street, Ste. 100, Phoenix, Arizona 85020 Phone No.: 602-371-1100

**STATE OF ARIZONA**

**HISTORIC PROPERTY INVENTORY FORM  
CONTINUATION SHEET**

**PROPERTY DESCRIPTION**

The Aviation Department Building or building #227 is a large, two-story structure that faces north. The masonry building has brick and textured concrete panels on its exterior walls and has a flat roof with eaves that is likely built-up. There is a single entry metal door with one-light on the front of the building. The door faces east and is surrounded by sidelights. The front entry area has six fixed windows with metal frames. Other windows on the front of the building are single-hung, two-light, aluminum frame windows. There are five single windows and three sets of paired windows with awnings on the building's front.

The first story of the rear (south) of the building has a loading dock on the southeast corner with a metal, roll-up door and platform that is shaded by a vehicle port with steel posts and a corrugated metal roof. The loading dock is labeled "Aviation Supply." Just west of the loading dock, there is a one-story, prefabricated building attached the back of the building with one metal roll-up door. There are four metal double entry doors with one-light with prefabricated shade awnings, and one, double-entry metal door with no light or awning. Two, single metal entry doors with two-lights and prefabricated shade awnings, and one, single entry metal door with a prefabricated shade awning also are located on the rear of the building. Four signs designating department locations were posted on the rear of the building: Facilities & Services, Carpenter Shop, Aviation Supply, and Sign Shop. There is one, metal roll-up door located in the second story.

The east side of the building has one, double entry metal door with concrete steps and a metal rail and one, single entry metal door with a metal awning. The west side of the building has one, metal roll-up door and one double entry door and two single entry doors with shade awnings. There is also a two-bay steel vehicle port attached to the side of the building.

**SIGNIFICANCE**

The Aviation Department Building or Building 227 was constructed between 1965 and 1966 as the Mech-Tronics machining company. The building was later purchased by the city when the airport boundaries expanded. The facility has multiple additions. It does not possess any significant values or represent any significant historic themes, and is not eligible for the National Register under Criterion A. Research did not reveal any associations with important persons and therefore the building is not eligible under Criterion B. The property is an example of a common type of large, combination office and warehouse building and is not eligible under Criterion C. Further study of the building is unlikely to yield important information and therefore is not eligible under Criterion D.

STATE OF ARIZONA

HISTORIC PROPERTY INVENTORY FORM

Please type or print clearly. Fill out each applicable space accurately and with as much information as is known about the property. Use continuation sheets where necessary. Send completed forms to City of Phoenix Historic Preservation Office, 200 W. Washington, 17th Floor, Phoenix, AZ 85003 for listing on Phoenix Historic Property Register, or Arizona State Historic Preservation Office, 1300 W. Washington, Phoenix, AZ 85007 for listing on Arizona/National Register of Historic Places.

PROPERTY IDENTIFICATION

For properties identified through survey: Site No: 3-ADP Survey Area: Phoenix Sky Harbor International Airport Development Program

Historic Name(s): Dynair Fueling Maintenance Shop

(Enter the name(s), if any, that best reflects the property's historic importance.)

Address: South of the parking area to the west of Terminal 2, Phoenix Sky Harbor International Airport

City or Town: Phoenix vicinity County: Maricopa Tax Parcel No.: 121-47-002A

Township: 1N Range: 3E Section: 14 Quarter Section: NW1/4 NW1/4 NE1/4 Acreage: >1

Block: Lot(s): Plat (Addition): Year of Plat:

UTM reference: Zone: Easting: Northing: USGS 7.5' quad map: Phoenix

Architect: not determined known source:

Builder: not determined known source:

Construction Date: 1955-1960 estimated known source: Phoenix Sky Harbor International Airport

STRUCTURAL CONDITION:

Good (Well-maintained; no serious problems apparent)

Fair (Some problems apparent) Describe:

Poor (Major problems; imminent threat) Describe:

Ruin/Uninhabitable

USES/FUNCTIONS

Describe how the property has been used over time, beginning with the original use:

Structure was originally used as a maintenance shop by Dynair Fueling.

The building is currently used by

Swissport Fuel.

Sources:

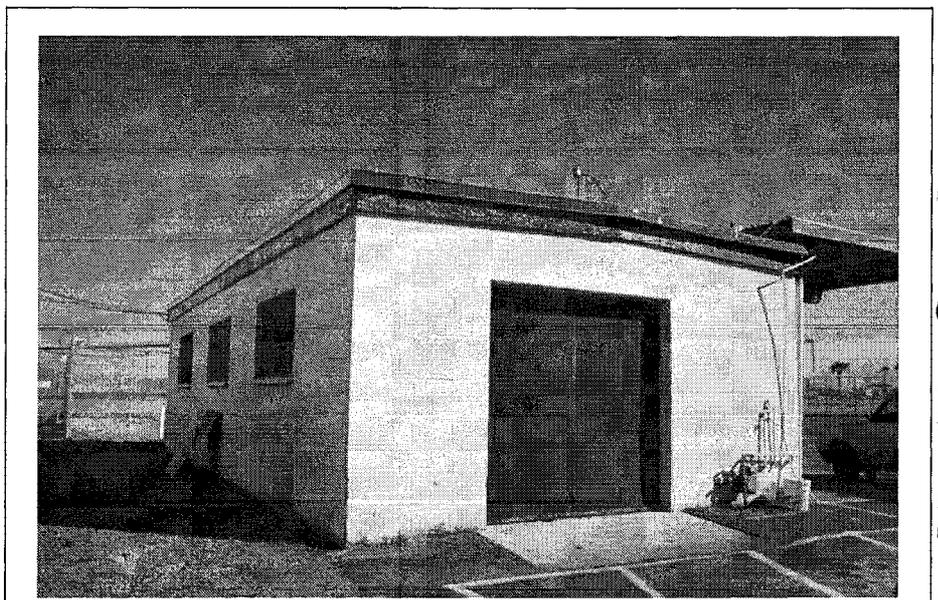
PHOTO INFORMATION

Date of photo: 9 March 2004

View Direction (looking towards):

Northeast

Negative No.: 4229



**SIGNIFICANCE**

To be eligible for the Phoenix/Arizona/National Register, a property must represent an important part of the history or architecture of an area. Note: a property need only be significant under one of the areas below to be eligible.

- A. HISTORIC EVENTS/TRENDS (Describe how the property is associated either with a significant historic event or with a trend or pattern of events important to the history of the nation, the state, or the local community.) SEE CONTINUATION SHEET
- B. PERSONS (Describe how the property is associated with the life of a person significant in the past.) SEE CONTINUATION SHEET
- C. ARCHITECTURE (Describe how the property embodies the distinctive characteristics of a type, period, or method of construction, or represents the work of a master, or possesses high artistic values.) SEE CONTINUATION SHEET

**INTEGRITY**

To be eligible for the Phoenix/Arizona/National Register, a property must have integrity, that is, it must be able to visually convey its importance. Provide detailed information below about the property's integrity. Use continuation sheets if necessary.

- 1. LOCATION  Original Site  Moved date: \_\_\_\_\_ Original Site: \_\_\_\_\_
- 2. DESIGN (Describe alterations from the original design, including dates—known or estimated—when alterations were made)  
Style: utilitarian concrete block box  
Windows and one door have been boarded over. A metal carport has been added to the east side of the building.
- 3. SETTING (Describe the natural and/or built environment around the property)  
Located among other warehouse buildings west of Terminal 2 at Phoenix Sky Harbor International Airport  
  
Describe how the setting has changed since the property's period of significance:  
Airport has expanded and more warehouses and maintenance buildings have been constructed in the surrounding area.
- 4. MATERIALS (Describe the materials used in the following elements of the property)  
Walls (structure): Concrete block Foundation: Concrete slab Roof: Slightly pitched  
Windows: Fixed and casement windows  
Wall Sheathing: None (exposed structural concrete block)
- 5. WORKMANSHIP (Describe the distinctive elements, if any, of craftsmanship or method of construction)  
Simple, utilitarian design.

**NATIONAL REGISTER STATUS (if listed, check the appropriate box)**

Individually listed  Contributor  Non-contributor to \_\_\_\_\_ Historic District  
Date Listed: \_\_\_\_\_  Determined eligible by keeper of National Register date: \_\_\_\_\_

**RECOMMENDATIONS OF ELIGIBILITY (opinion of HPO staff or survey consultant)**

Property  is  is not eligible individually.  
Property  is  is not eligible as a contributor to a potential historic district.  
 More information needed to evaluate  
If not considered eligible, state reason: SEE CONTINUATION SHEET

**FORM COMPLETED BY**

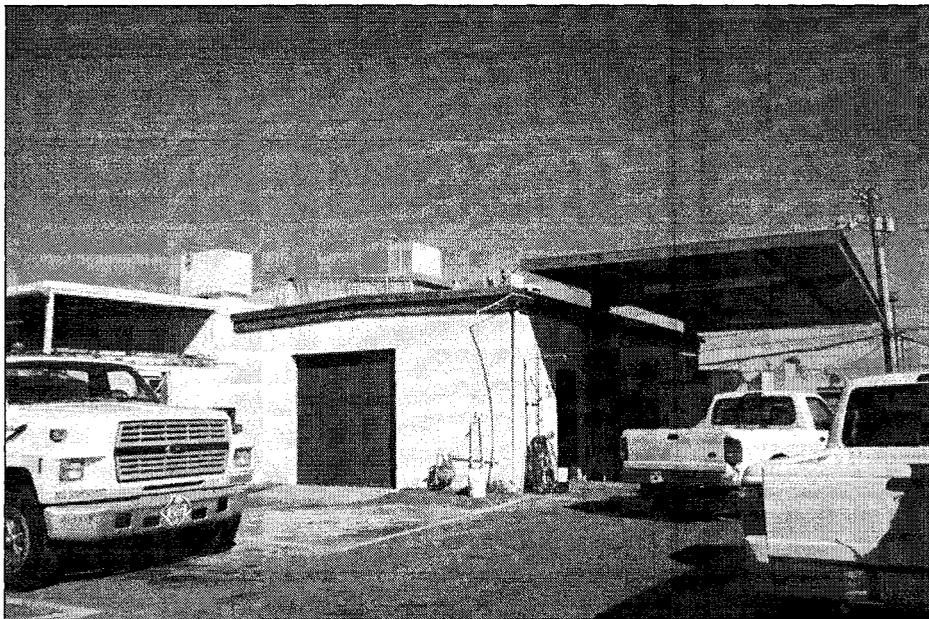
Name and Affiliation: Kirsten Erickson, URS Corporation Date: 5 January 2005  
Mailing Address: 7720 N. 16<sup>th</sup> Street, Ste. 100, Phoenix, Arizona 85020 Phone No.: 602-371-1100

STATE OF ARIZONA

HISTORIC PROPERTY INVENTORY FORM  
CONTINUATION SHEET

PROPERTY DESCRIPTION

The Dynair Fueling Maintenance Shop or Building 242 faces south. The foundation is a concrete slab and the walls are constructed of concrete block. The wood frame roof is slightly pitched and likely clad with composition roll. There is one vehicle bay entry on the south side of the building that has been boarded over and is no longer in use. There are two, single entry metal doors on the east side and two, metal framed windows. The glass has been removed from all windows and one window is infilled with an air conditioning unit. A metal-framed carport has been constructed on the east side of the building. The original windows appear to have had six lights—four fixed lights with a two-light casement window. The windows on the north side of the building are fixed, one-light windows with concrete block sills. There are three boarded over windows on the west side of the building.



Dynair Fueling Maintenance Shop (view north)

SIGNIFICANCE

The Dynair Fueling Maintenance Shop or Building 242 was constructed between 1955 and 1960 and probably was used originally as a maintenance or warehouse facility for airlines that provided service to the now demolished Terminal 1, such as TWA or Bonanza Airlines. It was constructed during an era of expansion for both the Sky Harbor International Airport and the Phoenix metropolitan area. The building is utilitarian in function and design and is not a significant representation of this era of airport and local history. The building is not eligible under Criterion A. Research did not reveal any associations with important persons and therefore the building is not eligible under Criterion B. The property is a simple, utilitarian concrete block building typical of maintenance and warehouse facilities and is not eligible under Criterion C. Further study of the building is unlikely to yield important information and therefore is not eligible under Criterion D.

STATE OF ARIZONA

HISTORIC PROPERTY INVENTORY FORM

Please type or print clearly. Fill out each applicable space accurately and with as much information as is known about the property. Use continuation sheets where necessary. Send completed forms to City of Phoenix Historic Preservation Office, 200 W. Washington, 17th Floor, Phoenix, AZ 85003 for listing on Phoenix Historic Property Register, or Arizona State Historic Preservation Office, 1300 W. Washington, Phoenix, AZ 85007 for listing on Arizona/National Register of Historic Places.

PROPERTY IDENTIFICATION

Phoenix Sky Harbor International Airport Development

For properties identified through survey: Site No: 4-ADP Survey Area: Project

Historic Name(s): American Airlines Maintenance Shop

(Enter the name(s), if any, that best reflects the property's historic importance.)

Address: South of parking area to the west of Terminal 2, Sky Harbor International Airport

City or Town: Phoenix vicinity County: Maricopa Tax Parcel No.:

Township: 1N Range: 3E Section: 14 Quarter Section: NW1/4 NW1/4 NE1/4 Acreage: <1

Block: Lot(s): Plat (Addition): Year of Plat:

UTM reference: Zone: Easting: Northing: USGS 7.5' quad map: Phoenix

Architect: not determined known source:

Builder: not determined known source:

Construction Date: 1964-1965 estimated known source: Phoenix Sky Harbor International Airport

STRUCTURAL CONDITION:

Good (Well-maintained; no serious problems apparent)

Fair (Some problems apparent) Describe:

Poor (Major problems; imminent threat) Describe:

Ruin/Uninhabitable

USES/FUNCTIONS

Describe how the property has been used over time, beginning with the original use:

Vehicle maintenance shop

Sources:

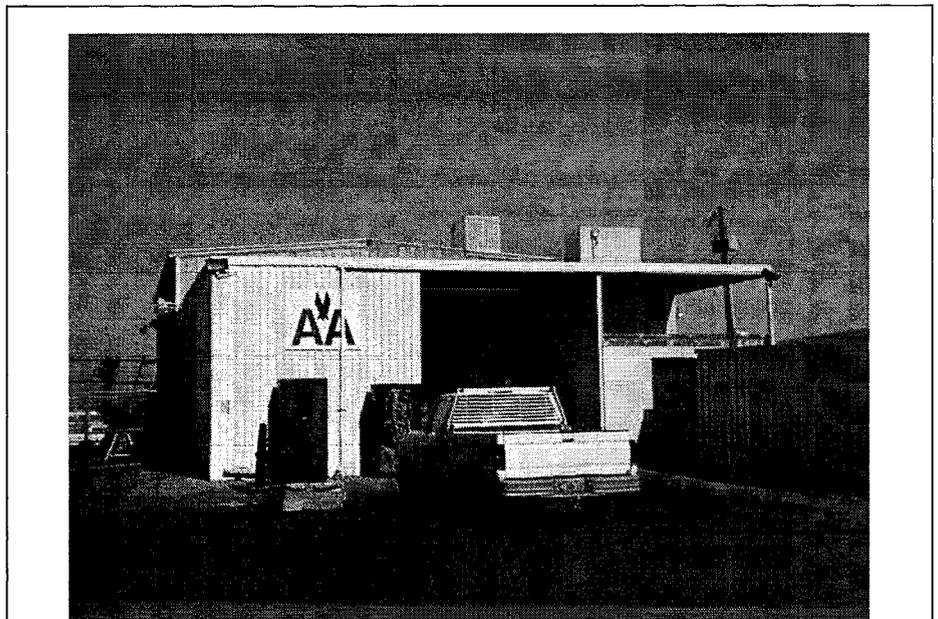
PHOTO INFORMATION

Date of photo: 19 November 2004

View Direction (looking towards):

North

Negative No.: 419



**SIGNIFICANCE**

To be eligible for the Phoenix/Arizona/National Register, a property must represent an important part of the history or architecture of an area. Note: a property need only be significant under one of the areas below to be eligible.

- A. HISTORIC EVENTS/TRENDS (Describe how the property is associated either with a significant historic event or with a trend or pattern of events important to the history of the nation, the state, or the local community.) SEE CONTINUATION SHEET
- B. PERSONS (Describe how the property is associated with the life of a person significant in the past.) SEE CONTINUATION SHEET
- C. ARCHITECTURE (Describe how the property embodies the distinctive characteristics of a type, period, or method of construction, or represents the work of a master, or possesses high artistic values.) SEE CONTINUATION SHEET

**INTEGRITY**

To be eligible for the Phoenix/Arizona/National Register, a property must have integrity, that is, it must be able to visually convey its importance. Provide detailed information below about the property's integrity. Use continuation sheets if necessary.

- 1. LOCATION  Original Site  Moved date: \_\_\_\_\_ Original Site: \_\_\_\_\_
- 2. DESIGN (Describe alterations from the original design, including dates—known or estimated—when alterations were made)  
Style: Utilitarian concrete block and prefabricated metal box  
Prefabricated metal portion of building added to concrete block portion, windows replaced—dates unknown.
- 3. SETTING (Describe the natural and/or built environment around the property)  
Located in among other warehouse buildings west of Terminal 2 at Phoenix Sky Harbor International Airport  
Describe how the setting has changed since the property's period of significance:  
Airport has expanded and more warehouses and maintenance buildings have been constructed in the surrounding area.
- 4. MATERIALS (Describe the materials used in the following elements of the property)  
Walls (structure): Metal frame & concrete block Foundation: Concrete slab Roof: Flat  
Windows: Sliding  
Wall Sheathing: Exposed structural concrete block and corrugated metal
- 5. WORKMANSHIP (Describe the distinctive elements, if any, of craftsmanship or method of construction)

**NATIONAL REGISTER STATUS (if listed, check the appropriate box)**

Individually listed  Contributor  Non-contributor to \_\_\_\_\_ Historic District  
Date Listed: \_\_\_\_\_  Determined eligible by keeper of National Register date: \_\_\_\_\_

**RECOMMENDATIONS OF ELIGIBILITY (opinion of HPO staff or survey consultant)**

Property  is  is not eligible individually.  
Property  is  is not eligible as a contributor to a potential historic district.  
 More information needed to evaluate  
If not considered eligible, state reason: SEE CONTINUATION SHEET

**FORM COMPLETED BY**

Name and Affiliation: Kirsten Erickson, URS Corporation Date: 5 January 2005  
Mailing Address: 7720 N. 16<sup>th</sup> Street, Ste. 100, Phoenix, Arizona 85020 Phone No.: 602-371-1100

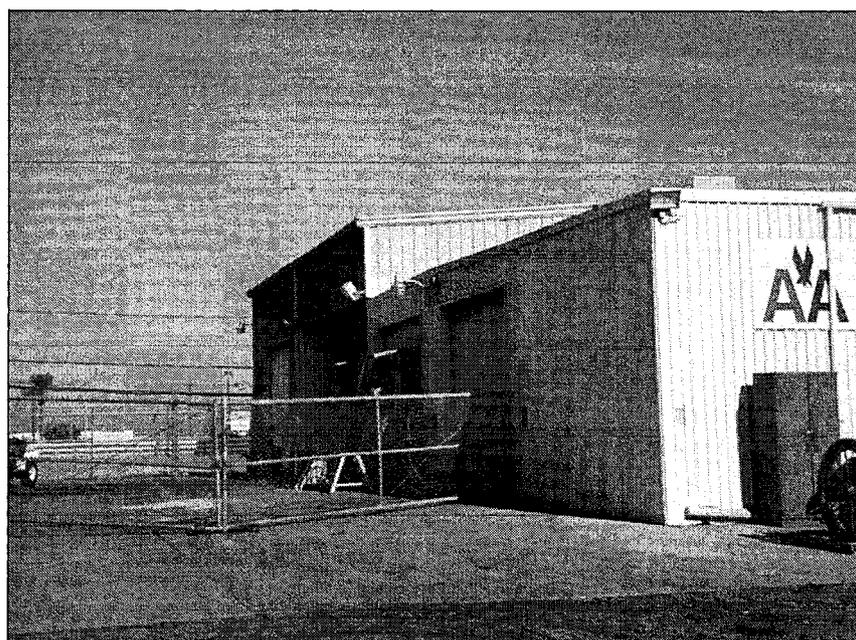
**STATE OF ARIZONA**

**HISTORIC PROPERTY INVENTORY FORM  
CONTINUATION SHEET**

**PROPERTY DESCRIPTION**

The American Airlines Maintenance Building or building #241 is a two-story building that faces south. The original portion of the building is constructed of concrete blocks. Prefabricated metal additions have been added to the rear (north) and side (west) of the building and to the southwest corner. The concrete block portion of the building has a flat roof with eaves and either has a composition roll or built-up roof. The prefabricated metal rear addition has a slightly pitched metal shed roof and the front addition has a flat roof. The front of the building is shaded by an awning supported by metal posts. There is one window on the front of the building that is covered with an aluminum screen and appears to be a metal-framed, sliding window. There are two, single entry metal doors on the front of the building.

The rear or north side of the building has no features. The east side of the building has one boarded over window opening and two, single entry metal doors. The west side has two metal roll-up doors in the original concrete block portion of the building and two metal roll up doors in the prefabricated metal addition constructed on the rear of the building.



West Side of the American Airlines Maintenance Shop (view northeast)

**SIGNIFICANCE**

The American Airlines Maintenance Shop or Building 241 was constructed between 1964 and 1965. It was constructed during an era of expansion for both the Sky Harbor International Airport and the Phoenix metropolitan area. The building is utilitarian in function and design and is not a significant representation of this era of airport and local history. The building is not eligible under Criterion A. Research did not reveal any associations with important persons and therefore the building is not eligible under Criterion B. The property is a simple, utilitarian building typical of maintenance and warehouse facilities and is not eligible under Criterion C. Further study of the building is unlikely to yield important information and therefore is not eligible under Criterion D.

STATE OF ARIZONA

HISTORIC PROPERTY INVENTORY FORM

Please type or print clearly. Fill out each applicable space accurately and with as much information as is known about the property. Use continuation sheets where necessary. Send completed forms to City of Phoenix Historic Preservation Office, 200 W. Washington, 17th Floor, Phoenix, AZ 85003 for listing on Phoenix Historic Property Register, or Arizona State Historic Preservation Office, 1300 W. Washington, Phoenix, AZ 85007 for listing on Arizona/National Register of Historic Places.

PROPERTY IDENTIFICATION

For properties identified through survey: Site No: 5-ADP Survey Area: Phoenix Sky Harbor International Airport Development Project

Historic Name(s): Delta Maintenance Shop

(Enter the name(s), if any, that best reflects the property's historic importance.)

Address: South of parking area to the west of Terminal 2, Sky Harbor International Airport

City or Town: Phoenix vicinity County: Maricopa Tax Parcel No.:

Township: 1N Range: 3E Section: 14 Quarter Section: NW1/4 NE1/4 Acreage: <1

Block: Lot(s): Plat (Addition): Year of Plat:

UTM reference: Zone: Easting: Northing: USGS 7.5' quad map: Phoenix

Architect: not determined known source:

Builder: not determined known source:

Construction Date: 1965-1968 estimated known source:

STRUCTURAL CONDITION:

Good (Well-maintained; no serious problems apparent)

Fair (Some problems apparent) Describe:

Poor (Major problems; imminent threat) Describe:

Ruin/Uninhabitable

USES/FUNCTIONS

Describe how the property has been used over time, beginning with the original use:

Vehicle maintenance shop

Sources:

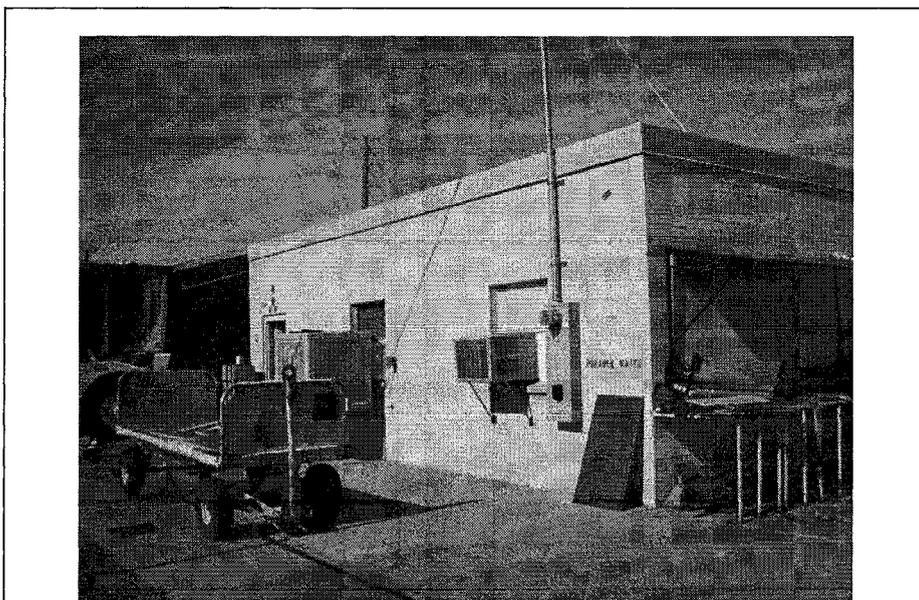
PHOTO INFORMATION

Date of photo: 19 November 2004

View Direction (looking towards):

Northwest

Negative No.: 427



**SIGNIFICANCE**

To be eligible for the Phoenix/Arizona/National Register, a property must represent an important part of the history or architecture of an area. Note: a property need only be significant under one of the areas below to be eligible.

- A. HISTORIC EVENTS/TRENDS (Describe how the property is associated either with a significant historic event or with a trend or pattern of events important to the history of the nation, the state, or the local community.) SEE CONTINUATION SHEET
- B. PERSONS (Describe how the property is associated with the life of a person significant in the past.) SEE CONTINUATION SHEET
- C. ARCHITECTURE (Describe how the property embodies the distinctive characteristics of a type, period, or method of construction, or represents the work of a master, or possesses high artistic values.) SEE CONTINUATION SHEET

**INTEGRITY**

To be eligible for the Phoenix/Arizona/National Register, a property must have integrity, that is, it must be able to visually convey its importance. Provide detailed information below about the property's integrity. Use continuation sheets if necessary.

- 1. LOCATION  Original Site  Moved date: \_\_\_\_\_ Original Site: \_\_\_\_\_
- 2. DESIGN (Describe alterations from the original design, including dates—known or estimated—when alterations were made)  
Style: utilitarian concrete box  
Air conditioning units installed in window openings on the front of the building—dates unknown.
- 3. SETTING (Describe the natural and/or built environment around the property)  
Located among other warehouse buildings west of Terminal 2 at Phoenix Sky Harbor International Airport  
Describe how the setting has changed since the property's period of significance:  
Airport has expanded and more warehouses and maintenance buildings have been constructed in the surrounding area.
- 4. MATERIALS (Describe the materials used in the following elements of the property)  
Walls (structure): Concrete block Foundation: Concrete slab Roof: Flat  
Windows: 2-light aluminum  
Wall Sheathing: None; exposed structure concrete block
- 5. WORKMANSHIP (Describe the distinctive elements, if any, of craftsmanship or method of construction)

**NATIONAL REGISTER STATUS (if listed, check the appropriate box)**

Individually listed  Contributor  Non-contributor to \_\_\_\_\_ Historic District  
Date Listed: \_\_\_\_\_  Determined eligible by keeper of National Register date: \_\_\_\_\_

**RECOMMENDATIONS OF ELIGIBILITY (opinion of HPO staff or survey consultant)**

Property  is  is not eligible individually.  
Property  is  is not eligible as a contributor to a potential historic district.  
 More information needed to evaluate  
If not considered eligible, state reason: SEE CONTINUATION SHEET

**FORM COMPLETED BY**

Name and Affiliation: Kirsten Erickson, URS Corporation Date: 5 January 2005  
Mailing Address: 7720 N. 16<sup>th</sup> Street, Ste. 100, Phoenix, Arizona 85020 Phone No.: 602-371-1100

**STATE OF ARIZONA**

**HISTORIC PROPERTY INVENTORY FORM  
CONTINUATION SHEET**

**PROPERTY DESCRIPTION**

The Delta Maintenance Building or building #240 is a concrete block building with a flat roof that faces south. There is a single entry, metal door and two, two-light aluminum framed windows with concrete sills on the front of the building. Each window has an air conditioning unit in the bottom half and the top half of both windows are boarded over. There are no features on the back or north side of the building. A metal framed awning with a corrugated metal roof is attached to the east side of the building and shades a work table. A concrete platform and air compressor also are located on the east side of the building. The west side of the building has one, two-light aluminum framed window with a concrete sill and a metal roll-up door. The building is attached to the adjacent building (Delta Maintenance Building #239) with a flat roofed, standing seam metal awning.

**SIGNIFICANCE**

The Delta Maintenance Shop or Building 240 was constructed between 1965 and 1968. It was constructed during an era of expansion for both the Sky Harbor International Airport and the Phoenix metropolitan area. The building is utilitarian in function and design and is not a significant representation of this era of airport and local history. The building is not eligible under Criterion A. Research did not reveal any associations with important persons and therefore the building is not eligible under Criterion B. The property is a simple, utilitarian concrete block building typical of maintenance and warehouse facilities and is not eligible under Criterion C. Further study of the building is unlikely to yield important information and therefore is not eligible under Criterion D.

STATE OF ARIZONA

HISTORIC PROPERTY INVENTORY FORM

Please type or print clearly. Fill out each applicable space accurately and with as much information as is known about the property. Use continuation sheets where necessary. Send completed forms to City of Phoenix Historic Preservation Office, 200 W. Washington, 17th Floor, Phoenix, AZ 85003 for listing on Phoenix Historic Property Register, or Arizona State Historic Preservation Office, 1300 W. Washington, Phoenix, AZ 85007 for listing on Arizona/National Register of Historic Places.

PROPERTY IDENTIFICATION

For properties identified through survey: Site No: 6-ADP Survey Area: Phoenix Sky Harbor International Airport Development Program

Historic Name(s): Delta Maintenance Shop

(Enter the name(s), if any, that best reflects the property's historic importance.)

Address: South of parking area to the west of Terminal 2, Sky Harbor International Airport

City or Town: Phoenix vicinity County: Maricopa Tax Parcel No.:

Township: 1N Range: 3E Section: 14 Quarter Section: NW1/4 NE1/4 Acreage: <1

Block: Lot(s): Plat (Addition): Year of Plat:

UTM reference: Zone: Easting: Northing: USGS 7.5' quad map: Phoenix

Architect: not determined known source:

Builder: not determined known source:

Construction Date: 1965-1968 estimated known source:

STRUCTURAL CONDITION:

Good (Well-maintained; no serious problems apparent)

Fair (Some problems apparent) Describe:

Poor (Major problems; imminent threat) Describe:

Ruin/Uninhabitable

USES/FUNCTIONS

Describe how the property has been used over time, beginning with the original use:

Vehicle maintenance shop

Sources:

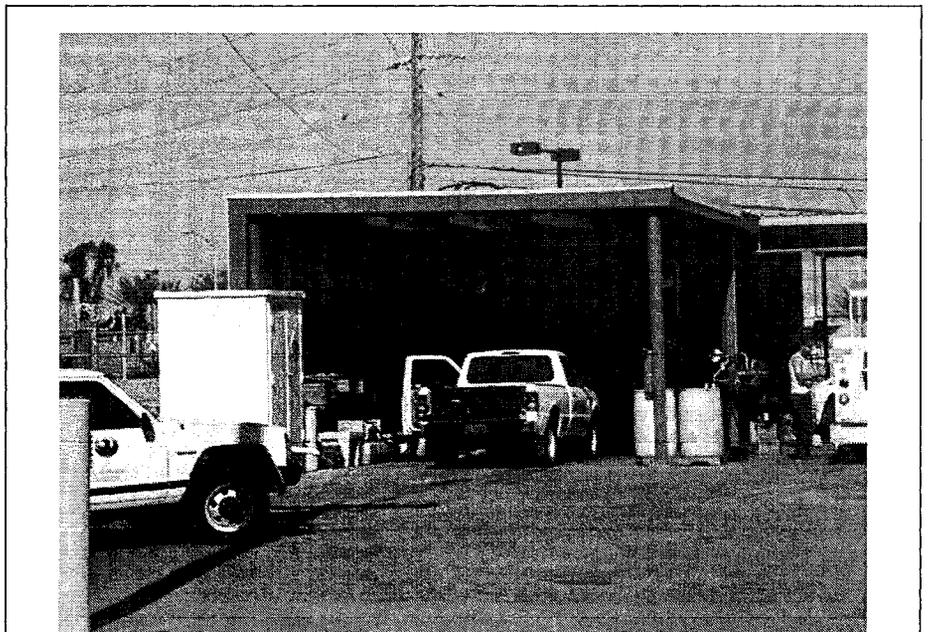
PHOTO INFORMATION

Date of photo: 19 November 2004

View Direction (looking towards):

North

Negative No.: 423



**SIGNIFICANCE**

To be eligible for the Phoenix/Arizona/National Register, a property must represent an important part of the history or architecture of an area. Note: a property need only be significant under one of the areas below to be eligible.

- A. HISTORIC EVENTS/TRENDS (Describe how the property is associated either with a significant historic event or with a trend or pattern of events important to the history of the nation, the state, or the local community.) **SEE CONTINUATION SHEET**
- B. PERSONS (Describe how the property is associated with the life of a person significant in the past.) **SEE CONTINUATION SHEET**
- C. ARCHITECTURE (Describe how the property embodies the distinctive characteristics of a type, period, or method of construction, or represents the work of a master, or possesses high artistic values.) **SEE CONTINUATION SHEET**

**INTEGRITY**

To be eligible for the Phoenix/Arizona/National Register, a property must have integrity, that is, it must be able to visually convey its importance. Provide detailed information below about the property's integrity. Use continuation sheets if necessary.

- 1. LOCATION  Original Site  Moved date: \_\_\_\_\_ Original Site: \_\_\_\_\_
- 2. DESIGN (Describe alterations from the original design, including dates—known or estimated—when alterations were made)  
Style: utilitarian, corrugated metal vehicle shed
- 3. SETTING (Describe the natural and/or built environment around the property)  
Located among other warehouse buildings west of Terminal 2 at Phoenix Sky Harbor International Airport  
Describe how the setting has changed since the property's period of significance:  
Airport has expanded and more warehouses and maintenance buildings have been constructed in the surrounding area.
- 4. MATERIALS (Describe the materials used in the following elements of the property)  
Walls (structure): Metal frame Foundation: Concrete slab Roof: Flat  
Windows: None  
Wall Sheathing: Corrugated metal; open on south and east sides
- 5. WORKMANSHIP (Describe the distinctive elements, if any, of craftsmanship or method of construction)

**NATIONAL REGISTER STATUS (if listed, check the appropriate box)**

Individually listed  Contributor  Non-contributor to \_\_\_\_\_ Historic District  
Date Listed: \_\_\_\_\_  Determined eligible by keeper of National Register date: \_\_\_\_\_

**RECOMMENDATIONS OF ELIGIBILITY (opinion of HPO staff or survey consultant)**

Property  is  is not eligible individually.  
Property  is  is not eligible as a contributor to a potential historic district.  
 More information needed to evaluate  
If not considered eligible, state reason: **SEE CONTINUATION SHEET**

**FORM COMPLETED BY**

Name and Affiliation: Kirsten Erickson, URS Corporation Date: 5 January 2005  
Mailing Address: 7720 N. 16<sup>th</sup> Street, Ste. 100, Phoenix, Arizona 85020 Phone No.: 602-371-1100

**STATE OF ARIZONA**

**HISTORIC PROPERTY INVENTORY FORM  
CONTINUATION SHEET**

**PROPERTY DESCRIPTION**

The Delta Maintenance Building or building #239 is an open, metal-framed structure used for vehicle repair and maintenance. The one-story building is open on the south and east sides and is attached to the adjacent building (Delta Maintenance, Building #240) with a flat roofed, standing seam metal awning. The foundation is concrete slab and the north and west walls are corrugated metal. The roof is flat and constructed of corrugated metal.

**SIGNIFICANCE**

The Delta Maintenance Shop or Building 239 was constructed between 1965 and 1968. It was constructed during an era of expansion for both the Sky Harbor International Airport and the Phoenix metropolitan area. The building is utilitarian in function and design and is not a significant representation of this era of airport and local history. The building is not eligible under Criterion A. Research did not reveal any associations with important persons and therefore the building is not eligible under Criterion B. The property is a simple, utilitarian metal-frame building typical of maintenance and warehouse facilities and is not eligible under Criterion C. Further study of the building is unlikely to yield important information and therefore is not eligible under Criterion D.

STATE OF ARIZONA

HISTORIC PROPERTY INVENTORY FORM

Please type or print clearly. Fill out each applicable space accurately and with as much information as is known about the property. Use continuation sheets where necessary. Send completed forms to City of Phoenix Historic Preservation Office, 200 W. Washington, 17th Floor, Phoenix, AZ 85003 for listing on Phoenix Historic Property Register, or Arizona State Historic Preservation Office, 1300 W. Washington, Phoenix, AZ 85007 for listing on Arizona/National Register of Historic Places.

PROPERTY IDENTIFICATION

For properties identified through survey: Site No: 7-ADP Survey Area: Phoenix Sky Harbor International Airport Development Program

Historic Name(s): East Terminal (Terminal 2)

(Enter the name(s), if any, that best reflects the property's historic importance.)

Address: 3200 E. Sky Harbor Boulevard

City or Town: Phoenix vicinity County: Maricopa Tax Parcel No.: 121-49-002A

Township: 1N Range: 3E Section: 14 Quarter Section: E1/2 NE1/4 Acreage: 4.6

Block: Lot(s): Plat (Addition): Year of Plat:

UTM reference: Zone: Easting: Northing: USGS 7.5' quad map: Phoenix

Architect: Lescher & Mahoney and Weaver & Drover not determined known source: Phoenix Sky Harbor International Airport; Clark 1962

Builder: Herman Chanen Construction Co. not determined known source: Phoenix Sky Harbor International Airport; Clark 1962

Construction Date: 1962 estimated known source: Phoenix Sky Harbor International Airport

STRUCTURAL CONDITION:

Good (Well-maintained; no serious problems apparent)

Fair (Some problems apparent) Describe:

Poor (Major problems; imminent threat) Describe:

Ruin/Uninhabitable

USES/FUNCTIONS

Describe how the property has been used over time, beginning with the original use:

Building has been used as Terminal 2 (formerly the East Terminal) at Phoenix Sky Harbor International Airport since its construction in 1962.

Sources: Phoenix Sky Harbor International Airport

PHOTO INFORMATION

Date of photo: 9 March 2004

View Direction (looking towards):

Southeast

Negative No.: 4251



**SIGNIFICANCE**

To be eligible for the Phoenix/Arizona/National Register, a property must represent an important part of the history or architecture of an area. Note: a property need only be significant under one of the areas below to be eligible.

- A. HISTORIC EVENTS/TRENDS (Describe how the property is associated either with a significant historic event or with a trend or pattern of events important to the history of the nation, the state, or the local community.) **SEE CONTINUATION SHEET**
- B. PERSONS (Describe how the property is associated with the life of a person significant in the past.) **SEE CONTINUATION SHEET**
- C. ARCHITECTURE (Describe how the property embodies the distinctive characteristics of a type, period, or method of construction, or represents the work of a master, or possesses high artistic values.) **SEE CONTINUATION SHEET**

**INTEGRITY**

To be eligible for the Phoenix/Arizona/National Register, a property must have integrity, that is, it must be able to visually convey its importance. Provide detailed information below about the property's integrity. Use continuation sheets if necessary.

- 1. LOCATION  Original Site  Moved date: \_\_\_\_\_ Original Site: \_\_\_\_\_
- 2. DESIGN (Describe alterations from the original design, including dates—known or estimated—when alterations were made)  
Style: contemporary  
**SEE CONTINUATION SHEET**
- 3. SETTING (Describe the natural and/or built environment around the property)  
Phoenix Sky Harbor International Airport.  
Describe how the setting has changed since the property's period of significance:  
Airport has expanded and 2 additional terminals and support facilities have been constructed in the surrounding area.
- 4. MATERIALS (Describe the materials used in the following elements of the property)  
Concrete frame with pre-cast concrete single tees, structural  
Walls (structure): steel Foundation: concrete Roof: Flat supported by pre-cast concrete single tees  
Windows: Metal/aluminum framed, fixed  
Wall Sheathing: Reinforced insulated stucco panels, exposed structural concrete, decorative stone panels
- 5. WORKMANSHIP (Describe the distinctive elements, if any, of craftsmanship or method of construction)  
**SEE CONTINUATION SHEET**

**NATIONAL REGISTER STATUS (if listed, check the appropriate box)**

Individually listed  Contributor  Non-contributor to \_\_\_\_\_ Historic District  
Date Listed: \_\_\_\_\_  Determined eligible by keeper of National Register date: \_\_\_\_\_

**RECOMMENDATIONS OF ELIGIBILITY (opinion of HPO staff or survey consultant)**

Property  is  is not eligible individually.  
Property  is  is not eligible as a contributor to a potential historic district.  
 More information needed to evaluate  
If not considered eligible, state reason: **SEE CONTINUATION SHEET**

**FORM COMPLETED BY**

Name and Affiliation: Kirsten Erickson, URS Corporation Date: 5 January 2005  
Mailing Address: 7720 N. 16<sup>th</sup> Street, Ste. 100, Phoenix, Arizona 85020 Phone No.: 602-371-1100

**STATE OF ARIZONA**

**HISTORIC PROPERTY INVENTORY FORM  
CONTINUATION SHEET**

**PROPERTY DESCRIPTION (Exterior)**

The Terminal 2 is located west of Terminal 3 within Phoenix Sky Harbor International Airport. The terminal faces north. The building is divided into three distinct parts, including the ticketing and baggage area, the main lobby area, and the concourse. The ticketing and baggage area is in the front of the building. Ticketing occurs in the west wing and baggage claim is located in the east wing. A central hallway leads to the main lobby. Security check points and the entrance to the concourse are located in the south wall of the main lobby.

The original core of Terminal 2 has a concrete frame with pre-cast concrete single tees that support the roof. Subsequent additions were constructed of structural steel stud walls, steel bar joists, and metal deck roof framing. The foundation is concrete, including both slab and wall, as there are underground baggage facilities. The ticketing/baggage portion of the building is only one story, but the main lobby has a mezzanine level and the concourse is two stories. Windows throughout the Terminal have metal (typically aluminum) framed fixed windows. The doors on the front of the building are aluminum framed automatic doors with lights that are shaded by a canopy cast with Southwest designs on the eaves. The canopy is supported by 25 sets of concrete pillars.

The two-story, main lobby portion of the building has windows in the mezzanine level. A circular patterned screen protects the rear of the building by limiting the amount of sunlight let into the lobby. The exterior walls of the lobby portion of the building are clad with decorative stone panels, and there is a double entry metal door with two lights. There is a one-story addition attached to the west side.

The concourse is two stories with gates in the second story and baggage and airline offices on the ground floor. The concourse is constructed of steel and concrete with metal framed fixed windows. The south concourse addition is taller than the original concourse and the exterior wall surface is concrete and brick. The windows are metal framed with two lights and the eaves are decorated with pre-cast Southwest designs.

Gates C and D extend east from the concourse entrance. Gate C contains passenger gates, while Gate D is now used as classrooms. Gates C and D are constructed of concrete block and have concrete foundations. The roof is flat and is likely built up. The grouped windows have metal frames with two lights in each. There are three sets of double entry, metal-framed doors with two lights. There is a shed roof extension on the east side of Gate D that is open and enclosed with chain link. Gates C and D are connected to Terminal 2 by a covered, outdoor concrete ramp.

Terminal 2 has been modified many times since its original construction. In the 1960s, additions included a covered walkway, a Sky Chef expansion, and an approximately 300-foot addition to the south end of the concourse. A walkway to the International Terminal (now Airport Operations) was completed and a second story added to the concourse in the early 1970s. In 1980, a baggage claim area was added to the east side of the terminal. In 1988, the baggage claim area was expanded to the south for additional baggage carousels, offices, and storage lockers. Other modifications made in the 1980s were a two-story addition to the concourse, guest services such as a new snack bar, restaurant and lounge, and ice cream shop, and the installation of automatic doors. In 1985, the main lobby was renovated and in 1987, the parking garage was constructed north of the terminal. Between 1990 and 1992, the front façade of the building was changed. This was likely when the cast concrete decorative Southwest designs were added, which reflected the design of the newly completed Terminal 4.

**SIGNIFICANCE**

**Terminal 2**

Terminal 2, or the East Terminal as it was originally called, was completed in 1962. By this time, Sky Harbor hosted 66 major carrier flights daily, including American Airlines, Western, TWA, Frontier, Continental, and Bonanza.

## STATE OF ARIZONA

### HISTORIC PROPERTY INVENTORY FORM CONTINUATION SHEET

Prominent Phoenix architects Lescher and Mahoney and Weaver and Drover designed the terminal, which was built by Herman Chanen Construction Company of Phoenix. The approximately 135,000 square foot building included a basement, lobby, a ticketing area, and concourse wings. Funding for the terminal came from airport income, federal aid, and the sale of revenue bonds (Anonymous 1962).

When completed, Terminal 2 was said to be "a monument to achievement, transcending from old to new amid a burst of pride and glory" (Anonymous 1962). It was also said to be "more than a terminal, a building of beauty to be used and enjoyed by residents of Phoenix" (Clark 1962). At the time of its construction, Terminal 2 was a representation of the cutting edge of airport terminal design, and was the seventh largest commercial airline terminal in the country (Clark 1962).

In the 1960s, commercial air travel was still a fairly new mode of transportation and was typically limited to the wealthy or those traveling on business. The contemporary design of Terminal 2 expressed the newness of air travel and an image of Phoenix as an up and coming center of business. The terminal's concourses reflected the newest trend in airport design, eliminating, in many cases, the need for passengers to walk outside to board their planes (Krugel 2004; Rumerman 2004).

The terminal was designed during a time when new technologies were being introduced, and the space age had inspired Americans to look into the future. The architects designed the terminal with 60 percent glass, in order to bring the outside in, and the interconnection of the building's sections and the high ceiling of the main lobby inspired an open and spacious effect. The interior of the original lobby especially reflected the contemporary streamlined and futuristic themes. Fifteen-foot-tall columns of stained glass were located on the south wall of the terminal and "solar screens" were mounted on the exterior south wall. The 30-foot high ceilings held six large chandeliers and 56 units of 3-bank lights that lit the lobby area. Seating in the lobby included plastic seats in pumpkin, mustard, aqua, and black. Guest services included a snack bar, a restaurant with a glass-enclosed terrace, seven concession stands, and a cocktail lounge. A patio outside the terminal held a fountain and the adobe mission arch with the bell that was used as the wedding chapel in the early years of the airport (Clark 1962).

Perhaps the most impressive feature of the lobby was the three-paneled mural completed by local Phoenix artist Paul Coze. When Terminal 2 opened it was thought of as a "monument to achievement" and that the new terminal was "as emblematic as the gaudy Phoenix bird which themes Paul Coze's lobby mural, transcending from the old to the new amid a burst of pride and glory" (Anonymous 1962). The Coze mural took five days to install in the new East Terminal (Terminal 2) in 1962. After fourteen months of planning and construction, the mural was mounted on pre-cast concrete wall panels that were installed in the west wall of the terminal lobby (Phoenix Sky Harbor Municipal Airport 1962).

#### Recommendations of Eligibility

When built in 1962, Terminal 2 was considered a state-of-the-art airport terminal and architecturally significant. It was representative of cutting edge airport terminal design and an important symbol of progress for Sky Harbor Airport. Designed by prominent Phoenix architects, the building reflected the forward looking views to the future that were prevalent at the time through its design. However, extensive remodeling and additions to the Terminal have masked its original features and the building is no longer a representation of the era of significance. Terminal 2 is not eligible for listing in the National Register under Criteria A, B, or C. Further study of the building is unlikely to yield important information and therefore is not eligible under Criterion D.

STATE OF ARIZONA

HISTORIC PROPERTY INVENTORY FORM  
CONTINUATION SHEET

REFERENCES

Anonymous

1962 *Ready for the Space Age*. Published in Arizona Days & Ways, Republic Magazine, 20 May. On file, Phoenix Sky Harbor International Airport.

Clark, Esther

1962 *The Construction Story: An Engineering Masterpiece*. Published in Arizona Days & Ways, a Republic Magazine, 20 May. On file, Phoenix Sky Harbor International Airport.

Krugel, James C.

2004 *Air Travel: It's Impact on the Way We Live and the Way We See Ourselves*. U.S. Centennial of Flight Commission. Electronic document, [www.centennialofflight.gov/essay/Social/impact/SH3.htm](http://www.centennialofflight.gov/essay/Social/impact/SH3.htm), accessed 9 September.

Phoenix Sky Harbor Municipal Airport

1962 *Phoenix Sky Harbor Municipal Airport Terminal*. Handout describing the Paul Coze Mural. On file, Phoenix Sky Harbor International Airport.

Rumerman, Judy

2004 *Airport Design*. U.S. Centennial of Flight Commission. Electronic document, [www.centennialofflight.gov/essay/Social/architecture/SH15.htm](http://www.centennialofflight.gov/essay/Social/architecture/SH15.htm), accessed 8 September.

STATE OF ARIZONA

HISTORIC PROPERTY INVENTORY FORM

Please type or print clearly. Fill out each applicable space accurately and with as much information as is known about the property. Use continuation sheets where necessary. Send completed forms to City of Phoenix Historic Preservation Office, 200 W. Washington, 17th Floor, Phoenix, AZ 85003 for listing on Phoenix Historic Property Register, or Arizona State Historic Preservation Office, 1300 W. Washington, Phoenix, AZ 85007 for listing on Arizona/National Register of Historic Places.

PROPERTY IDENTIFICATION

For properties identified through survey: Site No: 8-ADP Survey Area: Phoenix Sky Harbor International Airport Development Program

Historic Name(s): The Phoenix (Paul Coze Mural)

(Enter the name(s), if any, that best reflects the property's historic importance.)

Address: 3200 E. Sky Harbor Boulevard

City or Town: Phoenix vicinity County: Maricopa Tax Parcel No.: 121-49-002A

Township: 1N Range: 3E Section: 14 Quarter Section: E1/2 NE1/4 Acreage: <1

Block: Lot(s): Plat (Addition): Year of Plat:

UTM reference: Zone: Easting: Northing: USGS 7.5' quad map: Phoenix

Architect: Paul Coze (artist) not determined known source: Phoenix Sky Harbor International Airport

Builder: not determined known source:

Construction Date: 1962 estimated known source: Phoenix Sky Harbor International Airport

STRUCTURAL CONDITION:

Good (Well-maintained; no serious problems apparent)

Fair (Some problems apparent) Describe:

Poor (Major problems; imminent threat) Describe:

Ruin/Uninhabitable

USES/FUNCTIONS

Describe how the property has been used over time, beginning with the original use:

Lobby mural in Terminal 2, Phoenix Sky Harbor International Airport

Sources:

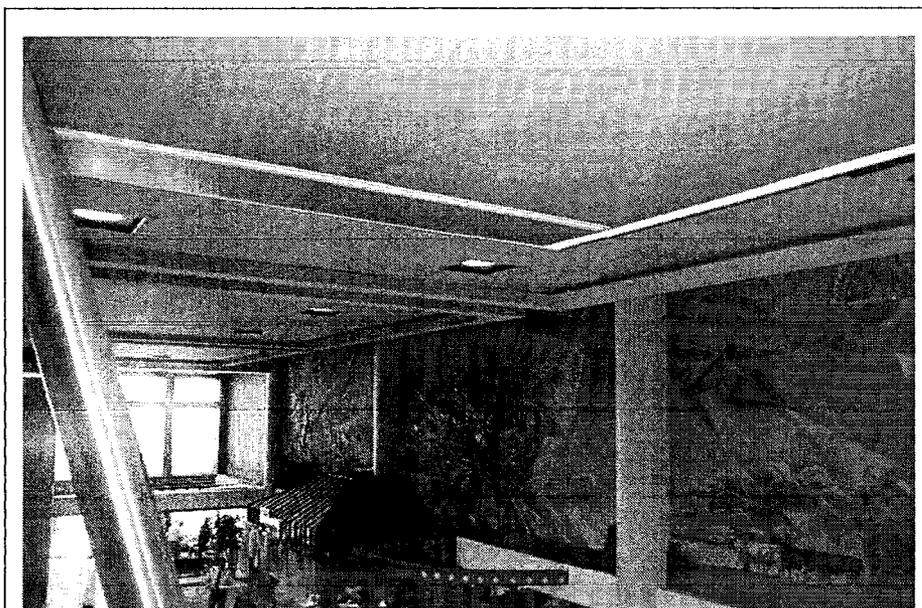
PHOTO INFORMATION

Date of photo: 9 March 2004

View Direction (looking towards):

Southeast

Negative No.: 4262



**SIGNIFICANCE**

To be eligible for the Phoenix/Arizona/National Register, a property must represent an important part of the history or architecture of an area. Note: a property need only be significant under one of the areas below to be eligible.

- A. HISTORIC EVENTS/TRENDS (Describe how the property is associated either with a significant historic event or with a trend or pattern of events important to the history of the nation, the state, or the local community.) SEE CONTINUATION SHEET
- B. PERSONS (Describe how the property is associated with the life of a person significant in the past.) SEE CONTINUATION SHEET
- C. ARCHITECTURE (Describe how the property embodies the distinctive characteristics of a type, period, or method of construction, or represents the work of a master, or possesses high artistic values.) SEE CONTINUATION SHEET

**INTEGRITY**

To be eligible for the Phoenix/Arizona/National Register, a property must have integrity, that is, it must be able to visually convey its importance. Provide detailed information below about the property's integrity. Use continuation sheets if necessary.

- 1. LOCATION  Original Site  Moved date: \_\_\_\_\_ Original Site: \_\_\_\_\_
- 2. DESIGN (Describe alterations from the original design, including dates—known or estimated—when alterations were made)  
The Coze mural has been only minimally altered since its installation in 1962. The original steel posts located between the mural panels have been replaced with concrete columns that are flush with the wall surface.
- 3. SETTING (Describe the natural and/or built environment around the property)  
Interior of Terminal 2, Phoenix Sky Harbor International Airport.  
  
Describe how the setting has changed since the property's period of significance:  
The interior of Terminal 2 has been renovated and remodeled since the mural's installation
- 4. MATERIALS (Describe the materials used in the following elements of the property)  
Walls (structure): N/A Foundation: N/A Roof: N/A  
Windows: N/A  
Wall Sheathing: N/A
- 5. WORKMANSHIP (Describe the distinctive elements, if any, of craftsmanship or method of construction)  
Mural consists of 15 interlocking pieces assembled into three panels, which is inlaid in the west wall of Terminal 2.

**NATIONAL REGISTER STATUS (if listed, check the appropriate box)**

Individually listed  Contributor  Non-contributor to \_\_\_\_\_ Historic District  
Date Listed: \_\_\_\_\_  Determined eligible by keeper of National Register date: \_\_\_\_\_

**RECOMMENDATIONS OF ELIGIBILITY (opinion of HPO staff or survey consultant)**

Property  is  is not eligible individually.  
Property  is  is not eligible as a contributor to a potential historic district.  
 More information needed to evaluate  
If not considered eligible, state reason: \_\_\_\_\_

**FORM COMPLETED BY**

Name and Affiliation: Kirsten Erickson, URS Corporation Date: 5 January 2005  
Mailing Address: 7720 N. 16<sup>th</sup> Street, Ste. 100, Phoenix, Arizona 85020 Phone No.: 602-371-1100

**STATE OF ARIZONA**

**HISTORIC PROPERTY INVENTORY FORM  
CONTINUATION SHEET**

**PROPERTY DESCRIPTION**

"The Phoenix" mural was designed and built in 1962 by local Phoenix artist Paul Coze. The mural consists of fifteen interlocking pieces that were assembled into three canvas painted panels that were attached to the west wall of the Terminal 2 lobby. The three panels depict the past (Earth), present (Water and Fire), and future (Air). Coze used 52 different materials to create the mural (one for each week of the year) including paint, turquoise, seaweed, petrified wood, glass, broken shell, plastic, indigenous rocks and dirt, and other three dimensional components. The entire mural is 16 feet high and is 75 feet long (Webb 1992; Phoenix Sky Harbor International Airport nd).

**The Earth**

The left panel is entitled "The Earth" and represents Arizona's and Phoenix's past. Coze paid tribute to Arizona's Native peoples by depicting a Hohokam petroglyph and the Eagle Kachina, a Hopi god. The Rainbow Kachina extends across all three panels, and in "The Earth" panel, an arrow is shown shooting towards it. A Conquistador and a Franciscan priest represent the Spanish era, and the Euro-American exploration and settlement area is illustrated with a wagon train, riders from the Mormon Battalion, and a Southern Pacific Railroad train. An eagle displaying a banner with the date Arizona was admitted into the Union represents statehood, and stars on the mural are arranged in formations that represent famous Arizona cattle brands (Phoenix Sky Harbor International Airport nd).

**Water and Fire**

A burning Phoenix bird perched on a date tree dominates the mural's middle panel titled "Water and Fire" representing the present. Smoke from the burning Phoenix forms rain clouds, which provide moisture that is collected by the Roosevelt Dam, representing the key role that water and reclamation plays in the Valley. Coze depicts Phoenix's emergence as a city of education, commerce, technology, and research with electrical towers and modern buildings (Phoenix Sky Harbor International Airport nd).

**The Air**

Although the right panel entitled "The Air" represents the future, Coze included reminders of the past. Hands are depicted reaching toward the sky that is filled with symbols of the future such as a solar reflector, electronic antennas, and a swirl of atoms. Coze also included electronic schematic symbols in the sky, intermingled with images of the past, including the Hopi symbol for the sun, the Navajo symbol for the moon, and Apache, Akimel O'odham (Pima), and Tohono O'odham (Papago) star representations. Brahma, Black Angus, and Hereford cattle are included to signify Arizona's ranchers, and irrigated citrus groves and cotton fields illustrate the importance of agriculture to the state's past and future. Arizona's mineral heritage is also represented with a shovel revealing copper ore and a pick ax striking a vein of turquoise. A white plastic steering wheel from a toy car, which serves as a valve for a pipe that projects from this panel, was reportedly from the toy of Steven Chanen, the son of the construction contractor, but Katherine Coze, the widow of the artist, states that the steering wheel came from her baby's seat (Coze 2003; Larson and others 1998; Phoenix Sky Harbor International Airport nd).

**SIGNIFICANCE**

**The Phoenix (Paul Coze Mural)**

Approximately one year before the completion and dedication of the new East Terminal (Terminal 2), the Phoenix City Council held a competition to determine who would create a mural for the lobby of the new building. Three finalists were chosen, including Coze and two other local artists, Jay Datus and Clinton Hill. Each finalist was

## STATE OF ARIZONA

### HISTORIC PROPERTY INVENTORY FORM CONTINUATION SHEET

required to present to the city council his version of a three-paneled mural depicting the Renaissance, the Air Age, and the Space Age. After a week of deliberations, the city council voted 5 to 1 for Coze's mural. He was paid \$10,000 for his creation (Arizona Republic 1961).

Paul Coze was an artist well known in Phoenix and throughout the state. Born in Syria in 1903 to a French father and Russian mother, Coze went to art school in France and was in the French army after World War I. Coze developed an interest and respect for American Indians, and co-authored a book (*Moeurs et histoire des Indiens peaux-rouges*) on American Indians in 1928. Between 1928 and 1934, Coze traveled across western Canada collecting ethnographic objects for the Heye Foundation in New York and the Musee d'Ethnographie (Trocadero) in Paris. He also organized a group of Parisian "hobbyists" who produced theatrical productions with aboriginal themes. Photographs, paintings, and writings collected and created by Coze during his trip across Canada are currently housed in the ethnology collections at the Provincial Museum of Alberta. Coze moved to the United States in the 1930s, and spent summers residing on American Indian reservations in Arizona and New Mexico, becoming an honorary member of seven tribes. In addition to writing books, Coze taught art in France; Pasadena, California; and Phoenix. He also worked as a technical director for 20<sup>th</sup> Century Fox and was the French Consul for Arizona. (Aronowitz 2002; PMA 2004; Steckner 1996).

Coze created many pieces of public art in Phoenix including a four-story medicine man mural for the former Blue Cross/Blue Shield Building at 331 W. Indian School Road (demolished), murals inside Veterans Memorial Colliseum (partially hidden), and a stained glass Phoenix outside of the Town & Country Shopping Center at 20<sup>th</sup> Street and Camelback Road (altered). In 1971, Coze constructed a fountain and large screen at the Phoenix Indian Hospital at 4212 N. 16<sup>th</sup> Street, which were removed after one year because some thought the symbols would bring bad luck. Other Coze works include Stations of the Cross and murals at St. Thomas the Apostle Church at 2312 E. Campbell Avenue. The Stations have been restored but the murals remain covered with wallpaper. In 1963, Coze hung a mural in the City Council chambers at 200 W. Jefferson Street. It was later removed and stored until Coze's widow urged its installation at St. Mary's High School (Steckner 1996).

Other artwork by Coze is located in Prescott. "Prelude to Modern Prescott" is an 8-panel mural located in the large conference room of the Phippen Museum. Using materials similar to those used in "The Phoenix" mural such as local stones, gravel, sand, and mosaic pieces, the "Prelude to Modern Prescott" mural illustrates Prescott's history. Focused on the era from 1840 to 1900, the mural portrays prospectors, trappers, soldiers, mountain men, and residents of the area. Two additional Coze pieces are located in Prescott City Hall. One is a large mural on canvas and the other is an oil painting of William Hickling Prescott. In addition to his work in Phoenix and Prescott, Coze also completed illustrations for National Geographic and Arizona Highways (Aronowitz 2002).

"The Phoenix" was likely the most well known of all of Coze's artwork. In 1962, Dr. F.M. Hinkhouse, director of the Phoenix art museum, stated that the mural "exemplifies the vibrant and exciting growth of the City and State" (Phoenix Sky Harbor Municipal Airport 1962). When the East Terminal (Terminal 2) opened it was thought of as a "monument to achievement" and that the new terminal was "as emblematic as the gaudy Phoenix bird which themes Paul Coze's lobby mural, transcending from the old to the new amid a burst of pride and glory" (Anonymous 1962). The Coze mural took five days to install in the new East Terminal (Terminal 2) in 1962. After fourteen months of planning and construction, the mural was mounted on pre-cast concrete wall panels that were installed in the west wall of the terminal lobby (Phoenix Sky Harbor Municipal Airport 1962).

Coze made significant contributions to the promotion of interest in local art and "The Phoenix" mural served as a recognizable piece of art that visitors to the airport associated with Phoenix. Thirty years later in 1992, the Phoenix Art Museum's director Jim Ballinger stated the Paul Coze "helped galvanize a lot of interest in art" and characterized the mural as being "of greater value as a kind of Phoenix artistic monument rather than as a great piece of art" (Webb 1992).

STATE OF ARIZONA

HISTORIC PROPERTY INVENTORY FORM  
CONTINUATION SHEET

Recommendations of Eligibility

"The Phoenix" or Paul Coze mural is eligible for the National Register under Criterion C. Locally, the mural is a significant piece of artwork that has been associated with Terminal 2 since its construction. The mural is representative of 1960s artwork as its three murals illustrating past, present, and future convey the desire to move into the future or modern age that was prevalent at this time. The East Terminal itself was designed with futuristic characteristics, influenced by the space age and the very aircraft that utilized the terminal. The mural mirrors this concept in its contemporary design. "The Phoenix" mural is one of a few of Coze's public pieces of artwork that survives intact in Phoenix today, and because his work was so prevalent during the 1960s and 1970s, the mural is significant as a representation of local artwork for that time.

REFERENCES

Arizona Republic

- 1961 Coze to Decorate New Sky Harbor Walls. *Arizona Republic*, 15 March. On file, Phoenix Sky Harbor International Airport.

Anonymous

- 1962 *Ready for the Space Age*. Published in Arizona Days & Ways, Republic Magazine, 20 May. On file, Phoenix Sky Harbor International Airport.

Aronowitz, Marguerite Madison

- 2002 Past Local artists share their dreams with today. *Sharlot Hall Museum Days Past*, 8 September. Electronic document, [www.sharlot.org/archives/history/dayspast/text/2002\\_09\\_08.shtml](http://www.sharlot.org/archives/history/dayspast/text/2002_09_08.shtml), accessed 9 September 2004.

Coze, Katharine

- 2003 Letter to Lennée Eller, Art Program Manager, Phoenix Sky Harbor International Airport. 7 March. On file Phoenix Sky Harbor International Airport.

Larson, Jane, Kerry Fehr, Glen Creno, Ken Western, and Russ Wiles

- 1998 Business Buzz: So who's the big wheel now? *Arizona Republic*, date unknown. On file, Phoenix Sky Harbor International Airport.

Phoenix Sky Harbor International Airport

- nd *The Phoenix, May 1962, Sky Harbor International Airport, Terminal 2*. Handout describing the Paul Coze Mural. On file, Phoenix Sky Harbor International Airport.

Phoenix Sky Harbor Municipal Airport

- 1962 *Phoenix Sky Harbor Municipal Airport Terminal*. Handout describing the Paul Coze Mural. On file, Phoenix Sky Harbor International Airport.

Provincial Museum of Alberta (PMA)

- 2004 *The Paul Coze Collection*. Electronic document, [www.pma.edmonton.ab.ca/human/ethno/collects/collects.htm](http://www.pma.edmonton.ab.ca/human/ethno/collects/collects.htm), accessed 10 September.

Steckner, Susie

- 1996 Fading art: Eclipse of works would have hurt creator. *Arizona Republic*, 5 April. On file, Phoenix Sky Harbor International Airport.

Webb, Dewey

- 1992 Flight of the Phoenix: The big bird at Terminal 2 needs somewhere to roost. *New Times*, 10-16 June. On file, Phoenix Sky Harbor International Airport.

STATE OF ARIZONA

HISTORIC PROPERTY INVENTORY FORM

Please type or print clearly. Fill out each applicable space accurately and with as much information as is known about the property. Use continuation sheets where necessary. Send completed forms to City of Phoenix Historic Preservation Office, 200 W. Washington, 17th Floor, Phoenix, AZ 85003 for listing on Phoenix Historic Property Register, or Arizona State Historic Preservation Office, 1300 W. Washington, Phoenix, AZ 85007 for listing on Arizona/National Register of Historic Places.

PROPERTY IDENTIFICATION

For properties identified through survey: Site No: 11-ADP Survey Area: Phoenix Sky Harbor International Airport Development Program

Historic Name(s): Arizona Aerosol Chemical Corporation

(Enter the name(s), if any, that best reflects the property's historic importance.)

Address: 15 S. 42nd Street

City or Town: Phoenix vicinity County: Maricopa Tax Parcel No.: 124-06-001

Township: 1N Range: 4E Section: 7 Quarter Section: NW 1/4 Acreage: <1

Block: 8 Lot(s): 1 Plat (Addition): Portland Tract Year of Plat: 1923

UTM reference: Zone: Easting: Northing: USGS 7.5' quad map: Tempe

Architect: Victor Shill not determined known source: City of Phoenix Developmental Services Dept.

Builder: E.G. White not determined known source: City of Phoenix Developmental Services Dept.

Construction Date: 1965-1966 estimated known source: Maricopa County Assessor

STRUCTURAL CONDITION:

Good (Well-maintained; no serious problems apparent)

Fair (Some problems apparent) Describe:

Poor (Major problems; imminent threat) Describe:

Ruin/Uninhabitable

USES/FUNCTIONS

Describe how the property has been used over time, beginning with the original use:

Office and warehouse.

Currently used as a recycling business.

Sources:

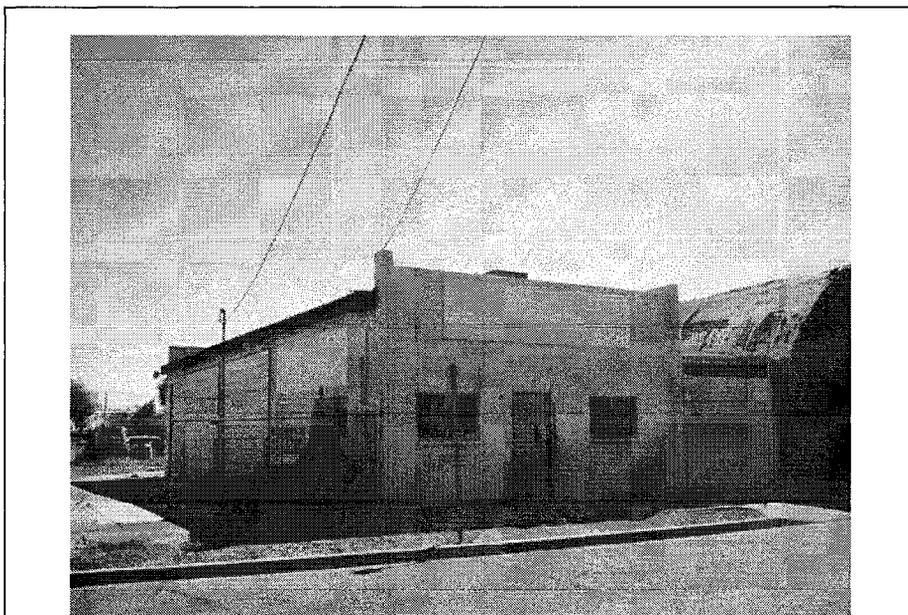
PHOTO INFORMATION

Date of photo: 11 October 2004

View Direction (looking towards):

East

Negative No.: 274



**SIGNIFICANCE**

To be eligible for the Phoenix/Arizona/National Register, a property must represent an important part of the history or architecture of an area. Note: a property need only be significant under one of the areas below to be eligible.

- A. HISTORIC EVENTS/TRENDS (Describe how the property is associated either with a significant historic event or with a trend or pattern of events important to the history of the nation, the state, or the local community.) SEE CONTINUATION SHEET
- B. PERSONS (Describe how the property is associated with the life of a person significant in the past.) SEE CONTINUATION SHEET
- C. ARCHITECTURE (Describe how the property embodies the distinctive characteristics of a type, period, or method of construction, or represents the work of a master, or possesses high artistic values.) SEE CONTINUATION SHEET

**INTEGRITY**

To be eligible for the Phoenix/Arizona/National Register, a property must have integrity, that is, it must be able to visually convey its importance. Provide detailed information below about the property's integrity. Use continuation sheets if necessary.

- 1. LOCATION  Original Site  Moved date: \_\_\_\_\_ Original Site: \_\_\_\_\_
- 2. DESIGN (Describe alterations from the original design, including dates—known or estimated—when alterations were made)  
20<sup>th</sup> century commercial style building
- 3. SETTING (Describe the natural and/or built environment around the property)  
Located within a light industrial / commercial area, just south of E. Washington Street, north of Sky Harbor Airport.  
Describe how the setting has changed since the property's period of significance:  
Setting has become progressively more light industrial since the building's construction.
- 4. MATERIALS (Describe the materials used in the following elements of the property)  
Walls (structure): Concrete block Foundation: Concrete slab Roof: Flat with parapets  
Windows: Aluminum frame with concrete block sills  
Wall Sheathing: Exposed structural concrete block
- 5. WORKMANSHIP (Describe the distinctive elements, if any, of craftsmanship or method of construction)

**NATIONAL REGISTER STATUS (if listed, check the appropriate box)**

Individually listed  Contributor  Non-contributor to \_\_\_\_\_ Historic District  
Date Listed: \_\_\_\_\_  Determined eligible by keeper of National Register date: \_\_\_\_\_

**RECOMMENDATIONS OF ELIGIBILITY (opinion of HPO staff or survey consultant)**

Property  is  is not eligible individually.  
Property  is  is not eligible as a contributor to a potential historic district.  
 More information needed to evaluate  
If not considered eligible, state reason: \_\_\_\_\_

**FORM COMPLETED BY**

Name and Affiliation: Kirsten Erickson, URS Corporation Date: 5 January 2005  
Mailing Address: 7720 N. 16<sup>th</sup> Street, Ste. 100, Phoenix, Arizona 85020 Phone No.: 602-371-1100

**STATE OF ARIZONA**

**HISTORIC PROPERTY INVENTORY FORM  
CONTINUATION SHEET**

**PROPERTY DESCRIPTION**

The commercial building is a one-story, rectangular shaped concrete block structure. The exterior wall surface is exposed structural concrete block and the foundation is concrete slab. The roof is flat with parapets extending above the roofline on the front (west) and rear (east) of the building. The roof is either built-up or clad with composition roll. There is one single entry, metal door on the front of the building and two aluminum framed sliding windows with concrete block sills. Both windows and the door are protected with iron security grills.

**SIGNIFICANCE**

This property is associated with the light industrial development of the Portland Tract that began in the late 1950s. This building was constructed on the footprint of an earlier auto repair shop that is depicted on the 1958 Sanborn Fire Insurance map. Construction on the current building occurred in 1965. The 1965 city directory identifies the tenant of this building as Arizona Aerosol Chemical Corporation. The building is utilitarian in function and is not a significant representative of any important historical themes. The property is not eligible under Criterion A. Research did not reveal any associations with important persons and therefore the building is not eligible under Criterion B. The property is a simple, utilitarian concrete block building typical of light industrial or commercial facilities and is not eligible under Criterion C. Further study of the building is unlikely to yield important information and therefore is not eligible under Criterion D.

STATE OF ARIZONA

HISTORIC PROPERTY INVENTORY FORM

Please type or print clearly. Fill out each applicable space accurately and with as much information as is known about the property. Use continuation sheets where necessary. Send completed forms to City of Phoenix Historic Preservation Office, 200 W. Washington, 17th Floor, Phoenix, AZ 85003 for listing on Phoenix Historic Property Register, or Arizona State Historic Preservation Office, 1300 W. Washington, Phoenix, AZ 85007 for listing on Arizona/National Register of Historic Places.

PROPERTY IDENTIFICATION

For properties identified through survey: Site No: 12-ADP Survey Area: Phoenix Sky Harbor International Airport Development Program

Historic Name(s): Valley National Bank / Bell Paint and Body Shop

(Enter the name(s), if any, that best reflects the property's historic importance.)

Address: 17 S. 42nd Street

City or Town: Phoenix vicinity County: Maricopa Tax Parcel No.: 124-06-002

Township: 1N Range: 4E Section: 7 Quarter Section: NW 1/4 Acreage: <1

Block: 10-13 Lot(s): 2 Plat (Addition): Portland Tract Year of Plat: 1923

UTM reference: Zone: Easting: Northing: USGS 7.5' quad map: Tempe

Architect: not determined known source:

Builder: not determined known source:

Construction Date: late 1940s estimated known source:

STRUCTURAL CONDITION:

Good (Well-maintained; no serious problems apparent)

Fair (Some problems apparent) Describe: A trailer fire that occurred in the adjacent lot to the south damaged the Quonset.

Damage occurred to the roof and heat blew out the glass of the front windows. Window openings currently covered with sheet metal.

Poor (Major problems; imminent threat) Describe:

Ruin/Uninhabitable

USES/FUNCTIONS

Describe how the property has been used over time, beginning with the original use:

Drive-through bank, auto body shop

Sources:

PHOTO INFORMATION

Date of photo: 11 October 2004

View Direction (looking towards):

Northeast

Negative No.: 276



**SIGNIFICANCE**

To be eligible for the Phoenix/Arizona/National Register, a property must represent an important part of the history or architecture of an area. Note: a property need only be significant under one of the areas below to be eligible.

- A. HISTORIC EVENTS/TRENDS (Describe how the property is associated either with a significant historic event or with a trend or pattern of events important to the history of the nation, the state, or the local community.) SEE CONTINUATION SHEET
- B. PERSONS (Describe how the property is associated with the life of a person significant in the past.) SEE CONTINUATION SHEET
- C. ARCHITECTURE (Describe how the property embodies the distinctive characteristics of a type, period, or method of construction, or represents the work of a master, or possesses high artistic values.) SEE CONTINUATION SHEET

**INTEGRITY**

To be eligible for the Phoenix/Arizona/National Register, a property must have integrity, that is, it must be able to visually convey its importance. Provide detailed information below about the property's integrity. Use continuation sheets if necessary.

- 1. LOCATION  Original Site  Moved date: late 1950s Original Site: Possibly 14<sup>th</sup> Street & McDowell Road
- 2. DESIGN (Describe alterations from the original design, including dates—known or estimated—when alterations were made)  
Quonset hut. Front porch overhang possibly added. Front window openings are covered with sheet metal and the original entry has been modified. A concrete block addition was added to the rear of the Quonset and the original drive-through window has been removed.
- 3. SETTING (Describe the natural and/or built environment around the property)  
Located within a light industrial / commercial area, south of East Washington Street and north of Sky Harbor Airport.  
Describe how the setting has changed since the property's period of significance:  
Number of light industrial properties in the building's vicinity has increased since construction
- 4. MATERIALS (Describe the materials used in the following elements of the property)  
Walls (structure): Steel frame Quonset hut Foundation: Concrete slab Roof: Barrel vault  
Windows: None visible; front window openings covered with sheet metal.  
Wall Sheathing: Corrugated sheet metal
- 5. WORKMANSHIP (Describe the distinctive elements, if any, of craftsmanship or method of construction)  
**SEE CONTINUATION SHEET**

**NATIONAL REGISTER STATUS (if listed, check the appropriate box)**

Individually listed  Contributor  Non-contributor to \_\_\_\_\_ Historic District  
Date Listed: \_\_\_\_\_  Determined eligible by keeper of National Register date: \_\_\_\_\_

**RECOMMENDATIONS OF ELIGIBILITY (opinion of HPO staff or survey consultant)**

Property  is  is not eligible individually.  
Property  is  is not eligible as a contributor to a potential historic district.  
 More information needed to evaluate  
If not considered eligible, state reason: \_\_\_\_\_

**FORM COMPLETED BY**

Name and Affiliation: Kirsten Erickson, URS Corporation Date: 5 January 2005  
Mailing Address: 7720 N. 16<sup>th</sup> Street, Ste. 100, Phoenix, Arizona 85020 Phone No.: 602-371-1100

**STATE OF ARIZONA**

**HISTORIC PROPERTY INVENTORY FORM  
CONTINUATION SHEET**

**PROPERTY DESCRIPTION**

The commercial/light industrial building located at 17 S. 42<sup>nd</sup> Street is a steel-framed Quonset hut that faces west. The Quonset appears to have a concrete slab foundation. The exterior walls are corrugated metal and the barrel vault roof is covered with remnants of a fire resistant coating that has been damaged. There is a single, wood entry on the front of the building. The front of the building is covered with sheet metal concealing all of the window openings. There is a flat roofed, concrete block addition to the rear of the building.

A trailer fire in the adjacent lot damaged the fire resistant coating on the roof and caused the windows that were once in the front of the building to blow out. Other modifications to the building include the rear addition that was completed in 1955 and replacement of the front entry. Once used as a drive-through bank, the Quonset's drive-through window has been replaced with a sliding door.

**SIGNIFICANCE**

The Quonset hut at 17 S. 42<sup>nd</sup> Street was constructed in the late 1940s, but was not moved to the Portland Tract until the mid 1950s. The building is not visible on the circa 1954 aerial photograph. The Quonset is depicted on the 1958 Sanborn Fire Insurance map as an auto body shop with concrete floors. The map shows a small noncombustible addition constructed with steel beams and six-inch concrete block, a concrete floor, and metal deck roof. The addition was likely constructed soon after the Quonset was moved onto its current location.

Quonset huts were first utilized by the military during World War II. Surplus Quonsets were later sold to civilians for residential use during the post-war housing shortage or for use in commercial or industrial purposes. The prefabricated Quonsets were designed to be easily assembled and disassembled so that the buildings could be moved quickly. Mrs. Ewart, the owner of the property, states that this Quonset hut was originally used as a drive-through bank by Valley National Bank in downtown Phoenix, and that it was reportedly the first drive-through bank in the city. Mrs. Ewart's late husband, Fred Smith, who operated Arizona House Movers, purchased and moved the Quonset to its current location in the 1950s. City directories indicate that the Plaza Auto Paint and Body Company property occupied the building after it was moved to the Portland Tract.

Although the Quonset was reportedly used by the Valley National Bank as a drive-through, the drive-through window itself has been removed and it's opening replaced. In addition, the Quonset has been moved from the bank's original location, and the building is no longer representative of this era of its history. Therefore, the Quonset was evaluated within the context of the light industrial and commercial development of the Portland Tract in the mid to late 1950s. Within this context, the Quonset does not appear to possess sufficient significance to be considered eligible for the National Register. Research did not reveal any associations with important persons and therefore the building is not eligible under Criterion B.

The building is an example of a Quonset hut that were once used by the military for temporary structures and later sold to the public during the housing shortage that occurred after World War II. Very few of these once common structures have been preserved, although there are at least three additional Quonsets within the Portland Tract outside of the current project area. However, the Quonset hut at 17 S. 42<sup>nd</sup> Street has been modified and damaged by fire and does not appear to be eligible under Criterion C. Further study of the building is unlikely to yield important information and therefore is not eligible under Criterion D.

STATE OF ARIZONA

HISTORIC PROPERTY INVENTORY FORM

Please type or print clearly. Fill out each applicable space accurately and with as much information as is known about the property. Use continuation sheets where necessary. Send completed forms to City of Phoenix Historic Preservation Office, 200 W. Washington, 17th Floor, Phoenix, AZ 85003 for listing on Phoenix Historic Property Register, or Arizona State Historic Preservation Office, 1300 W. Washington, Phoenix, AZ 85007 for listing on Arizona/National Register of Historic Places.

PROPERTY IDENTIFICATION

For properties identified through survey: Site No: 13-ADP Survey Area: Phoenix Sky Harbor International Airport Development Program

Historic Name(s): (Enter the name(s), if any, that best reflects the property's historic importance.)

Address: 23 S. 42nd Street

City or Town: Phoenix vicinity County: Maricopa Tax Parcel No.: 124-06-022

Township: 1N Range: 4E Section: 7 Quarter Section: NW1/4 Acreage: <1

Block: 8 Lot(s): 3 Plat (Addition): Portland Tract Year of Plat: 1923

UTM reference: Zone: Easting: Northing: USGS 7.5' quad map: Tempe

Architect: not determined known source:

Builder: Clarence Peet, Inc. not determined known source: City of Phoenix Developmental Services Dept.

Construction Date: 1963 estimated known source: City of Phoenix Developmental Services Dept.

STRUCTURAL CONDITION:

Good (Well-maintained; no serious problems apparent)

Fair (Some problems apparent) Describe:

Poor (Major problems; imminent threat) Describe:

Ruin/Uninhabitable

USES/FUNCTIONS

Describe how the property has been used over time, beginning with the original use:

Shop

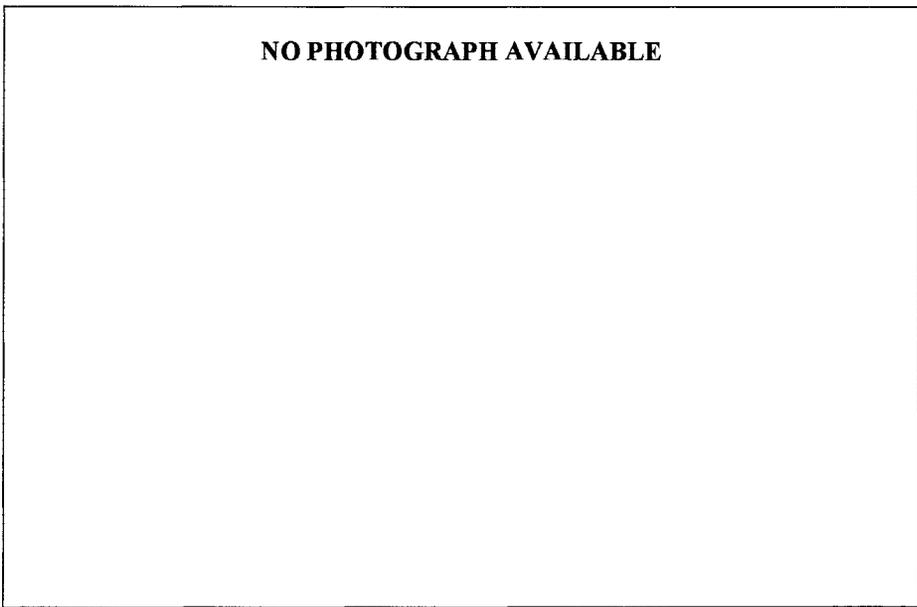
Sources:

PHOTO INFORMATION

Date of photo:

View Direction (looking towards):

Negative No.:



**SIGNIFICANCE**

To be eligible for the Phoenix/Arizona/National Register, a property must represent an important part of the history or architecture of an area. Note: a property need only be significant under one of the areas below to be eligible.

- A. HISTORIC EVENTS/TRENDS (Describe how the property is associated either with a significant historic event or with a trend or pattern of events important to the history of the nation, the state, or the local community.) SEE CONTINUATION SHEET
- B. PERSONS (Describe how the property is associated with the life of a person significant in the past.) SEE CONTINUATION SHEET
- C. ARCHITECTURE (Describe how the property embodies the distinctive characteristics of a type, period, or method of construction, or represents the work of a master, or possesses high artistic values.) SEE CONTINUATION SHEET

**INTEGRITY**

To be eligible for the Phoenix/Arizona/National Register, a property must have integrity, that is, it must be able to visually convey its importance. Provide detailed information below about the property's integrity. Use continuation sheets if necessary.

- 1. LOCATION  Original Site  Moved date: \_\_\_\_\_ Original Site: \_\_\_\_\_
- 2. DESIGN (Describe alterations from the original design, including dates—known or estimated—when alterations were made)  
Style: utilitarian concrete block and wood frame box
- 3. SETTING (Describe the natural and/or built environment around the property)  
Located within a light industrial / commercial area, south of East Washington Street and north of Sky Harbor Airport.  
Describe how the setting has changed since the property's period of significance:  
Number of light industrial properties in the building's vicinity has increased since construction
- 4. MATERIALS (Describe the materials used in the following elements of the property)  
Walls (structure): Concrete block Foundation: Concrete slab Roof: Shed  
Windows: N/A  
Wall Sheathing: Exposed structural concrete block
- 5. WORKMANSHIP (Describe the distinctive elements, if any, of craftsmanship or method of construction)

**NATIONAL REGISTER STATUS (if listed, check the appropriate box)**

Individually listed  Contributor  Non-contributor to \_\_\_\_\_ Historic District  
Date Listed: \_\_\_\_\_  Determined eligible by keeper of National Register date: \_\_\_\_\_

**RECOMMENDATIONS OF ELIGIBILITY (opinion of HPO staff or survey consultant)**

Property  is  is not eligible individually.  
Property  is  is not eligible as a contributor to a potential historic district.  
 More information needed to evaluate  
If not considered eligible, state reason: \_\_\_\_\_

**FORM COMPLETED BY**

Name and Affiliation: Kirsten Erickson, URS Corporation Date: 5 January 2005  
Mailing Address: 7720 N. 16<sup>th</sup> Street, Ste. 100, Phoenix, Arizona 85020 Phone No.: 602-371-1100

**STATE OF ARIZONA**

**HISTORIC PROPERTY INVENTORY FORM  
CONTINUATION SHEET**

**PROPERTY DESCRIPTION**

The building is concrete block and wood frame structure with a shed roof. Access to this property was denied, but views from the street and adjacent properties indicate that much of the structural material of this building appears modern. The shop building has three walls and the front (west) of the structure is open.

**SIGNIFICANCE**

The building at 23 S. 42<sup>nd</sup> Street was constructed in 1963. No city directory information was located for this building, but city building permit records indicate that the original owners of the property were Herb Porter and Marla Smith (Ewart) who applied for a permit to build on the lot on 7 March 1963. The shop building is currently associated with the adjacent parcel to the north (17 S. 42<sup>nd</sup> Street) and may have been associated with this building historically. The building at 23 S. 42<sup>nd</sup> Street is associated with the later, light industrial development of the Portland Tract, and does not possess any significant values or represent any significant historic themes, and is not eligible for the National Register under Criterion A. Research did not reveal any associations with important persons and therefore the building is not eligible under Criterion B. The building is a utilitarian open shop building with a simple design. It is not eligible under Criterion C. Further study of the building is unlikely to yield important information and therefore is not eligible under Criterion D.

STATE OF ARIZONA

HISTORIC PROPERTY INVENTORY FORM

Please type or print clearly. Fill out each applicable space accurately and with as much information as is known about the property. Use continuation sheets where necessary. Send completed forms to City of Phoenix Historic Preservation Office, 200 W. Washington, 17th Floor, Phoenix, AZ 85003 for listing on Phoenix Historic Property Register, or Arizona State Historic Preservation Office, 1300 W. Washington, Phoenix, AZ 85007 for listing on Arizona/National Register of Historic Places.

PROPERTY IDENTIFICATION

For properties identified through survey: Site No: 14-ADP Survey Area: Phoenix Sky Harbor International Airport Development Program
Historic Name(s): Colonial Duntex Tile Contractor

(Enter the name(s), if any, that best reflects the property's historic importance.)

Address: 27 S. 42nd Street
City or Town: Phoenix vicinity County: Maricopa Tax Parcel No.: 124-06-022

Township: 1N Range: 4E Section: 7 Quarter Section: NW1/4 Acreage: <1
Block: 8 Lot(s): 4 Plat (Addition): Portland Tract Year of Plat: 1923
UTM reference: Zone: Easting: Northing: USGS 7.5' quad map: Tempe

Architect: not determined known source:
Builder: L.J. Coffey not determined known source: City of Phoenix Developmental Services Dept.
Construction Date: 1959 estimated known source: City of Phoenix Developmental Services Dept.

STRUCTURAL CONDITION:

Good (Well-maintained; no serious problems apparent)
Fair (Some problems apparent) Describe:
Poor (Major problems; imminent threat) Describe:
Ruin/Uninhabitable

USES/FUNCTIONS

Describe how the property has been used over time, beginning with the original use:

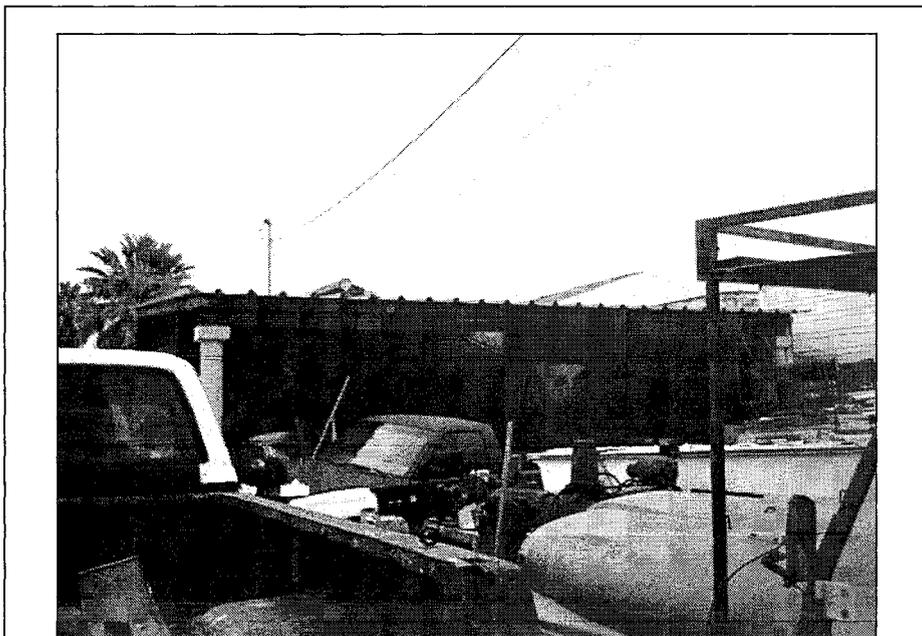
Used primarily has a roofing tile manufacturing company. Currently used for storage.

Sources: James Wools, owner

PHOTO INFORMATION

Date of photo: 12 November 2004
View Direction (looking towards): East

Negative No.: 348



**SIGNIFICANCE**

To be eligible for the Phoenix/Arizona/National Register, a property must represent an important part of the history or architecture of an area. Note: a property need only be significant under one of the areas below to be eligible.

- A. HISTORIC EVENTS/TRENDS (Describe how the property is associated either with a significant historic event or with a trend or pattern of events important to the history of the nation, the state, or the local community.) SEE CONTINUATION SHEET
- B. PERSONS (Describe how the property is associated with the life of a person significant in the past.) SEE CONTINUATION SHEET
- C. ARCHITECTURE (Describe how the property embodies the distinctive characteristics of a type, period, or method of construction, or represents the work of a master, or possesses high artistic values.) SEE CONTINUATION SHEET

**INTEGRITY**

To be eligible for the Phoenix/Arizona/National Register, a property must have integrity, that is, it must be able to visually convey its importance. Provide detailed information below about the property's integrity. Use continuation sheets if necessary.

- 1. LOCATION  Original Site  Moved date: \_\_\_\_\_ Original Site: \_\_\_\_\_
- 2. DESIGN (Describe alterations from the original design, including dates—known or estimated—when alterations were made)  
Style: utilitarian wood and metal frame box. Shed-roofed porch/awning was added to the front and shed roofed open addition on the rear were completed sometime after original construction.
- 3. SETTING (Describe the natural and/or built environment around the property)  
Located within a light industrial / commercial area, south of East Washington Street and north of Sky Harbor Airport.  
Describe how the setting has changed since the property's period of significance:  
Number of light industrial properties in the building's vicinity has increased since construction
- 4. MATERIALS (Describe the materials used in the following elements of the property)  
Walls (structure): Wood and metal frame Foundation: Concrete slab Roof: Front gable  
Windows: None  
Wall Sheathing: Corrugated metal; some horizontal wood siding on the northeast corner of the structure
- 5. WORKMANSHIP (Describe the distinctive elements, if any, of craftsmanship or method of construction)  
\_\_\_\_\_

**NATIONAL REGISTER STATUS (if listed, check the appropriate box)**

Individually listed  Contributor  Non-contributor to \_\_\_\_\_ Historic District  
Date Listed: \_\_\_\_\_  Determined eligible by keeper of National Register date: \_\_\_\_\_

**RECOMMENDATIONS OF ELIGIBILITY (opinion of HPO staff or survey consultant)**

Property  is  is not eligible individually.  
Property  is  is not eligible as a contributor to a potential historic district.  
 More information needed to evaluate  
If not considered eligible, state reason: SEE CONTINUATION SHEET

**FORM COMPLETED BY**

Name and Affiliation: Kirsten Erickson, URS Corporation Date: 5 January 2005  
Mailing Address: 7720 N. 16<sup>th</sup> Street, Ste. 100, Phoenix, Arizona 85020 Phone No.: 602-371-1100

**STATE OF ARIZONA**

**HISTORIC PROPERTY INVENTORY FORM  
CONTINUATION SHEET**

**PROPERTY DESCRIPTION**

The building is a one-story, rectangular structure that faces west. The building has a wood frame structure with some metal frame reinforcements. Most of the exterior wall surface is clad with corrugated metal, although a portion of the building near the northeast corner is clad with horizontal wood siding, which may be the original wall cladding. The front gable roof is clad with concrete tile and has exposed rafter ends. The front of the building has a large entrance opening with no door and there is an air conditioning unit installed in the front wall. A corrugated metal awning has been added to the front of the building, and is supported by concrete pillars. There are no windows on the front of the building.

The rear or east side of the building has a large vehicle-sized entrance with no door. There is a shed roofed addition attached to the rear of the building that has walls on the south and east sides, but is open on the north side. The north side of the building has one entrance opening with no door and one single entry with a wood paneled door. A window opening has been covered with corrugated metal. The south side of the building was not accessible.

**SIGNIFICANCE**

The building at 27 S. 42<sup>nd</sup> Street was constructed in 1959. The Colonial Duntex Tile Company occupied the property throughout its history. The current owner, Mr. James Wools leased the property from its owner, Julius Yost, until he purchased the property in 1979. The property is currently used for storage. City building permit files indicate that a permit was issued for the construction of a 24- by 48-foot building with metal siding and a tile roof on 19 June 1959. The building does not appear on the 1958 Sanborn Fire Insurance map, indicating that the 1959 construction year is correct.

The building at 27 S. 42<sup>nd</sup> Street is associated with the later, light industrial development of the Portland Tract, and does not possess any significant values or represent any significant historic themes, and is not eligible for the National Register under Criterion A. Research did not reveal any associations with important persons and therefore the building is not eligible under Criterion B. The building is a utilitarian building with a simple design. It is not eligible under Criterion C. Further study of the building is unlikely to yield important information and therefore is not eligible under Criterion D.

STATE OF ARIZONA

HISTORIC PROPERTY INVENTORY FORM

Please type or print clearly. Fill out each applicable space accurately and with as much information as is known about the property. Use continuation sheets where necessary. Send completed forms to City of Phoenix Historic Preservation Office, 200 W. Washington, 17th Floor, Phoenix, AZ 85003 for listing on Phoenix Historic Property Register, or Arizona State Historic Preservation Office, 1300 W. Washington, Phoenix, AZ 85007 for listing on Arizona/National Register of Historic Places.

PROPERTY IDENTIFICATION

For properties identified through survey: Site No: 15-ADP Survey Area: Phoenix Sky Harbor International Airport Development Program

Historic Name(s):

(Enter the name(s), if any, that best reflects the property's historic importance.)

Address: 55 S. 42nd Street

City or Town: Phoenix vicinity County: Maricopa Tax Parcel No.: 124-06-022

Township: 1N Range: 4E Section: 7 Quarter Section: NW 1/4 Acreage: <1

Block: 8 Lot(s): 6 Plat (Addition): Portland Tract Year of Plat: 1923

UTM reference: Zone: Easting: Northing: USGS 7.5' quad map: Tempe

Architect: not determined known source:

Builder: not determined known source:

Construction Date: 1957-1960 estimated known source:

STRUCTURAL CONDITION:

Good (Well-maintained; no serious problems apparent)

Fair (Some problems apparent) Describe:

Poor (Major problems; imminent threat) Describe:

Ruin/Uninhabitable

USES/FUNCTIONS

Describe how the property has been used over time, beginning with the original use:

Auto repair, greenhouse, storage

Sources: 1960 Phoenix City Directory, Ewart 2004

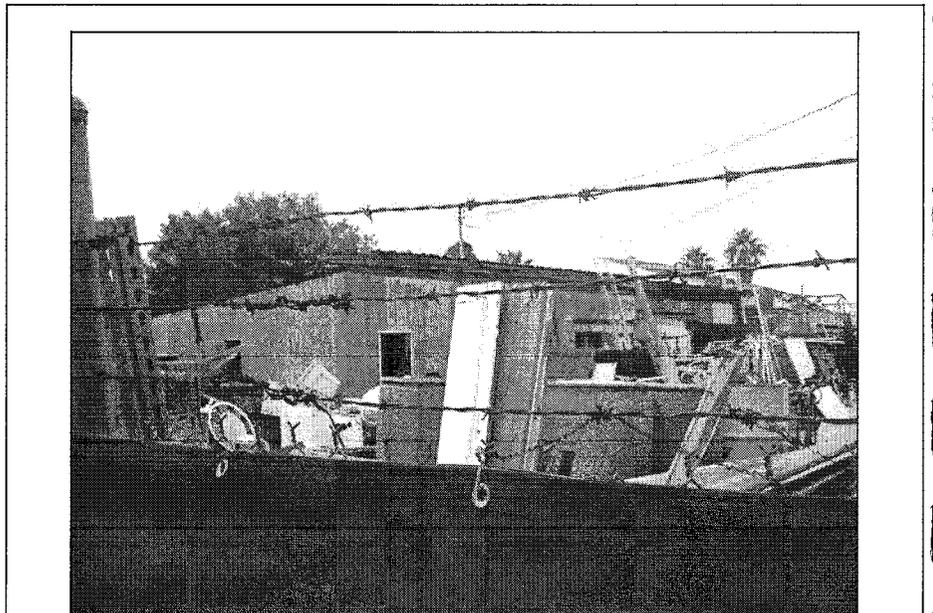
PHOTO INFORMATION

Date of photo: 12 November 2004

View Direction (looking towards):

Northeast

Negative No.: 351



**SIGNIFICANCE**

To be eligible for the Phoenix/Arizona/National Register, a property must represent an important part of the history or architecture of an area. Note: a property need only be significant under one of the areas below to be eligible.

- A. HISTORIC EVENTS/TRENDS (Describe how the property is associated either with a significant historic event or with a trend or pattern of events important to the history of the nation, the state, or the local community.) **SEE CONTINUATION SHEET**
- B. PERSONS (Describe how the property is associated with the life of a person significant in the past.) **SEE CONTINUATION SHEET**
- C. ARCHITECTURE (Describe how the property embodies the distinctive characteristics of a type, period, or method of construction, or represents the work of a master, or possesses high artistic values.) **SEE CONTINUATION SHEET**

**INTEGRITY**

To be eligible for the Phoenix/Arizona/National Register, a property must have integrity, that is, it must be able to visually convey its importance. Provide detailed information below about the property's integrity. Use continuation sheets if necessary.

- 1. LOCATION  Original Site  Moved date: \_\_\_\_\_ Original Site: \_\_\_\_\_
- 2. DESIGN (Describe alterations from the original design, including dates—known or estimated—when alterations were made)  
Style: utilitarian metal clad box
- 3. SETTING (Describe the natural and/or built environment around the property)  
Located within a light industrial / commercial area, south of East Washington Street and north of Sky Harbor Airport  
Describe how the setting has changed since the property's period of significance:  
Number of light industrial properties in the building's vicinity has increased since construction
- 4. MATERIALS (Describe the materials used in the following elements of the property)  
Walls (structure): Wood frame Foundation: Concrete slab Roof: Shed  
Windows: None visible  
Wall Sheathing: Corrugated metal
- 5. WORKMANSHIP (Describe the distinctive elements, if any, of craftsmanship or method of construction)

**NATIONAL REGISTER STATUS (if listed, check the appropriate box)**

Individually listed  Contributor  Non-contributor to \_\_\_\_\_ Historic District  
Date Listed: \_\_\_\_\_  Determined eligible by keeper of National Register date: \_\_\_\_\_

**RECOMMENDATIONS OF ELIGIBILITY (opinion of HPO staff or survey consultant)**

Property  is  is not eligible individually.  
Property  is  is not eligible as a contributor to a potential historic district.  
 More information needed to evaluate  
If not considered eligible, state reason: SEE CONTINUATION SHEET

**FORM COMPLETED BY**

Name and Affiliation: Kirsten Erickson, URS Corporation Date: 5 January 2005  
Mailing Address: 7720 N. 16<sup>th</sup> Street, Ste. 100, Phoenix, Arizona 85020 Phone No.: 602-371-1100

**STATE OF ARIZONA**

**HISTORIC PROPERTY INVENTORY FORM  
CONTINUATION SHEET**

**PROPERTY DESCRIPTION**

This property was not immediately accessible, but views from the street and adjacent properties indicate that the building is likely wood frame and may have a concrete slab foundation. The shed roof is clad with corrugated and standing seam metal and has exposed rafter ends. The 1958 Sanborn map indicates a one-story, open structure with an earth floor located in this parcel that is labeled auto body repair. Portions of the building indicated on the Sanborn map may be integrated into the current structure.

**SIGNIFICANCE**

The metal-clad building at 55 S. 42<sup>nd</sup> Street was constructed in the late 1950s. City directories indicate that Stan Lillard Rebuilding Services, an auto repair shop, occupied the building in 1960. The building is associated with the later, light industrial development of the Portland Tract, and does not possess any significant values or represent any significant historic themes, and is not eligible for the National Register under Criterion A. Research did not reveal any associations with important persons and therefore the building is not eligible under Criterion B. The building is a utilitarian building with a simple design. It is not eligible under Criterion C. Further study of the building is unlikely to yield important information and therefore is not eligible under Criterion D.

STATE OF ARIZONA

HISTORIC PROPERTY INVENTORY FORM

Please type or print clearly. Fill out each applicable space accurately and with as much information as is known about the property. Use continuation sheets where necessary. Send completed forms to City of Phoenix Historic Preservation Office, 200 W. Washington, 17th Floor, Phoenix, AZ 85003 for listing on Phoenix Historic Property Register, or Arizona State Historic Preservation Office, 1300 W. Washington, Phoenix, AZ 85007 for listing on Arizona/National Register of Historic Places.

PROPERTY IDENTIFICATION

For properties identified through survey: Site No: 16-ADP Survey Area: Phoenix Sky Harbor International Airport Development Program

Historic Name(s): (Enter the name(s), if any, that best reflects the property's historic importance.)

Address: 26 S. 42nd Place

City or Town: Phoenix vicinity County: Maricopa Tax Parcel No.: 124-06-008

Township: 1N Range: 4E Section: 7 Quarter Section: NW1/4 Acreage: <1

Block: 8 Lot(s): 8 Plat (Addition): Portland Tract Year of Plat: 1923

UTM reference: Zone: Easting: Northing: USGS 7.5' quad map: Tempe

Architect: not determined known source:

Builder: not determined known source:

Construction Date: 1939 estimated known source: Maricopa County Assessor

STRUCTURAL CONDITION:

Good (Well-maintained; no serious problems apparent)

Fair (Some problems apparent) Describe:

Poor (Major problems; imminent threat) Describe:

Ruin/Uninhabitable

USES/FUNCTIONS

Describe how the property has been used over time, beginning with the original use:

Concrete products warehouse.

Currently used as a wood working shop.

Sources:

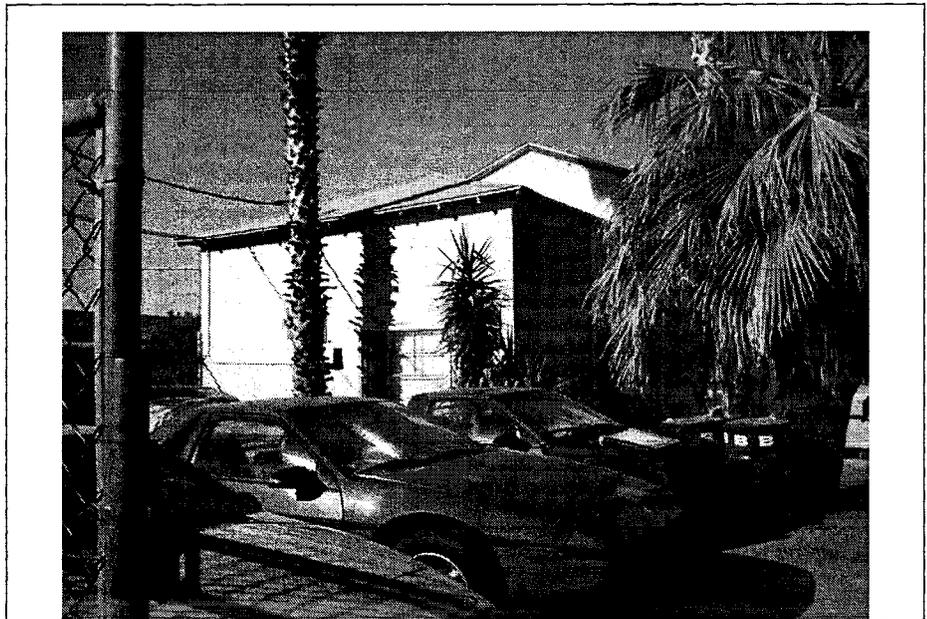
PHOTO INFORMATION

Date of photo: 11 October 2004

View Direction (looking towards):

Southwest

Negative No.: 259



**SIGNIFICANCE**

To be eligible for the Phoenix/Arizona/National Register, a property must represent an important part of the history or architecture of an area. Note: a property need only be significant under one of the areas below to be eligible.

- A. HISTORIC EVENTS/TRENDS (Describe how the property is associated either with a significant historic event or with a trend or pattern of events important to the history of the nation, the state, or the local community.) SEE CONTINUATION SHEET
- B. PERSONS (Describe how the property is associated with the life of a person significant in the past.) SEE CONTINUATION SHEET
- C. ARCHITECTURE (Describe how the property embodies the distinctive characteristics of a type, period, or method of construction, or represents the work of a master, or possesses high artistic values.) SEE CONTINUATION SHEET

**INTEGRITY**

To be eligible for the Phoenix/Arizona/National Register, a property must have integrity, that is, it must be able to visually convey its importance. Provide detailed information below about the property's integrity. Use continuation sheets if necessary.

- 1. LOCATION  Original Site  Moved date: ca. 1955-1958 Original Site: unknown
- 2. DESIGN (Describe alterations from the original design, including dates—known or estimated—when alterations were made)  
Style: possesses characteristics of the transitional ranch style  
Vents installed in gable ends; some windows have been replaced or boarded over; original vehicle bay doors replaced or modified. Dates unknown.
- 3. SETTING (Describe the natural and/or built environment around the property)  
Located within a light industrial / commercial area, south of East Washington Street and north of Sky Harbor Airport.  
Describe how the setting has changed since the property's period of significance:  
Number of light industrial properties in the building's vicinity has increased since construction
- 4. MATERIALS (Describe the materials used in the following elements of the property)  
Walls (structure): Wood frame Foundation: Concrete slab Roof: Hipped and side gable  
Windows: Steel frame casement and hopper windows  
Wall Sheathing: Stucco over chicken wire
- 5. WORKMANSHIP (Describe the distinctive elements, if any, of craftsmanship or method of construction)

**NATIONAL REGISTER STATUS (if listed, check the appropriate box)**

Individually listed  Contributor  Non-contributor to \_\_\_\_\_ Historic District  
Date Listed: \_\_\_\_\_  Determined eligible by keeper of National Register date: \_\_\_\_\_

**RECOMMENDATIONS OF ELIGIBILITY (opinion of HPO staff or survey consultant)**

Property  is  is not eligible individually.  
Property  is  is not eligible as a contributor to a potential historic district.  
 More information needed to evaluate  
If not considered eligible, state reason: SEE CONTINUATION SHEET

**FORM COMPLETED BY**

Name and Affiliation: Kirsten Erickson, URS Corporation Date: 6 January 2005  
Mailing Address: 7720 N. 16<sup>th</sup> Street, Ste. 100, Phoenix, Arizona 85020 Phone No.: 602-371-1100

**STATE OF ARIZONA**

**HISTORIC PROPERTY INVENTORY FORM  
CONTINUATION SHEET**

**PROPERTY DESCRIPTION**

The building is a combination warehouse and office building (being used for manufacturing custom furniture). It faces north and was moved to its current location. The construction of the building is wood frame and the exterior wall surface is stucco applied over chicken wire. The foundation is concrete slab. The warehouse portion of the building has side gable roof that is higher than the small office portion of the building, which has a hipped roof with exposed rafter ends. Both portions of the roof are clad with composition shingles.

The warehouse or workshop portion of the building has five bays with wood sliding doors in metal tracks. These doors are plywood and are likely not original or are modifications of the original doors. The interior of the building is bare wood frame with no wall surfacing or dry wall. The roof is supported by wood trusses and the roof itself is constructed with horizontal boards. Variations in the concrete floor and framing suggest four of the five bays may have been an addition to the original building.

The west side of the building has no features other than a vent in the gable end that was likely installed after the original construction and an air conditioning unit mounted against the wall and is supported by a metal shelf. The office portion of the building has a single entry door on the north side and combination fixed and casement window on the east side. The left portion of the window consists of a four-light casement window and the right portion of the window is a 4 over 1-light fixed window. The window has a metal frame with wood sills and surrounds.

The south side of the building was not accessible at the time of inventory. There are five window openings visible from the interior of the building that are boarded over. Most of these windows are wood framed hopper windows. One has been replaced by a modern sliding window.

**SIGNIFICANCE**

The building at 26 S. 42<sup>nd</sup> Place is depicted on the 1958 Sanborn map as a one-story, concrete products warehouse with a composition roof. Maricopa County Assessor's information indicates that the building was constructed in 1939, which is consistent with some of the building's architectural features such as the windows, and the hipped roof and exposed rafter ends on the office portion of the building. However, the location of 26 S. 42<sup>nd</sup> Place is vacant on the circa 1954 aerial of the Portland Tract and the project area, indicating that this building was moved onto the property sometime after 1954. Where the building was moved from is unknown, but the current tenant of the building believes it was moved from the Tovrea Stockyards complex, located to the east of the Portland Tract. No evidence was found to support this.

Although the building is the oldest property in the APM project area, it was moved to its current location from somewhere outside of the Portland Tract and is no longer within its original context. It does not possess any significant values or represent any significant historic themes, and is not eligible for the National Register under Criterion A. Research did not reveal any associations with important persons and therefore the building is not eligible under Criterion B. The building does not possess any significant architectural values that would warrant its preservation under Criterion C. Further study of the building is unlikely to yield important information and therefore is not eligible under Criterion D.

STATE OF ARIZONA

HISTORIC PROPERTY INVENTORY FORM

Please type or print clearly. Fill out each applicable space accurately and with as much information as is known about the property. Use continuation sheets where necessary. Send completed forms to City of Phoenix Historic Preservation Office, 200 W. Washington, 17th Floor, Phoenix, AZ 85003 for listing on Phoenix Historic Property Register, or Arizona State Historic Preservation Office, 1300 W. Washington, Phoenix, AZ 85007 for listing on Arizona/National Register of Historic Places.

PROPERTY IDENTIFICATION

For properties identified through survey: Site No: 17-ADP Survey Area: Phoenix Sky Harbor International Airport Development Program

Historic Name(s): Stewart Concrete & Pipe

(Enter the name(s), if any, that best reflects the property's historic importance.)

Address: 4218 E. Madison Street

City or Town: Phoenix vicinity County: Maricopa Tax Parcel No.: 124-06-022

Township: 1N Range: 4E Section: 7 Quarter Section: NW 1/4 Acreage: <1

Block: 8 Lot(s): 19-22 Plat (Addition): Portland Tract Year of Plat: 1923

UTM reference: Zone: Easting: Northing: USGS 7.5' quad map: Tempe

Architect: not determined known source:

Builder: not determined known source:

Construction Date: 1965 estimated known source:

STRUCTURAL CONDITION:

Good (Well-maintained; no serious problems apparent)

Fair (Some problems apparent) Describe:

Poor (Major problems; imminent threat) Describe:

Ruin/Uninhabitable

USES/FUNCTIONS

Describe how the property has been used over time, beginning with the original use:

Office for concrete and pipe company

Sources:

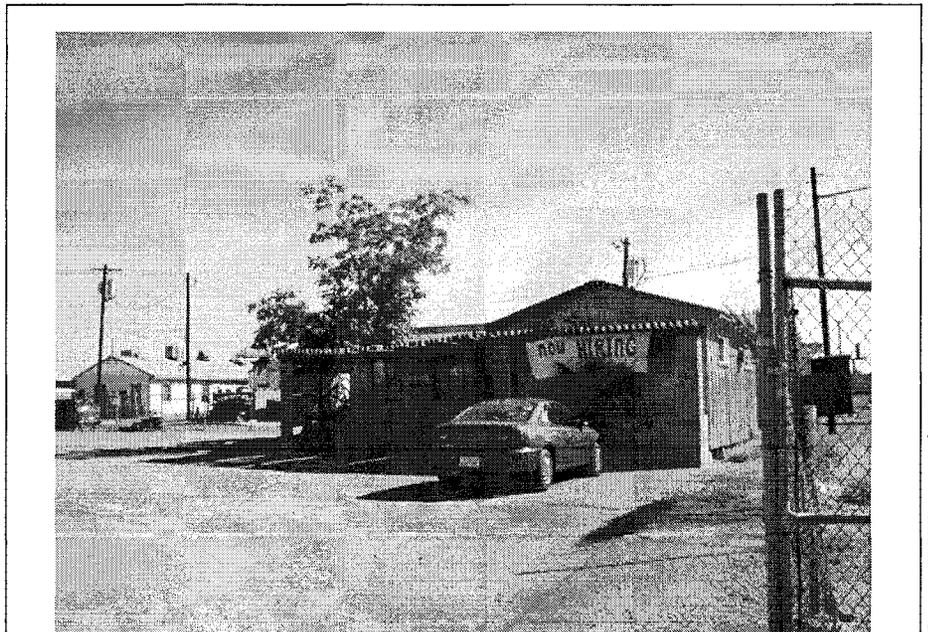
PHOTO INFORMATION

Date of photo: 11 October 2004

View Direction (looking towards):

East

Negative No.: 267



**SIGNIFICANCE**

To be eligible for the Phoenix/Arizona/National Register, a property must represent an important part of the history or architecture of an area. Note: a property need only be significant under one of the areas below to be eligible.

- A. HISTORIC EVENTS/TRENDS (Describe how the property is associated either with a significant historic event or with a trend or pattern of events important to the history of the nation, the state, or the local community.) **SEE CONTINUATION SHEET**
- B. PERSONS (Describe how the property is associated with the life of a person significant in the past.) **SEE CONTINUATION SHEET**
- C. ARCHITECTURE (Describe how the property embodies the distinctive characteristics of a type, period, or method of construction, or represents the work of a master, or possesses high artistic values.) **SEE CONTINUATION SHEET**

**INTEGRITY**

To be eligible for the Phoenix/Arizona/National Register, a property must have integrity, that is, it must be able to visually convey its importance. Provide detailed information below about the property's integrity. Use continuation sheets if necessary.

- 1. LOCATION  Original Site  Moved date: \_\_\_\_\_ Original Site: \_\_\_\_\_
- 2. DESIGN (Describe alterations from the original design, including dates—known or estimated—when alterations were made)  
Style: utilitarian board and batten wood frame building with some ranch style characteristics
- 3. SETTING (Describe the natural and/or built environment around the property)  
Located within a light industrial / commercial area, south of East Washington Street  
Describe how the setting has changed since the property's period of significance:  
Number of light industrial properties in the building's vicinity has increased since construction
- 4. MATERIALS (Describe the materials used in the following elements of the property)  
Walls (structure): Wood frame Foundation: Concrete piers Roof: Cross gable with a flat roofed porch addition within the "L"  
Windows: Sliding; aluminum frame with wood surrounds  
Wall Sheathing: Board and batten plywood
- 5. WORKMANSHIP (Describe the distinctive elements, if any, of craftsmanship or method of construction)

**NATIONAL REGISTER STATUS (if listed, check the appropriate box)**

Individually listed  Contributor  Non-contributor to \_\_\_\_\_ Historic District  
Date Listed: \_\_\_\_\_  Determined eligible by keeper of National Register date: \_\_\_\_\_

**RECOMMENDATIONS OF ELIGIBILITY (opinion of HPO staff or survey consultant)**

Property  is  is not eligible individually.  
Property  is  is not eligible as a contributor to a potential historic district.  
 More information needed to evaluate  
If not considered eligible, state reason: SEE CONTINUATION SHEET

**FORM COMPLETED BY**

Name and Affiliation: Kirsten Erickson, URS Corporation Date: 6 January 2005  
Mailing Address: 7720 N. 16<sup>th</sup> Street, Ste. 100, Phoenix, Arizona 85020 Phone No.: 602-371-1100

STATE OF ARIZONA

HISTORIC PROPERTY INVENTORY FORM  
CONTINUATION SHEET

PROPERTY DESCRIPTION

The building is an L-shaped, one-story structure that faces west. The wood frame building has no foundation and sits on concrete piers. The exterior wall surface is board and batten plywood. The gable roof is clad with composition shingles and there is a single entry wood door on the front of the building. There is a porch located within the "L" of the building that has a frame roof and brick supports. The windows are metal frame, modern sliding windows with wood surrounds.

There is an additional single entry door and one window on the north side of the building. There are three windows and one window opening that is boarded over on the east side of the building, and there are 2 windows and one window opening that has been filled with an air conditioner on the south side of the building.

SIGNIFICANCE

According to Arlen Stewart, current owner of Stewart Concrete and Pipe that has relocated to the east valley, his father leased the property at 4218 E. Madison in the 1950s, and used a concrete block building on an adjacent lot. On the 1958 Sanborn map, the lots on which the building currently sits are vacant, but is labeled 'concrete pipe manufacturing yard,' which is consistent with Mr. Stewart's memory. The north side of the current wood frame building was constructed in 1965 on-site and placed on piers so that it would be portable, since the Stewart's were only leasing the property. The south side of the L-shaped building was constructed in 1972.

The Stewart Concrete and Pipe building is associated with the later, light industrial development of the Portland Tract, and does not possess any significant values or represent any significant historic themes, and is not eligible for the National Register under Criterion A. Research did not reveal any associations with important persons and therefore the building is not eligible under Criterion B. The building is a utilitarian building and is an example of a common type of office or headquarters building that might be associated with a light industrial business. It is not eligible under Criterion C. Further study of the building is unlikely to yield important information and therefore is not eligible under Criterion D.

STATE OF ARIZONA

HISTORIC PROPERTY INVENTORY FORM

Please type or print clearly. Fill out each applicable space accurately and with as much information as is known about the property. Use continuation sheets where necessary. Send completed forms to City of Phoenix Historic Preservation Office, 200 W. Washington, 17th Floor, Phoenix, AZ 85003 for listing on Phoenix Historic Property Register, or Arizona State Historic Preservation Office, 1300 W. Washington, Phoenix, AZ 85007 for listing on Arizona/National Register of Historic Places.

PROPERTY IDENTIFICATION

For properties identified through survey: Site No: 18-ADP Survey Area: Phoenix Sky Harbor International Airport Development Program

Historic Name(s):

(Enter the name(s), if any, that best reflects the property's historic importance.)

Address: 31 S. 42nd Place

City or Town: Phoenix vicinity County: Maricopa Tax Parcel No.: 124-06-023B

Township: 1N Range: 4E Section: 7 Quarter Section: NW1/4 Acreage: <1

Block: 10-13 Lot(s): 1 Plat (Addition): Portland Tract Year of Plat: 1923

UTM reference: Zone: Easting: Northing: USGS 7.5' quad map: Tempe

Architect: not determined known source:

Builder: not determined known source:

Construction Date: 1960 estimated known source: Maricopa County Assessor

STRUCTURAL CONDITION:

Good (Well-maintained; no serious problems apparent)

Fair (Some problems apparent) Describe:

Poor (Major problems; imminent threat) Describe:

Ruin/Uninhabitable

USES/FUNCTIONS

Describe how the property has been used over time, beginning with the original use:

Office, shop, and warehouse.

Sources:

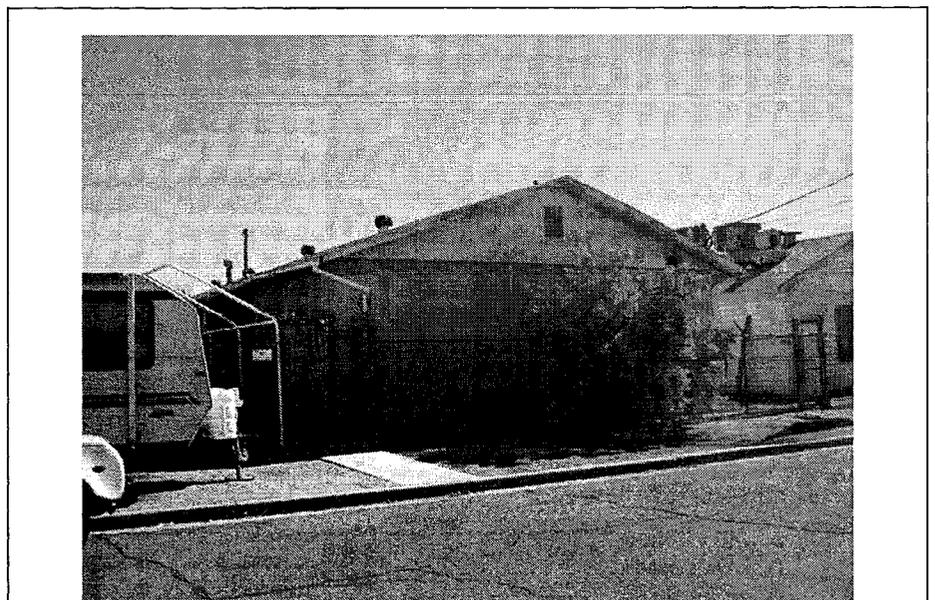
PHOTO INFORMATION

Date of photo: 3 November 2004

View Direction (looking towards):

Southeast

Negative No.: 340



**SIGNIFICANCE**

To be eligible for the Phoenix/Arizona/National Register, a property must represent an important part of the history or architecture of an area. Note: a property need only be significant under one of the areas below to be eligible.

- A. HISTORIC EVENTS/TRENDS (Describe how the property is associated either with a significant historic event or with a trend or pattern of events important to the history of the nation, the state, or the local community.) SEE CONTINUATION SHEET
- B. PERSONS (Describe how the property is associated with the life of a person significant in the past.) SEE CONTINUATION SHEET
- C. ARCHITECTURE (Describe how the property embodies the distinctive characteristics of a type, period, or method of construction, or represents the work of a master, or possesses high artistic values.) SEE CONTINUATION SHEET

**INTEGRITY**

To be eligible for the Phoenix/Arizona/National Register, a property must have integrity, that is, it must be able to visually convey its importance. Provide detailed information below about the property's integrity. Use continuation sheets if necessary.

- 1. LOCATION  Original Site  Moved date: \_\_\_\_\_ Original Site: \_\_\_\_\_
- 2. DESIGN (Describe alterations from the original design, including dates—known or estimated—when alterations were made)  
Building is a utilitarian concrete box. Masonry addition was completed on rear or the east end of the building in 1965.
- 3. SETTING (Describe the natural and/or built environment around the property)  
Located within a light industrial / commercial area, south of E. Washington Street and west of SR 153.  
Describe how the setting has changed since the property's period of significance:  
Number of light industrial properties in the building's vicinity has increased.
- 4. MATERIALS (Describe the materials used in the following elements of the property)  
Walls (structure): Concrete block Foundation: Concrete slab Roof: Side gable  
Windows: Metal framed casement windows  
Wall Sheathing: Exposed structural concrete block; east end of building has been partially covered with stucco
- 5. WORKMANSHIP (Describe the distinctive elements, if any, of craftsmanship or method of construction)

**NATIONAL REGISTER STATUS (if listed, check the appropriate box)**

Individually listed  Contributor  Non-contributor to \_\_\_\_\_ Historic District  
Date Listed: \_\_\_\_\_  Determined eligible by keeper of National Register date: \_\_\_\_\_

**RECOMMENDATIONS OF ELIGIBILITY (opinion of HPO staff or survey consultant)**

Property  is  is not eligible individually.  
Property  is  is not eligible as a contributor to a potential historic district.  
 More information needed to evaluate  
If not considered eligible, state reason: SEE CONTINUATION SHEET

**FORM COMPLETED BY**

Name and Affiliation: Kirsten Erickson, URS Corporation Date: 6 January 2005  
Mailing Address: 7720 N. 16<sup>th</sup> Street, Ste. 100, Phoenix, Arizona 85020 Phone No.: 602-371-1100

**STATE OF ARIZONA**

**HISTORIC PROPERTY INVENTORY FORM  
CONTINUATION SHEET**

**PROPERTY DESCRIPTION**

The building is a one-story, concrete block building that faces north toward the Grand Canal. It has a rectangular plan and a concrete slab foundation. The exterior wall surface consists mostly of exposed structural concrete block except for the east end of the building, which has been partially covered with stucco. The side gable roof is clad with composition shingles and the gable ends are covered with wood. There are vents in each gable end.

The north side or front of the building has a window, which consists of two fixed lights and a two-light casement window. The window has a metal frame and a concrete sill. Entrances on the north side of the building consist of a single entry, wood door and a metal roll up door, which replaced an earlier wood sliding door. There is an additional window opening on this side of the building that has been infilled with an air conditioning unit. The rear or south side of the building has only two windows—an aluminum framed sliding window and a metal framed casement window.

There are two windows and one door on the east side of the building. The windows have six lights, with 4 fixed lights and a 2-light casement window. The single entry door is wood with a metal security grille. The west side of the building has one, 2-light, metal framed casement window covered with a screen.

**SIGNIFICANCE**

City directory searches did not reveal the original inhabitant of this building, but it is currently occupied by Jakolat Machine. It was constructed in 1960 and an addition was constructed on the east side of the building in 1965. The building is associated with the later, light industrial development of the Portland Tract, and does not possess any significant values or represent any significant historic themes, and is not eligible for the National Register under Criterion A. Research did not reveal any associations with important persons and therefore the building is not eligible under Criterion B. The building is a utilitarian machine shop building and is an example of a common type of commercial or light industrial building. It is not eligible under Criterion C. Further study of the building is unlikely to yield important information and therefore is not eligible under Criterion D.

STATE OF ARIZONA

HISTORIC PROPERTY INVENTORY FORM

Please type or print clearly. Fill out each applicable space accurately and with as much information as is known about the property. Use continuation sheets where necessary. Send completed forms to City of Phoenix Historic Preservation Office, 200 W. Washington, 17th Floor, Phoenix, AZ 85003 for listing on Phoenix Historic Property Register, or Arizona State Historic Preservation Office, 1300 W. Washington, Phoenix, AZ 85007 for listing on Arizona/National Register of Historic Places.

PROPERTY IDENTIFICATION

For properties identified through survey: Site No: 19-ADP Survey Area: Program Phoenix Sky Harbor International Airport Development

Historic Name(s):

(Enter the name(s), if any, that best reflects the property's historic importance.)

Address: 37 S. 42nd Place

City or Town: Phoenix vicinity County: Maricopa Tax Parcel No.: 124-06-024B

Township: 1N Range: 4E Section: 7 Quarter Section: NW 1/4 Acreage: <1

Block: 10-13 Lot(s): 2 Plat (Addition): Portland Tract Year of Plat: 1923

UTM reference: Zone: Easting: Northing: USGS 7.5' quad map: Tempe

Architect: not determined known source:

Builder: not determined known source:

Construction Date: 1940s estimated known source:

STRUCTURAL CONDITION:

Good (Well-maintained; no serious problems apparent)

Fair (Some problems apparent) Describe:

Poor (Major problems; imminent threat) Describe:

Ruin/Uninhabitable

USES/FUNCTIONS

Describe how the property has been used over time, beginning with the original use:

Office, shop, and warehouse.

Sources:

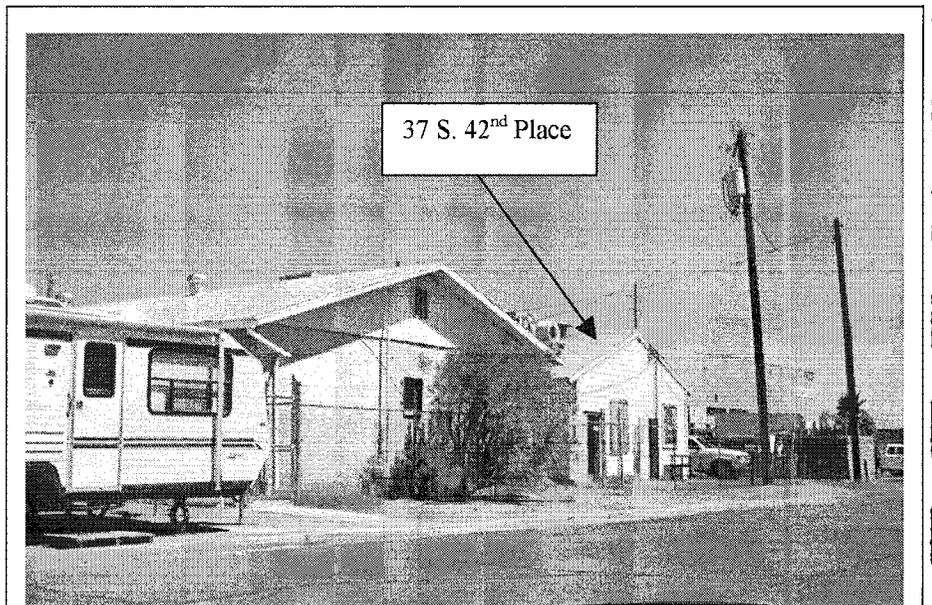
PHOTO INFORMATION

Date of photo: 17 June 2004

View Direction (looking towards):

Southeast

Negative No.: 4657



**SIGNIFICANCE**

To be eligible for the Phoenix/Arizona/National Register, a property must represent an important part of the history or architecture of an area. Note: a property need only be significant under one of the areas below to be eligible.

- A. HISTORIC EVENTS/TRENDS (Describe how the property is associated either with a significant historic event or with a trend or pattern of events important to the history of the nation, the state, or the local community.) **SEE CONTINUATION SHEET**
- B. PERSONS (Describe how the property is associated with the life of a person significant in the past.) **SEE CONTINUATION SHEET**
- C. ARCHITECTURE (Describe how the property embodies the distinctive characteristics of a type, period, or method of construction, or represents the work of a master, or possesses high artistic values.) **SEE CONTINUATION SHEET**

**INTEGRITY**

To be eligible for the Phoenix/Arizona/National Register, a property must have integrity, that is, it must be able to visually convey its importance. Provide detailed information below about the property's integrity. Use continuation sheets if necessary.

1. LOCATION  Original Site  Moved date: \_\_\_\_\_ Original Site: \_\_\_\_\_
2. DESIGN (Describe alterations from the original design, including dates—known or estimated—when alterations were made)  
Wood frame U.S. Army temporary storehouse or company administration building constructed from standardized plans during World War II
3. SETTING (Describe the natural and/or built environment around the property)  
Located within a light industrial / commercial area, south of E. Washington Street and west of SR 153.  
Describe how the setting has changed since the property's period of significance:  
Number of light industrial properties in the building's vicinity has increased.
4. MATERIALS (Describe the materials used in the following elements of the property)  
Walls (structure): Wood frame Foundation: Concrete slab Roof: Front gable  
Windows: Wood framed 6-over-6 light double hung  
Wall Sheathing: Horizontal wood siding
5. WORKMANSHIP (Describe the distinctive elements, if any, of craftsmanship or method of construction)

**NATIONAL REGISTER STATUS (if listed, check the appropriate box)**

Individually listed  Contributor  Non-contributor to \_\_\_\_\_ Historic District  
Date Listed: \_\_\_\_\_  Determined eligible by keeper of National Register date: \_\_\_\_\_

**RECOMMENDATIONS OF ELIGIBILITY (opinion of HPO staff or survey consultant)**

Property  is  is not eligible individually.  
Property  is  is not eligible as a contributor to a potential historic district.  
 More information needed to evaluate  
If not considered eligible, state reason: **SEE CONTINUATION SHEET**

**FORM COMPLETED BY**

Name and Affiliation: Kirsten Erickson, URS Corporation Date: 6 January 2005  
Mailing Address: 7720 N. 16<sup>th</sup> Street, Ste. 100, Phoenix, Arizona 85020 Phone No.: 602-371-1100

**STATE OF ARIZONA**

**HISTORIC PROPERTY INVENTORY FORM  
CONTINUATION SHEET**

**PROPERTY DESCRIPTION**

The building is a one-story, wood-frame building that faces west. Access to this property was denied, but a cursory architectural description was developed from views from the street and adjacent properties. The building has a front gable roof clad with composition shingles. The windows are six-over-six light, double-hung wood frame windows with wood sills. The exterior wall surface is clad with horizontal wood siding. There are two, single entries on the front of the building with modern doors. The design of the building is consistent with U.S. Army standardized plans for a World War II temporary storehouse or company administration building, which were commonly purchased for private use after the war (Wasch and others 1988).

**SIGNIFICANCE**

The building was evaluated within the themes of World War II military buildings and within the history of the commercial and light industrial era of development within the Portland Tract. Collins Metal Finishing currently occupies the building. Because the building is no longer within its original setting and has been modified since its original construction, it is no longer representative of its earlier history. Other than its history as a former military facility, the building does not possess any significant historic values and is not eligible under Criterion A. Research did not reveal any associations with important persons and therefore the building is not eligible under Criterion B.

The building is an example of an U.S. Army storehouse or company administration building constructed from standardized plans during World War II. This property was likely purchased from the Army after the war, although the original location of the building is unknown. The building may have possibly been moved from the Papago Park Military Reservation, but could have been moved from another army installation within the state. The building is no longer within its original context and alterations to the exterior have compromised its integrity. More intact examples of this once mass produced military building exist, and the building is not recommended eligible for the National Register under Criterion C. Further study of the building is unlikely to yield important information and therefore is not eligible under Criterion D.

STATE OF ARIZONA

HISTORIC PROPERTY INVENTORY FORM

Please type or print clearly. Fill out each applicable space accurately and with as much information as is known about the property. Use continuation sheets where necessary. Send completed forms to City of Phoenix Historic Preservation Office, 200 W. Washington, 17th Floor, Phoenix, AZ 85003 for listing on Phoenix Historic Property Register, or Arizona State Historic Preservation Office, 1300 W. Washington, Phoenix, AZ 85007 for listing on Arizona/National Register of Historic Places.

PROPERTY IDENTIFICATION

For properties identified through survey: Site No: 20-ADP Survey Area: Phoenix Sky Harbor International Airport Development Program
Historic Name(s): J.T. Richmond Tool and Die

(Enter the name(s), if any, that best reflects the property's historic importance.)

Address: 4302 E. Madison Street
City or Town: Phoenix vicinity County: Maricopa Tax Parcel No.: 124-06-037C

Township: 1N Range: 4E Section: 7 Quarter Section: NW1/4 Acreage: <1
Block: 9 Lot(s): 15 Plat (Addition): Portland Tract Year of Plat: 1923
UTM reference: Zone: Easting: Northing: USGS 7.5' quad map: Tempe

Architect: not determined known source:
Builder: not determined known source:
Construction Date: 1961 estimated known source: Maricopa County Assessor

STRUCTURAL CONDITION:

Good (Well-maintained; no serious problems apparent)
Fair (Some problems apparent) Describe:
Poor (Major problems; imminent threat) Describe:
Ruin/Uninhabitable

USES/FUNCTIONS

Describe how the property has been used over time, beginning with the original use:

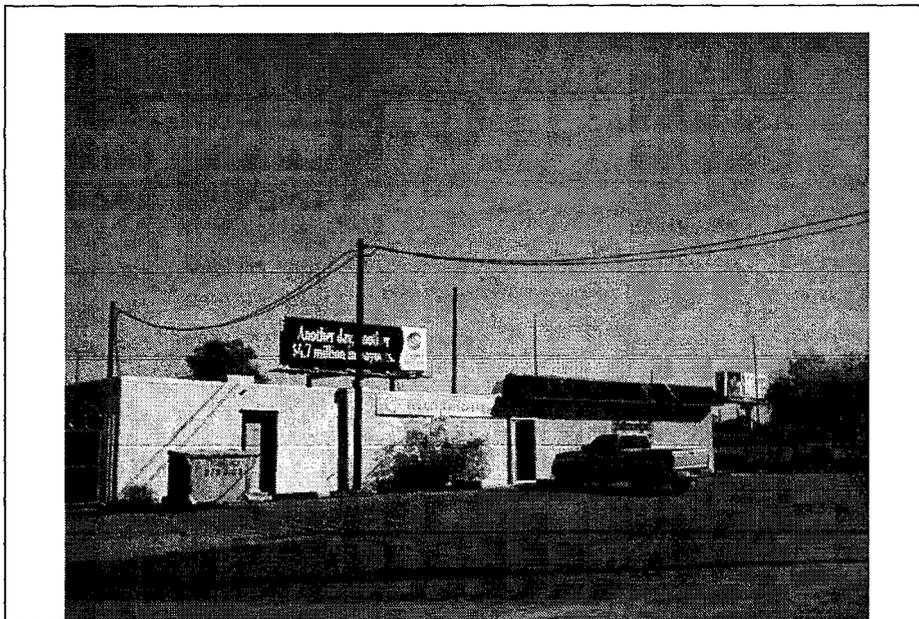
Originally used as machine shop.
Currently used as shop and offices for Galaxy Explorers Aerospace products

Sources:

PHOTO INFORMATION

Date of photo: 11 October 2004
View Direction (looking towards): North

Negative No.: 262



**SIGNIFICANCE**

To be eligible for the Phoenix/Arizona/National Register, a property must represent an important part of the history or architecture of an area. Note: a property need only be significant under one of the areas below to be eligible.

- A. HISTORIC EVENTS/TRENDS (Describe how the property is associated either with a significant historic event or with a trend or pattern of events important to the history of the nation, the state, or the local community.) **SEE CONTINUATION SHEET**
- B. PERSONS (Describe how the property is associated with the life of a person significant in the past.) **SEE CONTINUATION SHEET**
- C. ARCHITECTURE (Describe how the property embodies the distinctive characteristics of a type, period, or method of construction, or represents the work of a master, or possesses high artistic values.) **SEE CONTINUATION SHEET**

**INTEGRITY**

To be eligible for the Phoenix/Arizona/National Register, a property must have integrity, that is, it must be able to visually convey its importance. Provide detailed information below about the property's integrity. Use continuation sheets if necessary.

- 1. LOCATION  Original Site  Moved date: \_\_\_\_\_ Original Site: \_\_\_\_\_
- 2. DESIGN (Describe alterations from the original design, including dates—known or estimated—when alterations were made)  
20<sup>th</sup> century commercial style building
- 3. SETTING (Describe the natural and/or built environment around the property)  
Located within a light industrial / commercial area, east of State Route 143 and south of East Washington Street  
Describe how the setting has changed since the property's period of significance:  
Number of light industrial properties in the building's vicinity has increased since construction
- 4. MATERIALS (Describe the materials used in the following elements of the property)  
Walls (structure): Concrete block Foundation: Concrete slab Roof: Front gable with a false front; flat with eaves  
Windows: Window openings have been blocked in or converted for window air conditioning units  
Wall Sheathing: Stucco on front of building
- 5. WORKMANSHIP (Describe the distinctive elements, if any, of craftsmanship or method of construction)

**NATIONAL REGISTER STATUS (if listed, check the appropriate box)**

Individually listed  Contributor  Non-contributor to \_\_\_\_\_ Historic District  
Date Listed: \_\_\_\_\_  Determined eligible by keeper of National Register date: \_\_\_\_\_

**RECOMMENDATIONS OF ELIGIBILITY (opinion of HPO staff or survey consultant)**

Property  is  is not eligible individually.  
Property  is  is not eligible as a contributor to a potential historic district.  
 More information needed to evaluate  
If not considered eligible, state reason: **SEE CONTINUATION SHEET**

**FORM COMPLETED BY**

Name and Affiliation: Kirsten Erickson, URS Corporation Date: 6 January 2005  
Mailing Address: 7720 N. 16<sup>th</sup> Street, Ste. 100, Phoenix, Arizona 85020 Phone No.: 602-371-1100

**STATE OF ARIZONA**

**HISTORIC PROPERTY INVENTORY FORM  
CONTINUATION SHEET**

**PROPERTY DESCRIPTION**

The commercial building is located within a triangular shaped parcel on the north side of East Madison Street, east of 43<sup>rd</sup> Street, and southwest of the Grand Canal. The building has been constructed in at least four stages and is of both concrete block and wood frame construction. The exterior wall surface on the front of the building is stucco. There are two, metal, single entry doors on the front of the building. The eastern portion of the building has a front gable roof with false front parapets on the front and rear of the building. A visor roof clad with wood shingles has been attached to the front parapet.

On the east side of the building there is a vehicle bay door and a frame, lean-to addition with a shed roof. There is one, single entry door on the north side or rear of the building. The western portion of the building appears to have been constructed in two or three stages. The west half of the building has a flat roof with eaves.

City of Phoenix building permits indicate that an electrical permit was issued for the property in 1961, and the original owner, J.T. Richmond applied for a permit to construct a 20- by 20-foot foundation and to move a frame garage on the lot in 1962. The garage may be a portion of the west end of the existing structure.

**SIGNIFICANCE**

The original portion of the building was constructed for J.T. Richmond's tool and die shop. Multiple additions and renovations have occurred since its original construction, and the building is now occupied by Galaxy Explorers Aerospace Products. The building is associated with the later, light industrial development of the Portland Tract, and does not possess any significant values or represent any significant historic themes, and is not eligible for the National Register under Criterion A. Research did not reveal any associations with important persons and therefore the building is not eligible under Criterion B. The building is a utilitarian shop building and is an example of a common type of commercial or light industrial building. It is not eligible under Criterion C. Further study of the building is unlikely to yield important information and therefore is not eligible under Criterion D.

STATE OF ARIZONA

HISTORIC PROPERTY INVENTORY FORM

Please type or print clearly. Fill out each applicable space accurately and with as much information as is known about the property. Use continuation sheets where necessary. Send completed forms to City of Phoenix Historic Preservation Office, 200 W. Washington, 17th Floor, Phoenix, AZ 85003 for listing on Phoenix Historic Property Register, or Arizona State Historic Preservation Office, 1300 W. Washington, Phoenix, AZ 85007 for listing on Arizona/National Register of Historic Places.

PROPERTY IDENTIFICATION

For properties identified through survey: Site No: 21-ADP Survey Area: Phoenix Sky Harbor International Airport Development Program
Historic Name(s): Western Sealant Co.

(Enter the name(s), if any, that best reflects the property's historic importance.)
Address: 4209 E. Madison Street
City or Town: Phoenix vicinity County: Maricopa Tax Parcel No.: 124-06-042A

Township: 1N Range: 4E Section: 7 Quarter Section: NW 1/4 Acreage: <1
Block: 13 Lot(s): 5 and 6 Plat (Addition): Portland Tract Year of Plat: 1923
UTM reference: Zone: Easting: Northing: USGS 7.5' quad map: Tempe

Architect: not determined known source:
Builder: not determined known source:
Construction Date: 1960-1970 estimated known source:

STRUCTURAL CONDITION:

Good (Well-maintained; no serious problems apparent)
Fair (Some problems apparent) Describe:
Poor (Major problems; imminent threat) Describe:
Ruin/Uninhabitable

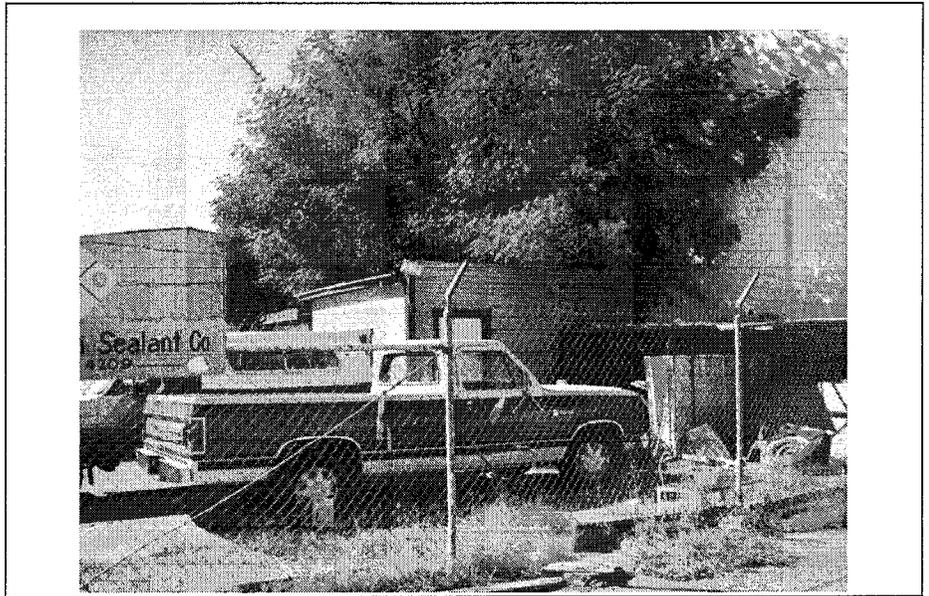
USES/FUNCTIONS

Describe how the property has been used over time, beginning with the original use:
Storage shed.

Sources:

PHOTO INFORMATION

Date of photo: 11 October 2004
View Direction (looking towards):
South
Negative No.: 272



**SIGNIFICANCE**

To be eligible for the Phoenix/Arizona/National Register, a property must represent an important part of the history or architecture of an area. Note: a property need only be significant under one of the areas below to be eligible.

- A. HISTORIC EVENTS/TRENDS (Describe how the property is associated either with a significant historic event or with a trend or pattern of events important to the history of the nation, the state, or the local community.) **SEE CONTINUATION SHEET**
- B. PERSONS (Describe how the property is associated with the life of a person significant in the past.) **SEE CONTINUATION SHEET**
- C. ARCHITECTURE (Describe how the property embodies the distinctive characteristics of a type, period, or method of construction, or represents the work of a master, or possesses high artistic values.) **SEE CONTINUATION SHEET**

**INTEGRITY**

To be eligible for the Phoenix/Arizona/National Register, a property must have integrity, that is, it must be able to visually convey its importance. Provide detailed information below about the property's integrity. Use continuation sheets if necessary.

- 1. LOCATION  Original Site  Moved date: \_\_\_\_\_ Original Site: \_\_\_\_\_
- 2. DESIGN (Describe alterations from the original design, including dates—known or estimated—when alterations were made)  
Utilitarian wood frame box. \_\_\_\_\_
- 3. SETTING (Describe the natural and/or built environment around the property)  
Located within a light industrial / commercial area, south of East Washington Street and north of Sky Harbor Airport  
Describe how the setting has changed since the property's period of significance:  
Number of light industrial properties in the building's vicinity has increased since construction \_\_\_\_\_
- 4. MATERIALS (Describe the materials used in the following elements of the property)  
Walls (structure): Wood frame Foundation: Concrete slab Roof: Flat  
Windows: Sliding; aluminum frame with wood surrounds  
Wall Sheathing: Horizontal wood siding \_\_\_\_\_
- 5. WORKMANSHIP (Describe the distinctive elements, if any, of craftsmanship or method of construction)  
\_\_\_\_\_

**NATIONAL REGISTER STATUS (if listed, check the appropriate box)**

Individually listed  Contributor  Non-contributor to \_\_\_\_\_ Historic District  
Date Listed: \_\_\_\_\_  Determined eligible by keeper of National Register date: \_\_\_\_\_

**RECOMMENDATIONS OF ELIGIBILITY (opinion of HPO staff or survey consultant)**

Property  is  is not eligible individually.  
Property  is  is not eligible as a contributor to a potential historic district.  
 More information needed to evaluate  
If not considered eligible, state reason: **SEE CONTINUATION SHEET**

**FORM COMPLETED BY**

Name and Affiliation: Kirsten Erickson, URS Corporation Date: 6 January 2005  
Mailing Address: 7720 N. 16<sup>th</sup> Street, Ste. 100, Phoenix, Arizona 85020 Phone No.: 602-371-1100

**STATE OF ARIZONA**

**HISTORIC PROPERTY INVENTORY FORM  
CONTINUATION SHEET**

**PROPERTY DESCRIPTION**

The outbuilding is a simple, one-story wood frame structure. The exterior wall surface is horizontal wood siding and the foundation is likely a concrete slab. The roof is flat with a small false front extending above it on the front (north) of the building. There is a single entry metal door on the front of the building with a wood surround. There is one set of paired aluminum framed sliding windows with wood surrounds on the east side of the building. There is a small, flat roofed addition or extension on the rear of the building that has a lower roofline.

**SIGNIFICANCE**

The Western Sealant Company shed is associated with the later, light industrial development of the Portland Tract. Although Maricopa County Assessor's records indicate a construction year of 1946 for the property, the parcel is depicted as vacant on both the circa 1954 aerial photograph and on the 1958 Sanborn map. The shed does not possess any significant values or represent any significant historic themes and is not eligible for the National Register under Criterion A. Research did not reveal any associations with important persons and therefore the building is not eligible under Criterion B. The building is a utilitarian shed with a simple design and is not eligible under Criterion C. Further study of the building is unlikely to yield important information and therefore is not eligible under Criterion D.

**APPENDIX C**

---

---

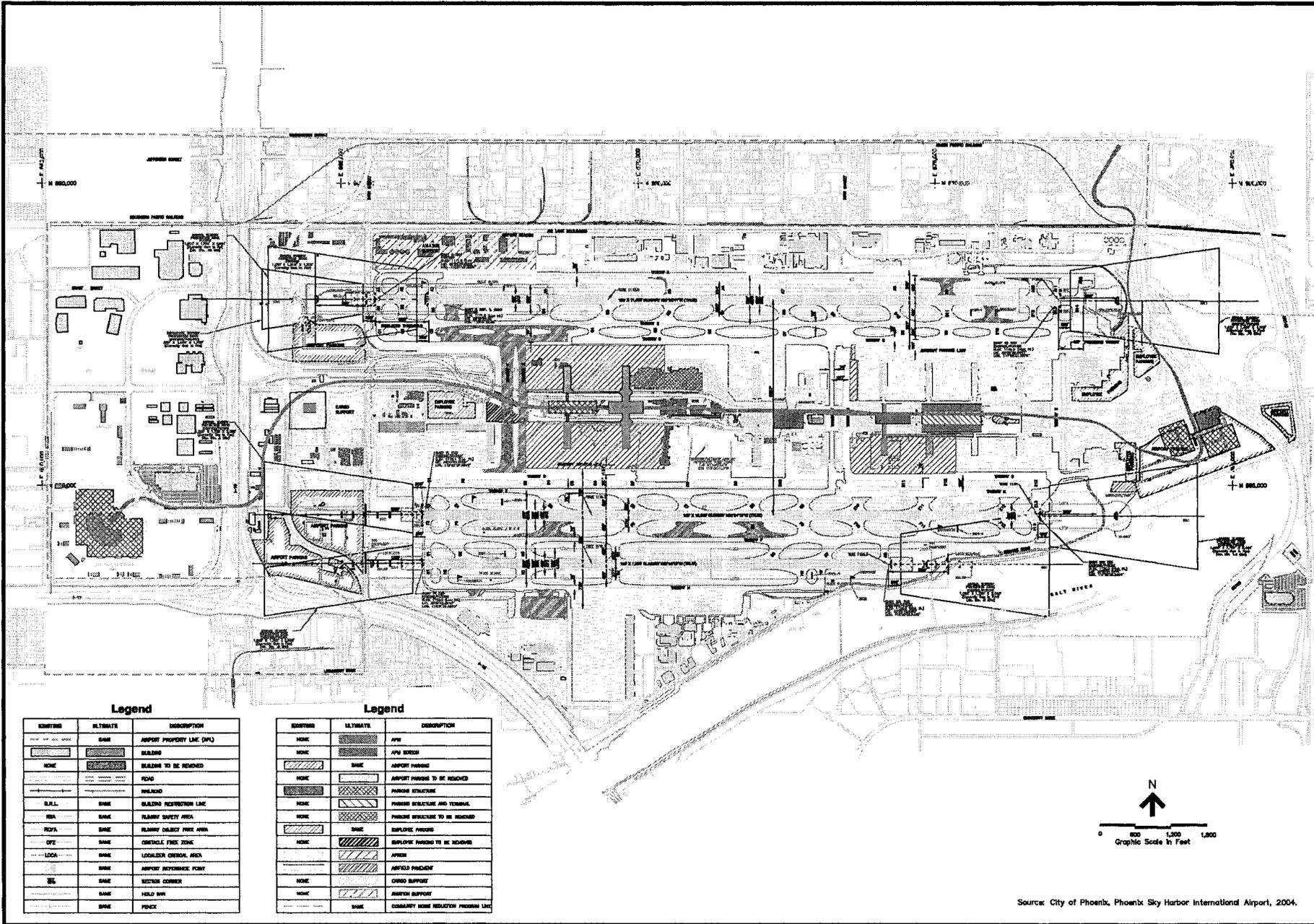
**Existing Facilities and Proposed Developments**



Phoenix Sky Harbor  
International Airport

EXISTING FACILITIES AND PROPOSED DEVELOPMENTS

Attachment 1

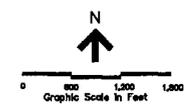


Legend

EXISTING	ULTIMATE	DESCRIPTION
[Symbol]	[Symbol]	AIRPORT PROPERTY LINE (APL)
[Symbol]	[Symbol]	BUILDING
[Symbol]	[Symbol]	BUILDING TO BE REMOVED
[Symbol]	[Symbol]	ROAD
[Symbol]	[Symbol]	UNPAVED
[Symbol]	[Symbol]	GLAZED RESTRICTION LINE
[Symbol]	[Symbol]	FLARE SAFETY AREA
[Symbol]	[Symbol]	FLARE SAFETY FREE AREA
[Symbol]	[Symbol]	OBSTACLE FREE ZONE
[Symbol]	[Symbol]	LOCALIZER CHANNEL AREA
[Symbol]	[Symbol]	AIRPORT REVERSE POINT
[Symbol]	[Symbol]	SECTION CORNER
[Symbol]	[Symbol]	FIELD BSR
[Symbol]	[Symbol]	FENCE

Legend

EXISTING	ULTIMATE	DESCRIPTION
[Symbol]	[Symbol]	APU
[Symbol]	[Symbol]	APU BAY
[Symbol]	[Symbol]	AIRPORT PARKING
[Symbol]	[Symbol]	AIRPORT PARKING TO BE REMOVED
[Symbol]	[Symbol]	PARKING STRUCTURE
[Symbol]	[Symbol]	PARKING STRUCTURE AND TERMINAL
[Symbol]	[Symbol]	PARKING STRUCTURE TO BE REMOVED
[Symbol]	[Symbol]	EMPLOYEE PARKING
[Symbol]	[Symbol]	EMPLOYEE PARKING TO BE REMOVED
[Symbol]	[Symbol]	APRON
[Symbol]	[Symbol]	AIRFIELD PERIMETER
[Symbol]	[Symbol]	CRASH SUPPORT
[Symbol]	[Symbol]	AVIATION SUPPORT
[Symbol]	[Symbol]	COMBINARY NOISE REDUCTION PROGRAM LINE



Source: City of Phoenix, Phoenix Sky Harbor International Airport, 2004.

**APPENDIX D**

---

---

**Agency and Tribal Coordination Documentation**



U.S. Department  
of Transportation  
Federal Aviation  
Administration

Western-Pacific Region  
Airports Division

P.O. Box 92007  
Los Angeles, CA 90009

MAR 11 2005

The Honorable Joni Ramos, President  
Salt River Pima-Maricopa Indian Community  
10005 E. Osborn Road  
Scottsdale, Arizona 85256

Dear President Ramos:

Phoenix Sky Harbor International Airport  
Phoenix, Arizona  
Section 106 Coordination

The Federal Aviation Administration (FAA) is in the process of preparing a Draft Environmental Impact Statement (EIS), pursuant to the National Environmental Policy Act of 1969, for proposed terminal development at Phoenix Sky Harbor International Airport (PHX). A Memorandum of Agreement (MOA) was executed on June 25, 1993, regarding development of PHX. Signatories to the MOA included the FAA, Advisory Council on Historic Preservation, and Arizona State Historic Preservation Officer. Concurring parties included the City of Phoenix, Gila River Indian Community and Salt River Pima-Maricopa Indian Community.

The proposed undertaking includes the following projects:

- Demolition of Terminal 2 and ancillary facilities,
- Construction and operation of a 33-gate West Terminal Complex and related construction of access roads, concourses, aprons, airline areas and structural and surface parking areas,
- Modifications to Terminal 4, Concourse N4 International Gates,
- Construction and operation of two crossfield Taxiways Uniform "U" and Victor "V",
- Realignment of Sky Harbor Boulevard,
- Construction and operations of the Automated People Mover (APM) Stage 2, including acquisition of approximately twenty-one acres of land to accommodate the proposed APM maintenance control and storage facility and APM station to connect with the Valley Metro Light Train Transit System.

The Cultural Resource Survey entitled, *Historical, Archaeological and Traditional Cultural Places Technical Report*, dated March 2005 has been enclosed for your review. If your community has an interest in or concerns about the project, we invite you to participate in the Section 106 consultations.

We expect to distribute a Draft Environmental Impact Statement (DEIS) for public review in Spring 2005, and we will send you a copy. Please contact me at 310/725-3637 if you have any questions or require additional information.

Sincerely,

ORIGINAL SIGNED BY  
JENNIFER MENDELSON

Jennifer Mendelsohn  
Environmental Protection Specialist

Enclosure

cc: Dezbah Hatathli, Acting Cultural Programs Supervisor  
Hans Klose, Community Development Director  
Kelly Washington, Acting Cultural Resources Dept. Director  
Todd Bostwick, Phoenix City Archaeologist  
Barbara Stocklin, Phoenix CHPO  
Joe Nucci, Tempe CHPO  
Chris Hacker, City of Phoenix  
✓A.E. (Gene) Rogge, URS



U.S Department  
of Transportation

Federal Aviation  
Administration

Western-Pacific Region  
Airports Division

P.O. Box 92007  
Los Angeles, CA 90009

MAR 11 2005

The Honorable Richard Narcia, Governor  
Gila River Indian Community  
P.O. Box 97  
Sacaton, Arizona 85247

Dear Governor Narcia:

Phoenix Sky Harbor International Airport  
Phoenix, Arizona  
Section 106 Coordination

The Federal Aviation Administration (FAA) is in the process of preparing a Draft Environmental Impact Statement (EIS), pursuant to the National Environmental Policy Act of 1969, for proposed terminal development at Phoenix Sky Harbor International Airport (PHX). A Memorandum of Agreement (MOA) was executed on June 25, 1993, regarding development of PHX. Signatories to the MOA included the FAA, Advisory Council on Historic Preservation, and Arizona State Historic Preservation Officer. Concurring parties included the City of Phoenix, Gila River Indian Community and Salt River Pima-Maricopa Indian Community.

The proposed undertaking includes the following projects:

- Demolition of Terminal 2 and ancillary facilities,
- Construction and operation of a 33-gate West Terminal Complex and related construction of access roads, concourses, aprons, airline areas and structural and surface parking areas,
- Modifications to Terminal 4, Concourse N4 International Gates,
- Construction and operation of two crossfield Taxiways Uniform "U" and Victor "V",
- Realignment of Sky Harbor Boulevard,
- Construction and operations of the Automated People Mover (APM) Stage 2, including acquisition of approximately twenty-one acres of land to accommodate the proposed APM maintenance control and storage facility and APM station to connect with the Valley Metro Light Train Transit System.

The Cultural Resource Survey entitled, *Historical, Archaeological and Traditional Cultural Places Technical Report*, dated March 2005 has been enclosed for your review. If your community has an interest in or concerns about the project, we invite you to participate in the Section 106 consultations.

We expect to distribute a Draft Environmental Impact Statement (DEIS) for public review in Spring 2005, and we will send you a copy. Please contact me at 310/725-3637 if you have any questions or require additional information.

Sincerely,

**ORIGINAL SIGNED BY  
JENNIFER MENDELSON**

Jennifer Mendelsohn  
Environmental Protection Specialist

Enclosure

- cc: Barnaby Lewis, GRIC Cultural Resources Management Program
- Todd Bostwick, Phoenix City Archaeologist
- Barbara Stocklin, Phoenix CHPO
- Joe Nucci, Tempe CHPO
- Chris Hacker, City of Phoenix
- A.E. (Gene) Rogge, URS



U.S. Department  
of Transportation  
Federal Aviation  
Administration

Western-Pacific Region  
Airports Division

P.O. Box 92007  
Los Angeles, CA 90009

MAR 11 2005

The Honorable Wayne Taylor, Jr., Chairman  
Hopi Tribe  
P.O. Box 123  
Kykotsmovi, Arizona 86039

Dear Chairman Taylor:

Phoenix Sky Harbor International Airport  
Phoenix, Arizona  
Section 106 Coordination

The Federal Aviation Administration (FAA) is in the process of preparing a Draft Environmental Impact Statement (EIS), pursuant to the National Environmental Policy Act of 1969, for proposed terminal development at Phoenix Sky Harbor International Airport (PHX). A Memorandum of Agreement (MOA) was executed on June 25, 1993, regarding development of PHX. Signatories to the MOA included the FAA, Advisory Council on Historic Preservation, and Arizona State Historic Preservation Officer. Concurring parties included the City of Phoenix, Gila River Indian Community and Salt River Pima-Maricopa Indian Community.

The proposed undertaking includes the following projects:

- Demolition of Terminal 2 and ancillary facilities,
- Construction and operation of a 33-gate West Terminal Complex and related construction of access roads, concourses, aprons, airline areas and structural and surface parking areas,
- Modifications to Terminal 4, Concourse N4 International Gates,
- Construction and operation of two crossfield Taxiways Uniform "U" and Victor "V",
- Realignment of Sky Harbor Boulevard,
- Construction and operations of the Automated People Mover (APM) Stage 2, including acquisition of approximately twenty-one acres of land to accommodate the proposed APM maintenance control and storage facility and APM station to connect with the Valley Metro Light Train Transit System.

The Cultural Resource Survey entitled, *Historical, Archaeological and Traditional Cultural Places Technical Report*, dated March 2005 has been enclosed for your review. If your community has an interest in or concerns about the project, we invite you to participate in the Section 106 consultations.

We expect to distribute a Draft Environmental Impact Statement (DEIS) for public review in Spring 2005, and we will send you a copy. Please contact me at 310/725-3637 if you have any questions or require additional information.

Sincerely,  
ORIGINAL SIGNED BY  
JENNIFER MENDELSON

Jennifer Mendelsohn  
Environmental Protection Specialist

Enclosure

cc: Leigh Kuwanwisiwma/Terry Morgart, Hopi Cultural Preservation Office  
Todd Bostwick, Phoenix City Archaeologist  
Barbara Stocklin, Phoenix CHPO  
Joe Nucci, Tempe CHPO  
Chris Hacker, City of Phoenix  
A.E. (Gene) Rogge, URS



U.S Department  
of Transportation  
Federal Aviation  
Administration

Western-Pacific Region  
Airports Division

P.O. Box 92007  
Los Angeles, CA 90009

MAR 11 2005

The Honorable Clinton Pattea, President  
Fort McDowell Yavapai Nation  
P.O. Box 17779  
Fountain Hills, Arizona 85269

Dear President Pattea:

Phoenix Sky Harbor International Airport  
Phoenix, Arizona  
Section 106 Coordination

The Federal Aviation Administration (FAA) is in the process of preparing a Draft Environmental Impact Statement (EIS), pursuant to the National Environmental Policy Act of 1969, for proposed terminal development at Phoenix Sky Harbor International Airport (PHX). A Memorandum of Agreement (MOA) was executed on June 25, 1993, regarding development of PHX. Signatories to the MOA included the FAA, Advisory Council on Historic Preservation, and Arizona State Historic Preservation Officer. Concurring parties included the City of Phoenix, Gila River Indian Community and Salt River Pima-Maricopa Indian Community.

The proposed undertaking includes the following projects:

- Demolition of Terminal 2 and ancillary facilities,
- Construction and operation of a 33-gate West Terminal Complex and related construction of access roads, concourses, aprons, airline areas and structural and surface parking areas,
- Modifications to Terminal 4, Concourse N4 International Gates,
- Construction and operation of two crossfield Taxiways Uniform "U" and Victor "V",
- Realignment of Sky Harbor Boulevard,
- Construction and operations of the Automated People Mover (APM) Stage 2, including acquisition of approximately twenty-one acres of land to accommodate the proposed APM maintenance control and storage facility and APM station to connect with the Valley Metro Light Train Transit System.

The Cultural Resource Survey entitled, *Historical, Archaeological and Traditional Cultural Places Technical Report*, dated March 2005 has been enclosed for your review. If your community has an interest in or concerns about the project, we invite you to participate in the Section 106 consultations.

We expect to distribute a Draft Environmental Impact Statement (DEIS) for public review in Spring 2005, and we will send you a copy. Please contact me at 310/725-3637 if you have any questions or require additional information.

Sincerely,

ORIGINAL SIGNED BY  
JENNIFER MENDELSON

Jennifer Mendelsohn  
Environmental Protection Specialist

Enclosure

cc: Marcy-Jean Mattson, FMYN Cultural Development Department  
Todd Bostwick, Phoenix City Archaeologist  
Barbara Stocklin, Phoenix CHPO  
Joe Nucci, Tempe CHPO  
Chris Hacker, City of Phoenix  
✓A.E. (Gene) Rogge, URS



U.S. Department  
of Transportation

Federal Aviation  
Administration

Western-Pacific Region  
Airports Division

P.O. Box 92007  
Los Angeles, CA 90009

MAR 15 2005

Mr. Robert Spude, Program Manager  
Cultural Resources and National Register Program  
National Park Service  
P.O. Box 728  
Santa Fe, New Mexico 87504-0728

Dear Mr. Spude:

**Phoenix Sky Harbor International Airport  
Phoenix, Arizona**

**Pueblo Grande Ruin and Irrigation Sites National Historic Landmark**

The Federal Aviation Administration (FAA) is in the process of preparing a Draft Environmental Impact Statement, pursuant to the National Environmental Policy Act of 1969, for proposed terminal development at Phoenix Sky Harbor International Airport (PHX). The proposed undertaking will provide additional facilities at PHX to meet passenger demand and improve the efficiency of airport operations.

The proposed undertaking includes the following projects:

- Demolition of Terminal 2 and ancillary facilities,
- Construction and operation of a 33-gate West Terminal Complex and related construction of access roads, concourses, aprons, airline areas and structural and surface parking areas,
- Modifications to Terminal 4, Concourse N4 International Gates,
- Construction and operation of two crossfield Taxiways Uniform "U" and Victor "V",
- Realignment of Sky Harbor Boulevard,
- Construction and operations of the Automated People Mover (APM) Stage 2, including acquisition of approximately twenty-one acres of land to accommodate the proposed APM maintenance control and storage facility and APM station to connect with the Valley Metro Light Train Transit System.

The purpose of this coordination effort is to address the potential impacts of the proposed project to National Historic Landmarks in accordance with Title 36, Code of Federal Regulations, Part 800.10(c), *Protection of Historic Properties*. The proposed project has the potential to affect the setting of the Pueblo Grande Ruin and Irrigation Sites National Historic Landmark.

The Pueblo Grande Ruin and Irrigation Sites National Historic Landmark within the Pueblo Grande Museum and Archaeological Park is located just east of the northern end of the APM Stage 2-East corridor. The part of the Pueblo Grande archaeological site within the park is listed in the National Register of Historic Places under Criteria A and D.

Please contact me at (310)725-3637 if you have any questions or require additional information.

Sincerely,

ORIGINAL SIGNED BY  
JENNIFER MENDELSON

Jennifer Mendelsohn  
Environmental Protection Specialist

Enclosure

cc: Todd Bostwick, Phoenix City Archaeologist  
Barbara Stocklin, Phoenix CHPO  
Joe Nucci, Tempe CHPO  
Chris Hacker, City of Phoenix  
A.E. (Gene) Rogge, URS



U.S. Department  
of Transportation

Federal Aviation  
Administration

Western-Pacific Region  
Airports Division

P.O. Box 92007  
Los Angeles, CA 90009

MAR 15 2005

Mr. Richard Boston, Archaeologist  
U.S. Bureau of Reclamation  
P.O. Box 81169  
Phoenix, Arizona 85069-1169

Dear Mr. Boston:

**Phoenix Sky Harbor International Airport  
Phoenix, Arizona  
Salt River Project Grand Canal**

The Federal Aviation Administration (FAA) is in the process of preparing a Draft Environmental Impact Statement, pursuant to the National Environmental Policy Act of 1969, for proposed terminal development at Phoenix Sky Harbor International Airport (PHX). The proposed undertaking will provide additional facilities at PHX to meet passenger demand and improve the efficiency of airport operations.

The proposed undertaking includes the following projects:

- Demolition of Terminal 2 and ancillary facilities,
- Construction and operation of a 33-gate West Terminal Complex and related construction of access roads, concourses, aprons, airline areas and structural and surface parking areas,
- Modifications to Terminal 4, Concourse N4 International Gates,
- Construction and operation of two crossfield Taxiways Uniform "U" and Victor "V",
- Realignment of Sky Harbor Boulevard,
- Construction and operations of the Automated People Mover (APM) Stage 2, including acquisition of approximately twenty-one acres of land to accommodate the proposed APM maintenance control and storage facility and APM station to connect with the Valley Metro Light Train Transit System.

The purpose of this consultation effort is to address the potential impacts of the proposed project to the Grand Canal. The Grand Canal is a feature of the Salt River Project (SRP) irrigation system, which is considered eligible for the National Register of Historic Places (NRHP) under Criterion A.

The APM Stage 2-East would leave the north side of the East Economy parking garage at the second floor level, and generally parallel the west side of State Route 153 north to the Union Pacific Railroad. North of the railroad, the alignment would curve to the west and then back to the northeast across the Grand Canal. The APM Stage 2-East would cross beneath the Southern Pacific Railroad under the existing bridge that carries the railroad over the depressed Sky Harbor Expressway. The APM would cross over the Grand Canal on an elevated section of guideway. The APM maintenance facility would be constructed between the railroad and canal.

The canal and railroad would not be altered. The proposed undertaking is not expected to adversely affect the historic qualities of the structures that make them eligible for the NRHP.

The Cultural Resource Survey entitled, *Historical, Archaeological and Traditional Cultural Places Technical Report*, dated March 2005 has been enclosed for your information. We would appreciate your comments on the proposed APM crossing of the Grand Canal. We expect to distribute a Draft Environmental Impact Statement (DEIS) for public review in Spring 2005, and we will send you a copy.

Please contact me at (310)725-3637 if you have any questions or require additional information.

Sincerely,

ORIGINAL SIGNED BY  
JENNIFER MENDELSON

Jennifer Mendelsohn  
Environmental Protection Specialist

Enclosure

cc: Todd Bostwick, Phoenix City Archaeologist  
Barbara Stocklin, Phoenix CHPO  
Joe Nucci, Tempe CHPO  
Chris Hacker, City of Phoenix  
A.E. (Gene) Rogge, URS



U.S. Department  
of Transportation  
Federal Aviation  
Administration

Western-Pacific Region  
Airports Division

P.O. Box 92007  
Los Angeles, CA 90009

MAR 16 2005

Mr. Don L. Klima, Director  
Office of Federal Agency Programs  
Advisory Council on Historic Preservation  
1100 Pennsylvania Avenue, NW, Room 803  
Washington, D.C. 20004-2501

Dear Mr. Klima:

**Phoenix Sky Harbor International Airport  
Phoenix, Arizona  
Pueblo Grande Ruin and Irrigation Sites National Historic Landmark and  
other National Register-Eligible Properties**

The Federal Aviation Administration (FAA) is in the process of preparing a Draft Environmental Impact Statement, pursuant to the National Environmental Policy Act of 1969, for proposed terminal development at Phoenix Sky Harbor International Airport (PHX). The proposed undertaking will provide additional facilities at PHX to meet passenger demand and improve the efficiency of airport operations.

The proposed undertaking includes the following projects:

- Demolition of Terminal 2 and ancillary facilities,
- Construction and operation of a 33-gate West Terminal Complex and related construction of access roads, concourses, aprons, airline areas and structural and surface parking areas,
- Modifications to Terminal 4, Concourse N4 International Gates,
- Construction and operation of two crossfield Taxiways Uniform "U" and Victor "V",
- Realignment of Sky Harbor Boulevard,
- Construction and operations of the Automated People Mover (APM) Stage 2, including acquisition of approximately twenty-one acres of land to accommodate the proposed APM maintenance control and storage facility and APM station to connect with the Valley Metro Light Train Transit System.

We are contacting you in compliance with regulations for Protection of Historic Properties (Title 36, Code of Federal Regulations (CFR), Part 800.6(a)(1)). This letter is intended to formally notify the Advisory Council that the proposed undertakings at PHX may adversely affect historic properties listed in or eligible for the National Register of Historic Places. In addition, we are notifying you that this project has the potential to affect the Pueblo Grande Ruin and Irrigation Sites National Historic Landmark, but in accordance with 36 CFR Part 800.10(a) special consideration has been given to protecting the landmark, and planning is being undertaken to minimize impacts. The Department of the Interior has been formally notified of the potential impacts on the Pueblo Grande Ruin

and Irrigation Sites National Historic Landmark by a letter sent to the National Park Service office in Santa Fe.

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 Federal Aviation Administration and Phoenix Aviation Department would work with the Museum Director and the Phoenix City Historic Preservation Office in defining design criteria and reviewing developing designs of the Automated People Mover Stage 2-East station and Automated People Mover maintenance, control, and storage facility. There appears to be good potential to avoid an adverse visual effect through sensitive design. The project even has potential to result in a beneficial effect by increasing public awareness of the Pueblo Grande Museum and enhancing pedestrian access from the Automated People Mover and Valley Metro Light Rail Transit stations.

To address documentation of the views of consulting parties, I am enclosing copies of letters exchanged with the National Park Service, U.S. Bureau of Reclamation, City of Phoenix Historic Preservation Office, Phoenix City Archaeologist, State Historic Preservation Office and affiliated tribes. Although only one tribe responded, known concerns of the other tribes regarding human remains and objects that might be associated with archaeological sites are addressed by a burial agreement that the City of Phoenix developed in 1995 to ensure that City of Phoenix projects comply with the Arizona Antiquities Act. Agency and public scoping meetings, and a media briefing were held in April 2001. A public workshop was held in October 2002. To date, no general public comments have expressed concerns about historic preservation issues. We plan to issue a draft Environmental Impact Statement for public review in Spring 2005.

The Cultural Resource Survey entitled, *Historical, Archaeological and Traditional Cultural Places Technical Report*, dated March 2005 has been enclosed for your information. We would appreciate your comments on the proposed project and the ongoing planning to minimize impacts to the Pueblo Grande Ruin and Irrigation Sites National Historic Landmark.

Please contact me at 310/725-3637 if you have any questions or require additional information.

Sincerely,

ORIGINAL SIGNED BY  
JENNIFER MENDELSON

Jennifer Mendelsohn  
Environmental Protection Specialist

Enclosure

cc: James Garrison, SHPO  
Todd Bostwick, Phoenix City Archaeologist  
Barbara Stocklin, Phoenix CHPO  
Joe Nucci, Tempe CHPO  
Chris Hacker, City of Phoenix  
A.E. (Gene) Rogge, URS



U.S Department  
of Transportation

Federal Aviation  
Administration

Western-Pacific Region  
Airports Division

P.O. Box 92007  
Los Angeles, CA 90009

MAR 16 2005

James Garrison  
State Historic Preservation Officer  
Arizona State Parks  
1300 W. Washington Street  
Phoenix, Arizona 85007

Dear Mr. Garrison:

**Phoenix Sky Harbor International Airport  
Phoenix, Arizona  
Section 106 Coordination**

The Federal Aviation Administration (FAA) is in the process of preparing a Draft Environmental Impact Statement, pursuant to the National Environmental Policy Act of 1969, for proposed terminal development at Phoenix Sky Harbor International Airport (PHX). The proposed undertaking will provide additional facilities at PHX to meet passenger demand and improve the efficiency of airport operations.

The proposed undertaking includes the following projects:

- Demolition of Terminal 2 and ancillary facilities,
- Construction and operation of a 33-gate West Terminal Complex and related construction of access roads, concourses, aprons, airline areas and structural and surface parking areas,
- Modifications to Terminal 4, Concourse N4 International Gates,
- Construction and operation of two crossfield Taxiways Uniform "U" and Victor "V",
- Realignment of Sky Harbor Boulevard,
- Construction and operations of the Automated People Mover (APM) Stage 2, including acquisition of approximately twenty-one acres of land to accommodate the proposed APM maintenance control and storage facility and APM station to connect with the Valley Metro Light Train Transit System.

The purpose of this consultation effort is to address the potential impacts of the proposed undertaking to historic properties and archaeological resources that occur or are likely to occur in the vicinity of the airport. The FAA has determined that the Area of Potential Effect (APE) for construction impacts encompasses approximately 432 acres (Figure 5). This area includes construction zones for demolition of Terminal 2, building the new West Terminal, constructing crossfield Taxiways U and V, realigning Sky Harbor Boulevard, modifying Concourse N4 International Gates in Terminal 4 and constructing APM Stage 2. The APE extends beyond the property line on the northeast side of the airport to include the construction and operation site for the proposed APM. The proposed APM would connect to the proposed

Valley Metro Light Rail Transit system at Washington Street on the west side of 44<sup>th</sup> Street. The APE includes all areas where activities that would disturb the ground would take place.

The FAA has determined that the APE for visual impacts encompasses approximately 5.3 square miles. It includes the airport property between 16<sup>th</sup> Street and the Hohokam Expressway (State Route 143), an area extending north from the airport boundary to Washington Street between 42<sup>nd</sup> Street and the Hohokam Expressway, the first row of parcels north of Washington Street to Van Buren Street between 44<sup>th</sup> Street and the Hohokam Expressway. The APE for visual impacts also includes the Tovrea Castle property that is situated on a prominent hill northeast of the airport.

The Cultural Resource Survey entitled, *Historical, Archaeological and Traditional Cultural Places Technical Report*, dated March 2005 has been enclosed for your review. The following archaeological resources and historic properties located within the APE are listed below. These properties are either listed or eligible for listing on the National Register of Historic Places (NRHP).

#### Grand Canal and the Phoenix Main Line of the Southern Pacific Railroad

Two historical properties located within the APE are the Grand Canal and the Phoenix Main Line of the Southern Pacific Railroad which are both eligible for the NRHP under Criterion A. The APM Stage 2-East would cross beneath the Southern Pacific Railroad under the existing bridge that carries the railroad over the depressed Sky Harbor Expressway. The APM would cross over the Grand Canal on an elevated section of guideway. The APM maintenance facility would be constructed between the railroad and canal. The canal and railroad would not be altered. The proposed undertaking is not expected to adversely affect the historic qualities of the structures that make them eligible for the NRHP.

#### Hohokam Habitation Sites

The Pueblo Salado, Dutch Canal Ruin and Pueblo Grande are eligible for the NRHP under Criterion D. The proposed undertaking has the potential to adversely affect the margins of these sites as well as buried remnants of many of the 19 Hohokam irrigation canals and the historical Joint Head Canal. Data recovery studies have been conducted within parts of all of these sites to mitigate the impacts of prior projects. Other unrecorded Hohokam sites, as well as early historic-era archaeological sites could be encountered on and off the airport. Intact archaeological resources at these sites are likely to have potential to yield important information.

The Phoenix Aviation Department, in coordination with the FAA would arrange to have archaeological testing or monitoring plans prepared and implemented. If archaeological resources are discovered, they would be evaluated and measures to avoid, reduce or mitigate impacts would be developed and implemented, with subsequent data recovery studies as warranted, as project planning proceeds and as final designs are prepared for the proposed undertaking. Traditional cultural concerns about disturbance of human remains and funerary objects that might be associated with archaeological sites would be addressed in accordance with a 1995 burial agreement that the City of Phoenix has developed to comply with the Arizona Antiquities Act.

#### Paul Coze Mural

The *Phoenix*, a mural by Paul Coze, is located within Terminal 2. The mural is recommended as eligible for the NRHP under Criterion C. Terminal 2 would be demolished as part of the proposed undertaking. The Phoenix Aviation Department would photo document and carefully remove the mural prior to demolition of the terminal and reinstall it at another airport location. This is not expected to adversely affect the historic qualities of the mural that make it eligible for the NRHP. The City of Phoenix would develop a plan for the removal and remounting of the mural prior to demolition of Terminal 2. This plan would be coordinated with the City Historic Preservation Office, the FAA and your office.

#### Sacred Heart Church and Tovrea Castle

The Sacred Heart Church was constructed in 1956 within the Golden Gate Barrio. All of the Golden Gate Barrio except the Sacred Heart Church was demolished when the property was integrated into the airport. The Sacred Heart Church is considered eligible for the NRHP under Criterion A. The church is currently located within a highly altered setting and the proposed new airport facilities would be a minor change in the current setting of the church. The FAA has determined the proposed undertaking would not have an adverse affect on the Sacred Heart Church.

The Tovrea Castle and surrounding 44-acre Carraro Cactus Garden is listed in the NRHP under Criteria A and C, and is a Phoenix Historic Landmark that currently is being developed for heritage tourism. Tovrea Castle is almost one mile east of the proposed APM Stage 2-East station and APM maintenance, control, and storage facility, and is on the opposite side of the elevated Hohokam Expressway. The proposed APM facilities would result in only minor changes of the highly developed urban landscape around the Tovrea Castle. The FAA has determined the proposed undertaking would not have an adverse affect on the Tovrea Castle.

#### Pueblo Grande Museum and Archaeological Park

The Pueblo Grande Ruin and Irrigation Sites National Historic Landmark within the Pueblo Grande Museum and Archaeological Park is located just east of the northern end of the APM Stage 2-East corridor. The part of the Pueblo Grande archaeological site within the park is listed in the NRHP under Criteria A and D. Pueblo Grande Ruin within the park is listed in the NRHP under Criteria A and D. The elevated elements of the APM Stage 2-East would alter the setting of the park. The APM station has yet to be designed, but it could be the equivalent of a two- to four-story building or taller. The guideway structure for the elevated section south of the station also has yet to be designed, but is expected to be approximately 11 feet deep and approximately 23 to 27 feet above the existing grade. Approximately 1,000 feet of elevated guideway entering the East Economy parking garage also would be visible from the southern part of the park. The top of this section of the guideway structure would be approximately 45 feet above Sky Harbor Boulevard, which is depressed below normal grade at this location at the eastern end of the Airport.

Views from the park to the west are dominated by light industrial, commercial and Airport development. Much of this development is one story in height, but some buildings are taller. The Crowne Plaza Hotel, just north of the interconnection of the APM and the Light Rail Transit station, is the tallest, at approximately 10 stories. There also are power lines, tall metal storage tanks, and billboards in the viewshed. From many places within the park, museum buildings, walls and trees screen views to the west. The elevated APM facilities would modify the landscape and be visible from parts of the park. The extent of visual changes cannot be fully assessed until the proposed facilities are designed in more detail. There is potential that the changes could result in an adverse effect on the setting of the park. The primary historic values of the park are not related to its setting, but instead are related to the archaeological information the site has yielded and has yet potential to yield, and to associations with the development of irrigation agriculture during the prehistoric and early historic eras. The proposed undertaking has potential to result in an adverse visual effect on the Pueblo Grande Ruin and Irrigation Sites National Historic Landmark within the Pueblo Grande Museum and Archaeological Park.

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, the City Historic Preservation Officer, and your office, to define design criteria and review developing designs of the APM Stage 2-East facilities. It is anticipated that a sensitive, compatible design could avoid an adverse visual effect to Pueblo Grande. The project has potential to result in a beneficial effect by enhancing pedestrian access to the Pueblo Grande Museum.

The FAA has coordinated with the City Historic Preservation Officer, City Archaeologist, and four tribes (Salt River Pima-Maricopa Indian Community, Gila River Indian Community, Fort McDowell Yavapai Nation, and Hopi Tribe) on the proposed undertaking.

Based on the information in the Cultural Resources Survey, the FAA has determined that the proposed undertaking at PEX may adversely affect the margins of three archaeological sites that are remnants of large Hohokam habitation sites. These include the margins of Pueblo Salado, Dutch Canal Ruin and Pueblo Grande. The proposed undertaking may adversely affect portions of 19 Hohokam irrigation canals and the historical Joint Head Canal northeast of the airport. If archaeological resources are discovered, they would be evaluated and measures to avoid, reduce or mitigate impacts would be developed and implemented, with subsequent data recovery studies as warranted, as project planning proceeds and as final designs are prepared for the proposed undertaking. We request your written concurrence with the APE and our determinations. Results of this coordination will be incorporated into the Draft Environmental Impact Statement (DEIS).

We expect to distribute a DEIS for public review in May 2005, and we will send you a copy. Please contact me at 310/725-3637 if you have any questions or require additional information.

Sincerely,

ORIGINAL SIGNED BY  
JENNIFER MENDELSON

Jennifer Mendelsohn  
Environmental Protection Specialist

Enclosure

cc: Don L. Klima, Advisory Council on Historic Preservation  
Todd Bostwick, Phoenix City Archaeologist  
Barbara Stocklin, Phoenix CHPO  
Joe Nucci, Tempe CHPO  
Chris Hacker, City of Phoenix  
A.E. (Gene) Rogge, URS



"Managing and conserving natural, cultural, and recreational resources"

In reply refer to SEPO-2003-194  
Adverse Effect

April 20, 2005

Jennifer Mendelsohn  
Environmental Protection Specialist  
Federal Aviation Administration  
P. O. Box 920007  
Los Angeles, CA 90009

Re: Proposed Development and Improvements at Phoenix Sky Harbor International Airport;  
FAA  
SEPO-2003-194 (23272)

Dear Ms. Mendelsohn:

Thank you for continuing to consult with our office regarding proposed development/improvement projects at Phoenix Sky Harbor International Airport. These projects include demolition of Terminal 2 and ancillary facilities; construction and operation of a 33 gate West Terminal Complex and related construction, modifications to Terminal 4, Concourse N4 international gates; construction and operation of two cross field taxiways Uniform "I" and Victor "V," realignment of Sky Harbor Boulevard; and construction and operations of the Automated People Mover (APM) State 2, including acquisition of approximately 21 acres of land to accommodate the proposed APM maintenance control and storage facility and APM station to connect with the Valley Metro Light Train Transit System.

Thank you for the extended review time. William Collins, Deputy State Historic Preservation Officer and I have reviewed the materials submitted and have the following comments pursuant to 36 CFR 800:

1. The cultural resources survey titled *Historical, Archaeological and Traditional Cultural Places Technical Report* (March 2005) identifies the following properties within the area of potential effect (APE) that are listed or eligible for listing in the National Register of Historic Places (NRHP):

The Grand Canal, eligible under Criterion A  
Phoenix Main Line of the Southern Pacific Railroad  
Paul Coe Mural *The Phoenix*, located within Terminal 2  
Sacred Heart Church  
Tovrea Castle  
Pueblo Grande Ruin and Irrigation Sites National Historic Landmark, which is contained within the boundaries of the Pueblo Grande Museum and Archaeological Park  
Hohokam Habitation Sites: Pueblo Grande, Pueblo Salado, and Dutch Canal Ruin

2. We concur that the Grand Canal, the Southern Pacific Railroad, the Coe Mural, Sacred Heart Church and Tovrea Castle would not be adversely affected by the undertaking.

3. Although not mentioned in the Pueblo Grande Ruin and Irrigation Sites National Historic Landmark (NHL) designation or NRHP nomination, we believe that Pueblo Grande is Register-eligible under Criterion A for importance in the history of the City of Phoenix as the first archaeological site set aside as a City park, for importance in the history of American Archaeology,

Janet Napolitano  
Governor

State Parks  
Board Members

Chair  
Elizabeth Stewart  
Tempe

William C. Porter  
Kingman

William Cordasco  
Flagstaff

Janice Chilton  
Payson

William C. Scalar  
Phoenix

John U. Hays  
Yarnell

Mark Winkelman  
State Land  
Commissioner

Kenneth E. Travis  
Executive Director

Arizona State Parks  
1300 W. Washington  
Phoenix, AZ 85007

Tel & TTY: 602.542.4174  
www.azstateparks.com

800.285.3703 from  
(620 & 928) area codes

General Fax:  
802.642.4181

Director's Office Fax:  
802.542.4184

Letter to Ms. Mendelsohn  
April 20, 2005  
Page 2

Sky Harbor Airport Improvements

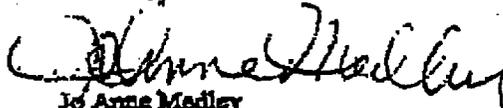
SHPO-2003-194

and as a place of importance in the history of several Indian tribes. We also believe that Pueblo Grande is Register-eligible under Criterion C for type of construction. The report should be revised to expand the significance discussion.

4. We recommend that FAA reconsider the potential for effect to Pueblo Grande based on new information about the property's significance.
5. We concur that the undertaking has the potential to affect the Pueblo Grande Ruin, which is the first archaeological site set aside as a City of Phoenix Park.
6. We suggest that FAA reconsider whether Pueblo Grande Park has been adequately evaluated as a Section 4f property.
7. We concur that the undertaking has the potential to adversely affect portions (more than just margins) of Hohokam habitation sites Pueblo Salado and the Dutch Canal Ruin. It is also possible that an unknown number of prehistoric canals associated with these sites could be adversely affected.
8. Although you did not request our concurrence on eligibility of 129 buildings and parcels inventoried (Appendix A), based on the information provided, it is our opinion that none would be eligible for inclusion in the NRHP.
9. A Memorandum of Agreement should be developed for this undertaking.

We look forward to continuing to consult and appreciate your continuing cooperation with our office in complying with the requirements of historic preservation. Please contact Dr. Collins at (602) 542-7159 or me at (602) 542-7142 if you have any questions or concerns.

Sincerely,

  
Jo Anne Medley  
Compliance Specialist/Archaeologist  
State Historic Preservation Office

APR 27 2005  
RECEIVED



City of Phoenix  
PARKS AND RECREATION DEPARTMENT

# FAX

Pueblo Grande Museum and Archaeological Park  
FAX 602-495-5645

Date: 4/27/05 Total Pages: 2 (plus cover)

Please Deliver To: Gene Rogge

Fax Number: (602) 371-1615

From: April Cummins and Robert Serocki, Jr.

Subject: Report Review

Comments: Hist, Arch & TCP Technical Report For  
the Proposed Sky Harbor Development Program

### Upcoming Events!

For more information or to register for a program call 602-495-0901.

For ages 15-18  
**TEEN TOUR  
GUIDE TRAINING**  
Mon-Thu, 6/13-6/23  
9am-12pm  
Fee \$10  
Call to Register!

For ages 7-14  
**HOHOKAM  
EXPERIENCE  
SUMMER CAMP!**  
Mon-Thu, 6/13-7/28  
8:30am-12pm  
Call to Register!

For ages 3-6  
**STORYTELLING  
AND CRAFTS**  
Each Friday  
6/17-7/29, except 7/8  
9:30-11:30am  
Call to Register!



Pueblo Grande Museum and Archaeological Park  
4619 E. Washington Street, Phoenix AZ 85034  
602-495-0901 • www.pueblogrande.com



Pueblo Grande is a National Historic Landmark and is accredited by the American Association of Museums.



# Report Review Form

**Project No.:** N/A

**Date Report Submitted:** 3/21/05

**Report Title:** Historical, Archaeological, and Traditional Cultural Places Technical Report for the Proposed Sky Harbor International Airport Development Program, Phoenix, Arizona

**Draft:**

**Final:** X

**Author:** Rogge and Erickson

**Firm:** URS

**Action:**  Accepted

More Information Requested

Revise & Resubmit

**Comments:**

This report has met City of Phoenix guidelines and standards.

**Recommendations:**

The City of Phoenix Archaeology Office concurs with the inventory of archaeological sites, the area of potential effects, the assessment of effect and the recommendations that testing or monitoring plans be prepared and implemented and subsequent data recovery studies be conducted as warranted.

**Reviewed By:** Robert A. Serocki Jr. and  
Todd W. Bostwick, Ph.D.

**Date:** 4/27/05

**Collection to be submitted:** N/A

**Remarks:**

Jan 6/1/05



*Preserving America's Heritage*

April 27, 2005

Jennifer Mendelsohn  
Environmental Protection Specialist  
Federal Aviation Administration  
Airports Division  
P.O. Box 92007  
Los Angeles, CA 90009

REF: *Terminal Development, Phoenix Sky Harbor International Airport, AZ.*

We received your notification and supporting documentation regarding the adverse effects of the referenced project on a property or properties eligible for inclusion in the National Register of Historic Places. Based upon the information you provided, we do not believe that our participation in consultation to resolve adverse effects is needed. However, should circumstances change, please notify us so we can re-evaluate if our participation is required. Pursuant to 36 CFR 800.6(b)(iv), you will need to file the Agreement, and related documentation at the conclusion of the consultation process. The filing of this Agreement with the ACHP is necessary to complete the requirements of Section 106 of the National Historic Preservation Act.

Thank you for providing us with your notification of adverse effect. If you have any questions, please contact Jane Crisler at 303/969-5110 or via email at [astanfill@achp.gov](mailto:astanfill@achp.gov).

Sincerely,

*Nancy Kochan*

Nancy Kochan  
Office Administrator/Technician  
Western Office of Federal  
Agency Programs

ADVISORY COUNCIL ON HISTORIC PRESERVATION

12136 West Bayaud Avenue, Suite 330 • Lakewood, Colorado 80228  
Phone: 303-969-5110 • Fax: 303-969-5115 • [achp@achp.gov](mailto:achp@achp.gov) • [www.achp.gov](http://www.achp.gov)

**RECORD OF TELEPHONE CALL**

**Date/Time:** 4/26/2005

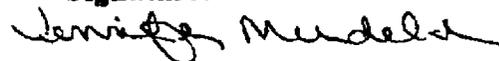
**Persons Contacted:** Barnaby Lewis, Gila River Indian Community

**Subject:** Mr. Lewis stated that they have received the coordination letters and Cultural Resources Survey entitled "*Historical, Archaeological and Traditional Cultural Places Technical Report*", dated March 2005 for the Draft Environmental Impact Statement for Phoenix Sky Harbor International Airport. At this time they do not have any comments.

**Decisions/Actions to be taken:** None.

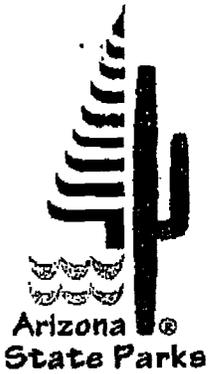
**Date:**  
4/26/2005

**Title:**  
Environmental Protection Specialist

**Signature:**  


623

In reply, please refer to:  
SHPO-2003-194



Kevin Flynn  
Federal Aviation Administration  
P.O. Box 92007  
Los Angeles, CA 90009

Janet Napolitano  
Governor

RE: FAA/Phoenix Sky Harbor International Airport

State Parks  
Board Members

Dear Mr. Flynn

Chair  
Suzanne Pfister  
Phoenix

Thank you for submitting documentation on the above referenced undertaking. I have reviewed the material pursuant to 36 CFR Part 800 and have the following comments:

Recreation Professional  
Vacant

1. We look forward to reviewing information regarding buildings and archaeological investigations that your agency is now gathering. In terms of potential historic buildings, the major property affected that might be considered is Terminal 2. Initial construction on Terminal 2 occurred in 1960, just at the end of the period you state will be considered the cut off for evaluation. This building may have exceptional significance in that it marked the beginning of the accommodation of jets at Sky Harbor. However, James Garrison, the State Historic Preservation Officer, noted that the building had been severely altered and he believes it has probably lost its historic integrity. I do have a concern about the artwork, a large mural in the building that may have significance itself. We recommend that your agency include a consideration of its preservation.

John U. Hays  
Yarnell

If you have any further questions or requests, you may contact me at (602) 542-7159, or by e-mail at [wcollins@pr.state.az.us](mailto:wcollins@pr.state.az.us).

Elizabeth Stewart  
Tempe

Sincerely,

William C. Porter  
Kingman

Walter D. Armer, Jr.  
Benson

William S. Collins, Ph.D.  
Deputy State Historic Preservation Officer  
State Historic Preservation Office

Mark Winkleman  
State Land  
Commissioner

Kenneth E. Travous  
Executive Director

Arizona State Parks  
1300 W. Washington  
Phoenix, AZ 85007

Tel & TTY: 602.542.4174  
[www.azstateparks.com](http://www.azstateparks.com)

800.285.3703 from  
(520 & 928) area codes

General Fax:  
602.542.4180

Director's Office Fax:  
602.542.4188

RECEIVED

MAR - 5 2003

STATE HISTORIC PRESERVATION  
OFFICE



U.S Department  
of Transportation

Federal Aviation  
Administration

AUG 20 2003

Western-Pacific Region  
Airports Division

P.O. Box 92007  
Los Angeles, CA 90008

The Honorable Wayne Taylor, Jr., Chairman  
Hopi Tribe  
P.O. Box 123  
Kykotsmovi, Arizona 86039

Dear Chairman Taylor:

**Phoenix Sky Harbor International Airport  
Phoenix, Arizona  
Section 106 Coordination**

The Federal Aviation Administration (FAA) is in the process of preparing a Draft Environmental Impact Statement (EIS), pursuant to the National Environmental Policy Act of 1969, for proposed terminal development at Phoenix Sky Harbor International Airport (PHX). A Memorandum of Agreement (MOA) was executed on June 25, 1993, regarding development of PHX. Signatories to the MOA included the FAA, Advisory Council on Historic Preservation, and Arizona State Historic Preservation Officer. Concurring parties included the City of Phoenix, Gila River Indian Community and Salt River Pima-Maricopa Indian Community.

The City of Phoenix is proposing to undertake additional improvements at the airport including construction of a West Terminal Complex and demolition of Terminal 2, which were included in the EIS completed November 1993. This letter is to provide you with information about the proposed project and solicit information and comments from you about archaeological resources that may be affected. The proposed undertaking consists of the construction of a new West Terminal Complex, construction and operation of an Automated People Mover, demolition of existing Terminal 2, realignment of Sky Harbor Boulevard, modifications to the International Concourse, and crossover taxiways on the west end of the airport.

FAA has determined that the Area of Potential Effect (APE) generally follows the airport property line since the proposed undertaking will be conducted well within the airport boundary. The APE extends beyond the property line on the northwest side of the airport to include the construction and operation site for the proposed Automated People Mover. The proposed Automated People Mover will connect to Phoenix's proposed Light Rail Transit system between Washington and Jefferson Streets.

We have included a drawing that shows the proposed APE and the following components of the proposed undertaking:

- Construction and operation of the West Terminal Complex
- Construction and operation of crossover taxiways
- Construction and operation of the Automated People Mover System
- Realignment of Sky Harbor Boulevard
- Demolition of Existing Terminal 2
- Modifications of the International Concourse

We anticipate that all ground disturbing activities related to construction and demolition will be confined within the approximately 405-acre area shown on the enclosed Figure 2.

Most of the construction activity will be on existing airport property and within previously disturbed areas or areas where archaeological data recovery studies have been completed for earlier projects. Due to the extent of prior study and the high degree of development in the project area, efforts to identify and evaluate historic properties during preparation of the EIS will focus on compiling and reviewing existing studies and information.

The data collection will include the following strategies:

1. Information will be collected from the computerized AZSITE Cultural Resource Inventory about prior studies and recorded cultural resources within the study area.
2. Reports of previous relevant studies will be reviewed.
3. The age of construction of all buildings and structures within the area of potential effect will be determined. Since any proposed demolition of existing buildings and structures will be completed no later than 2010, we will consider any buildings and structures built in 1960 or earlier as being of "historic age." The historic significance of any buildings and structures of historic age will be evaluated using criteria for listing in the National Register of Historic Places. We will also consider newer buildings and structures for exceptional significance.
4. The Salt River Pima-Maricopa Indian Community, Gila River Indian Community, Fort McDowell Yavapai Nation, and Hopi Tribe will be consulted to identify information and concerns about any traditional cultural places.
5. The public involvement program for preparation of the EIS will be used to provide information and solicit comments from the general public about historic preservation concerns.

If your community has an interest in or concerns about the project, we invite you to participate in the Section 106 consultations. Please contact Jennifer Mendelsohn at 310/725-3637 if you have any questions concerning the proposed project or require additional information.

Sincerely,  
**Original Signed By**  
**Richard P. Dykas**

*for*  
Mickeal Agaibi  
Supervisor, Planning Section

Enclosure

- cc: Leigh Kuwanwisiwma/Terry Morgart, Hopi Cultural Preservation Office  
 Todd Bostwick, Phoenix City Archaeologist  
 Barbara Stocklin, Phoenix CHPO  
 Joe Nucci, Tempe CHPO  
 A.E. (Gene) Rogge, URS



U.S. Department  
of Transportation  
Federal Aviation  
Administration

Western-Pacific Region  
Airports Division

P.O. Box 92007  
Los Angeles, CA 90009

SEP 25 2003

The Honorable Wayne Taylor, Jr., Chairman  
Hopi Tribe  
P.O. Box 123  
Kykotamovi, Arizona 86039

Dear Chairman Taylor:

**Phoenix Sky Harbor International Airport  
Phoenix, Arizona  
Section 106 Coordination**

In August 2003, you received a letter and map from the Federal Aviation Administration (FAA) regarding the preparation of a Draft Environmental Impact Statement (EIS), for proposed terminal development at Phoenix Sky Harbor International Airport (PHX). The map including the Area of Potential Effect (APE) did not include the proposed Automated People Mover (APM) on the East side of the Airport.

The proposed undertaking consists of the construction of an APM on either the West or East side of the Airport. The West side connection was discussed in our previous letter and shown on the map. The East side connection would extend from existing Terminal 4 to existing East Economy Parking facilities. The proposed APM will connect to City of Phoenix's proposed Light Rail Transit system at Washington and 44<sup>th</sup> Street on the west side of 44<sup>th</sup> Street. Since the APM will be evaluated on the west and east of the Airport the FAA has revised the Area of Potential Effect (APE) to include the land that may be impacted by the APM. The APE generally follows the airport property line since the proposed undertaking will be conducted well within the airport boundary. The APE extends beyond the property line on the northwest and northeast sides of the airport to include the connection of the APM to the proposed Light Rail Transit system.

Please replace the APE drawing sent to you in August 2003 with the enclosed map. Please contact Jennifer Mendelsohn at 310/725-3637 if you have any questions concerning the proposed project or require additional information.

Sincerely,  
Original signed by:  
MICKEAL R. AGAIBI

Mickeal Agaibi  
Supervisor, Planning Section

Enclosure

THE



HOPI TRIBE

Hopi Cultural Preservation Office

Wayne Taylor, Jr.  
ChairmanCaleb Johnson  
Vice Chairman

October 6, 2003

Mickeal Agaibi, Supervisor, Planning Section  
 Attention: Jennifer Mendelsohn  
 U.S. Department of Transportation, Federal Aviation Administration  
 Western Pacific Region, Airports Division  
 P.O. Box 92007  
 Los Angeles, California 90009

Dear Mr. Agaibi,

This letter is in response to your correspondence to Chairman Taylor and the Hopi Cultural Preservation Office dated September 25, 2003, regarding the Federal Aviation Administration (FAA) preparing a draft Environmental Impact Statement (EIS) for proposed terminal development at Sky Harbor International Airport.

As you know from our August 27<sup>th</sup> response to your August 20, 2003, correspondence, the Hopi Tribe claims cultural affiliation to prehistoric cultural groups in the Phoenix area, and therefore we appreciate the FAA's continuing solicitation of our input and your efforts to address our concerns. And therefore, we stated that we have an interest in and concerns about this project and have accepted your invitation to participate in consultations.

We have reviewed the enclosed *Literature Review and Cultural Resources Monitoring Plan for the Geotechnical Testing Phase of the Proposed Stage 1B Airport People Mover Section, From the East Economy Parking Lot North to Washington Street, City of Phoenix*, that identifies four prehistoric sites, Pueblo Grande, U:9:1, Park of the Four Waters, U:9:2, U:9:27, described as an artifact scatter and canals, and U:9:28, described as two canals, in the Stage 1B geotechnical project review area. Please provide us with a copy of the draft monitoring report for review and comment.

If you have any questions or need additional information, please contact Terry Morgart at the Hopi Cultural Preservation Office. Thank you again for consulting with the Hopi Tribe.

Respectfully,

Leigh J. Kuwanwisiwma, Director  
 Hopi Cultural Preservation Office

cc: Office of the Chairman  
 Todd Bostwick, City of Phoenix  
 A.E. (Gene) Rogge, URS Corporation  
 Arizona State Historic Preservation Office



**City of Phoenix**  
AVIATION DEPARTMENT

September 8, 2004

Barbara Stocklin  
City of Phoenix Historic Preservation Officer  
200 W. Washington Street, 17<sup>th</sup> Floor  
Phoenix, Arizona 85003

**Subject: Phoenix Sky Harbor International Airport West Terminal Development Program**

Dear Ms. Stocklin:

In the letter dated August 6, 2004 the Aviation Department attached Figures 2 and 3 to illustrate the elements of the proposed West Terminal Development Program, and the suggested Area of Potential Effect (APE) for Stage 2 East of the Automated People Mover (APM). As requested in our meeting on August 24, 2004, we have addressed the comments regarding the APE, and have revised Figures 2 and 3 to extend to the southern property line of Pueblo Grande Museum and identified the property line for Tovrea Castle. The enclosed revised Figures 2 and 3 now illustrate a suggested APE of visual effects. Please remove and replace the figures sent in the original letter on August 6, 2004.

We look forward to working with you to mutually agree on properly defining the Areas of Potential Effect (APE) for the EIS for the West Terminal Development Program.

If you have questions, please feel to contact me at (602) 273-3341.

Sincerely,

Christopher Hacker  
Project Manager

Enclosures

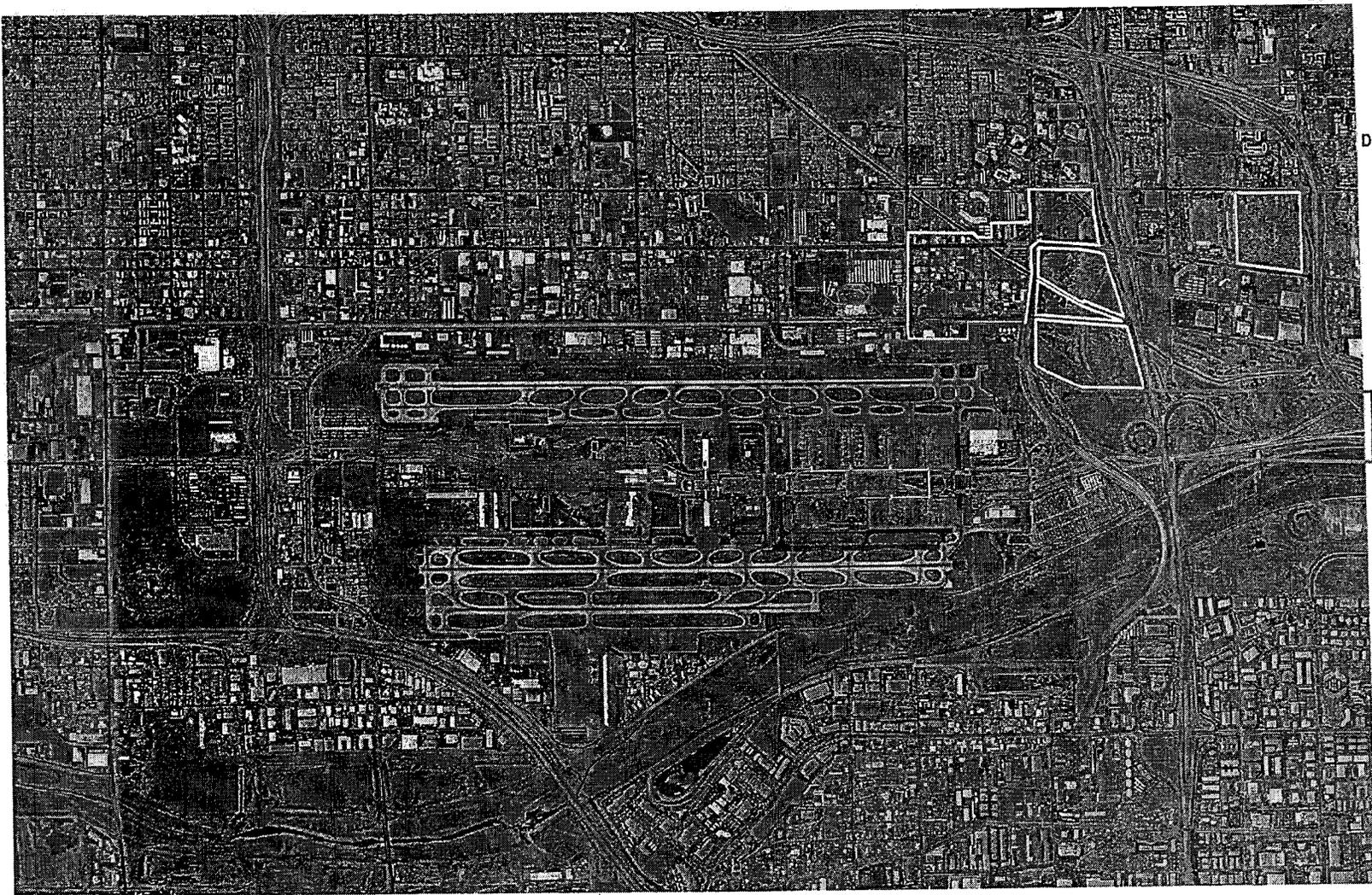
cc: Rodger Lidman, Director, Pueblo Grande Museum (w/ enclosures)  
Todd Bostwick, City of Phoenix Archaeologist (w/ enclosures)  
Carl Newman, City of Phoenix  
Carol Clements, City of Phoenix  
Nancy Kesteloot, City of Phoenix  
David Hensley, City of Phoenix  
Paul Blue, City of Phoenix



Barbara Stocklin  
West Terminal Development Program  
September 8, 2004  
Page 2

Jane Morris, City of Phoenix  
Paul Behrens, URS Corporation (w/ enclosures)  
Gene Rogie, URS Corporation  
David Kessler, Federal Aviation Administration (w/ enclosures)  
Jennifer Mendelsohn, Federal Aviation Administration  
Tom Mertens, DMJM/HDR  
John Williams, Ricondo & Associates

H:\Doc\Planning\CHPO-Section 106 (Revision).doc



**PHOENIX SKY HARBOR  
INTERNATIONAL AIRPORT**

**Airport Property and  
Proposed West Terminal  
Development Program Elements**

Figure 2

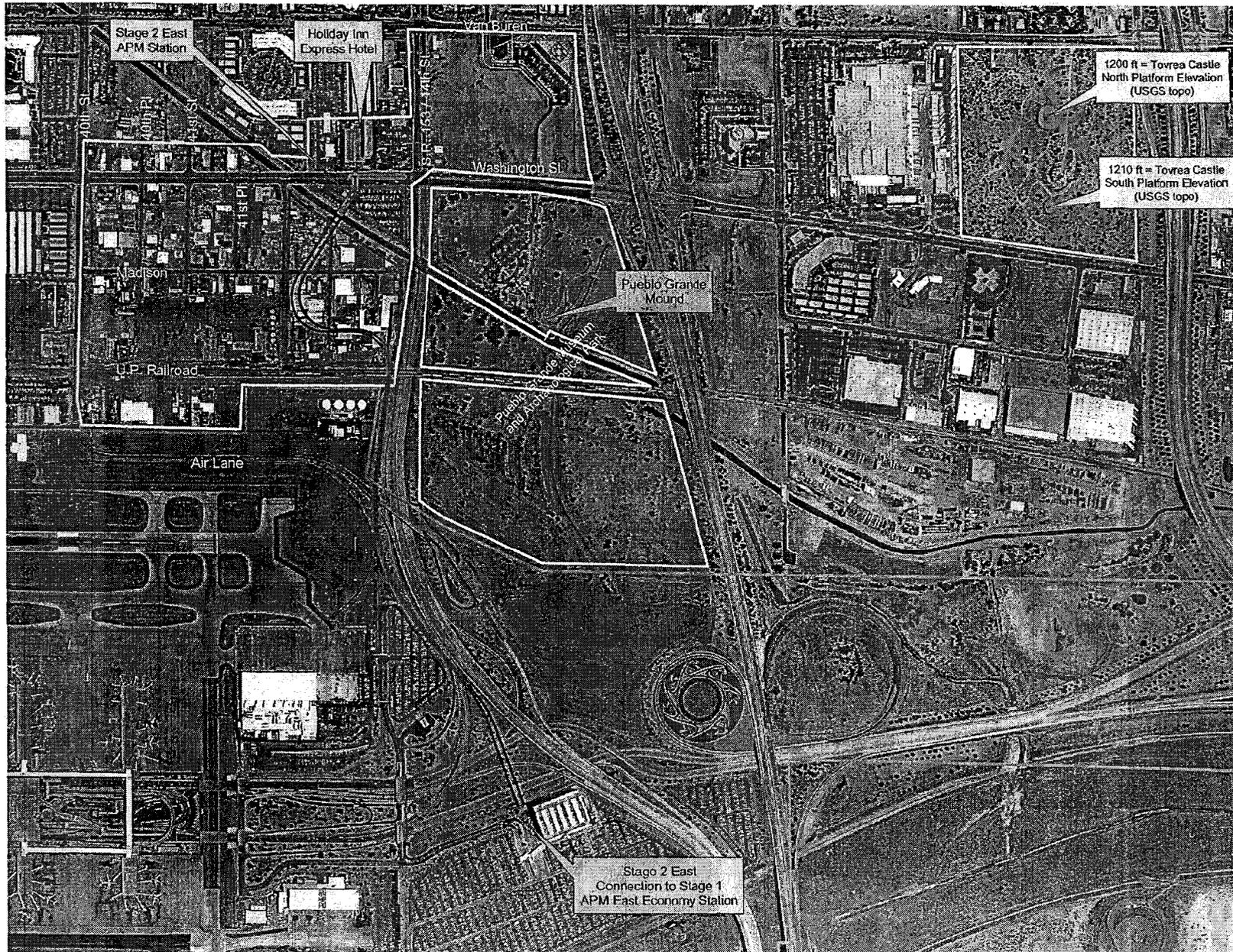
**Legend**

- Airport Property
- Proposed Development
- Proposed West Terminal Development Program Elements

0 900 1,800 3,600 Feet



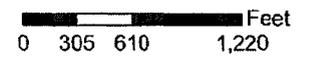
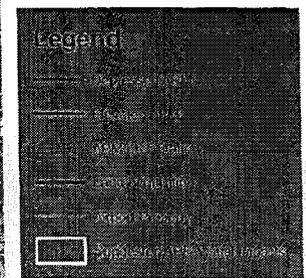
Prepared by DMJM/HDR  
Revised - August 24, 2004



**PHOENIX SKY HARBOR INTERNATIONAL AIRPORT**

**Automated People Mover Stage II East and Proposed Off-Airport Areas of Potential Visual Effect**

**Figure 3**



Prepared by DMJM/HDR  
 Revised - August 24, 2004



U.S Department  
of Transportation

Federal Aviation  
Administration

Western-Pacific Region  
Airports Division

P.O. Box 92007  
Los Angeles, CA 90009

AUG 20 2003

The Honorable Joni Ramos, President  
Salt River Pima-Maricopa Indian Community  
10005 E. Osborn Road  
Scottsdale, Arizona 85256

Dear President Ramos:

Phoenix Sky Harbor International Airport  
Phoenix, Arizona  
Section 106 Coordination

The Federal Aviation Administration (FAA) is in the process of preparing a Draft Environmental Impact Statement (EIS), pursuant to the National Environmental Policy Act of 1969, for proposed terminal development at Phoenix Sky Harbor International Airport (PHX). A Memorandum of Agreement (MOA) was executed on June 25, 1993, regarding development of PHX. Signatories to the MOA included the FAA, Advisory Council on Historic Preservation, and Arizona State Historic Preservation Officer. Concurring parties included the City of Phoenix, Gila River Indian Community and Salt River Pima-Maricopa Indian Community.

The City of Phoenix is proposing to undertake additional improvements at the airport including construction of a West Terminal Complex and demolition of Terminal 2, which were included in the EIS completed November 1993. This letter is to provide you with information about the proposed project and solicit information and comments from you about archaeological resources that may be affected. The proposed undertaking consists of the construction of a new West Terminal Complex, construction and operation of an Automated People Mover, demolition of existing Terminal 2, realignment of Sky Harbor Boulevard, modifications to the International Concourse, and crossover taxiways on the west end of the airport.

FAA has determined that the Area of Potential Effect (APE) generally follows the airport property line since the proposed undertaking will be conducted well within the airport boundary. The APE extends beyond the property line on the northwest side of the airport to include the construction and operation site for the proposed Automated People Mover. The proposed Automated People Mover will connect to Phoenix's proposed Light Rail Transit system between Washington and Jefferson Streets.

We have included a drawing that shows the proposed APE and the following components of the proposed undertaking:

- Construction and operation of the West Terminal Complex
- Construction and operation of crossover taxiways
- Construction and operation of the Automated People Mover System
- Realignment of Sky Harbor Boulevard
- Demolition of Existing Terminal 2
- Modifications of the International Concourse

We anticipate that all ground disturbing activities related to construction and demolition will be confined within the approximately 405-acre area shown on the enclosed Figure 2.

Most of the construction activity will be on existing airport property and within previously disturbed areas or areas where archaeological data recovery studies have been completed for earlier projects. Due to the extent of prior study and the high degree of development in the project area, efforts to identify and evaluate historic properties during preparation of the EIS will focus on compiling and reviewing existing studies and information.

The data collection will include the following strategies:

1. Information will be collected from the computerized AZSITE Cultural Resource Inventory about prior studies and recorded cultural resources within the study area.
2. Reports of previous relevant studies will be reviewed.
3. The age of construction of all buildings and structures within the area of potential effect will be determined. Since any proposed demolition of existing buildings and structures will be completed no later than 2010, we will consider any buildings and structures built in 1960 or earlier as being of "historic age." The historic significance of any buildings and structures of historic age will be evaluated using criteria for listing in the National Register of Historic Places. We will also consider newer buildings and structures for exceptional significance.
4. The Salt River Pima-Maricopa Indian Community, Gila River Indian Community, Fort McDowell Yavapai Nation, and Hopi Tribe will be consulted to identify information and concerns about any traditional cultural places.
5. The public involvement program for preparation of the EIS will be used to provide information and solicit comments from the general public about historic preservation concerns.

If your community has an interest in or concerns about the project, we invite you to participate in the Section 106 consultations. Please contact Jennifer Mendelsohn at 310/725-3637 if you have any questions concerning the proposed project or require additional information.

Sincerely,

**Original Signed By**  
**Richard P. Dykas**

 Mickeal Agaibi  
Supervisor, Planning Section

Enclosure

cc: Gary Gilbert, SRPMIC Cultural and Environmental Services  
Todd Bostwick, Phoenix City Archaeologist  
Barbara Stocklin, Phoenix CHPO  
Joe Nucci, Tempe CHPO  
— A.E. (Gene) Rogge, URS



U.S Department  
of Transportation

Federal Aviation  
Administration

AUG 20 2003

Western-Pacific Region  
Airports Division

P.O. Box 92007  
Los Angeles, CA 90009

The Honorable Richard Narcia, Governor  
Gila River Indian Community  
P.O. Box 97  
Sacaton, Arizona 85247

Dear Governor Narcia:

Phoenix Sky Harbor International Airport  
Phoenix, Arizona  
Section 106 Coordination

The Federal Aviation Administration (FAA) is in the process of preparing a Draft Environmental Impact Statement (EIS), pursuant to the National Environmental Policy Act of 1969, for proposed terminal development at Phoenix Sky Harbor International Airport (PHX). A Memorandum of Agreement (MOA) was executed on June 25, 1993, regarding development of PHX. Signatories to the MOA included the FAA, Advisory Council on Historic Preservation, and Arizona State Historic Preservation Officer. Concurring parties included the City of Phoenix, Gila River Indian Community and Salt River Pima-Maricopa Indian Community.

The City of Phoenix is proposing to undertake additional improvements at the airport including construction of a West Terminal Complex and demolition of Terminal 2, which were included in the EIS completed November 1993. This letter is to provide you with information about the proposed project and solicit information and comments from you about archaeological resources that may be affected. The proposed undertaking consists of the construction of a new West Terminal Complex, construction and operation of an Automated People Mover, demolition of existing Terminal 2, realignment of Sky Harbor Boulevard, modifications to the International Concourse, and crossover taxiways on the west end of the airport.

FAA has determined that the Area of Potential Effect (APE) generally follows the airport property line since the proposed undertaking will be conducted well within the airport boundary. The APE extends beyond the property line on the northwest side of the airport to include the construction and operation site for the proposed Automated People Mover. The proposed Automated People Mover will connect to Phoenix's proposed Light Rail Transit system between Washington and Jefferson Streets.

We have included a drawing that shows the proposed APE and the following components of the proposed undertaking:

- Construction and operation of the West Terminal Complex
- Construction and operation of crossover taxiways
- Construction and operation of the Automated People Mover System
- Realignment of Sky Harbor Boulevard
- Demolition of Existing Terminal 2
- Modifications of the International Concourse

We anticipate that all ground disturbing activities related to construction and demolition will be confined within the approximately 405-acre area shown on the enclosed Figure 2.

Most of the construction activity will be on existing airport property and within previously disturbed areas or areas where archaeological data recovery studies have been completed for earlier projects. Due to the extent of prior study and the high degree of development in the project area, efforts to identify and evaluate historic properties during preparation of the EIS will focus on compiling and reviewing existing studies and information.

The data collection will include the following strategies:

1. Information will be collected from the computerized AZSITE Cultural Resource Inventory about prior studies and recorded cultural resources within the study area.
2. Reports of previous relevant studies will be reviewed.
3. The age of construction of all buildings and structures within the area of potential effect will be determined. Since any proposed demolition of existing buildings and structures will be completed no later than 2010, we will consider any buildings and structures built in 1960 or earlier as being of "historic age." The historic significance of any buildings and structures of historic age will be evaluated using criteria for listing in the National Register of Historic Places. We will also consider newer buildings and structures for exceptional significance.
4. The Salt River Pima-Maricopa Indian Community, Gila River Indian Community, Fort McDowell Yavapai Nation, and Hopi Tribe will be consulted to identify information and concerns about any traditional cultural places.
5. The public involvement program for preparation of the EIS will be used to provide information and solicit comments from the general public about historic preservation concerns.

If your community has an interest in or concerns about the project, we invite you to participate in the Section 106 consultations. Please contact Jennifer Mendelsohn at 310/725-3637 if you have any questions concerning the proposed project or require additional information.

Sincerely,

**Original Signed By**  
**Richard P. Dykas**

 Mickeal Agaibi  
Supervisor, Planning Section

Enclosure

cc: Barnaby Lewis, GRIC Cultural Resources Management Program  
Todd Bostwick, Phoenix City Archaeologist  
Barbara Stocklin, Phoenix CHPO  
Joe Nucci, Tempe CHPO  
A.E. (Gene) Rogge, URS



U.S. Department  
of Transportation

Federal Aviation  
Administration

Western-Pacific Region  
Airports Division

P.O. Box 92007  
Los Angeles, CA 90009

AUG 20 2003

The Honorable Clinton Pattea, President  
Fort McDowell Yavapai Nation  
P.O. Box 17779  
Fountain Hills, Arizona 85269

Dear President Pattea:

Phoenix Sky Harbor International Airport  
Phoenix, Arizona  
Section 106 Coordination

The Federal Aviation Administration (FAA) is in the process of preparing a Draft Environmental Impact Statement (EIS), pursuant to the National Environmental Policy Act of 1969, for proposed terminal development at Phoenix Sky Harbor International Airport (PHX). A Memorandum of Agreement (MOA) was executed on June 25, 1993, regarding development of PHX. Signatories to the MOA included the FAA, Advisory Council on Historic Preservation, and Arizona State Historic Preservation Officer. Concurring parties included the City of Phoenix, Gila River Indian Community and Salt River Pima-Maricopa Indian Community.

The City of Phoenix is proposing to undertake additional improvements at the airport including construction of a West Terminal Complex and demolition of Terminal 2, which were included in the EIS completed November 1993. This letter is to provide you with information about the proposed project and solicit information and comments from you about archaeological resources that may be affected. The proposed undertaking consists of the construction of a new West Terminal Complex, construction and operation of an Automated People Mover, demolition of existing Terminal 2, realignment of Sky Harbor Boulevard, modifications to the International Concourse, and crossover taxiways on the west end of the airport.

FAA has determined that the Area of Potential Effect (APE) generally follows the airport property line since the proposed undertaking will be conducted well within the airport boundary. The APE extends beyond the property line on the northwest side of the airport to include the construction and operation site for the proposed Automated People Mover. The proposed Automated People Mover will connect to Phoenix's proposed Light Rail Transit system between Washington and Jefferson Streets.

We have included a drawing that shows the proposed APE and the following components of the proposed undertaking:

- Construction and operation of the West Terminal Complex
- Construction and operation of crossover taxiways
- Construction and operation of the Automated People Mover System
- Realignment of Sky Harbor Boulevard
- Demolition of Existing Terminal 2
- Modifications of the International Concourse

We anticipate that all ground disturbing activities related to construction and demolition will be confined within the approximately 405-acre area shown on the enclosed Figure 2.

Most of the construction activity will be on existing airport property and within previously disturbed areas or areas where archaeological data recovery studies have been completed for earlier projects. Due to the extent of prior study and the high degree of development in the project area, efforts to identify and evaluate historic properties during preparation of the EIS will focus on compiling and reviewing existing studies and information.

The data collection will include the following strategies:

1. Information will be collected from the computerized AZSITE Cultural Resource Inventory about prior studies and recorded cultural resources within the study area.
2. Reports of previous relevant studies will be reviewed.
3. The age of construction of all buildings and structures within the area of potential effect will be determined. Since any proposed demolition of existing buildings and structures will be completed no later than 2010, we will consider any buildings and structures built in 1960 or earlier as being of "historic age." The historic significance of any buildings and structures of historic age will be evaluated using criteria for listing in the National Register of Historic Places. We will also consider newer buildings and structures for exceptional significance.
4. The Salt River Pima-Maricopa Indian Community, Gila River Indian Community, Fort McDowell Yavapai Nation, and Hopi Tribe will be consulted to identify information and concerns about any traditional cultural places.
5. The public involvement program for preparation of the EIS will be used to provide information and solicit comments from the general public about historic preservation concerns.

If your community has an interest in or concerns about the project, we invite you to participate in the Section 106 consultations. Please contact Jennifer Mendelsohn at 310/725-3637 if you have any questions concerning the proposed project or require additional information.

Sincerely,

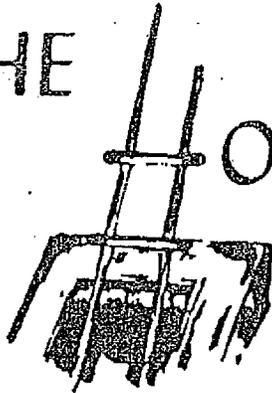
**Original Signed By**  
**Richard P. Dykas**

*for* Mickeal Agaibi  
Supervisor, Planning Section

Enclosure

cc: Marcy-Jean Mattson, FMYN Cultural Development Department  
Todd Bostwick, Phoenix City Archaeologist  
Barbara Stocklin, Phoenix CHPO  
Joe Nucci, Tempe CHPO  
—A.E. (Gene) Rogge, URS

THE  
HOPI TRIBE



Wayne Taylor, Jr.  
CHAIRMAN

Caleb Johnson  
VICE-CHAIRMAN

August 27, 2003

Mickeal Agaibi, Supervisor, Planning Section  
Attention: Jennifer Mendelsohn  
U.S. Department of Transportation, Federal Aviation Administration  
Western Pacific Region, Airports Division  
P.O. Box 92007  
Los Angeles, California 90009

Dear Mr. Agaibi,

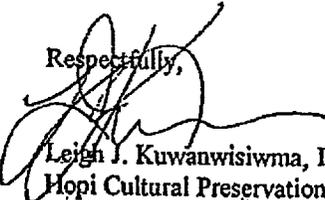
This letter is in response to your correspondence to Chairman Taylor and the Hopi Cultural Preservation Office dated August 20, 2003, regarding the Federal Aviation Administration (FAA) preparing a draft Environmental Impact Statement (EIS) for the proposed West Terminal Complex, Demolition of Terminal 2, and associated improvements at Sky Harbor International Airport.

The Hopi Tribe claims cultural affiliation to prehistoric cultural groups in the Phoenix area, and therefore we appreciate the FAA's solicitation of our input and your efforts to address our concerns. And therefore, we have an interest in and concerns about this project and accept your invitation to participate in consultations.

The Hopi Cultural Preservation Office understands that efforts to identify and evaluate historic properties during preparation of the EIS will focus on compiling and reviewing existing studies and information. Please provide us with copies of the cultural resources overview, the draft EIS, and any monitoring, treatment, or data recovery plans for review and comment.

If you have any questions or need additional information, please contact Terry Morgart at the Hopi Cultural Preservation Office. Thank you again for consulting with the Hopi Tribe.

Respectfully,

  
Leigh J. Kuwanwisiwma, Director  
Hopi Cultural Preservation Office

xc: Office of the Chairman  
Todd Bostwick, City of Phoenix  
A.E. (Gene) Rogge, URS Corporation  
Arizona State Historic Preservation Office



U.S. Department  
of Transportation  
**Federal Aviation  
Administration**

Western-Pacific Region  
Airports Division

P.O. Box 92007  
Los Angeles, CA 90009

January 29, 2002

James Garrison  
State Historic Preservation Officer  
Arizona State Parks  
1300 W. Washington Street  
Phoenix, Arizona 85007

Phoenix Sky Harbor International Airport  
Phoenix, Arizona  
Section 106 Coordination

Dear Mr. Garrison:

The Federal Aviation Administration (FAA) is preparing an Environmental Impact Statement (EIS), pursuant to the National Environmental Policy Act of 1969, for proposed projects at the Phoenix Sky Harbor International Airport (PHX). This letter is to initiate the consultation process in accordance with regulations for the *Protection of Historic Properties* (Title 36, Code of Federal Regulations (CFR), Part 800).

The EIS will address the following major projects proposed by the City of Phoenix (refer to the enclosed Figures 2):

- a. Construction and operation of the West Terminal Complex
- b. Construction and operation of Crossover Taxiways
- c. Construction and operation of Phase 2 of the Automated People Mover System
- d. Realignment of Sky Harbor Boulevard
- e. Demolition of a Temporary Concourse at Terminal 3
- f. Demolition of Existing Terminal 2
- g. Modifications of the International Concourse in Terminal 4 (Concourse N-4)

Most of the construction activity will be on existing airport property and confined to previously disturbed areas or within areas where archaeological data recovery studies have been completed. Because of the extent of prior study and the high degree of development in the project area, a majority of our efforts to identify and evaluate historic properties will focus on compiling and reviewing existing studies and information.

In addition to our review and evaluation of existing documentation, we propose the following as needed:

1. We will collect information from the AZSITE Cultural Resource Inventory about prior studies and recorded cultural resources within the study area to provide background information for the study.
2. We intend to determine the age of construction of all buildings and structures within the Area of Direct Disturbance. Because the planning horizon for the project is 2015, and any existing buildings are projected to be demolished by 2010, we will consider any buildings and structures built in 1960 or earlier as being of "historic age." The historic significance of any

buildings and structures of historic age will be evaluated using criteria for listing in the National Register of Historic Places. We will also consider newer buildings and structures for exceptional significance.

3. We intend to identify any traditional cultural places and concerns through tribal contacts including the Salt River Pima-Maricopa Indian Community, Gila River Indian Community, Fort McDowell Yavapai Nation, and the Hopi Tribe.

4. In terms of coordination and public involvement, we will be contacting the Phoenix City Archaeologist, the city of Tempe CHPO and the four tribes identified above. We plan to use the public involvement program for preparation of the EIS to provide information and solicit comments from the general public about any historic preservation concerns.

We anticipate that all ground disturbing activities related to construction and demolition will be confined to the approximate 405-acre area shown on the enclosed Figure 2. We propose to define this as the Area of Potential Effect (APE) for (1) archaeological resources, (2) traditional cultural places, and (3) historic buildings and structures.

If you have any questions or comments on the proposed projects or our approach, please contact me at 310-725-3632 or by electronic mail at [kevin.flynn@faa.gov](mailto:kevin.flynn@faa.gov).

Sincerely,

Kevin Flynn  
Supervisor, Arizona Standards Section

Enclosure

d:\airports\phoenix\terminaleis\SHPO Coord Letter.doc

**Memorandum of Agreement**

**MEMORANDUM OF AGREEMENT  
BETWEEN THE  
FEDERAL AVIATION ADMINISTRATION,  
ARIZONA STATE HISTORIC PRESERVATION OFFICER,  
BUREAU OF RECLAMATION, SALT RIVER PROJECT  
AND THE CITY OF PHOENIX  
REGARDING THE  
CITY OF PHOENIX AIRPORT DEVELOPMENT PROGRAM  
AT PHOENIX SKY HARBOR INTERNATIONAL AIRPORT**

**WHEREAS**, the City of Phoenix has requested that the Federal Aviation Administration (FAA), as the lead Federal agency, approve the City of Phoenix Aviation Department's (City) proposed Airport Development Program (ADP) and associated Airport Layout Plan (ALP) for Phoenix Sky Harbor International Airport; and

**WHEREAS**, the ADP consists of the demolition of Terminal 2 and other ancillary facilities, construction of a new 33-gate West Terminal and its associated facilities, modifications to the Terminal 4 N4 Concourse International gates, construction of crossfield Taxiways Uniform "U" and Victor "V", modifications to Sky Harbor Boulevard and construction of Stage 2 of the Automated People Mover (APM) consisting of Stage 2-East and Stage 2-West. (See **Attachment 1**); and

**WHEREAS**, the FAA is responsible for completing the requirements of Section 106 of the National Historic Preservation Act, 16 USC § 470 (NHPA) for this undertaking; and

**WHEREAS**, the FAA has consulted with the Arizona State Historic Preservation Officer (SHPO) and other interested parties pursuant to 36 CFR 800; and

**WHEREAS**, the FAA, in consultation with the SHPO, has established the Areas of Potential Effects (APE) for construction and visual impacts, as depicted on **Attachment 2**; and

**WHEREAS**, the FAA has consulted with the Advisory Council on Historic Preservation and provided the Council its adverse effect determination with specified documentation pursuant to the regulations for *Protection of Historic Properties*, Title 36, Code of Federal Regulations (CFR), Part 800.6(a)(1), which implement Section 106 of the National Historic Preservation Act (16 U.S.C. Section 470), and the Council chose not to participate in the consultations pursuant to 36 CFR 800.6(a)(1)(iii); and

**WHEREAS**, the proposed development may occur in several separate phases over a decade or longer; and

**WHEREAS**, the FAA, in consultation with the SHPO, determined that the implementation of the proposed undertaking could potentially affect eight historic properties listed in or eligible for listing in the National Register of Historic Places (National Register) (**Attachment 3**), as well as other historical and archaeological resources that might be discovered during project implementation; and

**WHEREAS**, the SHPO is authorized to advise and assist federal and state agencies in carrying out their historic preservation responsibilities and cooperate with these agencies under Arizona Revised Statutes § 41-511.04(D)(4); and

**WHEREAS**, the SHPO is authorized to enter into this Agreement in order to fulfill its role of advising and assisting federal agencies in carrying out their Section 106 responsibilities under the following federal statutes: Sections 101 and 106 of the National Historic Preservation Act of 1966, as amended, 16 U.S.C. Section 470f and pursuant to 36 CFR 800, regulations implementing Section 106, at 36 CFR 800.2(c)(1)(i) and 800.6(b); and

**WHEREAS**, the APM Stage 2-East would cross the Grand Canal which would require an easement. The Grand Canal is owned by the Bureau of Reclamation and managed by the Salt River Project. The FAA has invited the Bureau of Reclamation and the Salt River Project to be signatories to this Agreement; and

**WHEREAS**, the City is the project proponent and has primary responsibility for funding and implementing many provisions of this Agreement and ensures the City's archaeological contractor holds an Archaeological Resources Protection Act (ARPA) permit from the Bureau of Reclamation for data recovery on federal land and therefore is a signatory to this Agreement; and

**WHEREAS**, the archaeological data recovery necessitated by the undertaking must be permitted by the Arizona State Museum pursuant to A.R.S. § 41-842; and

**WHEREAS**, the City of Phoenix Historic Preservation Officer and the City of Phoenix Archaeologist participated in the consultation process; and

**WHEREAS**, the FAA consulted with the National Park Service pursuant to 36 CFR 800.10(c) and invited that agency to be a participant in this Agreement as a representative of the Department of the Interior, but the National Park Service chose not to participate; and

**WHEREAS**, the Salt River Pima-Maricopa Indian Community (SRPMIC), Gila River Indian Community (GRIC), Fort McDowell Yavapai Nation, Hopi Tribe, Ak-Chin Indian Community, Yavapai-Prescott Indian Tribe and Tohono O'Odham Nation participated in the consultation process and have been invited to concur with this Agreement; and

**NOW, THEREFORE**, the FAA, the Bureau of Reclamation, Salt River Project, SHPO and City agree that upon signing this MOA, the FAA's issuance of a Record of Decision approving the proposed ADP, and the City's decision to proceed with the ADP, the FAA shall ensure that the following stipulations are implemented in order to take into account the effects of the undertaking on historic properties and archaeological resources.

## **STIPULATIONS**

The FAA shall ensure that the following stipulations are implemented:

### Stipulation 1. Treatment of Archaeological Properties

The FAA shall ensure that the City prepares an Archaeological Treatment Plan (ATP) to address potential adverse effects on archaeological resources. These areas include and will take into account that the development will occur over time in phased construction build-out.

The ATP will address known archaeological resources and potential unrecorded sites within the APE. Known archaeological resources within the APE include Dutch Canal Ruin [AZ T:12:62(ASM)], Pueblo Salado [AZ T:12:47(ASM)], Pueblo Grande [AZ U:9:1(ASM)] and sites AZ U:9:2(ASM) and AZ U:9:28(ASM) depicted within **Attachment 4**.

The proposed 33-gate West Terminal, crossfield taxiways, APM Stage 2 West, and reconfiguration of Sky Harbor Boulevard may affect the resources known as Dutch Canal Ruin [AZ T:12:62(ASM)] and Pueblo Salado [AZ T:12:47(ASM)]. The proposed APM Stage 2 East and

APM Maintenance, Control, and Storage Facility may affect the resource known as Pueblo Grande [AZ U:9:1(ASM)] and sites AZ U:9:2(ASM) and AZ U:9:28(ASM).

**Attachments 5 and 6** identify areas where there is a potential that other unrecorded Hohokam sites, canals and other historic-era sites could be found.

The ATP shall include a strategy for archaeological testing and/or archaeological monitoring to identify buried archaeological resources within areas that could be affected by ground-disturbing demolition or construction activities. The ATP shall define a process for evaluating the National Register eligibility of any identified archaeological resources, assessing project effects, and designing and implementing mitigation measures, which are most likely to entail excavations and studies to recover and preserve archaeological data. The ATP shall also include a strategy for addressing unanticipated discoveries.

Because full development of the ADP will take several years to complete, treatment of archaeological resources may need to be phased to mesh with the implementation schedule. Once archaeological investigations are completed for each identified phase, the FAA shall authorize construction to proceed based on review and acceptance of preliminary reports documenting the accomplishment of each phase of the ATP.

The ATP shall be consistent with the *Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation*, as amended and annotated ([http://www.cr.nps.gov/local-law/arch\\_stnds\\_0.htm](http://www.cr.nps.gov/local-law/arch_stnds_0.htm)); and the *City of Phoenix Guidelines for Archaeology*, 2004. The Archaeological Treatment Plan shall specify, at a minimum:

- a) The property, properties, or portions of properties that are to be investigated;
- b) Any property, properties, or portions of properties that will be destroyed without data recovery;
- c) The research questions to be addressed, with an explanation of their relevance and importance;
- d) The fieldwork and analytical methods to be used, with an explanation of their relevance to the research questions;
- e) The methods to be used in data management and dissemination of data including a schedule;
- f) The proposed disposition of recovered materials and records;
- g) A proposed schedule for the submittal of preliminary, draft, and final plans and reports to FAA and consulting parties.
- h) The FAA shall ensure that archaeological investigations are conducted under the direction of individuals who meet the Secretary of the Interior's professional qualification standards, and the ATP shall include the names and a summary of the professional experience of the individuals who will supervise such work.
- i) The FAA shall ensure that all archaeological investigations are conducted in accordance with a permit issued by the Arizona State Museum pursuant to the Arizona Antiquities Act (Arizona Revised Statutes § 41-841 et seq.) and data recovery is conducted under terms of an ARPA permit from the Bureau of Reclamation.
- j) The FAA shall ensure that all archaeological materials collected in accordance with the ATP (excluding any human remains and cultural objects that are discovered and repatriated in accordance with Stipulation 5) and associated documentation are curated

in accordance with regulations for *Curation of Federally-Owned and Administered Archaeological Collections*, 36 CFR 79. The FAA shall ensure that all archaeological materials discovered on federal land managed by the Bureau of Reclamation shall be curated at the Huhugam Heritage Center on the Gila River Indian Reservation. If human remains are discovered on federal land managed by the Bureau of Reclamation, that agency shall treat the human remains in accordance with the Native American Graves Protection and Repatriation Act and the Bureau of Reclamation Treatment Plan (**Attachment 7**).

- k) The ATP or phases of the plan shall be reviewed and revised in accordance with Stipulation 5.

Stipulation 2. Paul Coze Mural, *The Phoenix*

The FAA, in consultation with the SHPO, has determined that implementation of the proposed undertaking would have no adverse effect upon **The Phoenix**, a three-panel, multimedia mural by Paul Coze. The City shall move the mural prior to demolition of Terminal 2 and display the three panels of the mural together in an appropriate public location on the Airport. The FAA shall ensure the City prepares a plan for moving the mural. The plan shall include provisions for photo-documenting the mural in place in Terminal 2, measures to minimize damage to the mural when it is moved, selection of a suitable public space on the airport for displaying the mural, a timely schedule for reinstalling the mural, documentation of the history of the mural, and public interpretation of the mural when it is again displayed. The plan shall be reviewed and revised in accordance with Stipulation 5.

Stipulation 3. Pueblo Grande Ruin and Irrigation Sites National Historic Landmark

The FAA, in consultation with the SHPO, has determined that implementation of the proposed undertaking would have no adverse affect on the Pueblo Grande Ruin and Irrigation Sites National Historic Landmark within the Pueblo Grande Museum and Archaeological Park. The FAA shall consult with the Director of the Pueblo Grande Museum and Archaeological Park, City of Phoenix Archaeologist, City of Phoenix City Historic Preservation Officer, SHPO, and National Park Service throughout the design process to ensure that a sensitive and compatible design will avoid adverse visual effect to Pueblo Grande Museum and Archaeological Park. The FAA shall review construction plans for the APM Stage 2-East and APM Maintenance Control and Storage Facility to determine whether there is potential for construction-induced ground vibration to damage the archaeological ruins of the Pueblo Grande Ruin and Irrigation Sites National Historic Landmark within the Pueblo Grande Museum and Archaeological Park. If warranted, a vibration-abatement and monitoring plan shall be prepared and implemented in accordance with Stipulation 5.

Stipulation 4. Treatment of Human Remains and Cultural Objects

The treatment of human remains and any cultural objects found on non-federal land shall follow the requirements and specifications contained in the City Burial Agreement. The FAA shall ensure that all archaeological materials discovered on federal land managed by the Bureau of Reclamation shall be curated at the Huhugam Heritage Center on the Gila River Indian Reservation. If human remains are discovered on federal land managed by the Bureau of Reclamation, that agency shall treat the human remains in accordance with the Native American Graves Protection and Repatriation Act and the Bureau of Reclamation Treatment Plan (**Attachment 7**).

Stipulation 5. Review, Comment, and Consultation

Plans and reports prepared in accordance with this Agreement shall be consistent with guidelines of the Arizona State Museum, SHPO, City Historic Preservation Officer, and City Archaeologist. As appropriate, the FAA shall coordinate preparation of draft documents prepared pursuant to this Agreement with the City Historic Preservation Officer, City Archaeologist, and Director of the Pueblo Grande Museum and Archaeological Park. The FAA shall submit draft documents to the SHPO and other participants in this Agreement for a thirty-day review period. The FAA in consultation with the signatories to this agreement shall consider any comments provided within thirty days, and request the City to revise reports as appropriate. The FAA shall provide the consulting parties with a copy of final reports.

Stipulation 6. Airport Development Program Modifications

As final designs of the various components of the ADP are prepared by the City, the FAA will review the results of the assessment of effects in consultation with the City Archaeologist and City Historic Preservation Officer. If design modifications expand the APE, the FAA shall ensure the City undertakes supplemental inventory to identify any historic properties in the expanded area of potential effects. The City shall provide the results of the review of final designs to the FAA. The FAA shall consult with the SHPO about the National Register-eligibility of those newly identified properties, about the effect of the ADP on any eligible properties, and about treatment to avoid, reduce, or mitigate any identified adverse effects.

Stipulation 7. Professional Qualifications

The FAA shall ensure that all historic preservation work carried out pursuant to this Agreement is carried out by or under the supervision of a person or persons meeting at a minimum the Secretary of the Interior's *Professional Qualifications Standards* (36 CFR Part 61).

Stipulation 8. Arbitration

The parties agree to utilize any arbitration that is required under applicable court rules.

Stipulation 9. Conflict of Interest

This Agreement is subject to cancellation by the State under ARS § 38-511 if a person significantly involved in the Agreement on behalf of the State is an employee or consultant of any other party in the Agreement at any time while the Agreement or any extension of the Agreement is in effect, but no later than three years after its execution.

The SHPO may terminate this Agreement upon finding that an Arizona State Parks employee was significantly involved in the creation of this Agreement is, at any time the Agreement is in effect but no later than three years after its execution, an employee or consultant of any other party in the Agreement.

Stipulation 10. Equal Opportunity/Non-Discrimination

The Consulting Parties agree to comply with all applicable federal or state laws relating to equal opportunity and non-discrimination.

Stipulation 11. Non-Availability of Funding

This Agreement shall be subject to available funding and nothing in this Agreement shall bind the City, State or Federal agencies to expenditures in excess of funds authorized and appropriated for the purposes outlined in the Agreement.

Stipulation 12. Confidentiality

Maintaining confidentiality of certain historic information is allowed under Section 304 of the National Historic Preservation Act and A.R.S.39-125. Therefore, the nature and location of certain historic properties discussed in the Agreement shall be maintained per 36 CFR 800.11(c).

Stipulation 13. Dispute Resolution

Should any party to this Agreement or member of the public object within thirty-days to any actions proposed or carried out pursuant to this Agreement, the FAA shall consult with the objecting party to resolve the objection. The FAA shall notify the SHPO of any objection. If the FAA determines that the objection cannot be resolved, the FAA shall forward all documentation relevant to the dispute to the Council. Within thirty-days after receipt of all pertinent documentation, the Council will either:

- a) Provide the FAA with recommendations, which the FAA will take into account in reaching a final decision regarding the dispute; or
- b) Notify the FAA that it will comment pursuant to 36 CFR Part 800.7(c), and proceed to comment. Any Council comment provided in response to such a request will be taken into account by the FAA in accordance with 36 Part CFR 800.7(c)(4) with reference to the subject of the dispute.
- c) Any recommendation or comment provided by the Council will be understood to pertain only to the subject of the dispute; the FAA responsibility to carry out all actions under this Agreement that are not subject of the dispute will remain unchanged.

Stipulation 14. Amendment

Any of the signatories may request that MOA be amended according to 36 CFR 800.6(c)(7). Any amendment will be effective on the date an amended Agreement is signed by all signatories. The FAA will ensure a copy of any executed amended Agreement is filed with the Advisory Council.

Stipulation 15. Duration

The FAA, SHPO and the City shall review this Agreement in January every five years from the year of the Agreement's execution to determine whether the Agreement needs to continue and whether any changes may be needed. The review and determinations may take place on a conference call or in a physical meeting as needed. Reviews of this MOA shall occur until the completion of the ADP.

Stipulation 16. Termination

In the event the terms of the MOA cannot be or are not being carried out, the signatories shall consult to seek amendment of the Agreement. If an agreement cannot be reached on an amendment, the FAA or the SHPO may terminate it pursuant to 36 CFR 800.6(c)(8). The FAA will either execute a new Memorandum of Agreement under 36 CFR 800.6(c)(1) or request and consider the comments of the Advisory Council for Historic Preservation pursuant to 36 CFR 800.7(a).

Execution of this Agreement, filing of the Agreement with the Council pursuant to 36 CFR 800.6(b)(1)(iv), and implementation of its terms is evidence that the FAA has taken into account the effects of the undertaking on historic properties protected under Section 106 of the National Historic Preservation Act and afforded the Council an opportunity to comment on the undertaking pursuant to that Act.

**FEDERAL AVIATION ADMINISTRATION**

By \_\_\_\_\_ Date \_\_\_\_\_

Manager, Airports Division, Western-Pacific Region

**ARIZONA STATE HISTORIC PRESERVATION OFFICE**

By \_\_\_\_\_ Date \_\_\_\_\_

Arizona State Historic Preservation Officer

**BUREAU OF RECLAMATION**

By \_\_\_\_\_ Date \_\_\_\_\_

Manager, Phoenix Area Office

**SALT RIVER PROJECT**

By \_\_\_\_\_ Date \_\_\_\_\_

Senior Principal Scientist

**CITY OF PHOENIX, A MUNICIPAL CORPORATION**

By \_\_\_\_\_ Date \_\_\_\_\_

David Krietor, Aviation Director

**ATTEST:**

**APPROVED AS TO FORM:**

\_\_\_\_\_

\_\_\_\_\_

City Clerk

City Attorney

\_\_\_\_\_

CONCUR:

SALT RIVER PIMA-MARICOPA INDIAN COMMUNITY

By \_\_\_\_\_ Date \_\_\_\_\_

Title \_\_\_\_\_

**CONCUR:**

**GILA RIVER INDIAN COMMUNITY**

By \_\_\_\_\_ Date \_\_\_\_\_

Title \_\_\_\_\_

**CONCUR:**

**FORT McDOWELL YAVAPAI NATION**

By \_\_\_\_\_ Date \_\_\_\_\_

Title \_\_\_\_\_

**CONCUR:**

**HOPI TRIBE**

By \_\_\_\_\_ Date \_\_\_\_\_

Title \_\_\_\_\_

CONCUR:

AK-CHIN INDIAN COMMUNITY

By \_\_\_\_\_ Date \_\_\_\_\_

Title \_\_\_\_\_

CONCUR:

YAVAPAI-PRESCOTT INDIAN TRIBE

Title \_\_\_\_\_

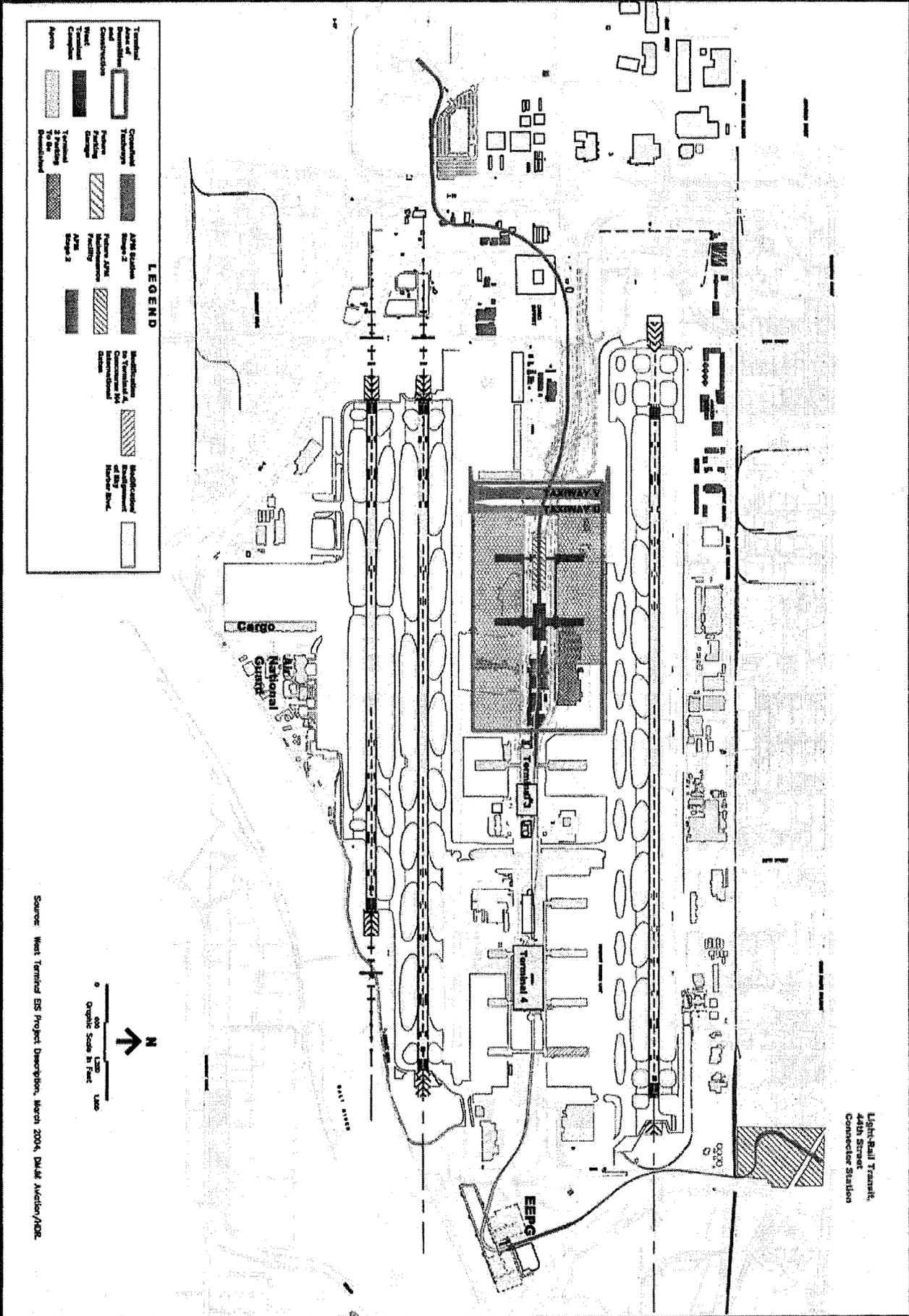
By \_\_\_\_\_ Date \_\_\_\_\_

**CONCUR:**

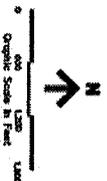
**TOHONO O'ODHAM NATION**

Title \_\_\_\_\_

By \_\_\_\_\_ Date \_\_\_\_\_

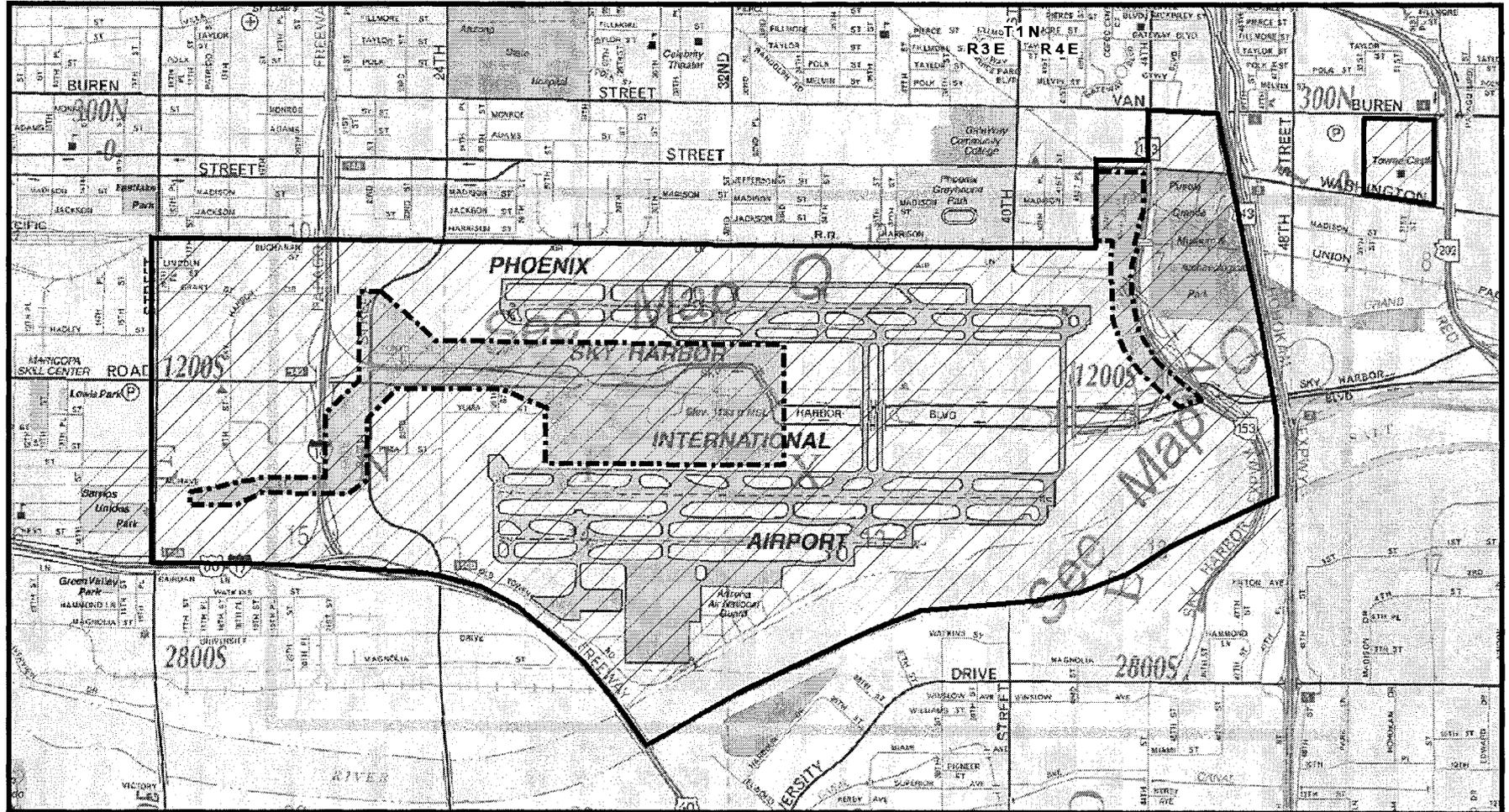


Source: West Terminal SS Project Description, March 2004, DMJM Anderson/ARC.

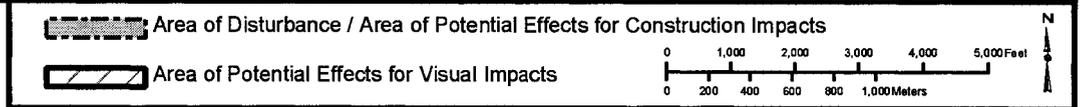


**LEGEND**

Taxiway Runway Taxiway Apron Taxiway Apron Facility Taxiway Apron Facility Stage 2 Taxiway to be Relocated Taxiway to be Relocated Stage 2	Taxiway Runway Taxiway Apron Taxiway Apron Facility Taxiway Apron Facility Stage 2 Taxiway to be Relocated Taxiway to be Relocated Stage 2
--	--



Source: ©2002 Wide World of Maps, Inc. Reproduced With Permission No. 410123



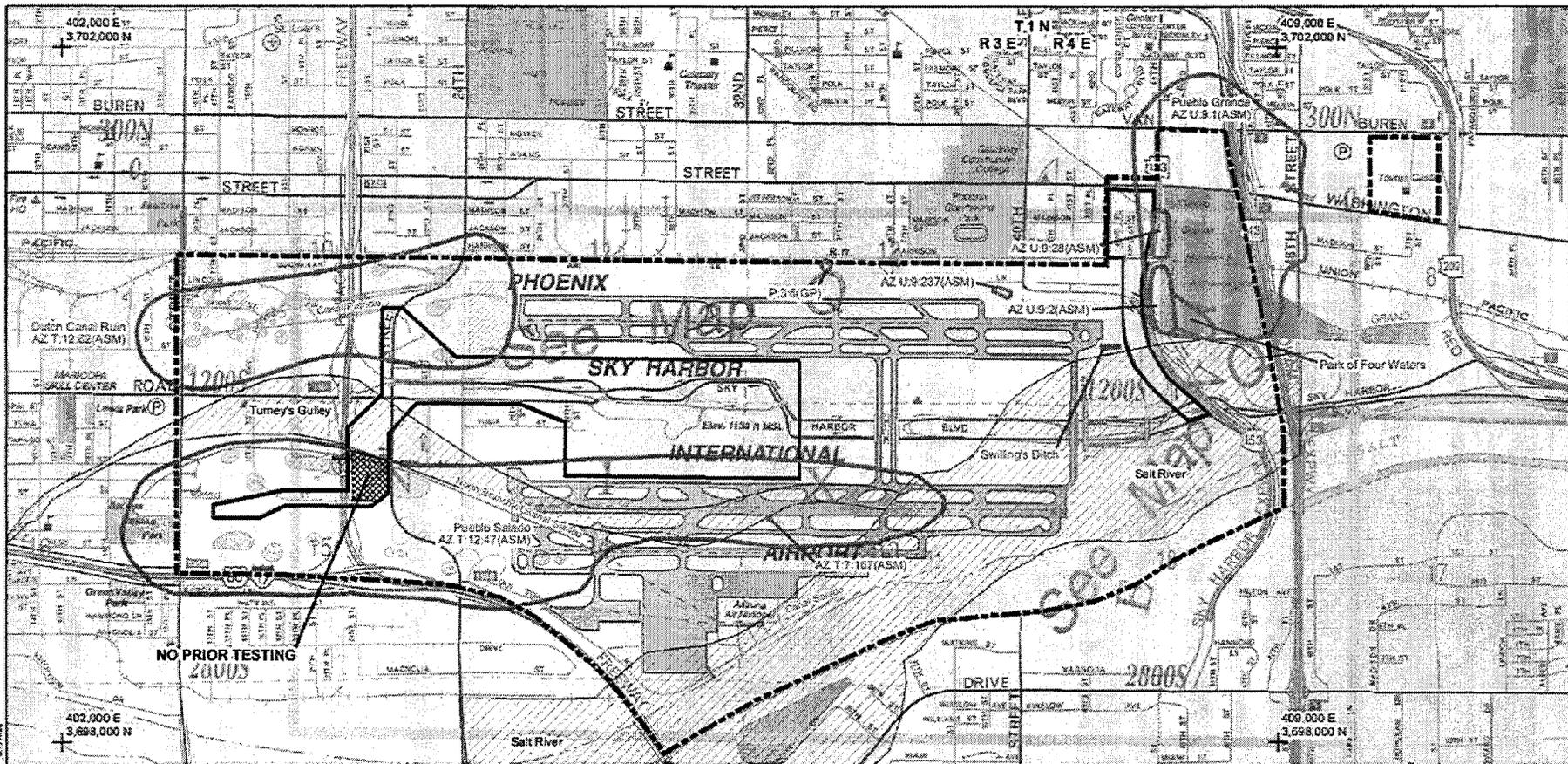
## Attachment 2 Area of Potential Effects

**Attachment 3**

<b>HISTORIC PROPERTIES SUBJECT TO POTENTIAL ADVERSE EFFECTS</b>				
<b>Site Name / Number</b>	<b>Location</b>	<b>Description</b>	<b>National Register Status</b>	<b>Section 106 Effect</b>
1 Pueblo Salado AZ T:12:47(ASM)	Southwest part of Airport	Hohokam habitation site, Classic period, pit houses, adobe compounds, field houses, canals, pits, burials	Eligible, Criterion D	Stage 2-West APM may disturb unstudied part of site, adverse effect <sup>1</sup>
2 Dutch Canal Ruin AZ T:12:62(ASM)	Northwest part of Airport	Hohokam (mostly seasonal) habitation site, pre-Classic and Classic periods, pit houses, canals, pits, burials	Eligible, Criterion D	Sky Harbor Boulevard realignment may disturb unstudied part of site, adverse effect <sup>1</sup>
3 Pueblo Grande AZ U:9:1(ASM) (outside park)	Northeast of Airport	Primary Hohokam village with many habitation and burial areas, canals, pits	Eligible, Criterion D	Stage 2-East APM may disturb unstudied part of site, adverse effect <sup>1</sup>
4 Pueblo Grande Museum and Archaeological Park AZ U:9:1(ASM)	4619 E. Washington St.	Museum and park to interpret platform and ballcourt of Pueblo Grande site	Listed, Criteria A and D; National Historic Landmark	Elevated section of Stage 2-East APM and APM maintenance and control facility would be within 300 to 800 feet of park boundary, potential adverse visual effect <sup>2</sup>
5 AZ U:9:2(ASM)	Northeast of Airport	11 Hohokam canals, Sedentary and Classic periods, 1884 Joint Head Canal	Eligible, Criterion D	Stage 2-East APM may disturb buried canal remnants that extend west of site, adverse effect <sup>1</sup>
6 AZ U:9:28(ASM)	Northeast of Airport	8 Hohokam canals, Sedentary and Classic periods, 2 activity areas, 3 historical trash pits	Data recovery studies completed	Stage 2-East may disturb buried canal remnants that extend west of site, adverse effect
7 Hohokam Canal Systems 2 and 10	Airport and vicinity	Hohokam irrigation canals	Intact segments eligible, Criterion D	Construction may disturb buried canal remnants, adverse effect <sup>1</sup>
8 Paul Coze Mural, <i>The Phoenix</i>	2908 East Sky Harbor Blvd	Mural by Paul Coze installed in Terminal 2 when it was built	Eligible, Criterion C	To be relocated, no adverse effect if photo documented, moved carefully, and publicly displayed and interpreted

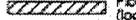
<sup>1</sup> Traditional cultural concerns about any human remains, funerary objects, sacred objects, and objects of cultural patrimony will be addressed in accordance with The City Burial Agreement, if remains are found on non-Federal land, or in accordance with Attachment 7 if found on Federal land managed by the Bureau of Reclamation.

<sup>2</sup> Phoenix Aviation Department will work to avoid adverse visual effects through sensitive design of APM facilities. No potential for damage from construction vibrations was identified, but will be reassessed after construction techniques are determined.



Base Map Source:  
 ©2002 Wide World of Maps, Inc.  
 Reproduced With Permission No. 410123  
 Sources: See references cited in  
 Table 1, Appendix C

**LEGEND**

-  Site
-  or  Artifact / Feature Clusters  
Data Recovery Studies Completed
-  Flood Scour Zone and Erosional Channel  
(location approximate)
-  Area of Disturbance / Area of Potential Effects for Construction Impacts
-  Area of Potential Effects for Visual Impacts

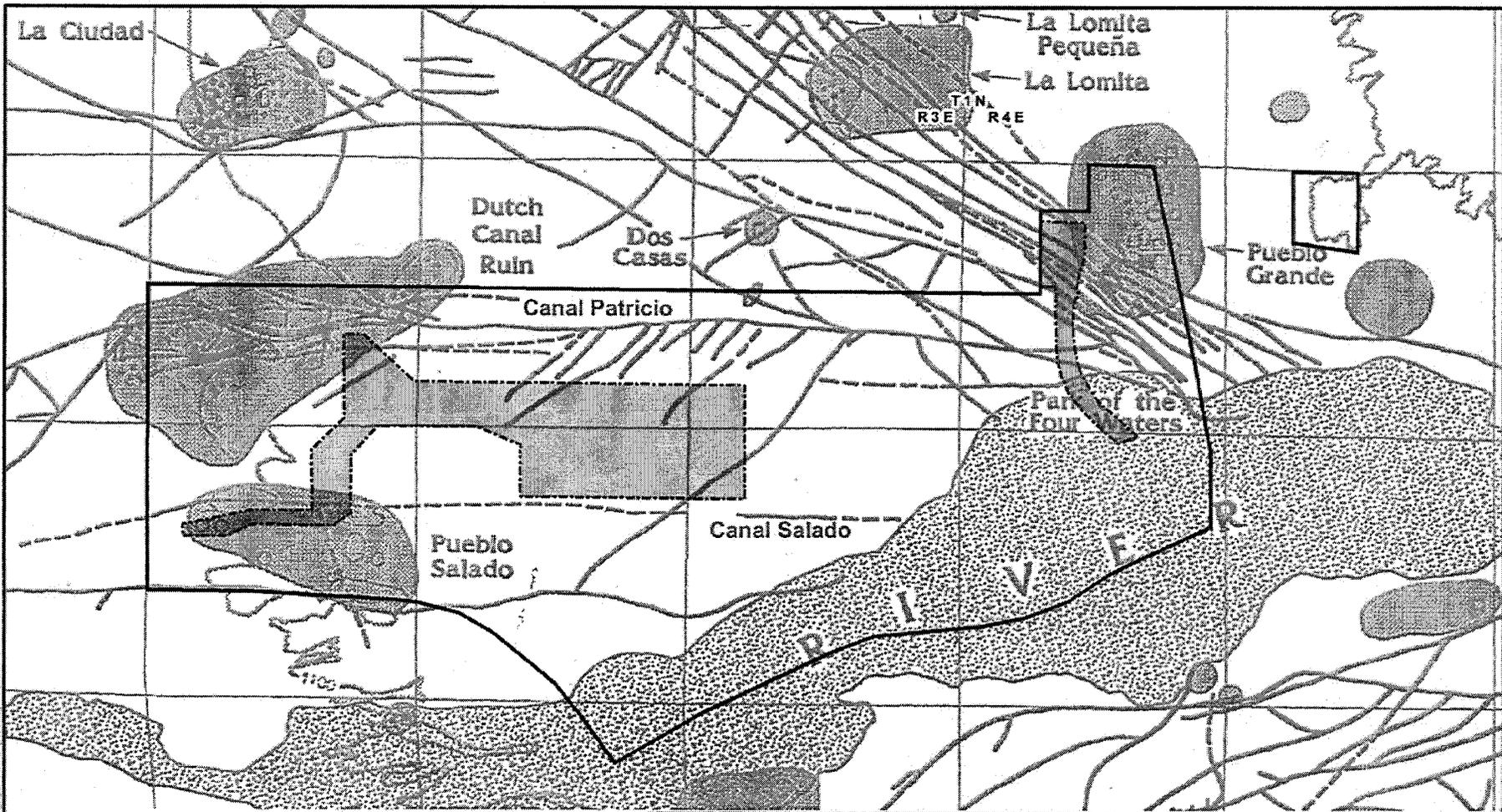


**Phoenix Sky Harbor**  
 INTERNATIONAL AIRPORT  
 Environmental Impact Statement



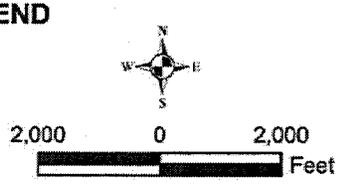
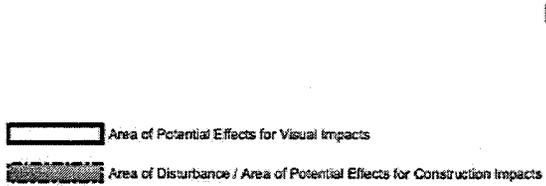
**Previously Recorded Archaeological Sites**

Attachment  
 4



P:\COP\_Arizona\West\_Terraced\_ED\gis\mxd\env\env11\Map\_of\_Arizona\CHDA\_Invaild\_MAR\_04.dwg

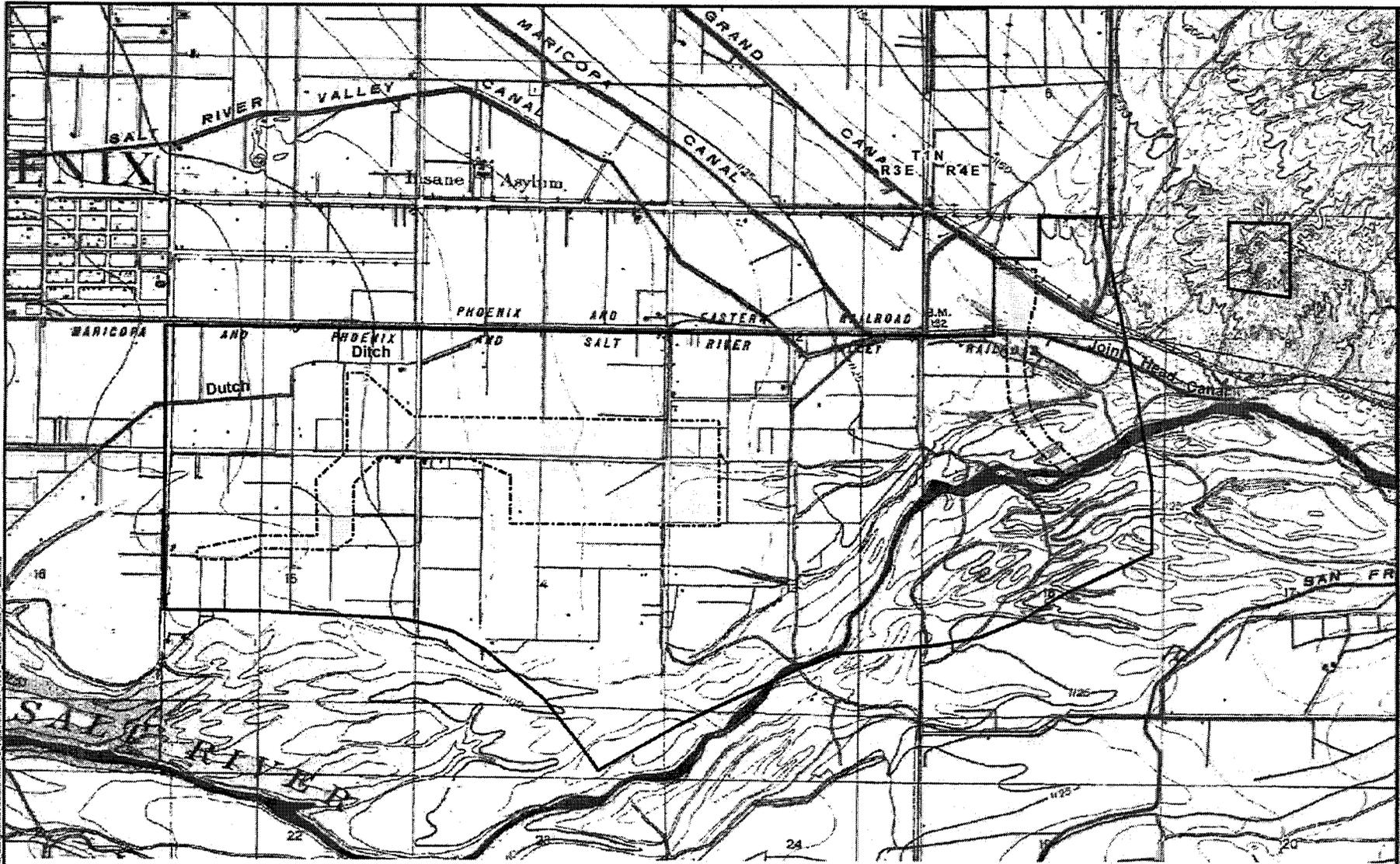
Base Map Source: Howard 1291



**Phoenix Sky Harbor**  
INTERNATIONAL AIRPORT  
Environmental Impact Statement

**Hohokam Canals in the Project Vicinity**

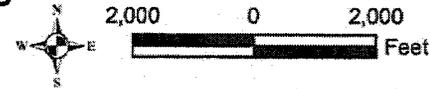
Attachment  
5



1902-3 U.S. Reclamation Service, Salt River Project, Salt River Valley, Arizona, Topographic and Irrigation Map

Base Map Source: 1902-3 U.S. Reclamation Service, Salt River Project, Salt River Valley, Arizona, Topographic and Irrigation Map

- LEGEND**
- Area of Potential Effects for Visual Impacts
  - Area of Disturbance / Area of Potential Effects for Construction Impacts



**Phoenix Sky Harbor**  
 INTERNATIONAL AIRPORT  
 Environmental Impact Statement

**Historical Canals in the Project Vicinity**

## ***Attachment 7***

The following burial treatment plan will be used in the unlikely event that prehistoric Native American burials are found on Federal land managed by the Bureau of Reclamation:

1. All excavations will be conducted by professional archaeologists and executed with respect.
2. Photographs will be taken but only for archival purposes. They will not be published or for public use.
3. Human remains and associated cultural objects will be transported to an approved laboratory and analyzed in that location.
4. The laboratory will have appropriate security equipment and procedures.
5. Analysis will be nondestructive – skeletal material will be dry brushed, and objects will be cleaned using agents that will not deteriorate or harm them.
6. Analysis will be completed within 60 days after completion of fieldwork.
7. A complete inventory of Native American human remains and cultural objects will be prepared.
8. A final report will be completed within 90 days after fieldwork has ended.
9. Disposition of Native American human remains and associated cultural objects will be completed within 30 days after completion of the final report.

Before any burial is removed, Reclamation archaeologists will be notified, and the above treatment plan implemented. Disposition of the human remains and associated funerary items will be treated in accordance with the Native American Graves Protection and Repatriation Act.

**BURIAL DISCOVERIES ON  
CITY OF PHOENIX LANDS  
OR PROJECTS CONDUCTED  
BY THE CITY OF PHOENIX**



The Arizona State Museum  
The University of Arizona  
Tucson, Arizona 85721

Telephone: 520/621-4795

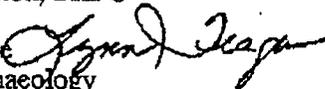
FAX: 520/621-2976

Internet: LTEAGUE@CCIT.ARIZONA.EDU

November 30, 1995

MEMORANDUM

To: Elaine Peters, Ak-Chin Indian Community  
Elaine Notah, Gila River Indian Community  
Ron Chiago, Salt River Pima-Maricopa Indian Community  
Joseph T. Joaquin, Tohono O'odham Nation  
Leigh Jenkins, Hopi Tribe  
Joseph Dishta, Zuni Pueblo  
Roger Anyon, Zuni Pueblo  
Todd Bostwick, City of Phoenix  
Louis Hood, Fort McDowell Mohave-Apache Indian Community  
Carol Heathington, SHPO

From: Lynn S. Teague   
Curator of Archaeology  
Coordinator, A.R.S. §41-844 and A.R.S. §41-865

I have enclosed the final agreement for long-term arrangements regarding treatment and disposition of burials encountered in the course of City of Phoenix projects. Only one request for revision of the draft was received, a minor correction from the City of Phoenix. This entailed removal of a reference to the City's contractors; the City itself handles all repatriation of remains.

I have included signature lines only for those tribes that are directly involved in implementing the agreement and those that have requested signature lines on cooperative agreements. If you are among these, please sign this agreement and return an original of your signature page to me. Thank you for your cooperation.

## BURIAL DISCOVERIES ON CITY OF PHOENIX LANDS OR PROJECTS CONDUCTED BY THE CITY OF PHOENIX

This agreement is intended to facilitate compliance with A.R.S. §41-844 and A.R.S. §41-865 on projects initiated and conducted by the City of Phoenix, and on property held by the City of Phoenix. The terms of this agreement will be interpreted and implemented in a manner consistent with terms, definitions, and principles provided in A.R.S. §41-844 and 41-865, *Rules* revised November 20, 1991, and current *Guidelines* issued by the Coordinator, ASM.

Tribes claiming affinity with native cultural traditions in the City of Phoenix are the Gila River Indian Community (GRIC), the Ak-Chin Indian Community (Ak-Chin), the Salt-River Pima-Maricopa Indian Community (SRPMIC), the Tohono O'odham Nation (TON), Zuni Pueblo (Zuni), the Hopi Tribe (Hopi), and the Fort McDowell Mohave-Apache Indian Community (Fort McDowell). These groups will be referred to collectively in this document as the Tribes. The SRPMIC represents these tribes, with the exception of the Apache, in cases north of Baseline Road and the GRIC represents them south of that line. Fort McDowell is responsible for consultations regarding Apache Remains.

### I. DISCOVERY OF REMAINS

#### A. Projects Expected to Discover Remains

1. The Coordinator, ASM; the Tribes; and the City of Phoenix agree that when the City of Phoenix plans archaeological or other undertakings believed likely to discover Remains, the Coordinator will be notified.

The Coordinator will consult the SRPMIC or GRIC, Fort McDowell, and the City of Phoenix to assess whether a project-specific agreement is needed, or whether work should proceed under the terms of this general agreement. Fort McDowell will determine whether the project area is known to them as one likely to contain Remains associated with the Apache cultural tradition. If the Coordinator is notified that Fort McDowell considers this likely, further consultation will include Fort McDowell.

2. If it is decided that a project will be administered under this agreement, the City of Phoenix will notify the Coordinator prior to initiating fieldwork (in individual phases, if appropriate), and will notify the Coordinator that the agreement has been activated by an initial discovery. After that initial discovery, individual burials will not require notice to the Coordinator. Instead, a letter indicating total numbers of burials and confirming compliance with the terms of the agreement will be submitted to the Coordinator within 30 days of completing compliance with the terms of the agreement (normally, the time at which remains are repatriated to the appropriate tribe).

The Coordinator will be notified and will initiate consultation regarding individual cases in which cultural association is uncertain or is known to be of a tradition not claimed by the Tribes.

#### B. Unexpected Discoveries

The Coordinator, ASM; the Tribes; and the City of Phoenix agree that the following provisions and procedures will apply in any case of inadvertant and unexpected discovery

of Remains as a consequence of a the City of Phoenix undertaking or on City of Phoenix property:

1. When remains or objects that may be subject to A.R.S. §41-844 or 41-865 are discovered, the City of Phoenix is authorized to undertake limited additional excavation and examination to assess whether the materials are within the protected classes of remains and objects, prior to notification of the Coordinator and claimants.

2. If the City of Phoenix and its contractors are unable to determine whether materials are Remains protected under the statutes, the Coordinator will be notified and will make this determination, with the assistance of specialists as needed.

3. The City of Phoenix will notify the Coordinator (if not already consulted) and the SRPMIC or GRIC of the discovery within 24 hours of confirmation that the discovery falls within the protected classes. If the Remains are of Apache origin, or are not clearly identifiable as belonging to a cultural tradition other than Apache, Fort McDowell will also be notified by the City of Phoenix.

4. If it is determined that the Remains represent a cultural tradition not claimed by the SRPMIC or GRIC or Fort McDowell, the Coordinator will undertake notification and consultation of appropriate parties.

5. If efforts to contact the SRPMIC or GRIC, Fort McDowell, and the Coordinator are unsuccessful, and Remains are endangered by human or natural action, the City of Phoenix is authorized to proceed with removal of the Remains to a local laboratory for their protection. Written notice of this action must be provided to the SRPMIC or GRIC, and to Fort McDowell when there is reason to believe that the remains may be Apache in origin, and to the Coordinator within 3 days of removal.

## II. TREATMENT AND DISPOSITION OF REMAINS

The following provisions for the treatment and disposition of Remains reference the SRPMIC or GRIC. However, when Remains are of Apache origin "Fort McDowell" will be substituted for "SRPMIC or GRIC" in all provisions below.

Unless otherwise agreed between the City of Phoenix, the Tribes, and the ASM Coordinator, the treatment and disposition of Human Remains shall be as follows:

1. All discovered Remains shall be treated with respect and dignity in order to avoid any unnecessary disturbance of Remains, separation of Human Remains from their Associated Funerary Objects, or physical modification of Human Remains.

2. Whenever possible, Remains will be protected in place. The SRPMIC or GRIC will be consulted regarding whether the security of the location is adequate.

3. If avoidance and protection of Remains is not possible, removal will proceed according to the following provisions:

a. Representatives of the SRPMIC or GRIC shall have the opportunity to be present during the excavation of the Remains. The City of Phoenix will provide to the SRPMIC or GRIC an opportunity to examine the Remains prior to removal and to conduct traditional activities, if this is feasible without delay that would endanger those Remains.

b. Remains will be excavated in accordance with the provisions and standards of the Arizona Antiquities Act and implementing Rules, and of Guidelines current at the time of the discovery.

c. Remains and associated objects may be transported to an archaeological laboratory within the Phoenix metropolitan area (including incorporated cities adjacent to

Phoenix) for archaeological inventory and description. Under no circumstances will Remains or associated Objects be taken out of the State of Arizona. Transport of Remains will be minimized.

d. No destructive analysis of Human Remains shall be permitted except with the written authorization of all claimant Tribes, with a copy of their authorizations to the Coordinator.

e. Photographs of human remains may be taken for record purposes only. The City of Phoenix will insure that these photographs are kept under secure conditions and that use is restricted in accordance with the wishes of the SRPMIC and GRIC. Photographs of burial locations and of Associated Objects can be taken and can be used in publications so long as no human remains are visible in the photograph. No human remains may be used in public displays.

4. Representatives of the claimant Tribes shall be afforded the opportunity to review all artifact collections and records resulting from activities of the City of Phoenix and their contractors in order to identify Funerary or Sacred Objects. If such objects are identified, the Coordinator will be notified by the Tribes and consultation regarding their treatment and disposition will be initiated.

5. Copies of all publications arising from archaeological activities in the project area shall be provided to the Coordinator, ASM, and to the Tribes by the City of Phoenix. An inventory of all Remains repatriated shall be submitted to the Coordinator within 30 days of repatriation.

6. The location of the discovery of Remains that are to be protected in place will be protected to the extent allowed by law, and will not be included in any public or professional publications having an unrestricted distribution.

7. All Tribes reserve the right to participate in further planning and implementation of activities, including reburial, under this agreement, after notice to the SRPMIC or GRIC, or Fort McDowell when the Remains may be Apache in origin.

8. The City of Phoenix will turn over to the SRPMIC or GRIC all Remains of relevant cultural affiliation that are removed from the project area. Remains may be temporarily inventoried and stored in local archaeological laboratory facilities, but will be made available to the SRPMIC or GRIC for repatriation within a specified period after completion of fieldwork, to be negotiated between the SRPMIC or GRIC and the City of Phoenix in each case.

10. An inventory and report of Remains encountered and their disposition (including inventory of remains and associated objects and maps and photographs, as specified in the Rules implementing A.R.S. §41-844 and 41-865) will be submitted to the Coordinator and to the Tribes by the City of Phoenix.

### III. DISPUTE RESOLUTION

All disputes shall be resolved in accordance with ARS §41-844 and 41-865 and the procedures set forth in the *Rules* implementing that statute and *Guidelines* current at the time of the dispute. Such disputes shall not interfere with or delay ongoing archaeological or construction work in the project area. If the nature of the dispute does not involve issues of cultural affiliation, the dispute will not delay repatriation of Remains.

**Appendix D**

---

**Fish, Wildlife, and Plants Supporting Materials**

**APPENDIX D**

**FISH, WILDLIFE AND PLANTS SUPPORTING MATERIALS**

This appendix contains information regarding Threatened and Endangered Species supporting materials used in this EIS.

- D-1 Habitat Requirements and Occurrence Potential within the Detailed Study Area
- D-2 Bird List of the Desert Botanical Garden
- D-3 Wildlife identified by U.S. Department of Agriculture Staff in the Sky Harbor Airport Vicinity
- D-4 Wetland Field Observations

APPENDIX D-1

SPECIAL STATUS SPECIES FOR MARICOPA COUNTY, ARIZONA – HABITAT REQUIREMENTS AND OCCURRENCE POTENTIAL WITHIN THE DETAILED STUDY AREA

Phoenix Sky Harbor International Airport West Terminal Environmental Impact Statement

Species Common Name Scientific Name	Status	Habitat Requirements	Occurrence Potential
Amphibian			
Arizona toad <i>Bufo microscaphus microscaphus</i>	SC	Found in east and west central Arizona, canyons and flood plains south of the Mogollon Rim, but also found in East Clear Creek. Potential habitat includes rocky streams and canyons in the pine-oak belt from near sea level to around 8,000 feet (2,440 meters). The species also occurs in lower deserts e.g. Agua Fria River area (AGFD 1997).	May occur in the detailed study area. The detailed study area is within the known geographic and elevation range of the Arizona toad. Rocky stream conditions in the Salt River are similar to habitat known to support this species.
Lowland leopard frog <i>Rana yavapaiensis</i>	SC	Lowland leopard frogs inhabit aquatic systems found in desert grassland to pinyon-juniper. They are habitat generalists and breed in a variety of natural and man-made aquatic systems. Natural systems include rivers, permanent streams, permanent pools in intermittent streams, beaver ponds, cienegas, and springs. Man-made systems include earthen cattle tanks, livestock drinkers, canals, irrigation sloughs, wells, mine adits, abandoned swimming pools and ornamental backyard ponds. In semi-permanent aquatic systems, lowland leopard frogs may survive the loss of surface water by retreating into deep mud cracks, mammal burrows, or rock fissures (AGFD 2001).	May occur in the detailed study area. The detailed study area is within the known geographic and elevation range of the lowland leopard frog. Substrate and hydrologic conditions in the Salt River are similar to habitat known to support this species.
Bird			
American peregrine falcon	SC	Found in Arizona near cliffs where sufficient prey	May occur in the detailed study area while

<p><i>Falco peregrinus anatum</i></p>		<p>exists. Optimum peregrine habitat is generally considered to be areas of steep, sheer cliffs overlooking woodlands; riparian areas; or other habitat supporting avian prey species in abundance (AGFD 1998). As Arizona's population grows, peregrines seem to be breeding in less optimal habitat: either small broken cliffs in ponderosa pine forest or large; sheer cliffs in very xeric areas (AGFD 1998); and sometimes on man-made structures such as office towers and bridge abutments (USFWS 2001). The presence of an open expanse is critical to the peregrine falcon (AGFD 1998).</p> <p>In Arizona, there are over 200 known eyries. Breeding pairs are well distributed throughout suitable habitat statewide, except for the low elevation deserts of the southwest quarter of the state where only one nesting territory is currently known. Breeding pairs appear to be year-round residents. Migrants also occur throughout the state as, transients, and wintering individuals (USFWS 2001).</p>	<p>foraging. Peregrine falcons are known to occur in the Phoenix area. They may forage for prey species, such as mourning dove (<i>Zenaida macroura</i>), in the study area. However, nesting opportunity in the detailed study area is limited and unlikely.</p>
<p>Bald eagle <i>Haliaeetus leucocephalus</i></p>	<p>LT</p>	<p>Usually found along sea coasts, lakes, and rivers. Nesting sites are usually isolated high in trees, on cliffs, or on pinnacles, with a commanding view of the area and in close proximity to water. A small resident population of approximately 40 pairs nest along the Salt, Verde, Gila, Bill Williams, Agua Fria, San Pedro, and San Francisco Rivers and along Tonto and Canyon Creeks. Bald eagles winter throughout the state of Arizona, with at least 200 to 300 found each year. The greatest numbers of wintering eagles are found along the Mogollon Rim and east through the White Mountains (USFWS 2001).</p>	<p>Unlikely to occur in the detailed study area. The Salt River does not contain the mature riparian vegetation needed for breeding or permanent water needed to support prey species for the bald eagle. The HDMS reports no records of the bald eagle occurring within a two-mile radius of the detailed study area.</p>
<p>Cactus ferruginous pygmy-owl <i>Glaucidium brasilianum cactorum</i></p>	<p>LE</p>	<p>Usually found in river bottom woodlands and palo verde cacti-mixed scrub associations of the</p>	<p>Unlikely to occur in the detailed study area. The Salt River and adjacent upland areas do not contain</p>

		<p>Sonoran desert. In central and southern Arizona, the pygmy-owl is currently found primarily in Sonoran desertscrub vegetation with some locations in riparian habitat and desert grassland habitat.</p> <p>The Cactus ferruginous pygmy-owl primarily nests within cavities of saguaro cacti, but will also use tree cavities. They are found below 1,219 meters (4,000 feet) in elevation (USFWS 2001). The Cactus ferruginous pygmy-owl were formerly common in mesquite bosques throughout central southern Arizona (AGFD 2001). They have been found historically south and west of the Tortolita Mts.; and in the vicinity of the Rincon, Pajarito, Puerto Blanco, Ajo, Santa Catalina and the Santa Rita Mountains. Other areas of occurrence include the Tucson area; Gila River near Bonita Creek; the San Francisco River, the San Pedro River near Dudleyville, and Sonoyta Creek. The only recent records are from Organ Pipe Cactus National Monument, near Ajo, and suburban northwest Tucson (AGFD 2001).</p>	<p>riparian or natural desert vegetation known to support the cactus ferruginous pygmy-owl. The project area is within the Phoenix urban area that is excluded from survey recommendations for the species due to the lack of suitable habitat and high degree of development (USFWS 2000). The HDMS reports no records of the species occurring within a two-mile radius of the detailed study area.</p>
<p>Mexican spotted owl <i>Strix occidentalis lucida</i></p>	LT	<p>Occurs in varied habitat, consisting of mature montane forest and woodland, shady wooded canyons and steep canyons. In forested habitat, uneven-aged stands with a high canopy closure, high tree density, and a sloped terrain appear to be key habitat components (USFWS 2002). The Mexican spotted owl can be found in mixed conifer and pine oak vegetation types. Elevation ranges from 1,249 to 2,743 meters (4,100 to 9,000 feet). Populations in Arizona are scattered but occur in all areas except the arid southwestern portion of the state and much of the lowland riparian zones (USFWS 2002).</p>	<p>Does not occur in the detailed study area. The detailed study area at Sky Harbor Airport is below the known elevation range of the Mexican spotted owl habitat. Also, the vegetation within the study area does not resemble that known to support the species. The HDMS reports no records of the Mexican spotted owl occurring within a two-mile radius of the detailed study area.</p>
<p>Southwestern willow flycatcher <i>Empidonax traillii extimus</i></p>	LE	<p>Occurs in dense riparian habitats along streams, rivers, and other wetlands where cottonwood,</p>	<p>Unlikely to occur in the detailed study area. The Salt River does not contain dense riparian</p>

		<p>willow, box elder, tamarisk, Russian olive, button bush, and arrow weed are present. Elevation of habitat is less than 8,500 feet (2,590 meters) (USFWS 2001).</p> <p>In Arizona, the southwestern willow flycatcher breeds locally along the Colorado River, Alamo Lake, the headwaters of the Little Colorado and San Francisco Rivers, portions of Verde River, Roosevelt Lake and the Gila and the San Pedro rivers (AGFD 2002).</p>	<p>vegetation or hydrologic conditions known to support the southwestern willow flycatcher.</p>
<p>Western burrowing owl <i>Athene cunicularia hypugaea</i></p>	SC	<p>Burrowing owls breed in grasslands, prairies, or open areas often near human habitation, especially golf courses and airports. This species can be found in urban areas on undeveloped land and in open areas associated with residential use (BISON 2002).</p>	<p>May occur in the detailed study area. The burrowing owl is known to occur in human altered environments including airports. Large open areas located in the western and northeastern portions of the detailed study area resemble habitat known to support this species.</p>
<p>Western least bittern <i>Ixobrychus exilis hesperis</i></p>	SC	<p>Least bitterns breeds in dense cattail marshes along the lower Colorado River and in some locations along the Salt and Gila Rivers, Picacho Reservoir and Dankworth Ponds south of Safford (AGFD 1988).</p>	<p>Unlikely to occur in the detailed study area. Vegetation and wetland conditions in the detailed study area do not resemble habitat known to support the least bittern. The HDMS reports no records of the least bittern occurring within a two-mile radius of the detailed study area.</p>
<p>Yellow-billed cuckoo <i>Coccyzus americanus</i></p>	C	<p>Suitable habitat is limited to narrow, and often widely separated, riparian cottonwood-willow galleries (salt cedar is also used by the cuckoo) (USFWS 2001). The species is rarely observed as transient in xeric desert or urban settings (AGFD 2001).</p>	<p>Unlikely to occur in the detailed study area. The Salt River does not contain mature cottonwood-willow riparian gallery forests needed to support the yellow-billed cuckoo. The HDMS reports no records of the species occurring within a two-mile radius of the detailed study area.</p>
<p>Yuma clapper rail <i>Rallus longirostris yumanensis</i></p>	LE	<p>Inhabits freshwater or brackish streambanks and marshlands under 1,372 meters (4,500 feet) elevation. The Yuma clapper rail is associated with dense riparian and marsh vegetation. It requires a wet substrate, such as a mudflat, sandbar, or slough bottom that supports cattail and bulrush stands of moderate to high density adjacent to shorelines (USFWS 2002). The Yuma clapper rail occurs along the Bill</p>	<p>Unlikely to occur in the detailed study area. The Salt River does not contain riparian and wetland vegetation and hydrology necessary to support the Yuma clapper rail. The HDMS reports no records of the Yuma clapper rail occurring within a two mile radius of the detailed study area.</p>

		Williams River drainage, the Lower Gila River from near Phoenix to the Colorado River, the lower Salt and Verde Rivers and at Picacho Reservoir (AGFD 2001). The species also occurs along the Tonto Creek arm of Roosevelt Lake, and may be expanding into other suitable marsh habitats in western and central Arizona (USFWS 2002).	
Fish			
Bonytail chub <i>Gila elegans</i>	LE	Found in slower water habitats such as eddies, pools, side channels, and coves. They are found in streams below 1,219-meters (4,000-foot) elevation. A small population exists in Lake Mohave with possible individuals down river as far as Parker Dam (AGFD 2001). Hatchery-produced and cove-reared bonytails have been stocked into Lakes Havasu and Mohave. Both sites have ongoing reintroduction programs (USFWS 2001).	Unlikely to occur in the detailed study area. The Salt River does not contain water habitats known to support the bonytail. The HDMS reports no records of the bonytail occurring within a two-mile radius of the detailed study area.
Desert pupfish <i>Cyprinodon macularius</i>	LE	Found in shallow water of desert springs, small streams, and marshes below 1,515-meters (5,000-foot) elevation. The species tolerates high salinities and high water temperatures (USFWS 2000). There are no natural populations of this subspecies remaining in Arizona. Reintroduced populations exist at Cold Springs in Graham County, AD Wash in Maricopa County and Finley Tank in Santa Cruz County. There are also about 9 populations in private ponds and aquariums (AGFD 2001).	Unlikely to occur in the detailed study area. The Salt River does not contain water habitats known to support the desert pupfish. The HDMS reports no records of the desert pupfish occurring within a two-mile radius of the detailed study area.
Desert sucker <i>Catostomus clarki</i>	SC	Found in rapids and flowing pools of streams and rivers primarily over bottoms of gravel-rubble with sandy silt in the interstices. It occurs between 146 to 2,696 meters (480 to 8,840 feet) elevation. The desert sucker occurs throughout the entire Gila River basin and in the Bill Williams tributaries. The species has decreased rapidly in the southern part of its range (AGFD 2001).	Unlikely to occur in the detailed study area. The Salt River does not contain water habitats known to support the desert sucker. The HDMS reports no records of the desert sucker occurring within a two-mile radius of the detailed study area.

Gila topminnow <i>Poeciliopsis occidentalis occidentalis</i>	LE	Occurs in small streams, springs, and cienegas below 1,350 meters (4,500 feet) elevation, primarily in shallow areas with aquatic vegetation and debris for cover (USFWS 2001). Currently, disjunct populations exist in 9-11 natural locations, 22-24 re-introduced locations within the Gila River drainage and one location in the Bill Williams River drainage (AGFD 2001).	Unlikely to occur in the detailed study area. The Salt River does not contain water habitats known to support the Gila topminnow. The HDMS reports no records of the Gila topminnow occurring within a two-mile radius of the detailed study area.
Longfin dace <i>Agosia chrysogaster</i>	SC	Wide ranging, from intermittent low-desert streams to clear and cool brooks at higher elevations. The longfin dace primarily occurs in the Gila and Bill Williams drainages and introduced into the Virgin River basin, Arizona (AGFD 1997).	Unlikely to occur in the detailed study area. The Salt River does not contain water habitats known to support the longfin dace. The HDMS reports no records of the longfin dace occurring within a two-mile radius of the detailed study area.
Razorback sucker <i>Xyrauchen texanus</i>	LE	Found in backwaters, flooded bottomlands, pools, side channels and other slow moving habitats under 1,829 meters (6,000 feet) elevation. Historically, they were recorded in areas near strong currents (USFWS 2001). Presently, adult populations exist in Lake Mohave, Lake Mead, and Lake Havasu (AGFD 2001). Small remnant populations are found in the Green, Yampa, and mainstream Colorado Rivers (USFWS 2001).	Unlikely to occur in the detailed study area. The Salt River does not contain water habitats known to support the razorback sucker. The HDMS reports no records of the razorback sucker occurring within a two-mile radius of the detailed study area.
Roundtail chub <i>Gila robusta</i>	SC	Roundtail chub occupy cool to warm water, mid-elevation streams and rivers where typical adult microhabitat consists of pools up to 2.0 meters (6.6 feet) deep adjacent to swifter riffles and runs. Cover is usually present and consists of large boulders, tree rootwads, submerged large trees and branches, undercut cliff walls or deep water. The species occurs in the mainstream tributaries of the Verde and Salt Rivers, as well as canals in metropolitan Phoenix (AGFD 2001).	Unlikely to occur in the Salt River at detailed study area as it does not contain water habitats known to support the roundtail chub. The HDMS reports no records of the roundtail chub occurring within a two-mile radius of the detailed study area.
Sonora sucker <i>Catostomus insignis</i>	SC	The Sonora sucker is found in a variety of habitats from warm water rivers to trout streams, with gravel-rubble bottoms. The Sonora sucker is native to the Gila Basin in Arizona, New Mexico	Unlikely to occur in the detailed study area. The Salt River does not contain water habitats known to support the Sonora sucker. The HDMS reports no records of the Sonora sucker occurring within a

		and Sonora, Mexico below 1,500 meters elevation. It is also in the upper Bill Williams and San Francisco River drainages, with the exception of extreme headwaters. In Arizona, the Sonora sucker has been recorded in the Apache-Sitgreaves and Coconino National Forests (AGFD 2001).	two-mile radius of the detailed study area.
Speckled dace <i>Rhinichthys osculus</i>	SC	Found in rocky riffles, runs, and pools of headwaters; creeks and small to medium rivers; and rarely in lakes. Resides in water less than 0.5 meter (1.6 feet) deep; often congregating below riffles and eddies. In Arizona, the speckled dace is found in portions of Colorado, Bill Williams and Gila Rivers drainage (AGFD 2001).	Unlikely to occur in the detailed study area. The Salt River does not contain water habitats known to support the speckled dace. The HDMS reports no records of the speckled dace occurring within a two-mile radius of the detailed study area.
Invertebrate			
Maricopa tiger beetle <i>Cicindela oregona maricopa</i>	SC	Most commonly occurs on sandy stream banks and less commonly on gravel and clay stream banks. The Maricopa tiger beetle is easily located along stream drainages in the Central Highlands between 300 and 1,000 meters elevation. The species occurs along banks of semipermanent streams throughout the Central Highlands below the Mogollon Rim (AGFD 2001).	Unlikely to occur in the detailed study area. The detailed study area is outside the geographic range of the Maricopa tiger beetle. Substrate in the Salt River does not resemble habitat known to support this species. The HDMS reports no records of the Maricopa tiger beetle occurring within a two-mile radius of the detailed study area
Squaw peak talussnail <i>Sonorella allynsmith</i>	SC	The Squaw peak talussnail is infrequently found beyond the limits of a 3000-foot band of elevation (BISON 2002). This species occurs in isolated, undisturbed areas of rocks, generally, but not exclusively, limestone. Most often the species are found on north facing or trending slopes, usually near hilltops or in rocky canyons (Pima County 2001).	Does not occur in the detailed study area. The detailed study area is outside the known geographic and elevation range of the Squaw peak talussnail. Substrate and other habitat conditions in the study area do not resemble habitat known to support this species. The HDMS reports no records of the Squaw peak talussnail occurring within a two-mile radius of the detailed study area.
Mammal			
California leaf-nosed bat <i>Macrotus californicus</i>	SC	Mostly found in the Sonoran desertscrub. The primary summer and winter ranges of the California leaf-nosed bat are essentially the same. The species roost in mines, caves, and rock shelters from 160 - 3,980 feet (49 - 1,214 meters). They occur primarily south of Mogollon Plateau	Unlikely to occur in the detailed study area. The detailed study area does not contain mines, caves and other roost sites for the California leaf-nosed bat. Sonoran desertscrub vegetation in the study area has been removed and replaced with landscaped vegetation or left as bare ground. The

		(AGFD 2001).	HDMS reports no records of the California leaf-nosed bat occurring within a two-mile radius of the detailed study area
Cave myotis bat <i>Myotis velifer</i>	SC	The Cave myotis bat is found in areas of desertscrub, creosote, brittlebush, palo verde and cacti. The species roost in caves, tunnels, mine shafts, under bridges and sometimes in buildings within a few miles of water. Habitat includes the southwestern half of Arizona, adjacent parts of California, Nevada, and New Mexico, and the northern third of Sonora, Mexico (AGFD 1997).	May occur in the detailed study area. The detailed study area contains bridges and other roost sites known to be used by the cave myotis bat.
Greater western mastiff bat <i>Eumops perotis californicus</i>	SC	Habitat includes the lower and upper Sonoran desertscrub near cliffs and rugged rocky canyons with abundant crevices. The species prefer crowding into tight crevices a foot or more deep and two inches or more wide. They range within Arizona southward from Kingman, Sun City, Tonto National Monument and Morenci. The species is considered a year-round resident in Arizona (AGFD 1997).	Unlikely to occur in the detailed study area. The detailed study area does not contain cliffs and other topographic features used for roosting by the greater western mastiff bat. The HDMS reports no records of the greater western mastiff bat occurring within a two-mile radius of the detailed study area.
Lesser long-nosed bat <i>Leptonycteris curasoae yerbabuena</i>	LE	Found mainly in desertscrub habitat in the U.S. portion of its range. Roosting is in caves, abandoned mines, and unoccupied buildings at the base of mountains where agave, saguaro, and organ pipe cacti are present. Forages at night on nectar, pollen and fruit of paniculate agaves and columnar cacti (USFWS 2001). Within Arizona, the species ranges in southern Arizona from the Picacho Mountains southwesterly to the Agua Dulce Mountains; southeasterly to the Galiuro and Chiricahua mountains; and then southerly into Mexico and beyond. Limited records from the Phoenix area. The Lesser long-nosed bat is not present in Arizona in winter (AGFD 1998).	Unlikely to occur in the detailed study area. The detailed study area does not contain mountainous topography, appropriate roost sites, and a sufficient food supply from agave and columnar cacti to support the lesser long-nosed bat. The HDMS reports no records of the lesser long-nosed bat occurring within a two-mile radius of the detailed study area.
Pale Townsend's big-eared bat <i>Plecotus townsendii pallascens</i>	SC	In Arizona, summer day roosts are found in caves and mines from desertscrub up to woodlands and	Unlikely to occur in the detailed study area. Vegetation in the study area does not resemble that

		coniferous forests. Night roosts may often be in abandoned buildings. In winter, the species hibernate in cold caves, lava tubes and mines. The species is widespread in Arizona, mostly in uplands and mountains from the vicinity of the Grand Canyon to the southeastern part of the state. The species is not considered common, especially in the southwest desert areas.	known to support the pale Townsend's big-eared bat. The HDMS reports no records of the pale Townsend's big-eared bat occurring within a two-mile radius of the detailed study area.
Sonoran pronghorn <i>Antilocapra americana sonoriensis</i>	LE	Inhabits wide alluvial basins with desert grassland vegetation in the Sonoran Desert climactic zone. A small remnant population persists in the extremely arid flatlands of in portions of Maricopa, Pima and Yuma Counties (USFWS 2002).	Does not occur in the detailed study area. The Sonoran pronghorn is restricted to a small population in southwestern Arizona, approximately 150 miles southwest of Phoenix, Arizona. The HDMS reports no records of the Sonoran pronghorn occurring within a two-mile radius of the detailed study area.
Yuma myotis <i>Myotis yumanensis</i>	SC	Prefers cliffs and rocky walls near water. Found throughout most of Arizona, but not found in northeastern corner or southeastern part of the State. Yuma myotis is probably absent in higher, boreal areas. The species' winter range is in the area of the Lower Colorado River (AGFD 1997).	Unlikely to occur in the detailed study area. The detailed study area does not contain cliffs or rock walls near water that is known to support the Yuma myotis. The HDMS reports no records of the Yuma myotis occurring within a two-mile radius of the detailed study area.
<b>Plant</b>			
Arizona agave <i>Agave arizonica</i>	LE HS	Arizona agave occurs in the transition zone between oak-juniper woodland and mountain mahogany-oak scrub at 915-1,830 meters (3,000-6,000 feet) in elevation. Steep rocky slopes characterize known habitat, however Arizona agave can occur on drainage bottoms or relatively gentle slopes or saddles (USFWS 2000). Scattered clones of Arizona Agave are known to inhabit areas extending from the New River Mountains (Maricopa and Yavapai counties) to southeast of Payson and the Sierra Ancha Mountains (Gila County) in Arizona (AGFD 1997).	Does not occur in the detailed study area. The detailed study area is outside the known geographic and elevation range of the Arizona agave. Substrate and topography in the study area does not resemble that known to support this species. The HDMS reports no records of the Arizona agave occurring within a two-mile radius of the detailed study area.
Arizona cliffrose <i>Purshia subintegra</i>	LE HS	Occurs on rolling, rocky, limestone hills and slopes within Sonoran Desertscrub from 2,120 to	Does not occur in the detailed study area. The detailed study area is outside of current known

		<p>4,000 feet (647 - 1,220 meters). The species occurs where the winters are mild, summers are hot, and the 22.9 - 86 centimeters (9 - 34 inches) of rainfall is evenly distributed between summer and winter rainfall periods (AGFD 2001).</p> <p>All four localities of Arizona cliffrose are in central Arizona below the Mogollon Rim. These known sites include the Burro Creek drainage in Mohave County, Horseshoe Lake in Maricopa County, Verde Valley in Yavapai County and the San Carlos Indian Reservation in Graham County (USFWS 2000).</p>	<p>geographic and elevation range of the species. Substrate in the study area does not resemble that known to support the species. The HDMS reports no records of the Arizona cliffrose occurring within a two-mile radius of the detailed study area.</p>
<p>Bigelow onion <i>Allium bigelovii</i></p>	SR	<p>Found in moist shaded canyon bottoms in climax conifer forests. The species is located most frequently in mature forests, usually along north-trending drainages in a narrow strip at the very bottom of low gradient (low erosion) perennial, intermittent and ephemeral stream courses with well developed organic soils. Occasionally it is found in moist soils on north aspect slopes, usually adjoining stream bottom populations. The species generally does not occur in meadows though it may be found in semi-open situations along the edges of large clearings or bordering streams. The Bigelow onion range in Arizona includes Apache County; White Mountains (extirpated from Canyon del Muerto); Pima County; and Santa Catalina Mountains (AGFD 1999).</p>	<p>Does not occur in the detailed study area. The detailed study area is outside of current known geographic and elevation range of species. Substrate in the study area does not resemble that known to support the species. The HDMS reports no records of the Bigelow onion occurring within a two-mile radius of the detailed study area.</p>
<p>Fish Creek fleabane <i>Erigeron piscaticus</i></p>	SC SR	<p>Found in moist, sandy canyon bottoms associated with perennial streams from 2,250 to 3,500 feet (686-1068 meters). The range of the Fish Creek fleabane in Central Arizona includes: Fish Creek Canyon, Superstition Mountains, Turkey Creek, Oak Grove Canyon (Aravaipa Canyon tributaries), and Galiuro Mountains (AGFD 2001).</p>	<p>Does not occur in the detailed study area. The detailed study area is outside of current known geographic and elevation range of the Fish Creek fleabane. Substrate in the study area does not resemble that known to support the species. The HDMS reports no records of the Fish Creek fleabane occurring within a two-mile radius of the detailed study area.</p>
<p>Fish Creek rock daisy</p>	SC	<p>Grows from cracks and crevices on cliff faces</p>	<p>Does not occur in the detailed study area. The</p>

<i>Perityle saxicola</i>		(very steep slopes), large boulders and rocky outcrops in canyons and on buttes composed of Barnes conglomerate and Mescal limestone in very xeric conditions from 2,025 - 3,800 feet (618 - 1,159 meters). The Fish Creek rock daisy is found in Gila and Maricopa counties; near Tonto National Monument; and at Roosevelt Lake. It is suspected throughout Superstition Mountains. The species is not found at Fish Creek (AGFD 1994);	detailed study area is outside of current known geographic and elevation range of the Fish Creek rock daisy. Substrate in the study area does not resemble that known to support the species. The HDMS reports no records of the Fish Creek rock daisy occurring within a two-mile radius of the detailed study area.
Flannel bush <i>Fremontodendron californicum</i>	SR	Occurs in Chaparral and Pinyon-Juniper Woodland vegetation communities in granitic substrate under dry conditions in slope habitats between 1,312 and 6,561 feet (CalFlora 2002).	Does not occur in the detailed study area. Vegetation and substrate in the study area does not resemble that known to support flannel bush. The HDMS reports no records of the flannel bush occurring within a two-mile radius of the detailed study area.
Hohokam agave <i>Agave murpheyi</i>	SC HS	In central Arizona, the Hohokam agave is usually found on benches or terraces on gentle bajada slopes (not steep slopes or drainage bottoms) above major drainages associated with prehistoric habitations and/or agricultural sites at elevations from 1,300 - 3,200 feet (397 - 976 meters). The Hohokam agave are also found near rock piles, which discourage rodents and help accumulate nutrients and water. The species' range in Arizona includes Paradise Valley (Phoenix Basin) and the New River Mountains in Maricopa County; South Bradshaw Mountains, Castle Creek and Agua Fria rivers in Yavapai County; Roosevelt Lake and Tonto Basin in Gila County; and Queen Creek near Superior in Pinal County (AGFD 1997).	Does not occur in the detailed study area. The detailed study area is outside of current known geographic and elevation range of the Hohokam agave. Substrate in the study area does not resemble that known to support the species. The HDMS reports no records of the Hohokam agave occurring within a two-mile radius of the detailed study area.
Pima Indian mallow <i>Abutilon parishii</i>	SC SR	Found in mesic conditions in full sun in higher elevation Sonoran desertscrub from 1,720 to 4,900 feet (525-1495 meters). Habitat includes rocky hillsides, cliff bases, canyon bottoms, lower side slopes and ledges of canyons among rocks and boulders. In riparian zones, it occurs on flat secondary terraces but typically not in canyon	Does not occur in the detailed study area. The detailed study area is outside of current known geographic and elevation range of the Pima Indian mallow. Substrate and topography in the study area does not resemble that known to support the species. The HDMS reports no records of the Pima Indian mallow occurring within a two-mile

		bottoms. The Pima Indian mallow range includes the Superstition Mountains in Maricopa County; Sabino Canyon and the Santa Catalina, Rincon, Silverbell, and Tucson Mountains in Pima County; Mineral Hills, Superstition, Picacho, Tortolito, and Dripping Springs Mountains in Pinal County; the Santa Rita and Tumacacori Mountains in Santa Cruz County; the Little Shipp Wash and Cottonwood Creek near Bagdad in Yavapai County (AGFD 2000).	radius of the detailed study area.
Ripley wild-buckwheat <i>Eriogonum ripleyi</i>	SC SR	Found in Tertiary lakebeds on well-drained powdery soils derived from limestone, sandstone, or volcanic tuffs from 2,000 - 6,000 feet (610 - 1830 meters). Its Range in Arizona extends from near Horseshoe Lake and Chalk Mountain in Maricopa and Yavapai Counties; near Cottonwood in Yavapai County; and southwest to Coconino County and adjacent Mohave and Yavapai counties (AGFD 1997).	Does not occur in the detailed study area. The detailed study area is outside of current known geographic and elevation range of the Ripley wild-buckwheat. Substrate and topography in the study area does not resemble that known to support the species. The HDMS reports no records of the Ripley wild-buckwheat occurring within a two-mile radius of the detailed study area.
Straw-top cholla <i>Opuntia echinocarpa</i>	SR	Occurs in creosote bush scrub, Joshua tree woodland and pinyon-juniper woodland between 984 and 4593 feet (CalFlora 2002).	Does not occur in the detailed study area. Vegetation in the detailed study area does not resemble that known to support straw-top cholla. The HDMS reports no records of the straw-top cholla occurring within a two-mile radius of the detailed study area.
Tonto basin agave <i>Agave delamateri</i>	SC HS	Usually found atop benches (often high benches), at edges of slopes, and on gentle slopes overlooking major drainages and perennial streams from 2,190 to 5,100 feet (668 - 1,556 meters). Found in direct or indirect association with archaeological features, including multi-room foundations and also above check dams and linear alignments. About 90 clones are known to occur from Young, AZ to San Carlos Reservoir; in the foothills of Mazatzal and Sierra Ancha Mountains, Gila County; Sunflower area, Maricopa County; and in the Verde Valley area, Yavapai County	Does not occur in the detailed study area. The detailed study area is outside of current known geographic and elevation range of the Tonto basin agave. Substrate and topography in the study area does not resemble that known to support the species. The HDMS reports no records of the Tonto basin agave occurring within a two-mile radius of the detailed study area.

		(AGFD 1997).	
Toumey agave <i>Agave toumeyana</i> var. <i>bella</i>	SR	<i>Agave toumeyana</i> var. <i>bella</i> occurs on open rocky, often limestone or basalt slopes of desertscrub, chaparral and pinyon-juniper woodland at elevations from 800 to 2700 meters (2700-5600 feet). (AGFD 1998)	Does not occur in the detailed study area. The detailed study area is outside of current known geographic and elevation range of the Toumey agave. Substrate and topography in the study area does not resemble that known to support the species. The HDMS reports no records it occurring within a two-mile radius of the detailed study area.
Tumamoc globeberry <i>Tumamoca macdougallii</i>	SR	Found along arroyos and sandy washes, below 3,000 ft. (915 m) in desert grassland, Sinaloan thornscrub, Sonoran Desert and upland Sonoran Desert (ARPC 2002). Occurs in the Tucson Mountains, Avra Valley, Puerto Blanco Mountains, Santa Catalina Mountains, Santa Cruz Valley, Vekol Valley, Santa Rosa Valley, Santa Rita Mountains, and Silverbell Mountains (ARPC 2002).	Does not occur in the detailed study area. The detailed study area is outside of current known geographic and elevation range of the Tumamoc globeberry. Substrate and topography in the study area does not resemble that known to support the species. The HDMS reports no records of the Tumamoc globeberry occurring within a two mile radius of the detailed study area.
Varied fishhook cactus <i>Mammillaria viridiflora</i>	SR	Recorded in Boundary Monument, Arizona (AGFD 2002).	Does not occur in the detailed study area. The detailed study area is outside of current known geographic and elevation range of the Varied Fishhook Cactus. The HDMS reports no records of the cactus occurring within a two mile radius of the detailed study area.
Reptile			
Arizona chuckwalla <i>Sauromalus obesus tumidus</i>	SC	Strictly a rock dweller, the chuckwalla is found in rocky outcrops, lava flows, and rocky hillsides of the Great Basin and the Mohave and Sonoran deserts. A resident of southwestern deserts in the United States and Mexico, the chuckwalla is found in southeastern California, southern Nevada, southwestern Utah, western Arizona, eastern Baja California, and northwestern Mexico (BISON 2002).	Does not occur in the detailed study area. The detailed study area does not contain rock topography known to support the Arizona chuckwalla. The HDMS reports no records of the Arizona chuckwalla occurring within a two-mile radius of the detailed study area.
Arizona skink <i>Eumeces gilberti arizonensis</i>	SC	Distribution is largely uncertain. Currently the species is documented only in riparian habitats along the perennial reaches of the Hassayampa	Does not occur in the detailed study area. The detailed study area is outside the current known geographic range of the Arizona skink. The

		River and its tributaries (AGFD 1988).	HDMS reports no records of the Arizona skink occurring within a two-mile radius of the detailed study area.
Desert rosy boa <i>Charina trivirgata gracia</i>	SC	The Desert rosy boa inhabits desert foothills with rocks and boulders from sea level to 4500 feet (1400 meters). Although this snake prefers rocky terrain where crevices make safe homes, it occasionally is spotted in shrublands or chaparral without rocky areas. The rosy boa is restricted to southern California, southwestern Arizona, and northwestern Mexico (BISON 2002).	Does not occur in the detailed study area. The detailed study area is outside the current known geographic range of the rosy boa. Topography and vegetation in the study area does not resemble that known to support the species. The HDMS reports no records of the rosy boa occurring within a two-mile radius of the detailed study area.
Mexican garter snake <i>Thamnophis eques megalops</i>	SC	In Arizona, these snakes are most abundant in densely vegetated habitat surrounding cienegas, cienega-streams, and stock tanks. They are found in or near water along streams in valley floors and generally open areas, but not in steep mountain canyon stream habitat. The species usually ranges at elevations between 3,000 and 5,000 feet (914 - 1525 meters), but may reach elevations of 8,500 feet (2593 meters). It <i>occurs</i> in the southeast corner of state from the Santa Cruz Valley east to generally south of the Gila River. It is also known to occur near the Agua Fria River, Oak Creek, the Verde River, and several upper Salt/Black River sites, including smaller tributaries (AGFD 2001).	Does not occur in the detailed study area. Vegetation and hydrology in the detailed study area does not resemble that known to support the Mexican garter snake. The HDMS reports no records of the Mexican garter snake occurring within a two-mile radius of the detailed study area.
Red-backed whiptail <i>Cnemidophorus burti xanthonotus</i>	SC	Habitat for the red-backed whiptail in Arizona includes high desert mountain scrub and grasslands with junipers or other scrub trees. Canyons with dense scrub are also used by the species. The total range of the red-back whiptail includes the south-central border of Arizona in Pima County and northern Sonora. The subspecies is known from Ajo, Dripping Springs, Puerto Blanco Mountains, in Organ Pipe Cactus National Monument in Pima County, the Table Top and Javelina Mountain ranges in south-central Pinal County, the Tohono O'odham Nation,	Does not occur in the detailed study area. The detailed study area is outside of the current known geographic range of the red-backed whiptail. Vegetation and topography in the study area does not resemble that known to support the species. The HDMS reports no records of the red-backed whiptail occurring within a two-mile radius of the detailed study area.

		Sauceda Mountains and Martina Mountain, and the Sierra Estrella in Maricopa County (BISON 2002).	
Sonoran desert tortoise <i>Gopherus agassizii</i> (Sonoran population)	SC	The Sonoran population includes those tortoises south and east of the Colorado River from locations near Pearce Ferry in Mojave County to the south beyond the International Boundary, and at many scattered locations in between. The northeastern-most tortoise records in Arizona occur along the Salt River near Roosevelt Lake in Gila County, although populations here have not been confirmed with recent observations. The Sonoran population of the desert tortoise occurs primarily on rocky slopes and bajadas of Mojave and Sonoran desertscrub. Caliche caves in incised, cut banks of washes (arroyos) are also used for shelter sites, especially in the Lower Colorado River Valley subdivision. Shelter sites are rarely found in shallow soils (AGFD 2001).	Does not occur in the detailed study area. The detailed study area is outside of the current known geographic range of the Sonoran desert tortoise. Vegetation and topography in the detailed study area does not resemble that known to support the species. The HDMS reports no records of the Sonoran desert tortoise occurring within a two-mile radius of the detailed study area.

Status Definitions:

- LE Listed Endangered: The ESA specifically prohibits the "take" of a species listed as endangered. Take is defined by the ESA as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to engage in any such conduct."
- LT Listed Threatened: The ESA specifically prohibits the "take" of a species listed as threatened. Take is defined by the ESA as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to engage in any such conduct."
- C Candidate: Species for which USFWS has sufficient information on biological vulnerability and threats to support proposals to list as Endangered or Threatened under ESA. However, proposed rules have not yet been issued because such actions are precluded at present by other listing activity.
- SC Species of Concern: Species of Concern. The terms "Species of Concern" or "Species at Risk" should be considered as terms-of-art that describe the entire realm of taxa whose conservation status may be of concern to the US Fish and Wildlife Service, but neither term has official status (currently all former C2 species).
- HS Highly Safeguarded: no collection allowed.
- SR Salvage Restricted: collection only with permit.

Source: USFWS July 2002; AGFD Heritage Data Management System, January 2002.

## Appendix D-2

### BIRD LIST OF THE DESERT BOTANICAL GARDEN

#### Phoenix Sky Harbor International Airport West Terminal Environmental Impact Statement

Bird Families	Common Names	Scientific Name	Winter	Spring	Summer	Fall
Heron ( <i>Ardeidae</i> )	Green Heron	<i>Butorides virescens</i>	X	X	X	
	Great Blue Heron	<i>Ardea herodias</i>	X	X	X	X
	Black-crowned Night Heron	<i>Nycticorax nycticorax</i>		X	X	
Duck ( <i>Anatidae</i> )	Mallard	<i>Anas platyrhynchos</i>	X	X	X	X
Rails, Gallinules, Coots ( <i>Rallidae</i> )	Common Moorhen	<i>Gallinula choropus</i>	X	X	X	X
New World Vulture ( <i>Cathartidae</i> )	Turkey Vulture	<i>Cathartes aura</i>		X	X	X
Hawk ( <i>Accipitridae</i> )	Northern Harrier	<i>Circus cyaneus</i>		X		
	Sharp-shinned Hawk	<i>Accipiter striatus</i>		X		
	Cooper's Hawk	<i>Accipiter cooperii</i>	X			X
	Red-tailed Hawk	<i>Buteo jamaicensis</i>	X	X	X	X
	Harris Hawk	<i>Parabuteo unicinctus</i>	X		X	X
	Swainson's Hawk *	<i>Buteo swainsoni</i>				
Falcon ( <i>Falconidae</i> )	Prairie Falcon	<i>Falco mexicanus</i>	X	X	X	X
	Merlin *	<i>Falco columbarius</i>				
	American Kestrel	<i>Falco sparverius</i>	X	X	X	X
Quail ( <i>Phasianidae</i> )	Gambel's Quail	<i>Lophortyx gambelii</i>	X	X	X	X
Plover ( <i>Charadriidae</i> )	Killdeer	<i>Charadrius vociferus</i>		X		X
Pigeon and Dove ( <i>Columbidae</i> )	Rock Dove	<i>Columba livia</i>	X	X	X	X
	White-winged Dove	<i>Zenaida asiatica</i>		X	X	
	Mourning Dove	<i>Zenaidura macroura</i>	X	X	X	X
	Inca Dove	<i>Scardafella inca</i>	X	X	X	X
Cuckoo ( <i>Cuculidae</i> )	Roadrunner	<i>Geococcyx californianus</i>	X	X	X	X
Barn Owl ( <i>Tytonidae</i> )	Barn Owl *	<i>Tyto alba</i>				
Typical Owl ( <i>Strigidae</i> )	Great Horned Owl	<i>Bubo virginianus</i>			X	
	Long-eared Owl *	<i>Asio otus</i>				X
	Western Screech Owl	<i>Otus asio</i>	X	X	X	
	Saw-whet Owl *	<i>Aegolius acadicus</i>				
	Elf Owl*	<i>Micrathene whitneyi</i>				
Nightjar ( <i>Caprimulgidae</i> )	Lesser Nighthawk	<i>Chordeiles acutipennis</i>			X	X
Swift ( <i>Apodidae</i> )	White-throated Swift	<i>Aeronautes</i>		X	X	X
Hummingbird ( <i>Trochilidae</i> )	Black-chinned Hummingbird	<i>Archilochus alexandri</i>		X	X	X
	Costa's Hummingbird	<i>Calypte costae</i>	X	X	X	X
	Anna's Hummingbird	<i>Calypte anna</i>	X	X	X	X
	Broad-tailed Hummingbird *	<i>Selasphorus platycercus</i>				
	Rufous Hummingbird	<i>Selasphorus rufus</i>				X
	Broad-billed Hummingbird *	<i>Cyanthus latirostris</i>				
Kingfisher ( <i>Alcedinidae</i> )	Belted Kingfisher *	<i>Megaceryle alcyon</i>				X
Woodpecker ( <i>Picidae</i> )	Red-shafted Flicker	<i>Colaptes cafer</i>		X		
	Gilded Flicker	<i>Colaptes "chrysoides"</i>	X	X	X	X
	Gila Woodpecker	<i>Centurus uropygialis</i>	X	X	X	X
	Red-naped Sapsucker *	<i>Sphyrapicus varius</i>				
	Ladder-backed Woodpecker	<i>Dendocopos scalaris</i>	X	X	X	X
Tyrant Flycatcher ( <i>Tyrannidae</i> )	Western Kingbird	<i>Tyrannus melancholicus</i>		X	X	X

	Brown-crested Flycatcher	<i>Myiarchus tyrannulus</i>			X	
	Cordilleran Flycatcher	<i>Empidonax occidentalis</i>				X
	Western Wood Pewee	<i>Contopus sordidulus</i>			X	X
	Olive-sided Flycatcher *	<i>Nuttallornis borealis</i> "				
	Say's Phoebe	<i>Sayornis saya</i>	X			X
	Black Phoebe	<i>Sayornis nigricans</i>				X
Swallow ( <i>Hirundinidae</i> )	Violet-green Swallow	<i>Tachycineta thalassina</i>		X	X	X
	Rough-winged Swallow	<i>Stelgidopteryx ruficollis</i>	X	X	X	X
	Cliff Swallow	<i>Petrochelidon pyrrhonota</i>		X	X	X
Crow and Jay ( <i>Corvidae</i> )	Scrub Jay *	<i>Aphelocoma coerulescens</i>				
	Common Raven	<i>Corvus corax</i>			X	
Verdin ( <i>Remizidae</i> )	Verdin	<i>Auriparus flaviceps</i>	X	X	X	X
Creeper ( <i>Certhiidae</i> )	Brown Creeper*	<i>Certhia familiaris</i>				
Wren ( <i>Troglodytidae</i> )	Bewick's Wren	<i>Thryomanes bewickii</i>				X
	Cactus Wren	<i>Campylorhynchus brunneicapillus</i>	X	X	X	X
	Rock Wren	<i>Salpinctes obsoletus</i>				X
	House Wren	<i>Troglodytes aedon</i>				X
Thrush ( <i>Turdidae</i> )	Robin	<i>Turdus migratorius</i>		X		
	Hermit Thrush	<i>Hylocichla guttata</i>				X
Old World Warbler ( <i>Sylviidae</i> )	Blue-gray Gnatcatcher	<i>Poliophtila caerulea</i>	X			X
	Black-tailed Gnatcatcher	<i>Poliophtila melanura</i>	X	X	X	X
	Ruby-crowned Kinglet	<i>Regulus calendula</i>	X	X		X
Mockingbird, Thrasher ( <i>Mimidae</i> )	Mockingbird	<i>Mimus polyglottos</i>	X	X	X	X
	Bendire's Thrasher	<i>Toxostoma bendirei</i>				
	Curve-billed Thrasher	<i>Toxostoma curvirostre</i>	X	X	X	X
	Brown Thrasher *	<i>Toxostoma rufum</i>				
Silky-flycatcher ( <i>Ptilonitidae</i> )	Phainopepla	<i>Phainopepla nitens</i>		X		X
Shrike ( <i>Laniidae</i> )	Loggerhead Shrike	<i>Lanius ludovicianus</i>	X	X	X	X
Starling ( <i>Sturnidae</i> )	European Starling	<i>Sturnus vulgaris</i>	X	X	X	X
Vireo ( <i>Vireonidae</i> )	Bell's Vireo *	<i>Vireo bellii</i>				
	Solitary Vireo *	<i>Vireo solitarius</i>		X		X
	Warbling Vireo	<i>Vireo gilvus</i>		X		X
Wood Warbler ( <i>Emberizidae:</i> <i>Parulidae</i> )	Orange-crowned Warbler	<i>Vermivora celata</i>	X	X		X
	Nashville Warbler	<i>Vermivora ruficapilla</i>				X
	Virginia's Warbler *	<i>Vermivora virginiae</i>				
	Lucy's Warbler	<i>Vermivora luciae</i>		X	X	
	Yellow-rumped Warbler	<i>Dendroica coronata</i>	X	X		X
	Black-throated Gray Warbler	<i>Dendroica nigrescens</i>		X		X
	Townsend's Warbler	<i>Dendroica townsendi</i>		X		
	Yellow Warbler	<i>Dendroica petechia</i>		X		X
	Chestnut-sided Warbler *	<i>Dendroica pensylvanica</i>				
	MacGillivray's Warbler	<i>Oporornis tolmiei</i>		X		X
	Wilson's Warbler	<i>Wilsonia pusilla</i>		X		X
	Common Yellowthroat	<i>Geothlypis trichas</i>	X	X		X
	Yellow-breasted Chat *	<i>Icteria virens</i>				
Tanager ( <i>Emberizidae: Thraupinae</i> )	Western Tanager	<i>Piranga ludoviciana</i>		X		X
American Bunting, Grosbeak ( <i>Emberizidae: Cardinalinae</i> )	Cardinal	<i>Richmondia cardinalis</i>			X	X
	Black-headed Grosbeak	<i>Pheucticus melanocephalus</i>		X	X	X
	Lazuli Bunting *	<i>Passerina amoena</i>				X
American Sparrow ( <i>Emberizidae:</i> <i>Emberizinae</i> )	Green-tailed Towhee	<i>Chlorura chlorura</i>		X		X

	Spotted Towhee *	<i>Pipilo erythrophthalmus</i>				x
	Abert's Towhee	<i>Pipilo aberti</i>	x	x	x	x
	Rufous-crowned Sparrow *	<i>Aimophila ruficeps</i>				
	Black-throated Sparrow	<i>Amphispiza bilineata</i>		x	x	x
	Dark-eyed Junco	<i>Junco hyemalis</i>	x	x		
	Chipping Sparrow *	<i>Spizella passerina</i>				
	Brewer's Sparrow	<i>Spizella breweri</i>		x		x
	White-crowned Sparrow	<i>Zonotrichia leucophrys</i>	x	x		x
	Lincoln's Sparrow	<i>Melospiza lincolnii</i>		x		x
	Grasshopper Sparrow *	<i>Ammodramus savannarum</i>				
Blackbird, Oriole ( <i>Emberizidae:</i> <i>Icteridae</i> )	Yellow-headed Blackbird	<i>Xanthocephalus xanthocephalus</i>	x			x
	Red-winged Blackbird	<i>Agelaius phoeniceus</i>	x	x		
	Hooded Oriole	<i>Icterus cucullatus</i>		x	x	
	Scott's Oriole	<i>Icterus parisorum</i>				
	Bullock's Oriole	<i>Icterus bullockii</i>		x	x	
	Great-tailed Grackle	<i>Cassidix mexicanus</i>	x	x	x	x
	Brown-headed Cowbird	<i>Molothrus ater</i>	x	x	x	
	Bronzed Cowbird	<i>Tangavius aeneus</i>		x	x	
Finch ( <i>Fringillidae</i> )	House Finch	<i>Carpodacus mexicanus</i>	x	x	x	x
	Lesser Goldfinch	<i>Spinus psaltria</i>	x	x		x
Old World Sparrow ( <i>Passeridae</i> )	House Sparrow	<i>Passer domesticus</i>		x	x	x

These birds have been seen recently at the Desert Botanical Garden in the seasons marked by an "x." An asterisk (\*) indicates fewer than five sightings in the past. The Desert Botanical Garden is located approximately 2.5 miles northwest of the detailed study area.

**APPENDIX D-3**  
**Wildlife Identified by U.S. Department of Agriculture Staff in the Sky Harbor**  
**Airport Vicinity**

**Phoenix Sky Harbor International Airport West Terminal**  
**Environmental Impact Statement**

<b>BIRDS</b>	
American Wigeon	<i>Anas americana</i>
Bufflehead	<i>Bucephala albeola</i>
Canada Goose	<i>Branta canadensis</i>
Canvasback	<i>Aythya valisineria</i>
Cinammon Teal	<i>Anas cyanoptera</i>
Common Moorhen	<i>Gallinula chloropus</i>
Domestic Duck	<i>numerous species</i>
Domestic Goose	<i>numerous species</i>
Double-crested Cormorant	<i>Phalacrocorax penicillatus</i>
Eared Grebe	<i>Podiceps nigricollis</i>
Gadwall	<i>Anas strepera</i>
Green winged Teal	<i>Anas crecca</i>
Hooded Merganser	<i>Lophodytes cucullatus</i>
Lesser Scaup	<i>Aythya affinis</i>
Mallard	<i>Anas platyrynchos</i>
Northern Pintail	<i>Anas acuta</i>
Northern Shoveler	<i>Anas clypeata</i>
Pied-billed Grebe	<i>Podilymbus podiceps</i>
Red-breasted Merganser	<i>Mergus serrator</i>
Redhead	<i>Aythya americana</i>
Ring-necked Duck	<i>Aythya collaris</i>
Western Grebe	<i>Aechmophorus occidentaihs</i>
Wood Duck	<i>Aix sponsa</i>
Ring-billed Gull	<i>Larus delawarensis</i>
American Coot	<i>Fulica americana</i>
Common Snipe	<i>Gallinago gallinago</i>
Greater Yellowlegs	<i>Tringa melanoleuca</i>
Killdeer	<i>Charadrus vociferus</i>
Least Sandpiper	<i>Calidris minutilla</i>
Long-billed Dowitcher	<i>Limnodromus scolopaceus</i>
Spotted Sandpiper	<i>Actitis macularia</i>
American Avocet	<i>Recurvirostra americana</i>
Black-crowned Night Heron	<i>Nycticorax nycticorax</i>
Black-necked Stilt	<i>Himantopus mexicanus</i>
Cattle Engret	<i>Bubulcus ibis</i>
Great Blue Heron	<i>Casmerodius albus</i>
Great Egret	<i>Casmerodius albus</i>
Green-backed Heron	<i>Butorides striatus</i>
Snowy Egret	<i>Egretta thula</i>
American Kestrel	<i>Falco sparverius</i>
Cooper's Hawk	<i>Accipiter cooperii</i>
Great Horned Owl	<i>Bubo virginianus</i>
Harris' Hawk	<i>Parabuteo unicinctus</i>

Merlin	<i>Falco columbarius</i>
Northern Harrier	<i>Circus cyaneus</i>
Osprey	<i>Pandion haliaetus</i>
Peregrine Falcon	<i>Falco peregrinus</i>
Red-tailed Hawk	<i>Buteo jamancensis</i>
Turkey Vulture	<i>Coragyps atratus</i>
Inca Dove	<i>Columbina inca</i>
Mourning Dove	<i>Zenaida macroura</i>
Rock Dove (feral pigeon)	<i>Columba livia</i>
White-winged Dove	<i>Zenaida asiatica</i>
Anna's Hummingbird	<i>Calypte anna</i>
Belted Kingfisher	<i>Ceryle alcoyon</i>
American Pipit	<i>Anthus rubescens</i>
Bewick's Wren	<i>Thryomanes bewickii</i>
Black tailed Gnatcatcher	<i>Polioptila melanura</i>
Cactus Wren	<i>Campylorhynchus brunneicapillus</i>
Curve-billed Thrasher	<i>Toxostoma curvirostre</i>
Gambel's Quail	<i>Callipepla gambelii</i>
Greater Roadrunner	<i>Geococcyx californianus</i>
Horned lark	<i>Eremophila alpestris</i>
House Wren	<i>Troglodytes aedon</i>
Verdin	<i>Auriparus flaviceps</i>
Cliff Swallow	<i>Hirundo pyrrhonota</i>
Common Poorwill	<i>Phalaenoptilus nuttalln</i>
Lesser Nighthawk	<i>Chordeiles acutipennis</i>
Northern Rough-winged Swallow	<i>Stelgidopteryx serripennis</i>
White-throated Swift	<i>Aeronautes saxatalis</i>
Abert's Towhee	<i>Pipilo Aberti</i>
Bell's Vireo	<i>Vireo bellii</i>
Common Yellowthroat	<i>Geothlypis trichas</i>
Green-tailed Towhee	<i>Pipilo chlorurs</i>
House Finch	<i>Carpodacus mexicanus</i>
House Sparrow	<i>Passer domesticus</i>
Lark Sparrow	<i>Chondestes grammacus</i>
Lesser Goldfinch	<i>Carduelis psaltria</i>
Orange-crowned Warbler	<i>Vermivora celata</i>
Rose-ringed Parakeet	<i>Psittacula krameri</i>
Rufous-crowned Sparrow	<i>Aimophila ruficeps</i>
White-crowned Sparrow	<i>Zonotrichia leucophrys</i>
Wilson's Warbler	<i>Wilsonia pusilla</i>
Yellow-rumped Warbler	<i>Dendroica coronata</i>
Yellow Warbler	<i>Dendroica petechia</i>
Brewer's Blackbird	<i>Euphagus cyanocephalus</i>
Brown-headed Cowbird	<i>Molothrus ater</i>
European Starling	<i>Sturnus vulgaris</i>
Great-tailed Grackle	<i>Quiscalus mexicanus</i>
Red-winged Blackbird	<i>Agelaius phoeniceus</i>
Western Meadowlark	<i>Sturnella neglecta</i>
Yellow-headed Blackbird	<i>Zanthocephalus xanthocephalus</i>
Black Phoebe	<i>Sayornis nigricans</i>
Gila Woodpecker	<i>Melanerpes uropygialis</i>
Loggerhead Shrike	<i>Lanius ludovicianus</i>
Northern Flicker	<i>Colaptes auratus</i>

Northern Mockingbird	<i>Mimus polyglottos</i>
Say's Phoebe	<i>Sayornis saya</i>
Western Kingbird	<i>Tyrannus verticalis</i>
Common Raven	<i>Corvus corax</i>
<b>MAMMALS</b>	
Mexican Free-tailed Bat	<i>Tadarida brasiliensis</i>
Coyote	<i>Canis latrans</i>
Feral Dog	<i>Canis familiaris</i>
Gray Fox	<i>Urocyon cinereoargenteus</i>
Feral Cat	<i>Felis domesticus</i>
Blacktail Jackrabbit	<i>Lepus californicus</i>
Desert Cottontail	<i>Sylvilagus auduboni</i>
Raccoon	<i>Procyon lotor</i>
Beaver	<i>Castor canadensis</i>
Brush Mouse	<i>Peromyscus boylei</i>
Deer Mouse	<i>Peromyscus maniculatus</i>
Desert Pocket Mouse	<i>Perognathus penicillatus</i>
House Mouse	<i>Mus musculus</i>
Rock Squirrel	<i>Citellus variegatus</i>
Roundtail Ground Squirrel	<i>Citellus tereticaudus</i>
Yuma Antelope Squirrel	<i>Ammospermophilus harrisi</i>
<b>REPTILES &amp; AMPHIBIANS</b>	
Common Tree Lizard	<i>Urosaurus ornatus</i>
Western Whiptail Lizard	<i>Cnemidophorus tigris</i>
Zebra tailed Lizard	<i>Callisaurus draconides</i>
Great Plains Toad	<i>Bufo cognatus</i>

Date: November 12, 2004

To: Dave Alberts

cc: D. Shanfelt

From: Danny Rakestraw

Subject: **Sky Harbor EIS – Wetland Field Observations and Proposed Revisions to the PDEIS**

Below is a brief summary of my observations of the areas defined as “wetlands” in Chapter 3, Affected Environment, of the Phoenix Sky Harbor Preliminary Draft EIS. The observations were made during a site visit on April 21, 2004. These observations do not constitute a formal delineation of the wetlands or waters of the U.S. that would be required to support permit applications for Section 404 of the Clean Water Act, if such a permit is needed.

My observations were generally consistent with the basic descriptions of the habitats provided in the PDEIS for the areas of interest, except that the size, shape, and general configuration of the habitats had changed somewhat as a result of flooding or human disturbance of the areas. During my site visit I took a number of photographs of the areas I observed. I have included several of these that best illustrate the wetland characteristics of the areas in question.

“RIPARIAN WETLANDS”: These areas were generally as described in the PDEIS. I concur that these areas are not wetlands because they currently have no regular source of wetland hydrology with the redirected Low Flow Channel. The plant species observed in the area are not dominated by hydrophytic species, and include sweetbush, palo verde, velvet mesquite, and acacia, as well as the non-native fan palms, pomegranate, and eucalyptus. Water for these areas likely is provided during significant local rain storms where flows in the river are high enough to force water outside the new Low Flow Channel created south of these areas. My recommendation is to revise the wording in the EIS to call these areas Riparian Habitats rather than wetlands.

STORMWATER WETLANDS: Again, I concur with the observations described in the PDEIS, though the text in the PDEIS was somewhat confusing. The western-most stormwater outfall area had dense vegetation, most of which was hydrophytic vegetation (See Photos at the end of the report). Plant species observed in the wetland area consisted of cattail, coyote willow, sedges, fountain grass, some saltcedar, bermuda grass, cottonwood, and numerous other herbaceous species I did not have time to identify. A small amount of water was flowing from the stormwater outfall and the soil in the area was moist. Much of the herbaceous vegetation was showing signs of stress (see Photos) possibly due to the season or the relatively low rain fall of the past few years.

The eastern-most stormwater outfall did not appear as described in the PDEIS. It appears the area has been disturbed in recent years by human activity and/or flood scouring, and much of the vegetation was missing and did not appear as in the figures in Chapter 3. The area consisted of a small amount of vegetation at the outfall and sparse, riparian vegetation (willow, saltcedar) along a channel extending from the outfall that directed water away from the outfall. Based on my limited observations, I would conclude this area does not meet the requirements of a wetland.

I will review the more recent aerial photography that you provided me, and I will try to provide input revisions to the figures in Chapter 3 to reflect what was present in the area during my site visit.

Under separate cover I am providing you a draft revision of "Section 3.10 Biotic Communities" and "Section 3.12 Wetlands". My revisions were focused primarily on providing better clarity in differentiating between habitats that have some wetland qualities and those that meet the regulatory definitions of WETLANDS.

Client Name: City of Phoenix, FAA

Site Location: Phoenix Sky Harbor Airport,  
Arizona

Project No.

**Photo No. 1**

**View Direction of  
Photo:**  
North

**Description:**  
View of the western-  
most stormwater  
outfall, showing an  
eastward-flowing  
channel lined with  
sedges and other  
vegetation.



**Photo No. 2**

**Location of Photo:**  
North

**Description:**  
View of the western-  
most stormwater  
outfall. Outfall  
structure can be seen  
at the base of the  
embankment.



Client Name: City of Phoenix, FAA	Site Location: Phoenix Sky Harbor Airport, Arizona	Project No.
-----------------------------------	--	-------------

<b>Photo No. 3</b> <b>View Direction of Photo:</b> Northwest	
<b>Description:</b> View of the western-most stormwater outfall. Photo provides detailed photo of the vegetation closer to the outfall structure, which is at the base of the embankment.	

<b>Photo No. 4</b> <b>View Direction of Photo:</b> Northwest	
<b>Description:</b> Another view of the western-most stormwater outfall.	

**Client Name:** City of Phoenix, FAA

**Site Location:** Phoenix Sky Harbor Airport,  
Arizona

**Project No.**

**Photo No. 5**

**View Direction of Photo:**  
South

**Description:**  
View of the westernmost stormwater outfall from west of the outfall structure providing additional view of the vegetation.



**Photo No. 6**

**View Direction of Photo:**  
Northwest

**Description:**  
View of the easternmost stormwater outfall area and the channel lined by riparian vegetation. Outfall structure is seen in the right half of the photo.





PHOTOGRAPHIC RECORD

Client Name: City of Phoenix, FAA

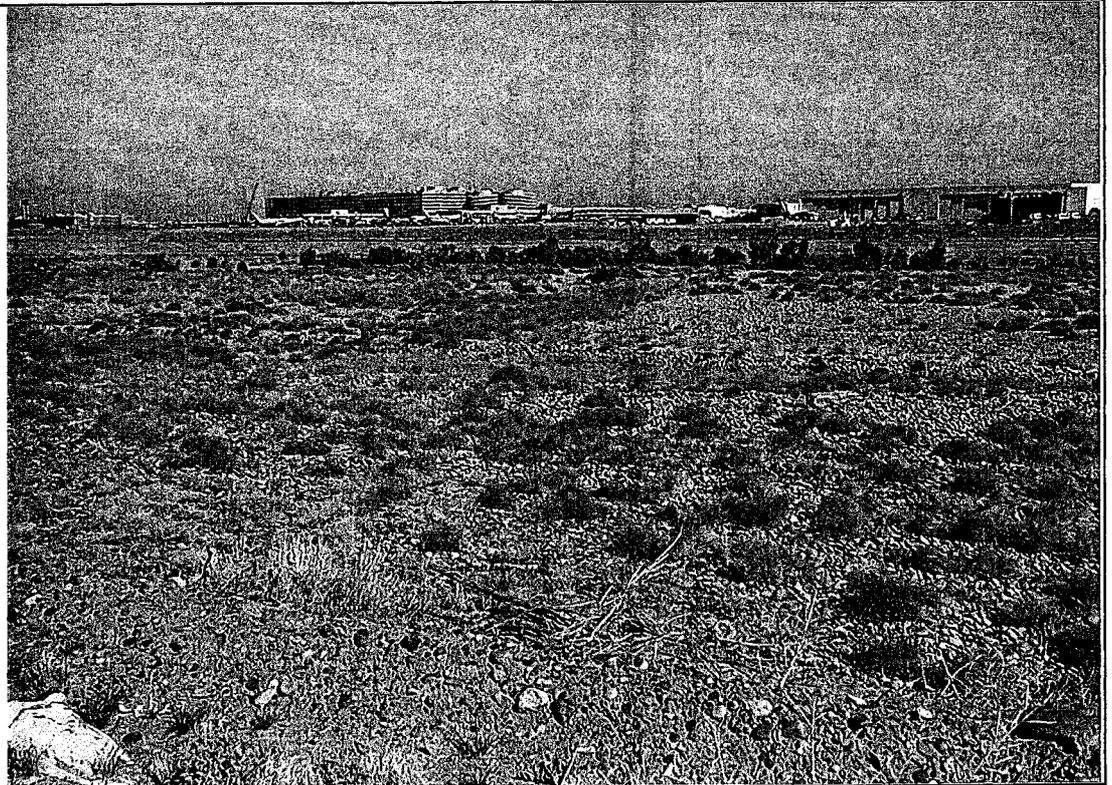
Site Location: Phoenix Sky Harbor Airport,  
Arizona

Project No.

Photo No. 7

View Direction of  
Photo:  
South

Description:  
View of the  
easternmost  
stormwater outfall  
area and the channel  
lined by riparian  
vegetation. Outfall  
structure is to the  
right of this photo.





## Interoffice Memorandum

1790 E. River Road  
Suite E-300  
Tucson, Arizona 85718-5876  
520 529 1141 Tel  
520 529 2449 Fax

---

Action	Info	File
Court Morgan	URS Phoenix	
From	Joseph B. Platt, Ph.D.	
Date	22 July,2002	
Subject	Field Survey of Sky Harbor Airport EIS	

Court,

By way of an update, I wanted to confirm we have conducted a field visit to areas of the project within the Detailed Study Area but outside of the airport boundary fence.

On 16 July, 2002, biologist Jean Paul Charpentier and myself began by entering the Salt River bed south of terminal 4. We walked east along its southern portion and then west along the northern portion of the bed, thus covering the entire riverbed within the Detailed Study Area. We then inspected the northeast corner of the study area between highways 153 and 143. The area was fence off but we were able to generally inspect it from the west and north sides. We then visited the western end of the Detailed Study Area. We walked and drove the unoccupied ground on both sides of Interstate 10.

We noted plant communities; these will be delimited on aerial photographs. We identified areas of potential use by wildlife and also noted the presence of wildlife. We did not identify significant biological resources outside the boundary fence that were at risk from activities of the project.

Sincerely yours,  
URS

Joseph B. Platt Ph.D.  
Senior Biologist



## Interoffice Memorandum

1790 E. River Road  
Suite E-300  
Tucson, Arizona 85718-5876  
520 529 1141 Tel  
520 529 2449 Fax

---

Action	Info	File
Court Morgan	URS Phoenix	
From	Joseph B. Platt Ph.D. Biological Resources Group	
Date	14 August, 2002	
Subject	Second Field Survey of Sky Harbor Airport EIS	

Court,

I wanted to confirm that JP Charpentier and I conducted a field visit to Salt River area of the project within the Detailed Study Area and the eastern most area near the Pueblo Grande.

On 13 August, we walked the edge of the banks of the Salt River south of terminal 4. We examined all of the storm water outfalls originating from the airport and from the industrial areas on the southern bank. The wetlands associated with these sites were assessed and a detailed species list was created. We identified the potential use by wildlife and also noted the presence of wildlife. We observed without entering the area south of the Pueblo and north of the east economy parking lot.

The project does not present a threat to biological resources noted in these areas.

Sincerely yours,  
URS

Joseph B. Platt Ph.D.  
Senior Biologist

Appendix E

---

Water Resources Supporting Material

**APPENDIX E**

**WATER RESOURCES**

This appendix contains information regarding Water Resources supporting materials used for this EIS.

## Appendix E

### Water Quality of the Gila River at the Confluence with the Salt River

Four stations on the Salt River downstream of PHX have an adequate period of record (POR) to use in assessing stream chemical water quality. Despite this, the POR and number of analyses at these stations are very limited. The POR is less than 2 months for all of the stations, and the number of analyses is no greater than three for any major constituent group (e.g., physical parameters, nutrients, major ions, etc.). All data are obtainable from EPA's *STORET* on-line database.

Station 000203 (a few miles north of the Gila-Salt confluence, upstream of the 91<sup>st</sup> Avenue WWTP) has been sampled for physical parameters, nutrients, trace elements, major ions, organics, sediments, and biological parameters (e.g., fecal coliform, etc.). The POR for this station is limited to 1 month, June 1983. Station 09512190 (directly downstream of the I10 bridge) has been sampled for physical parameters, nutrients, trace elements, major ions, organics, sediments, and biological parameters (e.g., fecal coliform, etc.). The POR for this station is from October to December 1990. Station SLR1 (downstream of the 91<sup>st</sup> Avenue WWTP) has been sampled for physical parameters, nutrients, trace elements, major ions, and organics. The POR for this station is also limited to 1 month, September 1992. Station 09512405 (downstream) was sampled for physical parameters, and sediment parameters. The POR for this station was limited to one date, June 1993.

This study area was included in the Central Arizona Basins (CAZB) National Water Quality Assessment (NAWQA) report. The 91st Avenue WWTP was included as a basic indicator site in the NAWQA report. However, this site includes discharge from the Tolleson WWTP as well as storm water flow. For the NAWQA report, the WWTP effluent was sampled on a monthly basis for major ions, nutrients, organic carbon, and suspended sediment from November 1995 to November 1997; and for volatile organic chemicals (VOCs) from December 1996 to April 1997. Buckeye Canal was sampled on a monthly basis for major ions, nutrients, organic carbon, and suspended sediment from November 1995 to February 1998; for VOCs from December 1996 to April 1997; and, for pesticides (schedule 2010 and 2051) from December 1996 to February 1998.

The Salt and Gila River confluence effluent synoptic analysis was completed as part of the NAWQA report in March 1996. It was completed to develop a better understanding of the hydrology and water quality in the reach between the two monitoring stations mentioned above. For this synoptic study, the two fixed sites were sampled once for the National Water Quality Lab analyses (see the list of constituents above) and eight times for field parameters and nutrients over a 2-day period. Thirteen additional sites were sampled for nutrients between the two fixed stations. The conclusions of the synoptic study were that as the WWTP discharge increases, the ammonia concentration, turbidity, and conductivity increase; while the nitrate concentration and dissolved oxygen (DO) concentration decrease. They also concluded that the water quality within this reach is dependent on the time of day. As a result of this analysis, continuous loggers for temperature and conductivity were installed in September 1996 at both fixed sites.

A baseline characterization study of the historical studies completed in the area, as well as baseline data collection, was completed by CH2MHill (1997) during 1996. Their study was completed to characterize the aquatic habitat along the Salt and Gila Rivers in the vicinity of Phoenix, Arizona. It also included three studies completed in 1992-1993 in which one contained chemical parameter information from additional inputs to the Salt-Gila River, the second contained physical parameters from two stations downstream of PHX, and the third contained trace metals from stations between 115th and 147th Avenue. The data collection completed by CH2MHill in 1996 included quarterly sampling for physical parameters, biological indicator parameters, major ions, nutrients, and trace elements.

**Macroinvertebrate Bioassays** – In addition to these chemical water quality studies, there have been a number of bioassessment completed in the effluent dependent reaches of the Salt and Gila Rivers west of the PHX.

- ADEQ (1994) collected macroinvertebrate samples from effluent dominated waters located in different regions of Arizona including below the 91st Avenue WWTP to document the types of macroinvertebrate taxa present in these waters.
- City of Phoenix (COP) (1997) prepared a terrestrial and aquatic ecological characterization of the Salt and Gila Rivers below 91st Avenue WWTP to provide a summary of existing conditions within the area to facilitate planning for the development of treatment wetlands.
- COP (1998) documented the unpublished results of a fish survey conducted at three locations on the Salt and Gila Rivers below the 91st Avenue WWTP.
- USGS (1998) reported some of the results of a NAWQA study being carried out in central and southern Arizona (Central Arizona Basins Study). The 1998 report compared chlorophyll a levels and aquatic invertebrate community characteristics of effluent dependent and non-effluent dependent streams.
- In 1999, Pima County Wastewater Management Department (PCWMD) conducted a bioassessment of the Salt and Gila River below PHX as part of an EPA grant (AWWQRP 2002). Five sites were assayed. Macroinvertebrates were sampled only at four of the five reconnaissance sites since upstream of the discharge the Salt River was dry.

Four aquatic biological measures are used to compare data results: total number of taxa; Hilsenhoff Biotic Index (HBI) values; percent Ephemeroptera, Plecoptera, Trichoptera (EPT) taxa; and relative abundance of the following major taxonomic groups: *Oligochaetes* (segmented worms); Diptera (flies); and Other [primarily Crustacea, Gastropoda (snails), Odonata (dragonflies and damselflies), Hemiptera (true bugs) and Coleoptera (beetles)].

All historical studies suggest low numbers of macroinvertebrate families and orders in the effluent-dependent river reach downstream of PHX. The PCWMD results suggest that numbers of taxa have increased since 1996 (the last year a sample was taken by any of the referenced studies). Previous studies have found similar HBI values along the Salt and Gila Rivers, typically between 6 and 7. USACE (1998) and ADEQ (1994) found few EPT taxa at their respective study sites. The one mayfly found by ADEQ (1994) was the genus *Callibaetis*, a pollution-tolerant taxon.

The number of taxa doubled from 5 to 10 between Sites 2 and 4 but declined at Site 5. The PCWMD study reported EPT (mayflies, stoneflies, and caddisflies) taxa as limited to mayflies, which were relatively abundant only at on site.

Previous investigations have found relatively low abundance of invertebrates in the Salt and Gila rivers below the 91<sup>st</sup> Avenue WWTP (USACE 1998; ADEQ 1994). Abundance generally increased downstream of the facility until near the confluence of the Agua Fria River (Site E – USACE 1998). Samples were generally dominated by chironomid midges and oligochaete worms. The PCWMD survey found higher invertebrate abundance than was found by earlier studies. However, abundance, which was greatest immediately below the WWTP discharge, steadily declined with increased distance downstream of the WWTP. In addition to decreasing abundance, the composition of the macroinvertebrate community shifted from one dominated by worms and midges below the WWTP to a community dominated by corixid water bugs and snails.

Habitat quality was best immediately below the discharge and declined with increased distance from the discharge. Much of the change in aquatic habitat quality appears to be the result of construction activities that have increased sediment loads and decay of salt cedar vegetation, which appears to contribute significant organic matter to the river. In addition to these factors, the channel is low gradient with very sluggish flows, resulting in a fairly stagnant environment.

**Fish Community Assessment** – USACE (1998) conducted a fish survey in 1996, which likely represents one of the more comprehensive fish surveys on this reach of the river in many years. Additional USACE data were collected in November 1998. EPA, USFWS, and AGFD reported the presence of fish species,

but the USACE (1998) study actually quantified relative fish abundance at several sites between the 91<sup>st</sup> Avenue WWTP and the confluence of the Gila and Agua Fria rivers. USACE (1998) used electroshocking techniques in a manner that allowed the fish count data to be converted into density values (numbers per hectare).

The number of fish species in the effluent-dependent reaches varied between three species below the WWTP to eight species. Fish abundance was highest at the sites closest to the WWTP discharge; fish richness was highest at sites farthest downstream from the discharge. *Cichlids* (at least two *Tilapia* species) were dominant at most sites except one, where *Cyprinids* (primarily carp and red shiners) and *Poecilids* (primarily mosquitofish) were dominant.

USACE (1998) collected fish data using electroshocking methods from a site near 115<sup>th</sup> Avenue, approximately 0.5 mile downstream of Site C (USACE 1998). This survey found five species at 115<sup>th</sup> Avenue, and the community was dominated by *Tilapia*, similar to the findings of USACE (1998).

## SUPPLEMENTAL WATER RESOURCES INFORMATION

The Gila River as it passes through the GRIC is designated as Ephemeral Aquatic and Biota, Partial Immersion Recreation, and Fish Consumption. Parts of the Salt River under GRIC jurisdiction have the designated uses of Effluent-Dependent Aquatic and Biota and Livestock and Range (GRIC DEQ 2002). The Arizona reaches of the Gila above the GRIC are designated for A&We, PBC, and AgL, with the exception of a short reach that is supported by the Florence WWTP and is A&Wedw. Downstream of the GRIC, the designated use of the Gila River is A&Wedw, PBC, FC, Agl, and AgL all the way to Gillespie Dam. ADEQ also assesses use attainability of the Grand Canal, designating it as an Agl and AgL water.

**Use Attainability of the Salt and Gila Rivers** – In general, streams that are impaired with respect to their designated uses require a Total Maximum Daily Load (TMDL) analysis, under state and Federal law. In 2001, ADEQ proposed a new system of assessing impairment for streams in Arizona not attaining their designated uses. This system includes both a 303(d) list of streams designated as impaired and awaiting or going through a TMDL and a four-part planning list, which is composed of streams that are either: (1) streams attaining all of their uses but requiring additional monitoring, (2) streams attaining some, but not all, of their designated uses, (3) streams where the data are inconclusive and (4) streams assessed as not attaining but not impaired, thereby not requiring a TMDL.

In 2002, ADEQ released a combined draft 303(d) list and 305(b) assessment report for public comment. In that report, the middle Gila River from Hayden Dam to Gillespie Dam is proposed for the planning list under Part 3, "Inconclusive." All of these five reaches were listed on the 1998 303(d) list for DDT breakdown compounds, chlordane, toxaphene and dieldrin (pesticides). The Gila River Indian Community has yet to release a 303(d) list.

The Salt River below the 23<sup>rd</sup> Avenue WWTP was also listed for the same pesticides on the 1998 list but has also been proposed for the planning list. The Grand Canal has also been added to the Planning List, Part 3 (Inconclusive) due to a lack of adequate data. All other reaches of the Salt are listed as Attaining All Uses, Part 1.

**Sources of Impairment** – In the 305(b) report, ADEQ does not identify the source of pesticides in the middle Gila and Salt Rivers. However the USGS does conclude (Cordy, et al 2000) that the past use of agricultural pesticides and herbicides in the west Salt River Valley is the ultimate origin of these compounds and further concludes that they are now accumulative in fish tissue and sediment along the impacted reaches.

**Current Surface Water Impacts from PHX** – None of the pesticides listed in the 303(d) and 305(b) assessment reports are currently used. Therefore, the mobilization of the compounds must include the re-suspension of previously contaminated sediment and transport off site. Given that most of PHX is impervious and paved, the fraction of suspended sediment from soil is very low. At this time, there is no indication from ADEQ (ADEQ 2002) that there are any impacts to surface water from PHX.

**Ground Water** – In August 2002, the ground water elevation at PHX ranged from about 1,058 feet above MSL in the Aviation Department monitor well installed to the east of Terminal 4 to about 1,021 feet above MSL on the west side of the West Economy Parking Lot. Due to current drought conditions throughout the Phoenix basin, ground water elevations are decreasing at a rate of approximately 4 feet per year. A similar decrease in ground water elevation has been observed in the vicinity of PHX. In 1992 and 1993, water releases to the Salt River caused an increase in ground water elevation of up to 30 feet in the vicinity of the West Sky Harbor Blvd. Two-thirds of this increase occurred in 1992 over a period of about six months. It is likely that water flow within the Salt River in the future will have similar effects on ground water elevation.

## STORMWATER

Stormwater runoff is generated by rainfall accumulating on impervious surfaces. The methodology for estimating pollutant loads based upon impervious surface comes from the Metropolitan Washington Council of Governments (Schueler 1987). This methodology is frequently used for estimates used in stormwater management plans. According to Schueler,

$$L = [P * P_j * R_v / 12] * C * A * 2.72$$

where, L = pollutant load, pounds  
P = rainfall depth, inches  
P<sub>j</sub> = rainfall correction factor  
R<sub>v</sub> = runoff coefficient  
C = mean event concentration of pollutant, mg/L  
and A = area, acres

Schueler's analysis of 44 urban drainages across the US indicates that,

$$R_v = 0.05 + 0.009 * I$$

where, I = % impervious surfaces

The U.S. Geological Survey completed a stormwater pollution investigation of the Phoenix Metropolitan Area that covered PHX and generated appropriate estimates for all of these parameters for existing impervious surfaces and facilities. Estimates were not prepared for the change in impervious area estimated for the proposed AIP Alternative as design data were not available at that time (Fossum et al. 2001).

**STATE OF ARIZONA 304(B) ASSESSMENT FOR THE SALT AND GILA RIVERS NEAR PHX**

Stream Name Segment Waterbody ID Designated Uses	Agency and Program Site Description Site Code ADEQ Database ID	Year Sampled Number and Type of Samples	Parameter Units	Standards Exceeded at This Site per Sampling Event				Comments
				Standard (Designated Use)	Range of Results (Mean)	Frequency Exceeded Standard	Designated Use Support	
<b>Salt Watershed</b>								
Salt River Saguaro Lake-Verde River AZ15050106A-003 A&Wc, FC, FBC, DWS, Agl, AgL	AGFD Below Stewart Mountain Dam SRSLR027.30	1999 – 2 field, 2 nutrient 2000 – 1 field, 1 nutrient	OK					
	SRP Below Stewart Mountain Dam WSRVSL2 SRSLR030.22	1996 – 12 suites 1997 – 12 suites 1998 – 11 suites 1999 – 12 suites 2000 – 14 suites, 9 pesticides	Copper (dissolved) µg/L	Varies with hardness (A&Ww)	11-110	1 of 61		
	USGS Station #095020000 Below Stewart Mountain Dam SRSLR033.55	1999 – 2 suites, 2 bact 2000 – 6 suites, 6 bact	Dissolved oxygen mg/L	7.0 (90% saturation) (A&Ww)	4.1-9.4	2 of 8		
	Reach Summary Row A&Wc     Attaining FC        Attaining FBC       Attaining DWS       Attaining Agl        Attaining Agl        Attaining	1996-2000 72 sampling events	Dissolved oxygen mg/L	7.0 (90% saturation) (A&Wc)	4.1-10.3	2 of 11	Attaining	AGFD collected 3 samples in 1999-2000. SRP collected 61 samples in 1996-2000. USGS collected 8 samples in 1999-2000. Reach assessed as "attaining all uses."
		Copper (dissolved) µg/L	Varies with hardness (A&Ww)	11-110	1 of 61	Attaining		
<b>Middle Gila Watershed</b>								
Salt River 23 <sup>rd</sup> Avenue WWTP-Gila River AZ15060106B-001D A&Wedw, FC, PBC, Agl, AgL	USGS NAWQA Site #09512407 91 <sup>st</sup> Avenue WWTP Outfall MGSLR010.78	1996 – 10 suites 1997 – 12 suites, 5 VOCs 1998 – 2 suites	OK					Missing core parameters: turbidity, bacteria, boron, mercury, insufficient metals except manganese.
	Reach Summary Row A&Wedw   Inconclusive FC        Inconclusive PBC       Inconclusive Agl       Inconclusive Agl        Inconclusive	1996-1998 24 sampling events Missing core parameters		OK			Inconclusive	USGS collected 24 samples in 1996-1998. Reach assessed as "inconclusive" and added to the Planning List due to missing core parameters.
Grand Canal 15070101-New River AZ15070102-250 Agl, AgL	SRP/USGS Routine Monitoring At 99 <sup>th</sup> Avenue, Phoenix SVLT 2-23-0 MGGR000.70	1996 – 10 suites 1997 – 12 suites 1998 – 11 suites 1999 – 11 suites 2000 – 11 suites	OK					Missing core parameters: no total metals, only dissolved metals reported.
Gila River Agua Fria River-Waterman Wash AZ15070101-014 A&Wedw, FC, PBC, Agl, AgL	USGS NAWQA Site #09514100 At Estrella Parkway MGGLR093.63	1996 – 1 suite, pesticide	OK					Missing core parameters: turbidity, metals, bacteria, boron
	USGS NAWQA Site #09513990 Above Head of Buckeye Canal MGGLR094.27	1996 – 6 suites, pesticides	OK					Missing core parameters: turbidity, metals, bacteria, boron

Note: OK indicates that no standards were exceeded.

Source: ADEQ, 2002.

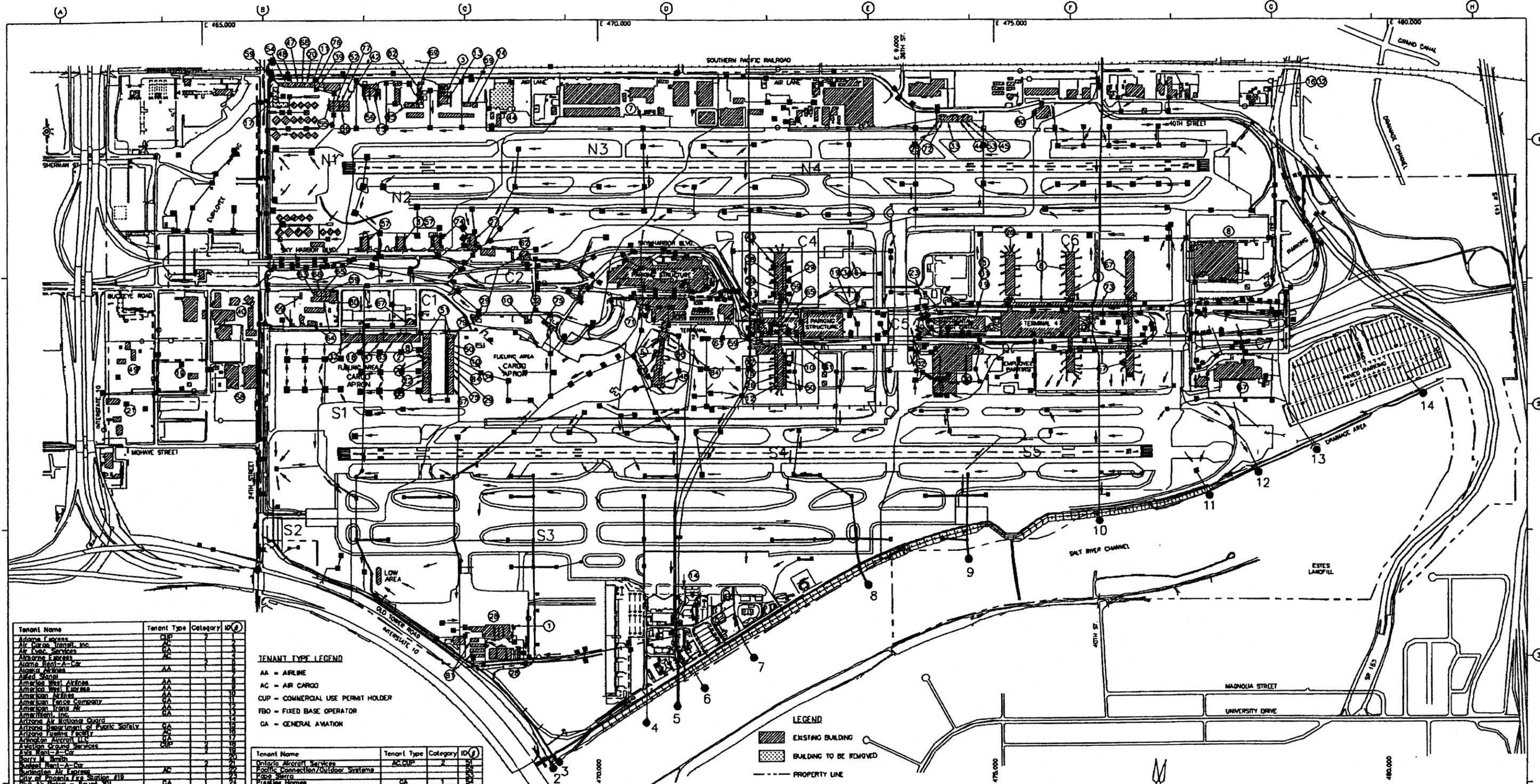
**ASSESSMENT, PLANNING LIST, AND 303(D) STATUS – MIDDLE GILA WATERSHED**

2002 Assessment and Planning List				303(d) List			
Waterbody Name Segment Description Size Waterbody ID	Assessment 5-Part Listing Lake Trophic Status	Planning List	Pollutants of Concern (Number of Samples Exceeding Standards)	Status of the 1998 303(d) List			Recommendations for 2002 303(d) List
				Pollutants (Designated Use Impaired)	Year Listed	Status of TMDL	
Salt River 23 <sup>rd</sup> Avenue WWTP-Gila River 14 miles AZ15060106B-001D	Inconclusive Part 3	Add to the Planning List	DDT metabolites, toxaphene, dieldrin, and chlordane in fish tissue (see delist recommendation from 303(d) List). Missing core parameters.	Narrative toxicity standard – Fish consumption advisory due to DDT, toxaphene, dieldrin and chlordane (FC)	1988	Ongoing investigation	Delist DDT, toxaphene, dieldrin, and chlordane. Lack of applicable narrative implementation guidance as required in new Arizona TMDL Statutes.
				pH (A&Wedw, PBC, AgI, AgL)	1994		Delist pH. No exceedances in 24 samples (attaining).
Gila River Ashurst-Hayden-Florence WWTP 13 miles AZ15050100-003B	Inconclusive Part 3	Add to the Planning List	Copper (1 of 2 samples) Missing core parameters. Lack of sampling events				
Gila River Salt River-Agua Fria River 4 miles AZ15070101-015	Inconclusive Part 3	Add to the Planning List	DDT metabolites, toxaphene, dieldrin, and chlordane in fish tissue (see delist recommendation from 303(d) List).	Narrative toxicity standard – Fish consumption advisory due to DDT, toxaphene, dieldrin and chlordane (FC)	1988	Ongoing investigation	Delist DDT, toxaphene, dieldrin, chlordane. Lack of applicable narrative implementation guidance as required in new Arizona TMDL Statutes.
Gila River Agua Fria River-Waterman Wash 12 miles AZ15070101-014	Inconclusive Part 3	Add to the Planning List	DDT metabolites, toxaphene, dieldrin, and chlordane in fish tissue (see delist recommendation from 303(d) List). Missing core parameters.	Narrative toxicity standard – Fish consumption advisory due to DDT, toxaphene, dieldrin and chlordane (FC)	1988	Ongoing investigation	Delist DDT, toxaphene, dieldrin, chlordane. Lack of applicable narrative implementation guidance as required in new Arizona TMDL Statutes.
Gila River Waterman Wash-Hassayampa River 14 miles AZ15070101-010	Inconclusive Part 3	Add to the Planning List	DDT metabolites, toxaphene, dieldrin, and chlordane in fish tissue (see delist recommendation from 303(d) List).	Narrative toxicity standard – Fish consumption advisory due to DDT, toxaphene, dieldrin, and chlordane (FC)	1988	Ongoing investigation	Delist DDT, toxaphene, dieldrin, chlordane. Lack of applicable narrative implementation guidances as required in new Arizona TMDL Statutes.
Gila River Hassayampa River-Gillespie Dam 7 miles AZ15070101-009	Inconclusive Part 3	Add to the Planning List	DDT metabolites, toxaphene, dieldrin, and chlordane in fish tissue (see delist recommendation from 303(d) List).	Narrative toxicity standard – Fish consumption advisory due to DDT, toxaphene, dieldrin, and chlordane (FC)	1988	Ongoing investigation	Delist DDT, toxaphene, dieldrin, chlordane. Lack of applicable narrative implementation guidances as required in new Arizona TMDL Statutes.
Grand Canal 5 miles AZ15070102-250	Inconclusive Part 3	Add to the Planning List	Missing core parameters				

Source: ADEQ, 2002.







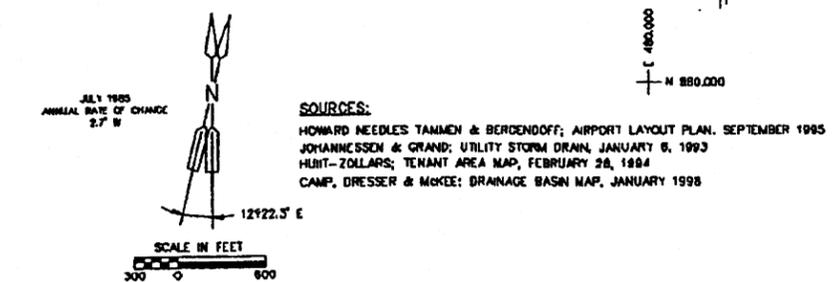
Tenant Name	Tenant Type	Category	ID #
Adams Express	CUP	7	1
Air Cargo Terminal, Inc.	CA	1	2
Air Tech Services	CA	1	3
Alouga Express	CA	1	4
Alouga Rent-A-Car	CA	1	5
Alouga Airlines	AA	1	6
Alouga Shuttle	AA	1	7
American West Airlines	AA	1	8
American West Express	AA	1	9
American Airlines	AA	1	10
American Fence Company	CA	1	11
American Trans Air	AA	1	12
Amstat, Inc.	CA	1	13
Arizona Air National Guard	CA	1	14
Arizona Department of Public Safety	CA	1	15
Arizona Federal Facility	CA	1	16
Arizona Airport LLC	CA	1	17
Aviation Ground Services	CUP	7	18
Avia Rent-A-Car	CA	1	19
Berry M. Smith	CA	1	20
Budget Rent-A-Car	CA	1	21
Continental Air Express	CA	1	22
City of Phoenix Fire Station #19	CA	1	23
City of Phoenix - Board #11	CA	1	24
Communications Systems Group	CA	1	25
Continental Airlines, Inc.	AA	1	26
Critical Air	CA	1	27
Delta Aviation	CUP/FBO	7	28
Delta Airlines	CUP	7	29
Delta Express	CUP	7	30
Delta Rent-A-Car	CA	1	31
Dynair Fueling, Inc.	CUP/FBO	7	32
Empire Airlines	CUP	7	33
European International	CA	1	34
Executive Air Lines	CA	1	35
Express Air	CA	1	36
Express Express Corporation	CA	1	37
Frontier Airlines	AA	1	38
Frontier Express, Inc.	CA	1	39
Frontier Rent-A-Car	CA	1	40
Hopet Marriott	CA	1	41
Interstate Equipment Leasing	CA	1	42
ITS Corporation	CA	1	43
ITT Cannon	CA	1	44
Kanada Industries, Inc.	CA	1	45
King Aviation, Inc.	CA	1	46
Lincoln Land	CA	1	47
Miller Corporation	CA	1	48
National Car Rental	CA	1	49
Northwest Airlines	AA	1	50

**TENANT TYPE LEGEND**  
 AA = AIRLINE  
 AC = AIR CARGO  
 CUP = COMMERCIAL USE PERMIT HOLDER  
 FBO = FIXED BASE OPERATOR  
 GA = GENERAL AVIATION

Tenant Name	Tenant Type	Category	ID #
Arizona Airport Services	AC/CUP	7	51
Aviation Construction/Outdoor Systems	CA	1	52
Paco Sierra	CA	1	53
Franklin Thomas	CA	1	54
Police Construction	CA	1	55
Salt River Project	CA	1	56
Savage Aviation	FBO	7	57
Sky Chits	CA	1	58
Sky Harbor Airfield Maintenance	CA	1	59
Sky Harbor Airfield Maintenance	CA	1	60
Sky Harbor Custodial Services	CA	1	61
Sky Harbor Executive Nonstop	CA	1	62
Sky Harbor Facilities - Rent, Waste	CA	1	63
Sky Harbor Fleet Maintenance	CA	1	64
Sky Harbor Mechanical Maintenance	CA	1	65
Sky Harbor Park Maintenance	CA	1	66
Southern Airlines	AA	1	67
Spirit, Inc.	AA	1	68
Sun Ltd. Van Arizona Airways	AA	1	69
Sun West Air Freight	AA	1	70
Sun West Airlines	AA	1	71
Sun West Airlines	AA	1	72
Superior Aviation	CA	1	73
Swift Aviation Services, Inc.	CA	1	74
Trans World Airlines	AA	1	75
Transportation Asset Services	CA	1	76
Urbana No. 1000	CA	1	77
U.S. Airways	AA	1	78
U.S. Customs - Air Cargo	CA	1	79
U.S. Customs Service	CA	1	80
World Service Company	CUP	7	81

Tenant Name	Tenant Type	Category	ID #
U.S. Forest Service	AC	1	82
U.S. Helicopters	CA	1	83
U.S. Postal Service	CA	1	84
United Airlines	AA	1	85
United Parcel Service	CA	1	86
World Service Company	CUP	7	87

**LEGEND**  
 [Hatched Box] EXISTING BUILDING  
 [Dotted Box] BUILDING TO BE REMOVED  
 [Dashed Line] PROPERTY LINE  
 [Solid Line] STORM DRAIN LINE  
 [Arrow] STORM WATER FLOW DIRECTION  
 [Square] CATCH BASIN  
 [Square with 'O'] CATCH BASIN OBSERVED BY CDM  
 [Square with 'X'] CATCH BASIN NOT OBSERVED DURING SITE VISIT BY CDM  
 [Line] HEAD WALL  
 [Square] BUBBLER BOX  
 [Line] FLOOR DRAIN  
 [Square] OIL/WATER SEPARATOR FOR STORM WATER  
 [Circle] DISCHARGE POINT (OUTFALL) FROM AIRPORT PROPERTY  
 [Line] TRENCH DRAIN  
 [Dashed Line] TRENCH DRAIN NOT OBSERVED DURING SITE VISIT BY CDM  
 [Line] DRAINAGE BASIN BOUNDARY



**SOURCES:**  
 HOWARD NEEDLES TAMM & BERGENOFF; AIRPORT LAYOUT PLAN, SEPTEMBER 1985  
 JOHANNESSEN & GRAND; UTILITY STORM DRAIN, JANUARY 6, 1993  
 HUNT-ZOLLARS; TENANT AREA MAP, FEBRUARY 28, 1984  
 CAMP, DRESSER & MOKE; DRAINAGE BASIN MAP, JANUARY 1998

REV. NO.	DATE	DRWN	CHKD	REMARKS
1/98	J.M.	LD		

**CH2MHILL**  
 1620 W. FOUNTAINHEAD PARKWAY  
 SUITE 500  
 TEMPE, AZ 85282-1843

CITY OF PHOENIX AVIATION DEPARTMENT  
 SKY HARBOR INTERNATIONAL AIRPORT  
**STORM WATER MULTI-SECTOR GENERAL PERMIT**

**DRAINAGE BASIN MAP**

PROJECT NO. 0761-122  
 FILE NAME: SWMGP2-4.DWG  
 FIGURE NO. 2-4



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION IX  
75 Hawthorne Street  
San Francisco, CA 94105-3901

OFFICE OF THE  
REGIONAL ADMINISTRATOR

December 5, 2002

Jane Dee Hull  
Governor  
State of Arizona  
1700 West Washington  
Phoenix, AZ 85007

Dear Governor Hull:

I am pleased to inform you that the U.S. Environmental Protection Agency has approved the State of Arizona's application to administer the National Pollutant Discharge Elimination System program pursuant to Section 402(b) of the Clean Water Act, 33 U.S.C. § 1342(b). Specifically, Arizona is being approved to administer both the NPDES permit program covering point source dischargers to State waters and the pretreatment program covering industrial sources discharging to publicly owned treatment works in all areas within the State except for Indian Country.

Let me congratulate you and everyone at the State on this fine effort. We look forward to continue working closely with you on the NPDES program. If we can assist you in any way, please feel free to call.

Sincerely,

A handwritten signature in black ink, appearing to read "Wayne Natri".

Wayne Natri  
Regional Administrator