Exhibit 1

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

Western-Pacific Region
Office of the Regional Administrator

777 S. Aviation Blvd., Ste.150
El Segundo, CA 90245

June 1, 2022

Mr. Andrew Ching
City Manager, Tempe
31 East Fifth Street
Tempe, AZ 85281

Dear Mr. Ching:

RE: Tempe Entertainment District (TED) – Supplemental Information

The Federal Aviation Administration (FAA) is in receipt of the April 8, 2022, correspondence from Mr. Gutierrez regarding the proposed Tempe Entertainment District (TED). A copy of this correspondence is included as Attachment 1. We are providing this additional information to ensure the City of Tempe understands the concerns of the FAA. As the City of Tempe has authority and jurisdiction over this matter, we are providing this in advance of the Tempe City Council meeting scheduled for June 2, 2022.

In correspondence dated April 1, 2022, we also outlined numerous concerns with the proposed development, including, but not limited to airspace impacts, both permanent and temporary conditions, flight impacts to aircraft using Phoenix Sky Harbor International Airport (PHX), along with noncompatible land use. A copy of this correspondence is included as Attachment 2.

Regarding compatible land use planning, the FAA encourages and can support an airport sponsor's coordination with land use planning authorities to undertake efforts to secure compatible land use development around public use airports. Since the City of Tempe has authority over the proposed TED project, the FAA strongly encourages the City of Tempe to ensure compatible land use for its citizens and interested stakeholders, as well as those of neighboring jurisdictions.

It is also important to understand the FAA does not support residential development within areas experiencing aviation related noise levels of Day-Night Average Sound Level (DNL) 65 decibel(dB) or greater. The proposed TED development would be located within the DNL 65 dB noise contour as depicted in the airport's Noise Exposure Maps (NEMs). As established in Title 14, Code of Federal Regulations (CFR) Part 150, Table A-1, FAA considers areas exposed to aviation noise levels of DNL 65 dB or above to be noncompatible with residential land use. Also note, that noncompatible land use determinations outlined in 14 CFR Part 150, Table A-1 *"…do not constitute a Federal determination that any use of land covered by the program is acceptable or unacceptable under Federal, State, or local law. The responsibility for determining the acceptable and permissible land uses and the relationship between specific properties and specific noise contours rests with the local authorities."* Thus, Federal agencies, including the FAA, do not have jurisdiction or the authority to control local land use planning, zoning or

regulation. Furthermore, as noted in the Arizona Coyote's letter to the FAA (April 8, 2022), 14 CFR Part 150 indicates that, *"[w]here the community determines that residential or school uses must be allowed, measures to achieve outdoor to indoor Noise Level Reduction (NLR) of at least 25 dB and 30 dB should be incorporated into building codes and be considered in individual approvals. […] However, the use of NLR criteria will not eliminate outdoor noise problems."* That is, while sound insulation treatment may be incorporated into residential structures, the residents living within the proposed TED will continue to experience aviation noise levels at or above DNL 65 dB while enjoying outdoor activities and open windows.

As noted in FAA's letter to the City of Tempe (April 1, 2022), it is FAA policy[1] that FAA's approval of remedial noise mitigation measures (including land acquisition and residential sound insulation treatment) are limited to existing non-compatible development. Thus, the City of Phoenix as the airport sponsor, would not be eligible to receive FAA Airport Improvement Program (AIP) funding for remedial noise mitigation of residential properties associated with TED. The City of Tempe would also not be eligible to receive AIP funding for remedial noise mitigation of residential properties associated with TED.

FAA would also like to ensure the City of Tempe recognizes the results of the FAA's Neighborhood Environmental Survey (NES)[2]. These results indicate that when compared with the Schultz Curve (i.e., a tool developed in 1992 to predict community response to transportation noise), a substantially higher percentage of people were highly annoyed over the entire range of aircraft noise levels (i.e., from DNL 50 to 75 dB). Specifically, the NES results show that at a noise exposure level of DNL 65 dB 60.1-70.09 percent of people were highly annoyed[3].

If you have any questions regarding this letter, please call my office at (424) 405-7000.

Sincerely,

Tamara A. Swann

Tamara A. Swann
Regional Administrator (A)

Enclosures:
Attachment 1 Arizona Coyote's letter to the FAA dated April 8, 2022
Attachment 2 FAA letter to the City of Tempe dated April 1, 2022

cc: Mr. Chad Makovsky, City of Phoenix
Mr. Xavier Gutierrez, Arizona Coyotes

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[1] Federal Register Vol 63. No. 64. Department of Transportation, Federal Aviation Administration. Final Policy on Part 150 Approval of Noise Mitigation Measures: Effect on the Use of Federal Grants for Noise Mitigation Projects. April 3, 1998.

[2] Federal Register Vol. 86, No. 8. Department of Transportation, Federal Aviation Administration. Overview of FAA Aircraft Noise Policy and Research Efforts: Request for Input on Research Activities to Inform Aircraft Noise Policy. January 8, 2021.

[3] Data represents a 95% confidence limit from the NES.

Exhibit 2

PHX Phoenix Sky Harbor International Airport

Comprehensive Asset Management Plan

2019

Contents

PHX RICONDO®

Introduction

The Comprehensive Asset Management Plan (CAMP) is a guide for managing and developing future facilities such as terminals, roadways, and aircraft aprons at Phoenix Sky Harbor International Airport (PHX).

The Federal Aviation Administration requires airport operators to maintain long-range plans for airport development so they can make cost-effective facility and land use decisions that reflect local goals. CAMP has resulted in an updated development plan that cost-effectively addresses aviation demand, enhances safety and security, increases operational efficiency, and preserves the flexibility to respond to evolving industry conditions and changing characteristics of Airport activity.

CAMP is the framework strategy for the long-term development of PHX. The preferred concept is not a rigid development program and decisions will be made as demand triggers are reached and opportunities arise. Specific development actions will reflect changing conditions, business climate, evolving demand characteristics, and other relevant factors. Prior to implementation, development actions would require further environmental review and projects would be funded from a variety of sources including federal and state grants, Airport funds, passenger facility charge revenue, and general airport revenue bonds. Improvement projects at PHX are not funded with taxpayer dollars.

To ensure a successful stakeholder-led planning process, CAMP promoted a high level of awareness which effectively balanced stakeholder input and interests.

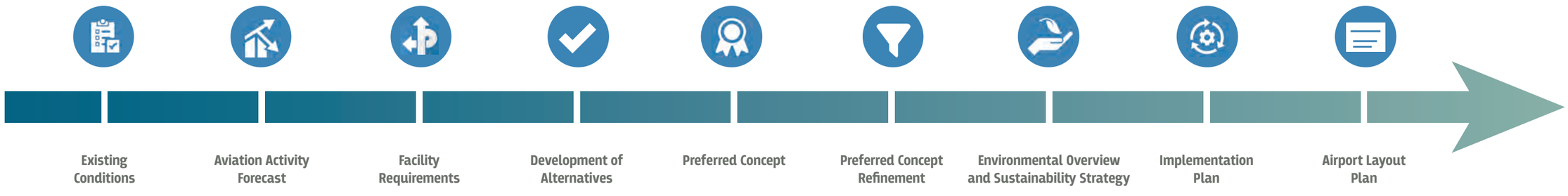
Project committees and focus groups were formed and included individual citizens, elected officials, other city departments, state agencies, federal agencies, Airport users and tenants, special interest groups, and others. These stakeholders provided crucial information that helped guide the planning process and provided valuable feedback. The public was also provided the opportunity to learn about CAMP and engage in the planning process through public workshops held at key milestones during the project.

CAMP Process

The CAMP process began with an inventory of existing conditions including physical and operational characteristics of the Airport and its immediate environs. The inventory provided the basis for the facility requirements analyses later in the study. Aviation activity forecasts were developed for a 20-year planning horizon through 2037 and were reviewed and approved by the FAA. A base forecast and three forecast scenarios were developed to reflect reasonable conditions that could develop at the Airport over the planning horizon. The forecasts were used to establish future requirements for airfield, terminal/gates, transportation (roadways and parking), and support facilities, including cargo.

The future requirements for these Airport components were used to define alternatives. The alternatives for each component were evaluated, and the preferred alternative for each was integrated into an overall preferred concept. An environmental overview was produced to identify any issues to be resolved prior to implementation of the projects. Sustainability was integrated throughout the planning process and a strategy was prepared that suggests sustainability measures that can be integrated into the preferred concept.

An implementation plan, including timing and triggers for the various development components, and cost estimates were developed for subsequent use in financial planning. The preferred concept was depicted on the airport layout plan and submitted to the FAA for their review and approval.



Airport Growth and Usage

120,000 passengers on 1,200 aircraft arrive and depart per day

Airport covers 3,400 acres (5 sq mi)

More than 57,000 Airport jobs

Over 25,000 parking spaces

Over 800 tons of cargo moved per day

1920s

The Airport was originally developed by Scenic Airways with a single runway (existing Runway 7L-25R). The company collapsed on Black Friday (1928) and the Airport becomes the property of Acme Investment.

1930s

The City of Phoenix purchases the Airport from Acme Investments for $100,000.

1950s

Terminal 1 opens and serves American, Trans World, Frontier, and Western Airlines.

1960s

Terminal 2 opens with 19 gates (now 10 gates due to larger aircraft) for a cost of $2.7 million. PHX surpasses one million passengers per year.

1970s

Terminal 3 opens with adjacent parking garage and north/south concourses consisting of 23 gates. PHX surpasses 5 million passengers a year.

1990s

Terminal 4 opens in 1990 with 5 concourses and 44 gates as the Airport serves more than 20 million passengers per year. A fourth concourse added on the north side of the terminal.

2000s

An additional concourse is added on the south side of Terminal 4, a new 326-foot tall Airport Traffic Control Tower is constructed, and consolidated Rental Car Center opens.

2010s

PHX Sky Train opens and provides a connection between Terminal 3, Terminal 4, East Economy Parking, and the 44th Street/Washington Valley Metro Light Rail Station.

Forecast

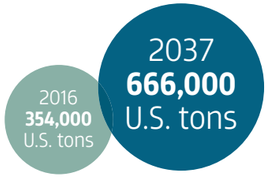
To assess the ability of Airport facilities and evaluate the potential need for new or expanded facilities, aviation activity forecasts were developed for (1) enplaned airline passengers, (2) aircraft operations, and (3) cargo volume activity. The forecasts included a base forecast and three alternate forecast scenarios for passengers and aircraft operations and two alternate forecast scenarios for cargo volume. The forecasts were prepared in 2017 using 2016 data as the source for the baseline forecast. Actual data for 2017 has since been added to the charts below.

Passenger Forecasts

Annual passenger activity is estimated to grow by 25 percent over the next 10 years and by 55 percent by 2037 to nearly 68 million passengers.

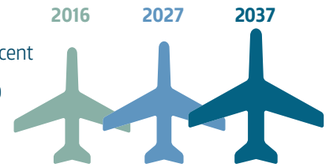
Cargo Volume Forecasts

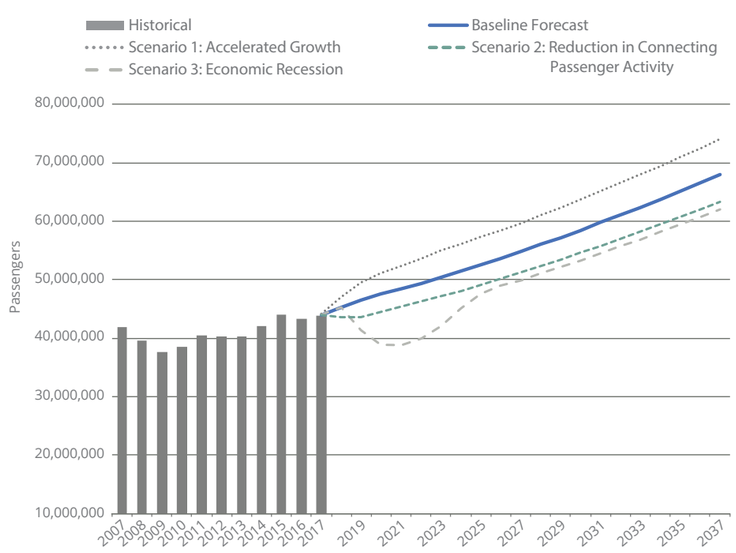
Cargo volume is forecast to increase from 354,000 U.S. tons in 2016 to 666,000 U.S. tons in 2037. Low and high cargo forecasts reflect varying growth rates in cargo activity, particularly e-commerce.

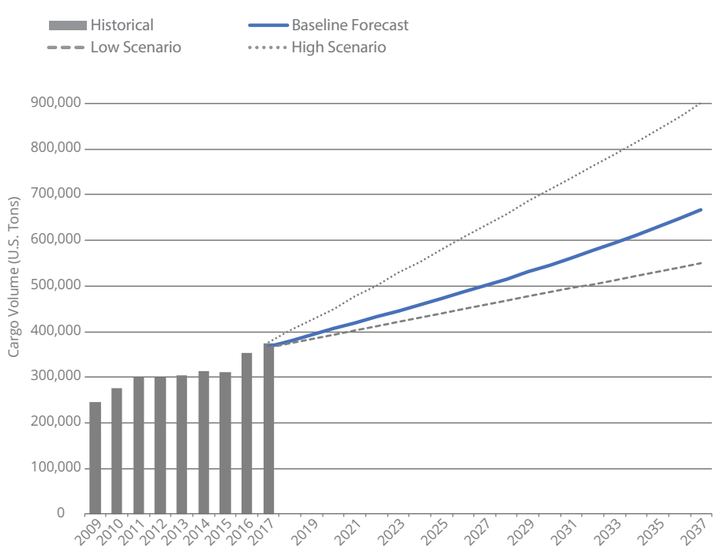


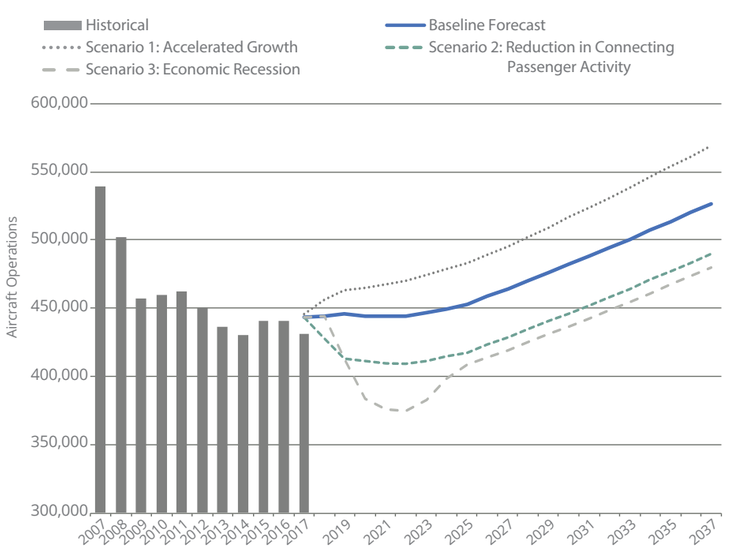
Aircraft Operations Forecasts

Aircraft operations are forecast to grow by 5 percent over the next 10 years and by approximately 20 percent by 2037.









In addition to the baseline forecast, three additional scenarios, a high forecast scenario and two low forecast scenarios, were developed to estimate the possible variation in passenger related activity resulting from changes in the socioeconomic and competitive environment assumed in the baseline forecast.

Scenario 1: Accelerated growth scenario where population and economic activity would grow at a faster rate between 2017 and 2023, with the growth rate peaking in 2020 and returning to baseline levels of year-over-year growth from 2024 to 2037.

Scenario 2: Connecting passenger traffic is reduced as capacity is realigned across airline networks. The capacity reduction would begin early in the forecast period and result in connecting passenger volume decreasing by approximately 13 percent compared to the baseline forecast.

Scenario 3: Weakened economic activity would drive a decrease in passenger volume and aircraft operations. An economic recession was assumed to begin in 2019 driving year-over-year decreases in passenger activity through 2021. Growth would resume in 2022 and traffic would increase at an accelerated rate through 2026, mimicking the patterns of the 2008 recession and subsequent recovery.

PHX RICONDO®

Existing Facilities

This map depicts the airfield, terminal, landside, support, and miscellaneous facilities at the Airport at the beginning of CAMP in 2017.

A Airfield

A-1. Runway 8-26
A-2. Runway 7L-25R
A-3. Runway 7R-25L

L Landside Transportation

L-1. Rental Car Center
L-2. Terminal 2 Parking Garage
L-3. Terminal 3 Parking Garage
L-4. Terminal 4 Parking Garage
L-5. West Economy Parking
L-6. East Economy Parking
L-7. Cell Phone Lots
L-8. Employee Parking
L-9. Taxi/Transportation Network Company Staging

S Support

S-1. West Cargo Complex
S-2. Facilities & Services
S-3. South Cargo Complex
S-4. Airport Operations Center
S-5. Corporate Office Building
S-6. Aviation Fuel Tanks
S-7. Mesa Airlines Maintenance
S-8. American Airlines Maintenance
S-9. Southwest Airlines Maintenance
S-10. Aircraft Rescue & Fire Fighting Stations
S-11. Airport Traffic Control Tower
S-12. North General Aviation Hangars/Offices
S-13. South General Aviation Hangars/Offices

T Terminals

T-2. Terminal 2
T-3. Terminal 3
T-4. Terminal 4

M Miscellaneous

M-1. Arizona Air National Guard Complex
M-2. Honeywell Industrial Complex

Planned Airport Facilities

At the beginning of CAMP in 2017, the Airport was in the planning, design, or construction phase of several significant development projects. These facilities are described below and were incorporated in CAMP.

A Airfield

A-1 + A-2. Crossfield Taxiways V and U
Two crossfield taxiways are planned to connect Runway 7L and Runway 8. Implementation of these taxiways would require the relocation of Facilities & Services and West Cargo Complex.

S Support

S-1. Southwest Airlines Maintenance Expansion
Southwest Airlines is doubling the size of its aircraft maintenance hangar and adding space for other maintenance services.

T Terminal Projects

T-2. Demolition of Terminal 2
Terminal 2 has reached the end of its useful life. Once the Terminal 3 Modernization Program and Terminal 4 Concourse S1 are complete, Terminal 2 will be demolished. As part of the demolition project, the Paul Coze Mural in Terminal 2 will be relocated.

T-3. Terminal 3 Modernization
The first milestone for the Terminal 3 Modernization Program was reached in December 2016, when the western portion of the terminal processor was completed. The completely reconstructed Terminal 3 South Concourse opened to passengers in January 2018. The North Concourse and eastern portion of the Terminal 3 processor improvements are anticipated to be complete in 2020. Enhancements include more baggage handling capacity, additional ticket counter and baggage claim, and additional aircraft gates.

T-4. Terminal 4 Concourse S1
Terminal 4 Concourse S1 is a new eight-gate concourse currently in the design phase.

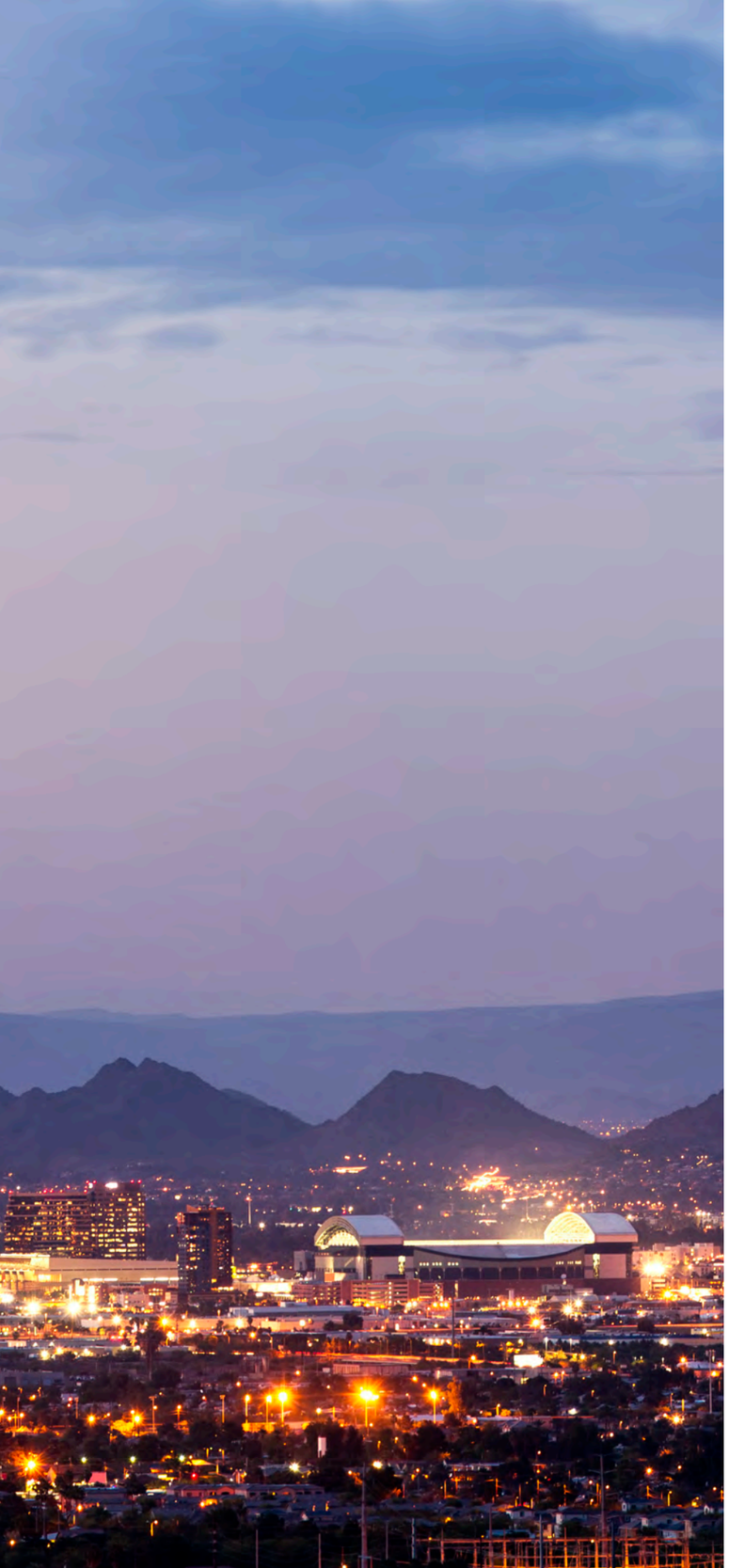
L Landside Transportation

L-1. PHX Sky Train Stage 2
Stage 2 of the PHX Sky Train project involves extending the existing line from the Terminal 3 station 2.5 miles to the Rental Car Center (L-2). This $700 million project will be funded using airline Passenger Facility Charge and rental car Customer Facility Charge revenues. This project impacts several existing Airport facilities, including the West Economy Parking, Ground Transportation Staging Lot, a FedEx leasehold, and Gate 1 at Terminal 2.

L-2. Rental Car Center Station

L-3. West Ground Transportation Center Station

L-4. Future Terminal Station



Facility Requirements

The relationship between demand for and capacity of the functional components of an airport is complex. Numerous factors affect how efficiently a certain level of demand can be processed within the capacity of a facility. Furthermore, the level of service that is acceptable varies by user, facility, and stakeholder. The relationship between demand and capacity was explored in the requirements analysis, and the ability of existing facilities to accommodate future demand was assessed. Facility requirements were developed based on stakeholder input, tenant interviews, industry benchmarking, and planning guidance developed by the following:

- Federal Aviation Administration
- Transportation Security Administration
- U.S. Customs and Border Protection
- International Air Transport Association
- Airport Cooperative Research Program
- Airports Council International – North America

As part of the stakeholder involvement process, several key issues were identified and considered in the study.

Airfield

- Provide additional aprons for aircraft parking overnight
- Identify areas for ground support equipment storage
- Create an implementation plan for crossfield Taxiways V and U
- Balance aircraft parking locations to reduce aircraft congestion on crossfield Taxiways T, S, and R

Passenger Experience

- Reduce terminal complexity
- Create secure connections between terminals
- Alleviate holdroom congestion
- Provide additional gate capacity and capability

Sustainability and Community

- Increase efficiency and redundancy of existing and planned Airport facilities
- Address idle vehicles in cell phone lots and around terminal curbs
- Address alternative energy sources and decrease Airport environmental impacts
- Develop community-friendly expansion and mitigate community traffic impacts
- Prepare surrounding roadways for the Airport's future development and to help local business and neighborhoods thrive

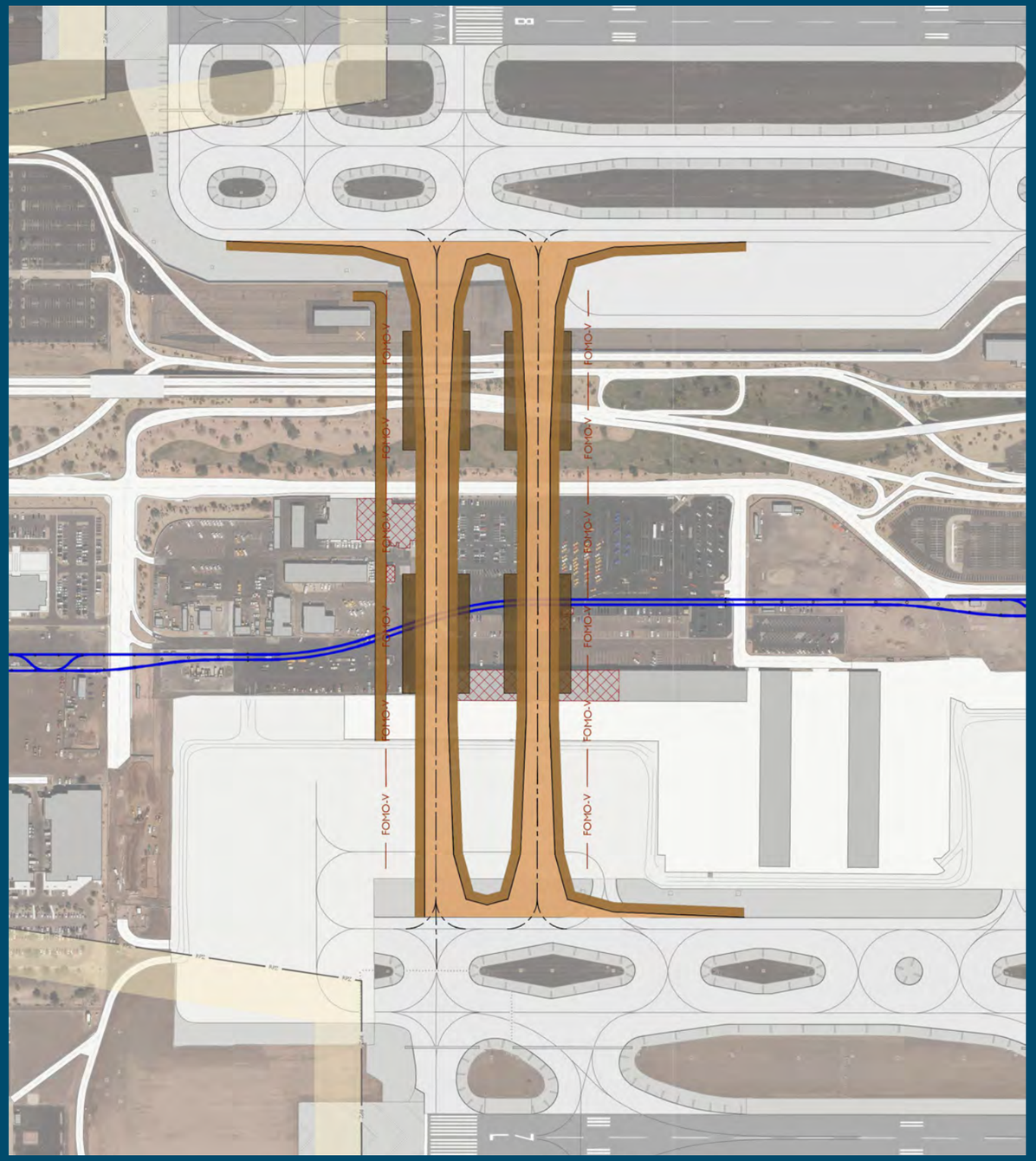
Land Use

- Optimize use of existing Airport lands
- Identify highest and best use of land north of Airport
- Determine which developments should be considered in and around the Airport

Airfield

The three existing runways at the Airport provide sufficient capacity to meet demand through Planning Activity Level (PAL) 3, which is equivalent to approximately 68 million annual passengers (MAP). The number of peak hour and annual operations should not exceed calculated capacities for the airfield.

A new set of crossfield taxiways located in the west airfield that connect the ends of Runway 7L and Runway 8 are planned. These taxiways would provide air traffic control with greater flexibility to maneuver aircraft throughout the airfield and the ability to better sequence aircraft for departure. These crossfield taxiways also reduce overall average taxi distances and travel times while reducing congestion along north and south concourses.



Terminal

Terminal and concourse requirements were categorized into three terminal groups: Terminal 3, Terminal 4-North, and Terminal 4-South, assuming that airlines operating in Terminal 2 would relocate to Terminal 3 when Terminal 2 is closed. The table below identifies capacity deficiencies for each PAL for gates, holdroom area, and each terminal function.

The Terminal 3 Modernization Program provides sufficient gate and holdroom area capacity through PAL 2 with some modifications to gate parking positions and minor expansion of holdroom areas by PAL 3. For Terminal 4-South, the opening of the Concourse S1 provides sufficient holdroom area through PAL 2. By PAL 3, Terminal 4-South will require additional holdroom space. The existing gates areas for Terminal 4-North are deficient in holdroom area and this continues through PAL 3 as the number of gates required increases.

The table below provides an assessment of the anticipated performance of various terminal components for each PAL. Assuming that airlines stay in their existing locations, most of the functional areas in the terminals have sufficient capacity through PAL 1. Some of the functional areas need additional capacity to accommodate demand in PAL 2. There would need to be significant improvements and expansion of most functional areas by PAL 3, indicating a need for terminal expansion.

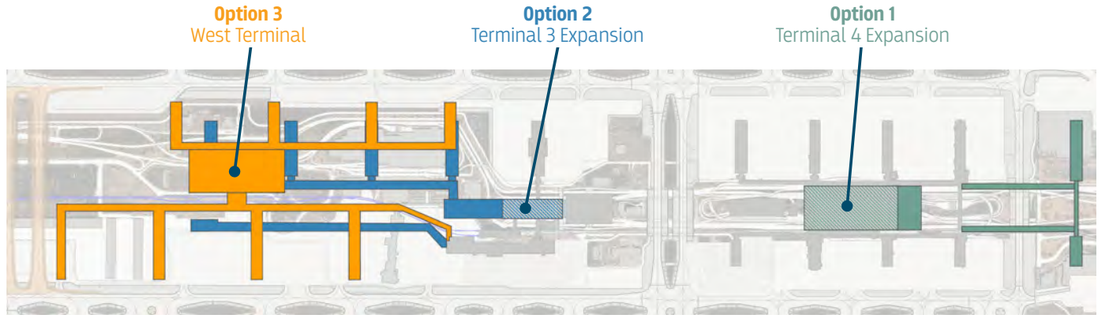
	TERMINAL COMPONENT	PAL 1 (49 MAP)	PAL 2 (55 MAP)	PAL 3 (68 MAP)
Terminal 3	Total Gates Required	27	27	29
	Additional Holdroom Required (sq ft)	0	0	1,409
	Check-in			
	Security			
	Checked Bag Screening			
	Outbound Baggage Make-up			
	Domestic Bag Claim			
Terminal 4 - South	Total Gates Required	24	25	32
	Additional Holdroom Required (sq ft)	2,309	5,139	16,419
	Check-in			
	Security			
	Checked Bag Screening			
	Outbound Baggage Make-up			
	Domestic Bag Claim			
Terminal 4 - North	Total Gates Required	61	62	64
	Additional Holdroom Required (sq ft)	50,366	64,616	87,826
	Check-in			
	Security			
	Checked Bag Screening			
	Outbound Baggage Make-up			
	Domestic Bag Claim			
	International Arrivals			

LEGEND
Sufficient
Marginal
Deficient

To address gate, holdroom, and terminal needs, three options were analyzed for overall terminal facility expansion:

- **Terminal 4 Expansion:** Gate facilities placed over existing airline maintenance facilities and expansion of the terminal processor resulting in the relocation of roadways and vertical parking access.
- **Terminal 3 Expansion:** Terminal 3 processor extension and placement of gates to the west which would require a reconfiguration of the recently modernized facility.
- **West Terminal:** New terminal facility located west of Terminal 3 accommodating north and south pier concourses and utilizing the planned PHX Sky Train station.

Ultimately, a West Terminal development is preferred due to the ability to accommodate gate and terminal expansion beyond PAL 3 while not interfering with the operation of existing terminals and concourses. The West Terminal is also preferred largely due to cost, construction challenges, and decrease in passenger level of service associated with the expansion of Terminal 3 or Terminal 4. The terminal plan includes a north pier concourse and a secure passenger connection located between Terminals 3 and 4. Secure passenger connections are also planned between Terminal 3 and the future West Terminal on both the north and south sets of pier concourses. These passenger connections increase operational flexibility by allowing gates to be served by more than one terminal.



Preferred Terminal Concept

T-1 West Terminal

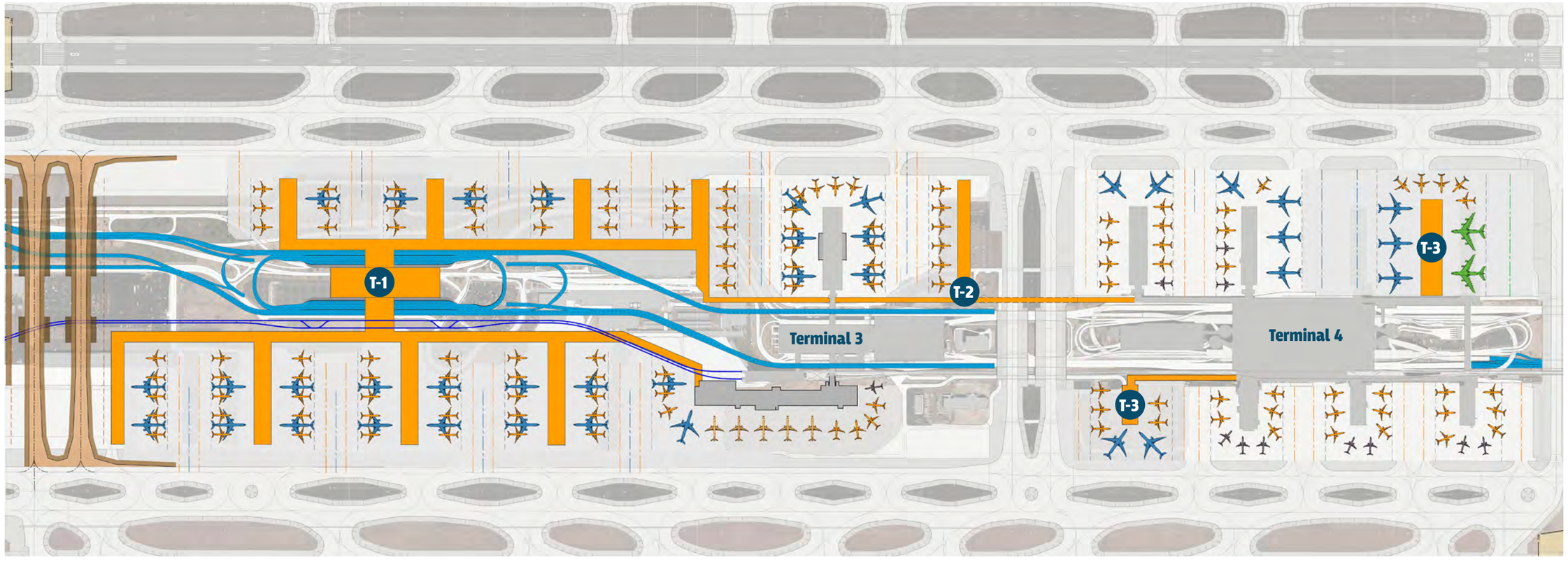
The West Terminal provides a centralized passenger processor connected to north and south concourse piers that can accommodate up to 62 aircraft. Both the north and south concourses would have a secure connection to Terminal 3. The West Terminal is planned to be configured with dual-level roadways on both sides (similar to Terminal 4). This terminal would have a station for the PHX Sky Train.

T-2 Terminal 3 North Concourse 2 and Terminal 3-Terminal 4 Connector

A concourse providing six narrowbody gates located between Terminal 3 and Terminal 4 would accommodate near-term gate demand. The new concourse would include a passenger connector that allows it be used by passengers in Terminal 3 or Terminal 4.

T-3 Concourse S1 and International Concourse

Terminal 4 gate improvements include the planned Concourse S1 and an international concourse to replace Concourses N3 and N4. This new concourse would better accommodate widebody aircraft by providing dual taxiway/taxilanes on each side. Expanded holdroom and concessions areas and facilities for processing international arriving passengers would be incorporated to increase capacity and provide a better passenger experience.



Transportation

Transportation facilities at the Airport include access roads, parking, rental car facilities, and facilities associated with commercial vehicles (taxicabs, limousines, transportation network companies, off-Airport parking shuttles, and hotel courtesy vehicles). The following describes the key issues, challenges, and requirements for transportation facilities.

R Rental Car Access

Access to the Rental Car Center on eastbound Interstate 10 requires drivers to exit the freeway before the Airport exit at the Washington/Jefferson Street off-ramp, cross the light rail and Washington/Jefferson Street intersections at grade, cross over the freight railroad, and then make a right turn on Sky Harbor Circle North which then leads to the RCC. Similarly drivers leaving the RCC and heading back toward downtown Phoenix on westbound Interstate 10 must navigate a complicated route to get back to the Interstate 10 on-ramp at Washington/Jefferson Street. A more direct route to/from the RCC would save time and ease driver anxiety for those not familiar with the local access roads near the Airport.

W West Access

Access to Sky Harbor Boulevard and the terminal core from Interstate 17 and westbound Interstate 10 requires drivers to exit the freeway system at Buckeye Road, head west to Copperhead Drive and make a left turn before merging on to Sky Harbor Boulevard. Currently this route only causes a few minutes of delay for customers that want to access the terminal area, but in the future there will be significantly more traffic near the West Ground Transportation Center. All other routes to the Airport from the regional freeway system on both the east and west sides have direct ramp access that flow onto Sky Harbor Boulevard.

T Terminal Curbs

Terminal curb congestion was analyzed for existing conditions and PALs 1, 2, and 3. If the West Terminal is not constructed, in order to maintain an acceptable level of service by PAL 3, there is an anticipated need for an additional 30 feet, 50 feet, and 220 feet of two-lane curbing space at Terminal 3 South Inner, Terminal 4 North Departures, and Terminal 4 South Departures curbfronts, respectively. In addition to curbfront length, demand for one additional through lane is required for Terminal 3 North Outer, Terminal 3 South Inner, and Terminal 3 South Outer curbfronts and for the Terminal 4 Departure South curbfront.

C Cut-through Traffic

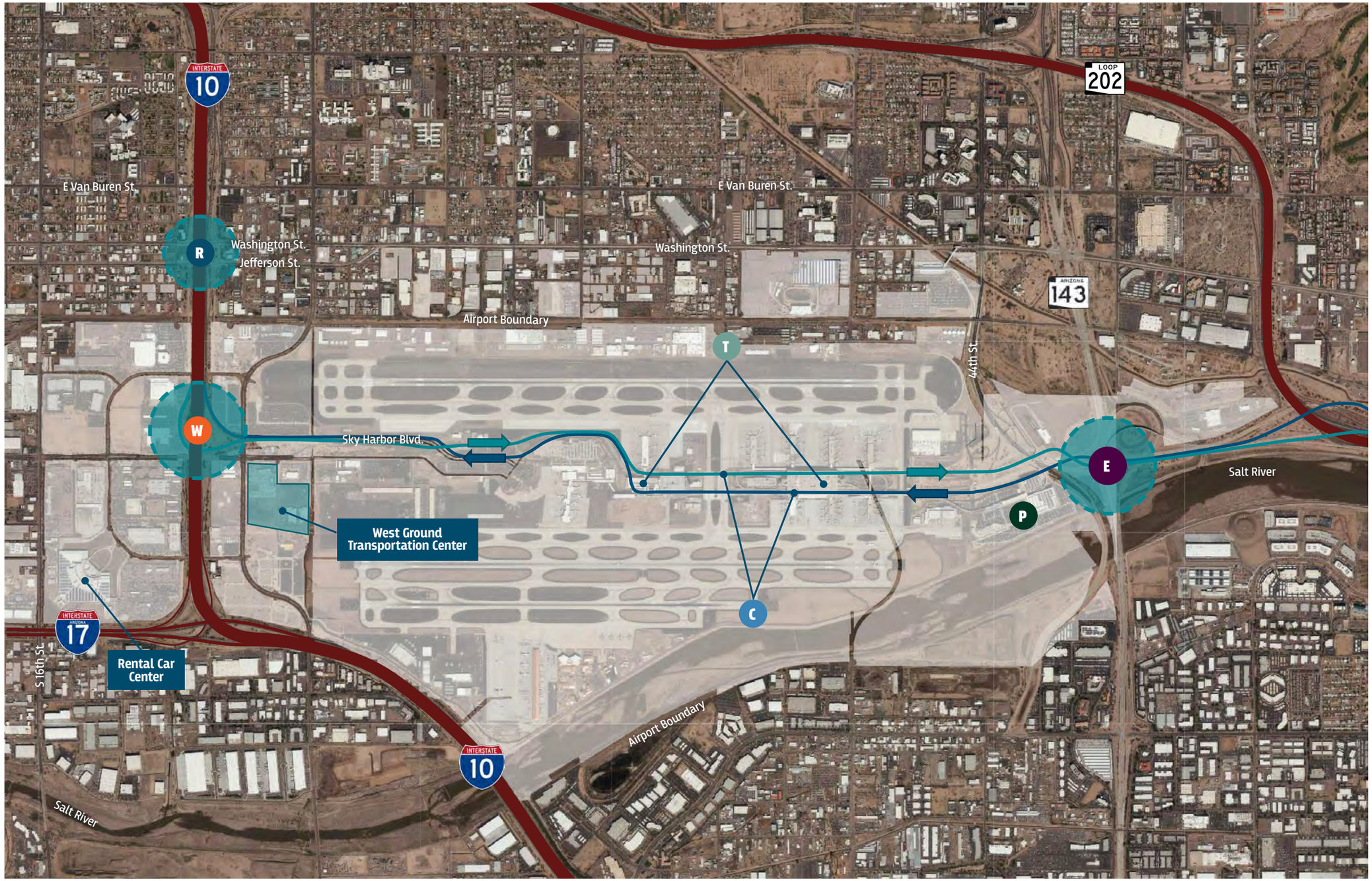
Vehicle traffic delays on surrounding Airport roadways (Interstate 10 and State Route 202) have resulted in a trend of commuters using Sky Harbor Boulevard to bypass the congestion – especially during morning and evening weekday peak hours. This additional traffic creates unnecessary demands on Sky Harbor Boulevard, reducing the roadway level of service, and increasing on-Airport traffic congestion.

E East Access

All routes to the terminal core converge onto westbound Sky Harbor Boulevard within a short distance east of Terminal 4. These routes include westbound State Route 202, northbound and southbound State Route 143, northbound and southbound 44th Street, and the ramp from 42nd Street that serves the East Economy Parking Lot. This causes excessive merging, weaving, driver confusion, traffic congestion, and safety concerns as drivers attempt to jockey for position to be in their correct lane. At busy times of the day there can be significant backups on Sky Harbor Boulevard Drivers need more time and distance to get in the correct lane assignments for Terminal 4 Arrivals, Terminal 4 Departures, or Terminals 2 and 3.

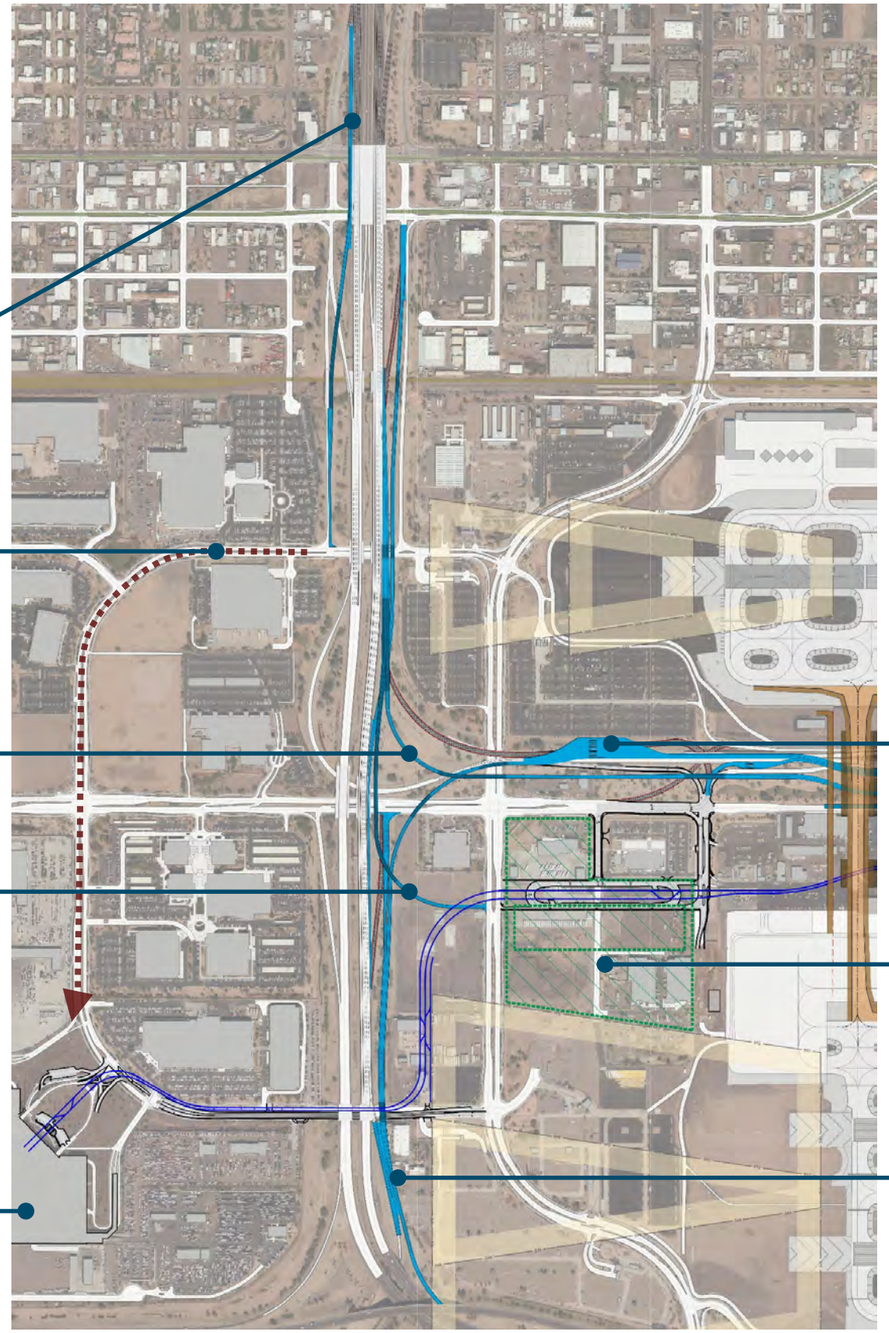
P Parking

An additional 4,400 public and 600 employee parking spaces will be needed by PAL 3. Due to the uncertainty of future travel modes with Transportation Network Companies, autonomous vehicles, and the West GTC currently in development, specific locations for vehicle parking development were not identified. It is recommended that the Airport preserve undeveloped or re-developable parcels near the terminals and roadways that could be utilized for vehicle parking until demand clarifies the amount of space that will be needed in the future.


INTERSTATE 10
LOOP 202
ARIZONA 143
INTERSTATE ARIZONA 17
E Van Buren St.
Washington St.
Jefferson St.
Airport Boundary
44th St
Sky Harbor Blvd.
West Ground Transportation Center
Rental Car Center
S 16th St.
Salt River
R
W
T
C
E
P

Transportation

Several improvements are identified for west roadway access, including a security plaza to reduce cut-through traffic and removal and addition of on-and-off ramps and roadways to provude more direct access to the Rental Car Center, West Ground Transportation Center, and Sky Harbor Boulevard.



West Roadway Access

Improved Rental Car Center Access
A bypass exit from Interstate 10 over Washington Street and Jefferson Street intersections to improve connectivity to the Rental Car Center.

Rental Car Center Access

Airport Exit Improvements
Airport exit is shifted south of Airport entrance to allow for inbound security plaza and extended Interstate 10 merge distance.

West Ground Transportation Center and Rental Car Center Exit to Interstate 10
Entrance ramp provides access to Interstate 10 directly from 24th Street to reduce congestion near Buckeye Road.

Rental Car Center

Security Plaza
Reduces cut-through traffic from the west.

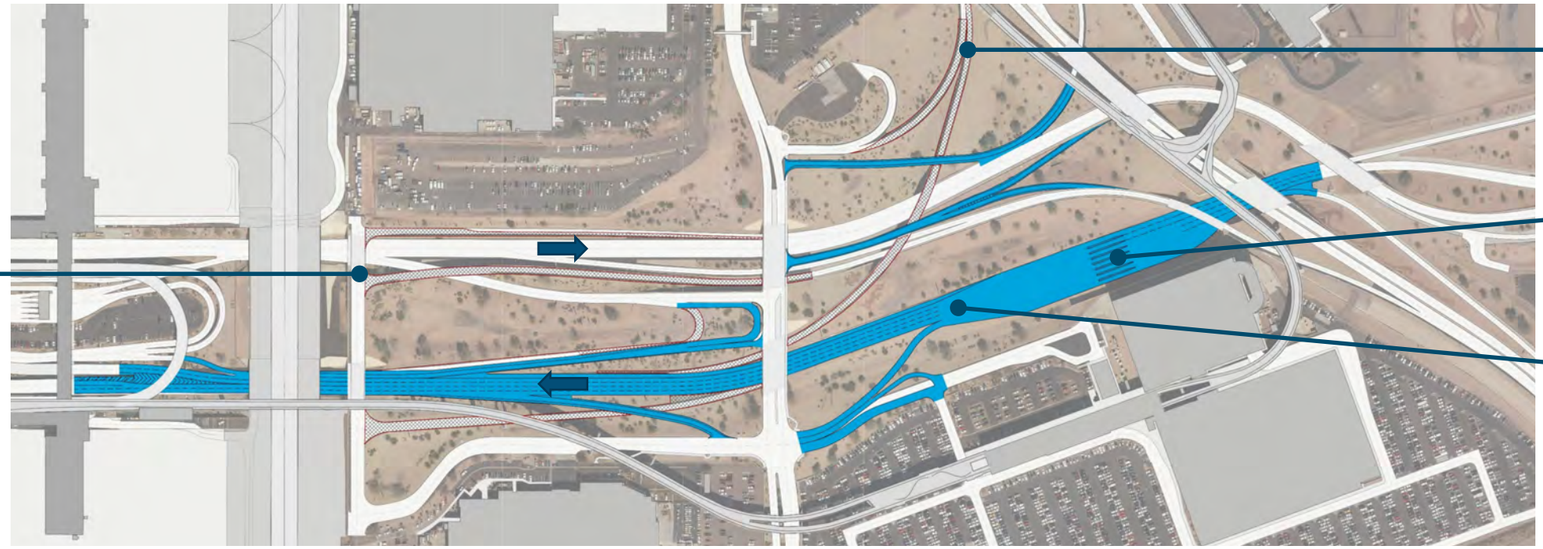
West Ground Transportation Center
Facility with parking garage, vehicle curb, and PHX Sky Train station provides access to terminals and opportunitites to reduce demand on terminal curbsides.

Interstate 10 Improvements
Capacity improvements to Interstate 10 by mitigating the merge/weave conflicts at the Buckeye Road exit, Jefferson Street exit, and the Airport on-ramp to Interstate 10.

Transportation

Improvements are also identified for east roadway access, including a security plaza, removal of 44th Street access, and reconfiguration of on- and off-ramps and roadways to reduce congestion and enhance safety. Sky Harbor Boulevard will be reconfigured to accommodate the West Terminal and eliminate the sharp curve west of Terminal 3.

East Roadway Access



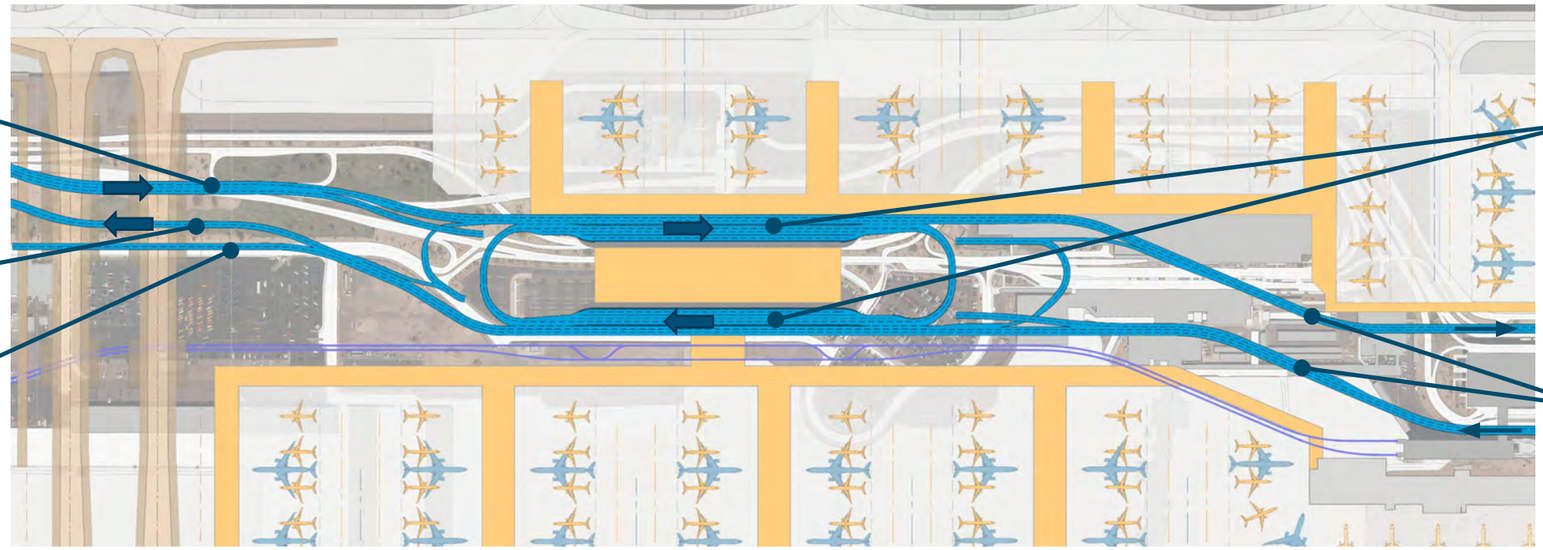
Conversion of 41st Street to Airside Road
With 42nd Street roadway improvements, 41st Street will no longer be required for public access and roadway can be used as secured airside road between the north and south airfields.

Remove 44th Street Access from the North
Eliminates merge/weave congestion at Terminal 4.

Security Plaza
Reduces cut-through traffic from the east.

East Access Improvments
Enhanced access and wayfinding including improved access to/from the East Economy Lot to reduce weaving and congestion.

West Terminal Roadways



West Airport Entrance

West Airport Exit

Buckeye Road Access

Dual Level West Terminal Curbs
Curbs in similar alignment to existing Terminal 4 with outer bypass lanes.

Sky Harbor Boulevard Realignment

Support Facilities

Requirements

The graphic below identifies the various support facilities and the land required to accommodate demand associated with PAL 3. The graphic also identifies facility siting needs and potential interdependencies.

Concept

The Arizona Air National Guard (AZANG) currently accommodates 8 KC-135 Stratotanker aircraft on their existing apron. The AZANG has interest in basing 12 new generation KC-46A aircraft that are longer, wider, and have a taller tail. The existing apron is not able to accommodate these aircraft due to surfaces associated with the south runway. The concept for the south area includes expansion of AZANG and general aviation facilities into the existing South Cargo Complex. The South Cargo Complex would be relocated to a new north cargo area. The West Cargo Complex houses all-cargo and passenger airline cargo facilities and would be relocated to the north area to accommodate Taxiways U and V and the West Terminal and associated concourses. The consolidation of cargo facilities on the north side allows for greater facility efficiency and the ability to accommodate future cargo demand.

To utilize the north area of the Airport for cargo and an aero support complex, the Union Pacific Railroad along the north side of the Airport would be placed in a trench extending from Interstate 10 to South 44th Street. This trench would provide the ability to stage trains and allow the Airport to access and utilize land north of the railroad. This rail trench would also remove at-grade roadway crossings throughout the area and most notably at 24th Street.

Cargo facilities are planned to extend west from 34th Street with dual taxilanes providing airfield access to the area. An additional taxilane would be constructed near existing 27th Street. The North Aero Support Complex would be located east of 36th Street and accommodate the relocation of the Facilities & Services Lot, passenger airline cargo, and airline ground support equipment storage and maintenance facilities, as well as off-airport and new airport facilities such as in-flight catering and a Centralized Receiving and Distribution Center. Operations, Police, and Facilities & Services administration functions would be located near the West GTC. Airport Administration functions would be expanded in this area as needed.

Support Facilities and PAL 3 Requirements

Support Facility	Integrated Cargo	All-Cargo	Fixed Based Operator	General Aviation	Airline Maintenance	Operations/ Police	Facilities & Services	Centralized Receiving & Distribution Center	In-flight Catering Services	Passenger Airline Cargo	Airline Ground Support Equipment	Aero-Industrial/ Aerospace
PAL 3 Required (High Growth)	59 Acres (66 Acres)	22 Acres (49 Acres)	8 Acres	6 Acres	7 Acres	6 Acres	13 Acres	6 Acres	7 Acres	8 Acres (9 Acres)	3 Acres	65 Acres
Facility Siting Needs/Interdependency	Airfield Taxiway Access					Landside and Airside Roadway Access		Airfield Roadway Access				
	Co-location Efficiencies	Co-location Efficiencies				Combined Site Space and Operational Efficiencies						
						Near Terminal Core/Sky Harbor Boulevard/ PHX Sky Train Access	Storage/Screening Collaboration					
						Consolidated Support Campus / Aero Support Complex						

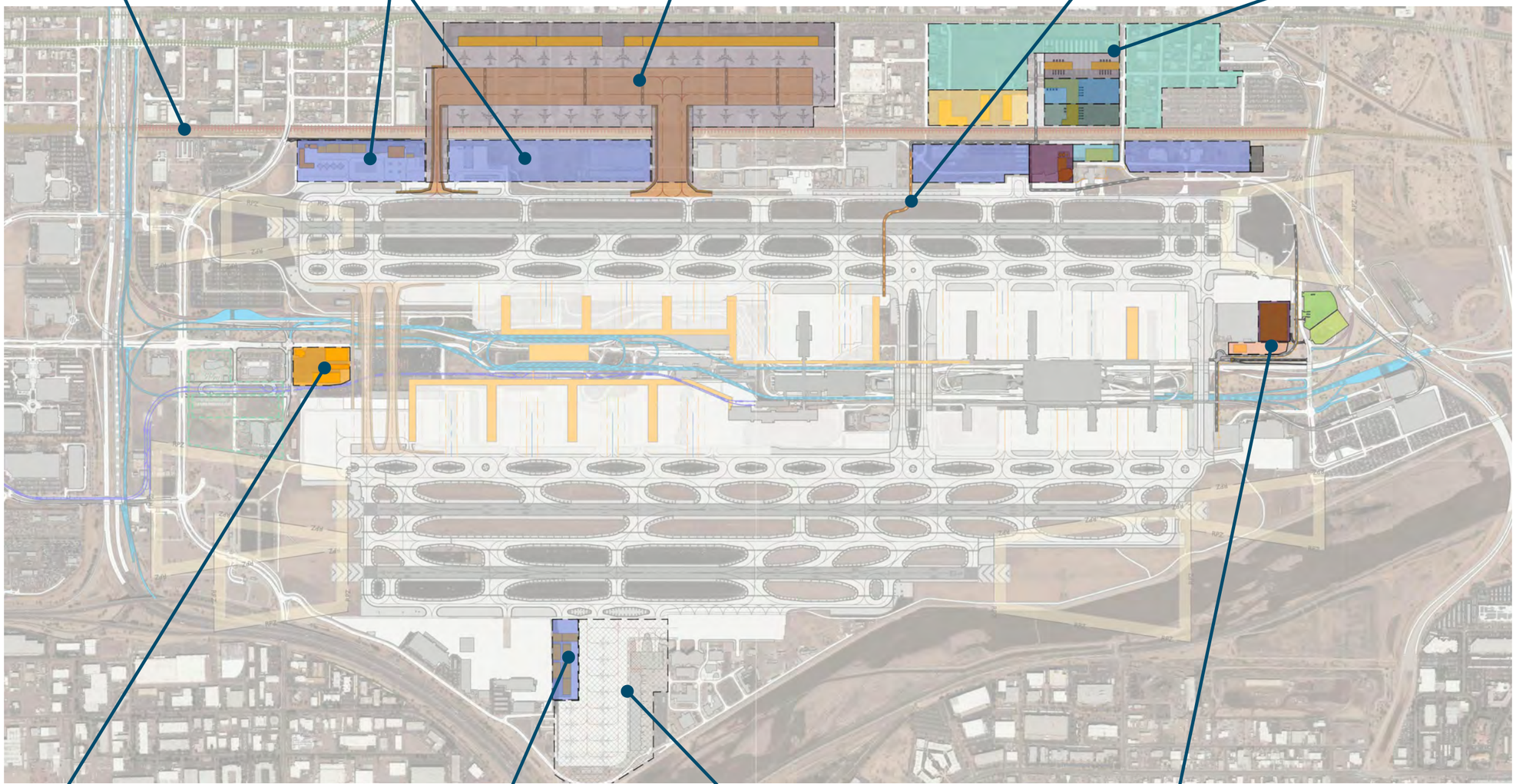
Union Pacific Railroad Trench
Placement of the Union Pacific Railroad in a 30-foot deep trench to allow an airfield connection to north cargo and support facilities and provide an overpass for roadway crossings, most notably 24th Street.

Aero Business/General Aviation
Areas south of the Union Pacific Railroad trench to accommodate aviation needs, such as special event aircraft parking and aviation services companies.

North Cargo Facility
To accommodate relocation of the South Cargo and West Cargo facilities and provide future expansion capability, a consolidated north cargo facility is planned. Development in this area requires placing the Union Pacific Railroad in a trench to allow taxiway and secure roadway access to the airfield.

Vehicle Service Road Tunnel
A secure roadway tunnel below the airfield to provide a direct vehicle connection between the North Aero Support Complex and the terminal core.

North Aero Support Complex
Co-location of support facilities displaced by terminal and taxiways development and allows for future growth and sharing of screening and distribution functions.



Operations/Police/Administration
Relocation of the operations and police facilities displaced by the West Terminal and concourses. Facility would have access to Sky Harbor Boulevard, the airfield, and future PHX Sky Train West GTC Station.

Fixed Based Operator
Executive hangar growth utilizing a portion of the South Cargo ramp adjacent to existing Fixed Base Operators.

Arizona Air National Guard
The AZANG is pursuing basing 12 KC-46A aircraft requiring additional space beyond their current leasehold and site space for additional facilities. This growth displaces the current South Cargo Complex.

Airline Support Facility Optimization
Relocation of support facilities for the construction of the Terminal 3 North Concourse 2. Includes realignment of an airside service road and security gate while accommodating maintenance hangar facility expansion.

Short-Range Development Plan: 0 to 10 Years

Projects are listed below in the order of construction in their category based on demand triggers. The anticipated time frame for the start of construction is identified for each project assuming a base year of 2019.

A Airfield

0-3 Yrs

A-1. Crossfield Taxiway V

Taxiway to provide air traffic control with greater flexibility and reduce overall average taxi distance.

0-10 Yrs

A-2. Airfield Improvements

Various taxiway improvements to increase airfield efficiency and enhance safety for aircraft operations.

L Landside

5-10 Yrs

L-1. West Access Improvements

Roadway connection improvements to Interstate 10 and Interstate 17, including a west security plaza.

L-2. East Access Improvements

Roadway connection improvements for Terminal 4 traffic weaving and an east security plaza.

L-3. Rental Car Access Improvements

More direct access to the Rental Car Center from eastbound Interstate 10 to bypass Washington Street and Jefferson Street.

0 to 10 Years Total Phase Cost: $2,277M

Select Project Costs:
S-2. Union Pacific Railroad Trench: $441M
T-2. Terminal 4 Concourse S1: $310M
T-3. Terminal 3 North Concourse 2: $178M
T-4. Terminal 3-Terminal 4 Connector: $194M
S-5. North Cargo: $263M
T-5. Concourse WS4: $361M

**Rough Order of Magnitude cost estimates do not include future cost escalation*

T Terminal

0-3 Yrs

T-1. Apron Hardstands

Utilization of the west apron area for remote bus gates served from Terminal 3 or Terminal 4 to provide near-term additional gates.

3-5 Yrs

T-2. Terminal 4 Concourse S1

An eight-gate concourse (or five narrowbody and two widebody) serving Terminal 4 airlines.

T-3. Terminal 3 North Concourse 2

A six-gate narrowbody concourse for Terminal 4 or Terminal 3 airlines. Initially the concourse can function as a bus-gate facility.

5-10 Yrs

T-4. Terminal 3-Terminal 4 Connector

A passenger tunnel and corridor connecting the Terminal 3 North Concourse 2 to Terminal 3 and Terminal 4. Connector allows for utilization of gates by either terminal while providing a secure connection between terminals. Project includes a tunnel for airside vehicles to eliminate vehicle crossings on Taxiways S and T.

T-5. Concourse WS4

The first phase of the West Terminal concourses would be an extension of the existing Terminal 3 South Terminal, allowing for ten gates (or 4 widebody and 2 narrowbody).

S Support

0-3 Yrs

S-1. C-Point Relocation

Relocation of the American Airlines cargo facility and vehicle gate located west of the Terminal 3 North Concourse to the existing American Airlines Maintenance Hangar to allow for the construction of Terminal 3 North Concourse 2.

0-5 Yrs

S-2. Union Pacific Railroad Trench

Trench the existing railroad to allow for Airport expansion to the north.

S-3. Facilities & Services Lot Relocation

5-10 Yrs

Relocation of the existing Facility & Services Lot to the North Aero Support Complex to allow for crossfield Taxiway V and the Operations/Police/Administration facility.

S-4. Operations/Police/Administration

Relocation of the Operations and Police and growth of administration support functions to allow for realignment of Sky Harbor Boulevard and construction of the West Terminal.

S-5. North Cargo

Relocation of existing West Cargo and South Cargo facilities.

S-6. Fixed Based Operator

Expansion of Fixed Based Operator facilities near existing operations.

M Miscellaneous

0-10 Yrs

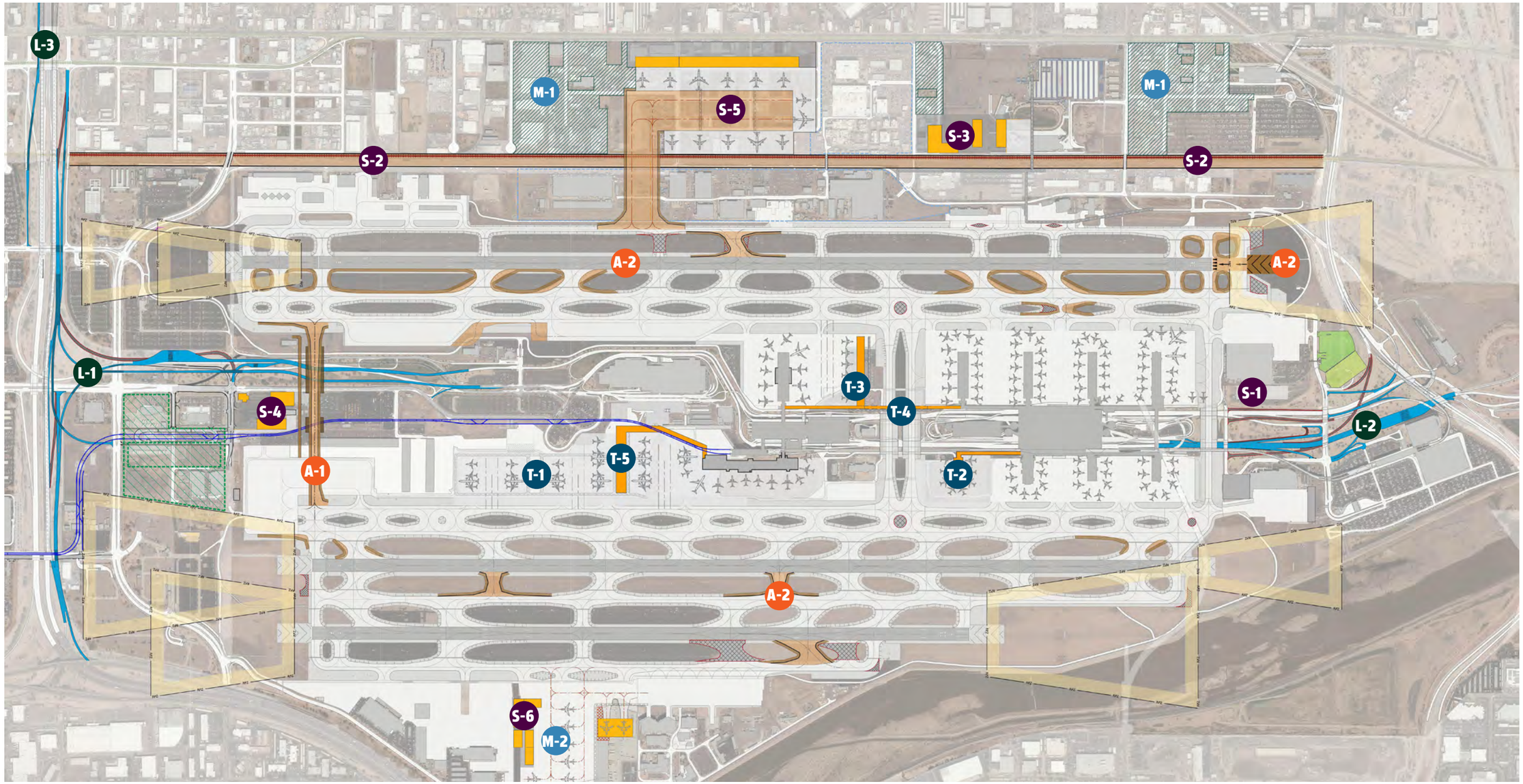
M-1. Land Acquisition Areas

Continual purchasing of land between Washington Street and the Union Pacific Railroad trench for future Airport expansion.

5-10 Yrs

M-2. Arizona Air National Guard Expansion

Displacement of the South Cargo Complex to allow for the AZANG to accomodate larger KC-46A aircraft. The existing South Cargo building would be re-purposed by the AZANG.


L-3
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L-1
S-4
T-3
T-4
S-1
L-2
A-1
T-1
T-5
T-2
A-2
S-6
M-2

Long-Range Development Plan: 10 to 20 Years

Projects are listed below in the order of construction in their category based on demand triggers. The anticipated time frame for the start of construction is identified for each project assuming a base year of 2019.

A Airfield

15-20 Yrs

A-3. Crossfield Taxiway U
Taxiway parallel to Taxiway V to reduce anticipated airfield congestion around the West Terminal and associated concourses.

T Terminal

15-20 Yrs

T-6. West Terminal
A terminal with dual-level curbs on the north and south sides (similar to existing Terminal 4) allowing for processing of passengers for up to 35 narrowbody gates. It would include a PHX Sky Train station as well as adjacent terminal parking. The terminal roadways would align with existing crossfield taxiway bridges V and U.

T-7. West Terminal South Concourses
Three additional south concourses (in addition to Concourse WS4) providing 25 additional narrowbody gates (or 10 widebody and 5 narrowbody). The concourses would displace all existing West Cargo facilities, which would be relocated to the north.

10 to 20 Years Total Phase Cost: $1,924M

Select Project Costs:
T-6. West Terminal: $564M
T-7. West Terminal South Concourses: $956M
S-7. North Cargo Expansion: $199M

**Rough Order of Magnitude cost estimates do not include future cost escalation*

S Support

10-20 Yrs

S-7. North Cargo Expansion
Expansion of the North Cargo complex to allow for cargo growth and relocation of all-cargo operations from the West Cargo facility due to construction of the West Terminal (T-6) and associated concourses (T-7).

10-15 Yrs

S-8. General Aviation Redevelopment
Redevelopment of the existing general aviation facility to allow better utilization and inclusion of all general aviation activities, including VIP parking and aircraft staging area.

S-9. Vehicle Service Road Improvements
Realignment of the existing airside vehicle service road to bypass the existing American Airlines Maintenance Hangar apron area.

S-10. Passenger Cargo Relocation
Relocation and growth of passenger cargo (belly cargo) facilities from the West Cargo area to the North Aero Support Complex.

S-11. Flight Kitchen Relocation
Relocation of flight kitchen facilities from off-Airport to on-Airport.

S-12. Centralized Receiving and Distribution Facility
A new facility for screening and storage of Airport deliveries with secure airfield access.

10-15 Yrs

S-13. Ground Support Equipment Relocation
Relocation and growth of Ground Support Equipment maintenance and storage facilities from the West Cargo area to the North Aero Support Complex.

S-14. North Airline Maintenance Facility Expansion
Continued expansion of the existing north airline maintenance facility.

S-15. Aero Business/General Aviation
Aero business development areas to support future facilities requiring airfield access.

S-16. Aero Industrial/Aerospace
Aero industrial development areas to support future facilities requring roadway and airfield access.

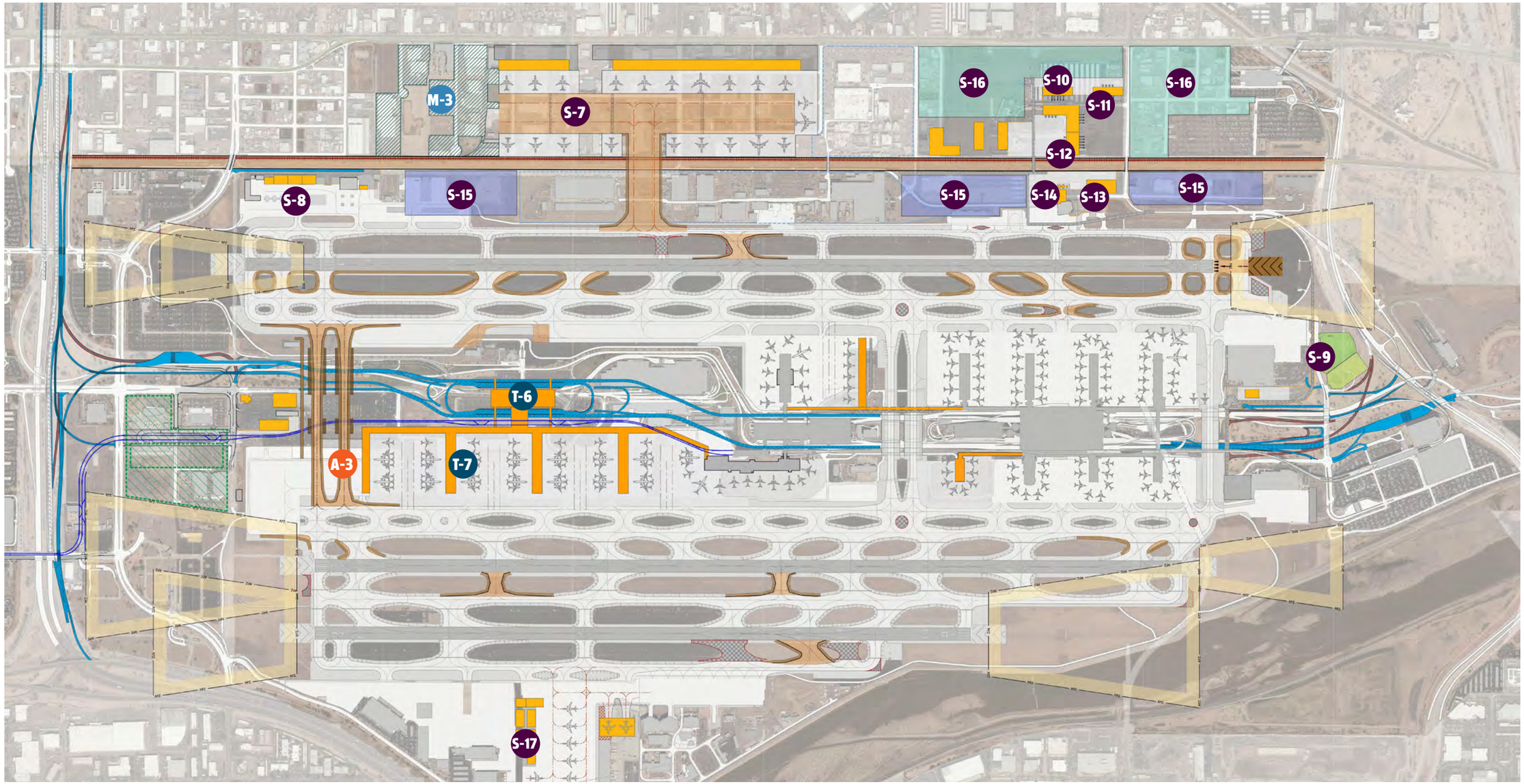
15-20 Yrs

S-17. Fixed Base Operator Expansion
Expansion of hangars and adjacent apron for general aviation fixed base operators.

M Miscellaneous

10-20 Yrs

M-3. Land Acquisition Areas
Continual purchasing of land between Washington Street and the Union Pacific Railroad trench for future Airport expansion.


M-3
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S-10
S-11
S-16
S-12
S-8
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S-14
S-13
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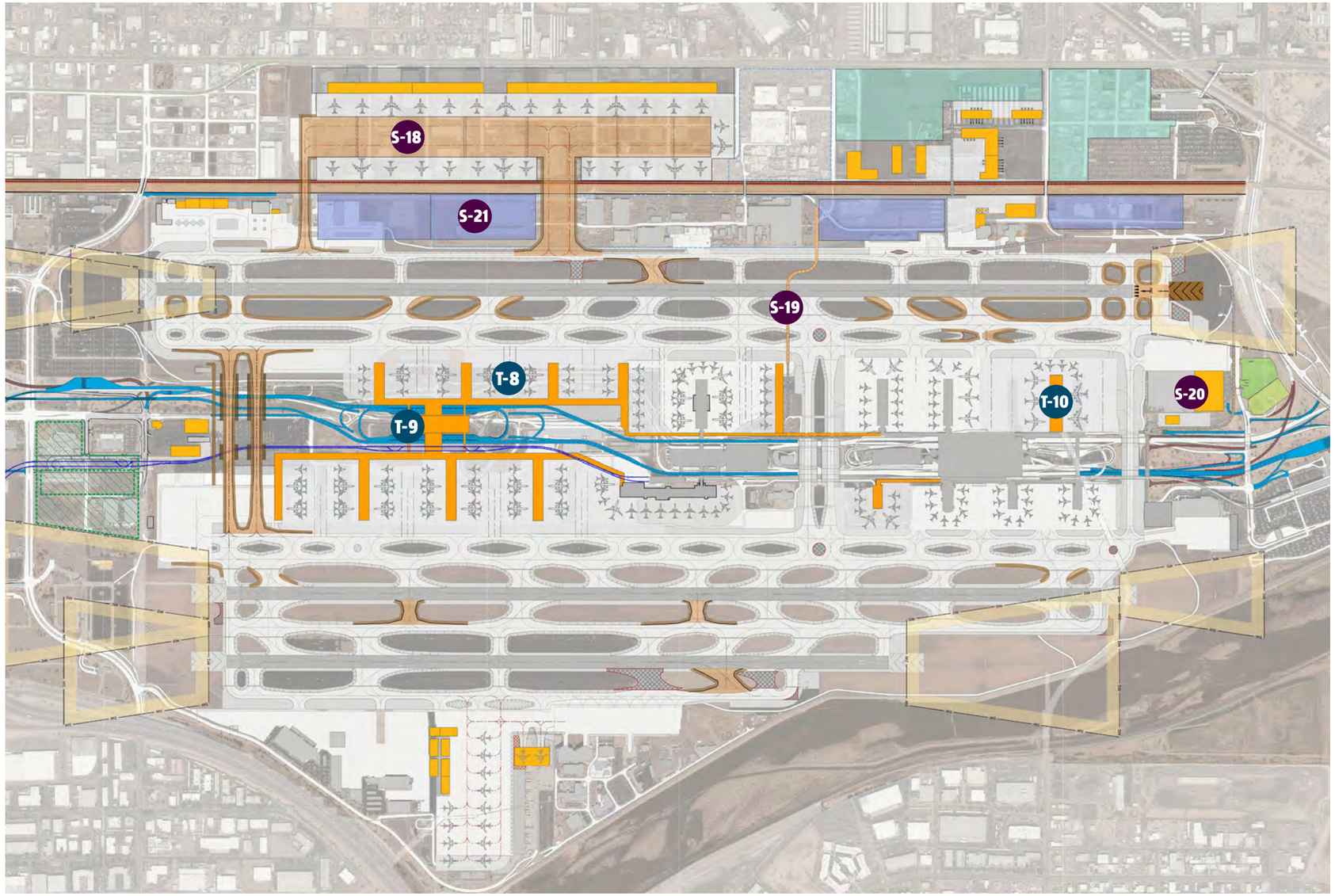
T-6
A-3
T-7
S-17

CAMP Development Plan: 20+ Years



T Terminal

20+ Yrs

T-8. West Terminal North Concourses

Four additional north concourses providing 42 additional narrowbody gates (or 4 widebody and 34 narrowbody) with a Terminal 3 connection.

T-9. West Terminal Expansion

Expansion of the West Terminal to accommodate increased passenger demand associated with the North Concourses.

T-10. International Concourse N3.5

A widebody capable concourse with expanded holdroom and concessions areas and facilities for processing international arriving passengers.

S Support

20+ Yrs

S-18. North Cargo Expansion

Expansion of the North Cargo complex.

S-19. Vehicle Service Road Tunnel

Vehicle tunnel connecting the North Aero Support Complex to the terminal core.

S-20. Airline Maintenance Expansion

Hangar expansion and improvements.

S-21. Aero Business/General Aviation

Aero business development areas to support future facilities requiring airfield access.

20+ Years Total Phase Cost: $1,434M

Select Project Costs:
T-8. West Terminal North Concourses: $800M
T-9. West Terminal: $235M

CAMP Project Renderings

North Cargo, Rail Trench, and General Aviation Layout (looking east)

CAMP Project Renderings

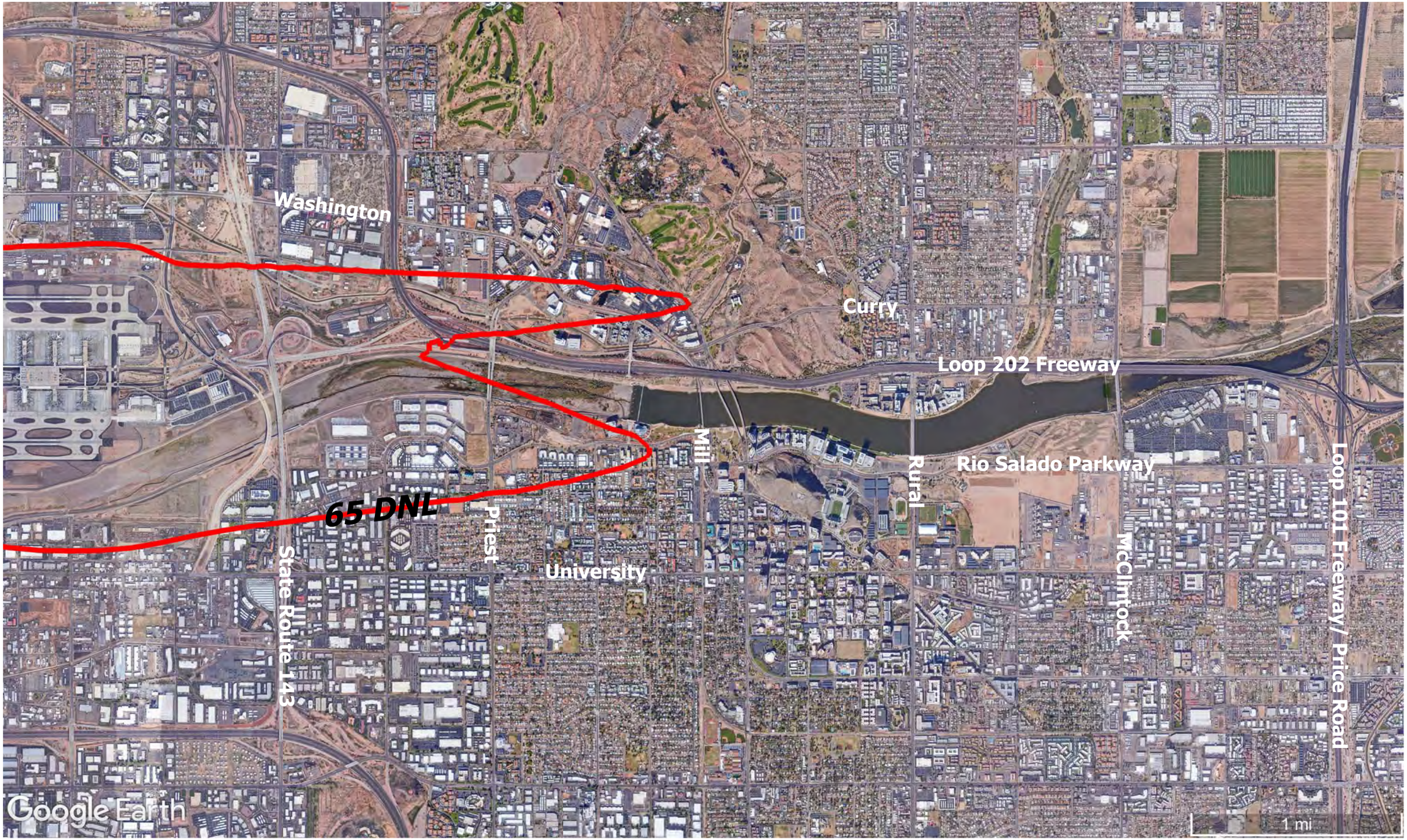
West Terminal with North and South Concourse Piers (looking west)

CAMP Project Renderings

North Cargo, Rail Trench, and General Aviation Layout (looking south)


Terminal 4
EAST EXIT
Arrivals
High Profile Parking
44th Street
East Economy Parking
Next Right
2 3 WEST EXIT
26th St. / Downtown
Rental Car Return
EXIT

Exhibit 3


Washington
Curry
Loop 202 Freeway
Rio Salado Parkway
65 DNL
Mill
Rural
Priest
University
State Route 143
McClintock
Loop 101 Freeway/ Price Road
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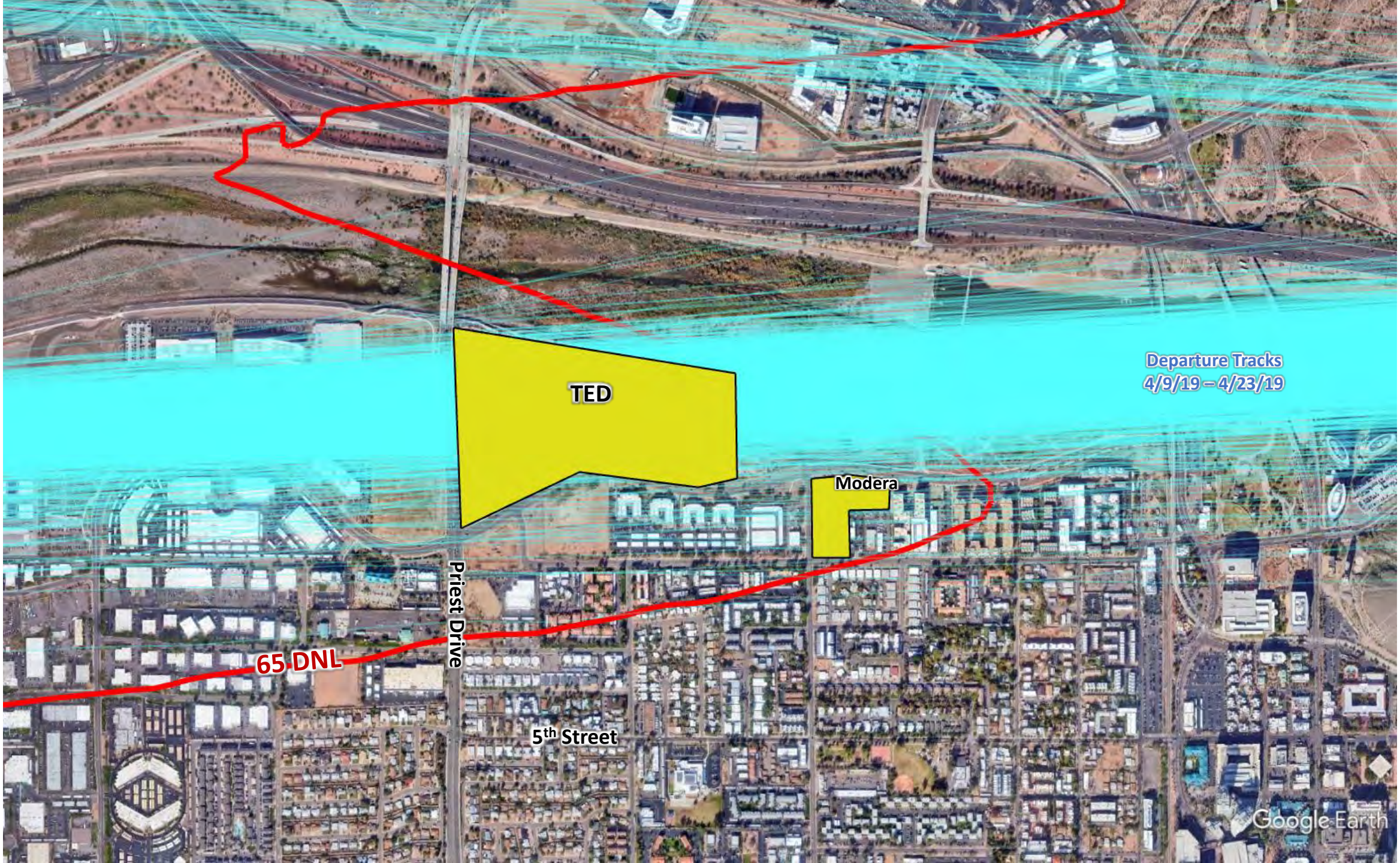
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Departure Tracks
4/9/19 – 4/23/19
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5th Street
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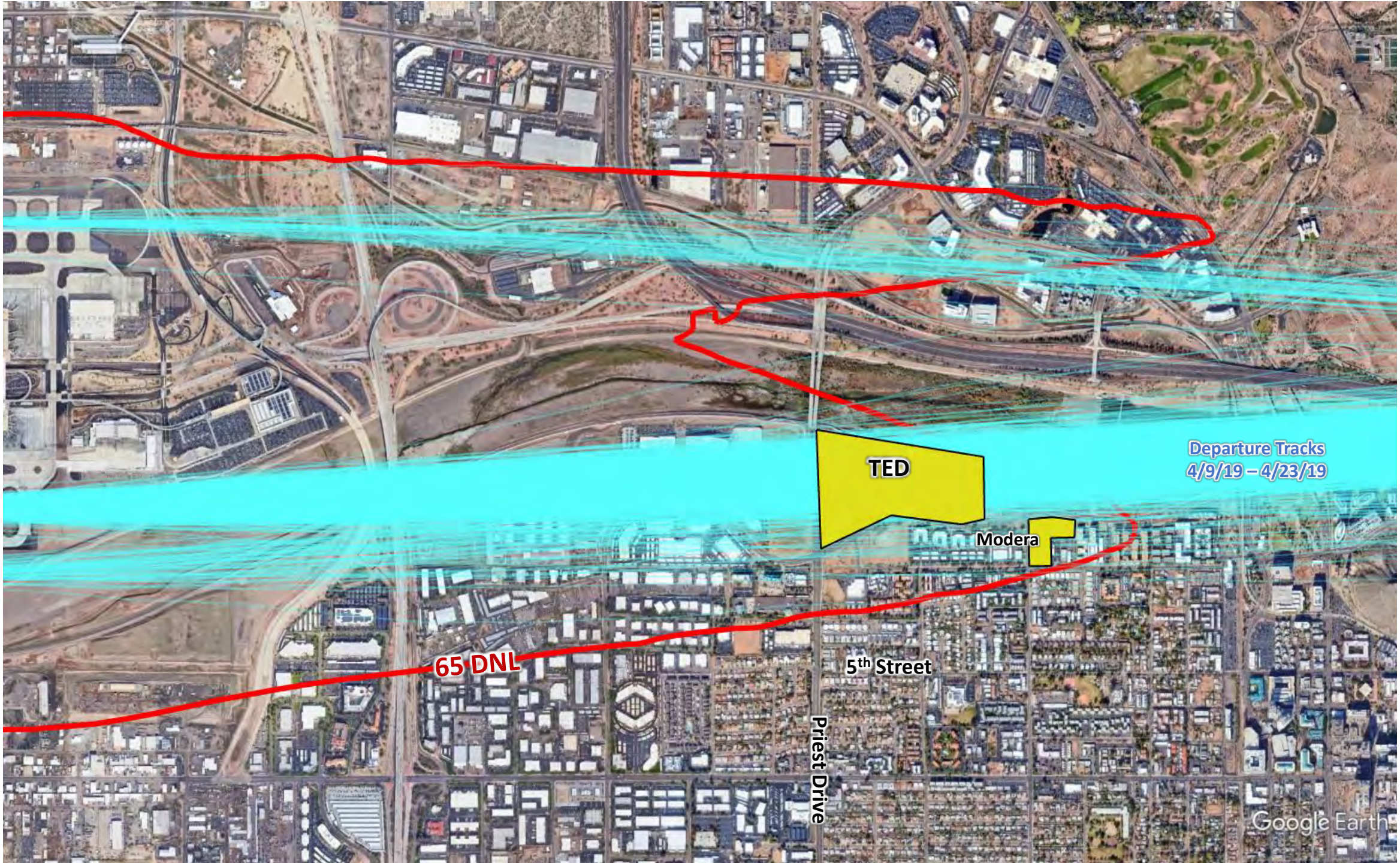
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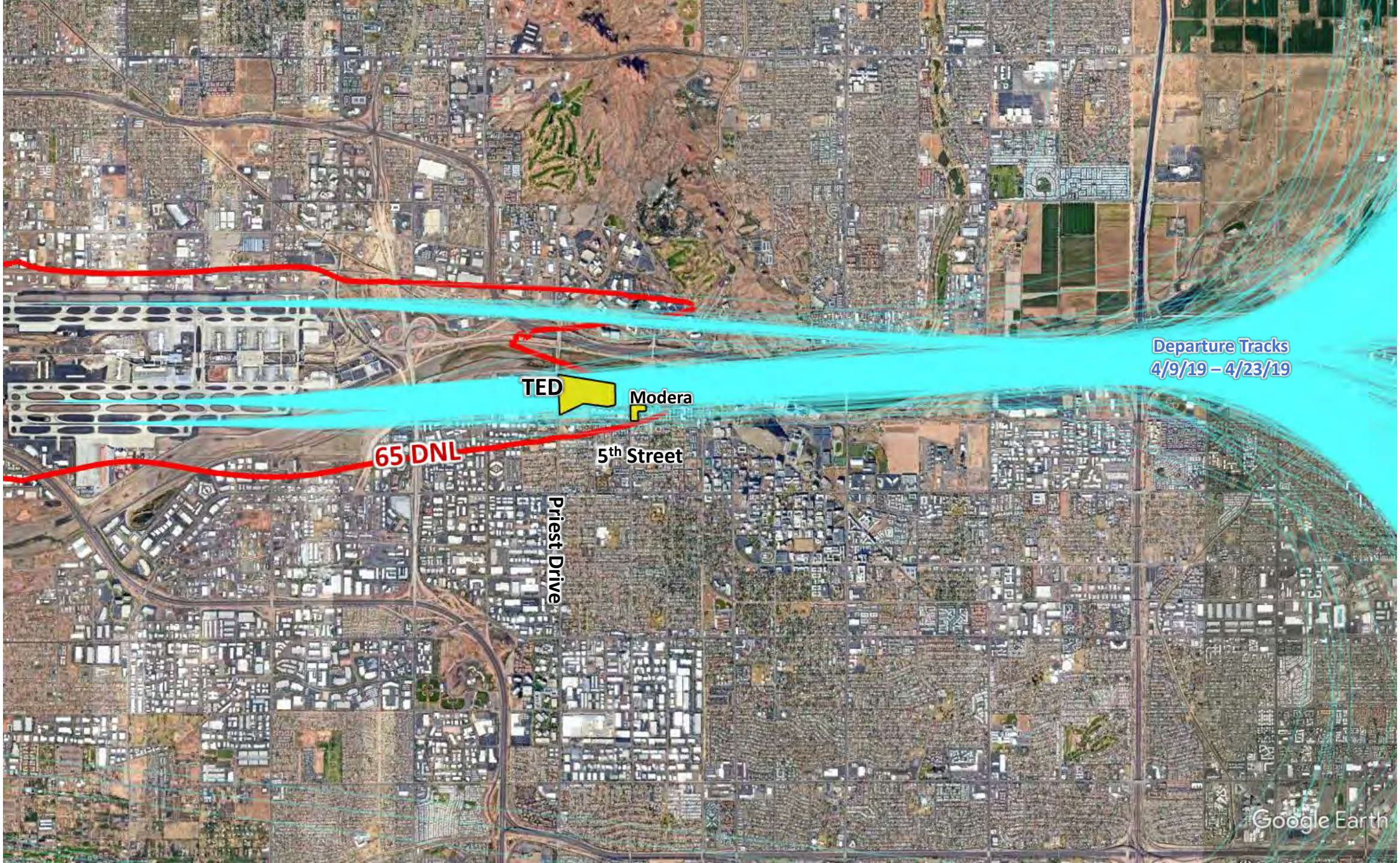
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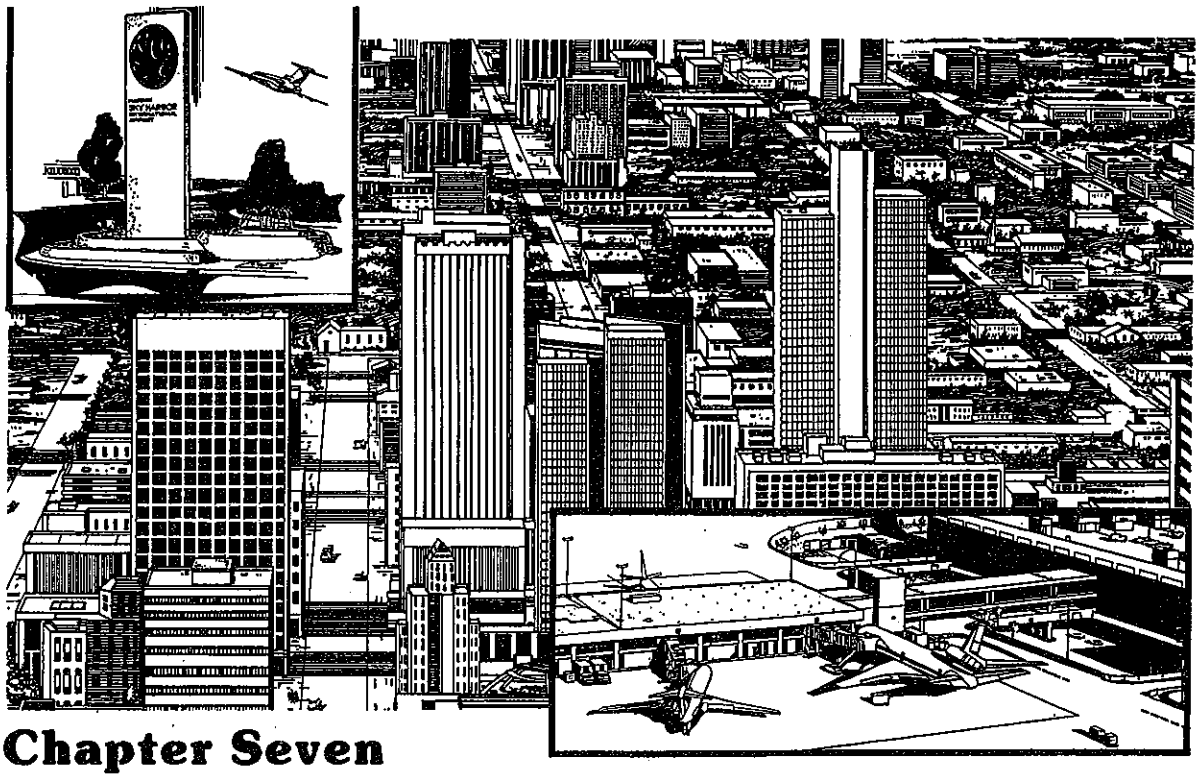
Exhibit 4 part 1



Chapter Seven
NOISE COMPATIBILITY PLAN

Part 150 of the Federal Aviation Regulations provides for voluntary submissions of an F.A.R. Part 150 Noise Compatibility Plan. This plan consists of two distinct parts: Noise Exposure Maps and a Noise Compatibility Program.

Noise Exposure Maps consist of two maps, one showing current noise exposure and one showing projected noise levels five years into the future with any known noise abatement procedures in effect, plus supporting documentation. These were prepared at the conclusion of Chapter Four and presented to the sponsor for approval and submission to the FAA.

The Noise Compatibility Program under Part 150 consists of a plan to further abate aircraft noise, control land use development, and implement and update the program. The planning period must be at least five years.

The complete Part 150 program will be submitted to the FAA for Part 150 review and approval certification in order to qualify for special funding for noise-related projects under the AIP noise set-aside, or may simply be used as a locally-financed noise reduction program.

The objective of the noise compatibility planning process for Phoenix Sky Harbor International Airport has been to improve the compatibility between aircraft operations and noise-sensitive land uses within the airport environs, while allowing the airport to continue to serve its role in the community, region and nation. The Noise Compatibility Plan contained in this chapter consists of three closely related programs aimed at satisfying this objective.

- The Aviation Noise Abatement Plan, which consists of a series of noise abatement measures selected from the alternatives previously evaluated in Chapter Five. These potentially consist of runway use and flight track changes, airport facility changes, airport restrictions, and aircraft operational changes.

- The Land Use Management Plan consists of actions which address noise compatibility measures to mitigate or prevent impacts on existing noise-impacted land uses and future land use development in the airport environs. It also contains actions to mitigate any noise impacts resulting from implementation of the Aviation Noise Abatement Plan. Potential land use management techniques were discussed in Chapter Six.

- The Implementation Plan consists of procedures and documents for use in bringing the recommended noise abatement and land use measures to reality, monitoring the progress of the programs, and updating the plan.

The Part 150 Noise Compatibility Plan applies to a five-year period of time. In order to assure that short-term improvements accomplished by the implementation of programs during the immediate future will not result in the long-term increases in noise exposure, ten and twenty-year contours have also been projected. Therefore, the Noise Compatibility Program will assume the continuation of recommended programs beyond the five-year time frame by projecting the elements of the plan into ten and twenty year noise exposure forecasts. It may then serve as the basis of later updates of the approved Part 150 Program.

This chapter contains a detailed outline of the three recommended programs, as well as a description of the actions recommended for initial implementation of the programs and for monitoring the effectiveness of the programs. Additionally, forecasts of aircraft activity and runway utilization prepared during the current master plan update are incorporated into the calculation of noise contours for the recommended noise abatement program.

ADJUSTMENTS TO BASELINE DATA

The airport operator has directed the incorporation of updated forecasts and runway utilization data recently made available during the master plan study. This information includes two basic changes to the noise exposure input data: an adjusted level of operations during each of the future analysis years, and the incorporation of a third parallel runway in the year 1997 abated noise contour analysis.

FORECAST REVISIONS

The forecasts provided in Chapter Two of this document were revised as part of the master planning effort for Sky Harbor. These revisions are incorporated into the noise exposure assessments of this recommended plan to more accurately reflect currently anticipated operations levels. Table 7A indicates both the Part 150 and revised forecasts of operations by aircraft category for each of the three future planning years. Table 7B indicates the revisions to the future fleet mix data presented in Table 2Q which are necessitated by the adjustments in operations levels.

Table 7A demonstrates that the number of operations by the general aviation fleet are now expected to decline more rapidly in future years than had been anticipated by the earlier Part 150 forecasts drawn from the Regional Airport Systems Plan prepared by MAG. It is anticipated that these operations will occur at other airports. During the 1992 and 1997 time frames, the remaining categorical master plan forecasts remain within four percent of the forecasts used for the earlier Part 150 analyses. These minor variations will not result in noise contours demonstrably different than those

projected in Chapter Two for those time frames. The year 2007 master plan forecasts for air carrier and commuter operations are 13 and 19 percent less, respectively, than had been projected by the earlier Part 150 forecasts drawn from the 1986 DWL forecasts discussed in Chapter Two.

TABLE 7A
Forecast Comparison Part 150 Study/Master Plan Update
Phoenix Sky Harbor International Airport

	1992		1997		2007	
	Part 150	MP*	Part 150	MP*	Part 150	MP*
Air Carrier	278,460	277,344	331,068	342,128	467,759	406,406
Commuter	35,048	33,870	41,246	39,165	57,348	46,508
Air Taxi	30,482	30,482	36,190	36,190	51,050	51,050
Cargo	10,676	10,676	12,544	12,544	16,920	16,920
Military	8,000	8,000	8,000	8,000	8,000	8,000
General Aviation	114,236	86,510	106,842	66,370	92,052	39,050
Total	**476,902**	**446,882**	**535,890**	**504,888**	**693,129**	**567,934**

*MP (Master Plan) forecasts are drawn from "Revised Forecasts of Aircraft Operations and Traffic", a working paper of the Master Plan Update, June 30, 1988, prepared by Howard Needles Tammen & Bergendoff.

The fleet mix for each component portion of the total operating fleet was recompiled, based on a proportional distribution of operations by the percentage of change between the two forecasts. The result of this recompilation for each aircraft type is indicated by Table 7B for an average day of operation.

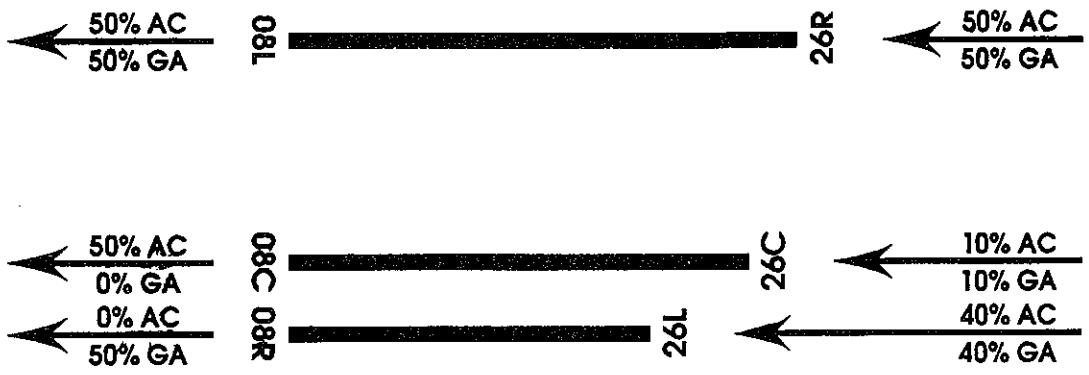
The differences between the Part 150 and Master Plan levels of daily operations reflected by the table would result in minor variations in the area within the noise contours associated with the two sets of data for each analysis year. The year 1992 area within the unabated 65 Ldn contour would be reduced by less than 0.3 percent, the area of the 1997 Ldn 65 contour would be enlarged by 1.6 percent, and the area of the 65 Ldn contour under year 2007 operations levels would be reduced by 6.4 percent.

RUNWAY USE REVISIONS

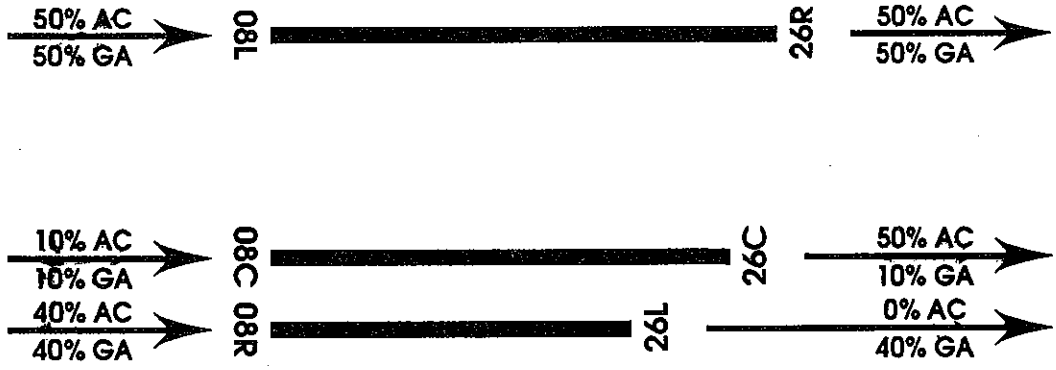
The updated master plan indicates that a third parallel runway should be constructed prior to the year 1997. The effect of that construction should be reflected in the noise compatibility plan. This runway is proposed to be initially constructed at 7,800 feet in length and located 800 feet south of current Runway 8R-26L. Its ultimate length is anticipated to be as much as 9,600 feet. The master plan assumes its use by general aviation traffic in both directions from the airport and its use by air carrier traffic landing at the airport.

The runway use percentages associated with the use of three parallel runways in an operating mode which maximizes airport capacity were provided by the airport's master plan consultant. These operating percentages are indicated by Exhibit 7A for both east and west flow traffic. Specific mitigation of the impacts of the development of a third runway will be addressed in the Environmental Assessment and Impact Statement prepared for that facility.

West (Runways 26) Flow



East (Runways 08) Flow



Note : If Runway 08R-26L is not constructed,
all traffic is assumed to use each runway end 50% of the time.
Percentages indicate best case capacity condition.

Exhibit 7A
RUNWAY USE PERCENTAGES
WITH THREE PARALLEL RUNWAYS

Sky Harbor
INTERNATIONAL AIRPORT

TABLE 7B
Fleet Mix Operations Comparison
Part 150/Master Plan Update
Phoenix Sky Harbor International Airport

	1992		1997		2007	
	Part 150	MP*	Part 150	MP*	Part 150	MP*
B747/DC-10						
L-1011/A300	41.6	41.4	53.9	55.7	99.7	86.1
B-767/A310	38.1	38.0	81.6	84.4	153.8	133.6
B-757/A320	68.9	68.6	125.3	129.5	280.1	245.0
B-727-200	85.9	85.6	70.5	72.8	51.2	44.5
B-727-100	11.1	11.1	13.7	13.7	11.6	11.6
DC-8-71/73	4.4	4.4	4.3	4.3	-	-
DC-9-10/30/50	15.6	15.6	2.1	2.1	-	-
MD-80	48.9	48.7	81.0	83.7	150.9	131.1
B-737-100/200	374.3	372.8	375.2	387.7	283.0	245.8
B-737-300/400	91.5	91.2	117.9	121.9	271.2	235.6
BAe-146	2.2	2.2	8.4	8.4	25.2	21.4
Medium Twin-engine Turboprop	83.3	74.4	104.1	92.0	158.7	126.2
Light Twin-engine Turboprop	24.7	22.1	30.1	27.3	37.8	30.1
Twin-engine Piston Prop	99.2	84.0	90.0	74.1	79.6	58.7
Single-engine Piston Prop	265.9	218.9	250.5	172.3	222.5	118.8
Business Jet	16.2	12.9	21.1	17.6	30.3	26.0
Helicopter	12.7	10.5	16.5	14.0	23.6	19.7
KC/35	5.5	5.5	5.5	5.5	5.5	5.5
C-130/KC97/ Huey/Etc.	16.4	16.4	16.4	16.4	16.4	16.4
Total Average Daily Operations	**1,306.4**	**1,224.3**	**1,468.1**	**1,383.4**	**1,901.1**	**1,556.1**

* Master Plan total operations forecasts are drawn from "Revised Forecasts of Aircraft Operations and Traffic", a working paper of the Master Plan Update, June 30, 1988, prepared by Howard Needles Tammen & Bergendoff.

AVIATION NOISE ABATEMENT PLAN

The preliminary aviation noise abatement alternative evaluations contained in Chapter Five included numerous measures. For the purposes of selecting the final components of the Noise Compatibility Program, each was subjected to detailed considerations of both implementability and the effectiveness of its noise impact reduction. Comments received from all sectors of the planning participation process were considered and the program recommended here is a result of these evaluations. The review process indicated that several alternatives had the potential for implementation and would result in the reduction of noise impacts around the airport, while others, although beneficial in theory, were not

considered achievable within the local environment and within the plan's short-term time frame.

The analyses in Chapter Five, and the subsequent reviews by the consultant, airport management, the Planning Advisory Committee membership and the general public, have resulted in a number of measures which are recommended for inclusion in the Aviation Noise Abatement Plan. Each contributes to the potential for reduced noise impacts in the airport vicinity and each is believed implementable. Specific recommended measures may be implemented independently and do not require simultaneous implementation with all other portions of the plan.

RECOMMENDED PROGRAM ELEMENTS

The recommended noise abatement program may be separated into two phases -- measures which are considered implementable by 1992 and those which may require a longer period to implement.

Short-Term Program Measures

The first stage of the aviation noise abatement program consists of those measures which are believed to be achievable by 1992. These measures assume the airport in its present configuration of two parallel east to west runways. The recommended measures include the following:

NA-1 Continue a runway use program calling for the equalization of departure operations to the east and west for both the daytime and nighttime periods.

NA-2 Request airlines adopt the use of FAA Advisory Circular 91-53 or equivalent replacement noise abatement departure procedures by jet air carrier aircraft when departing from all runways. Request that low bypass ratio aircraft reduce power to 1.7 EPR or less during the thrust reduction mode and that high bypass ratio aircraft reduce power to normal climb thrust. Although AC 91-53 does not specify a 1.7 EPR cutback, most airlines have found this level to be acceptable for noise abatement under nearly every condition.

NA-3 Request the use of NBAA "close-in" or comparable departure procedures by general aviation business jet aircraft when departing from all runways.

NA-4 Implement a left turn by all jets and large propeller aircraft departing Runway 26L to a heading of 245 degrees upon crossing the middle marker for Runway 08R approaches. Maintain that heading until reaching 13 DME from the SRP VORTAC. To enhance traffic separation, assign Runway 26R/L departures based on SID procedure selected. Assign Runway 26L to aircraft using left-turning or straight-out SIDs. Assign Runway 26R to aircraft using right-turning SIDs.

NA-5 Implement a departure route procedure which overflys the Salt river to a position one mile west of the SRP VORTAC for use by all jets and large propeller aircraft departing Runways 08R/L. (One DME departure)

NA-6 Standardize initial departure and final approach routes for helicopter traffic using Sky Harbor Airport.

NA-7 Continue existing runup policies.

NA-8 Encourage airlines to utilize Stage III aircraft, especially for late night departures.

NA-9 Encourage the use of established Published Visual Approaches during VFR conditions, traffic permitting.

Long-Term Program Measures

The elements of a longer-term program (beyond 1992) are variable based upon

the presence or absence of a third parallel runway located on the south side of the existing south parallel runway. The on-going master plan project now projects the need for development of this facility prior to the year 1997, and this Part 150 Study has previously assessed the runway under the twenty year unabated noise projections. The method of utilization anticipated to maximize airport capacity using this facility was presented in Exhibit 7A. Until the runway is commissioned, the short term program may continue in place, but when the new runway comes on line, two additional noise abatement measures are recommended.

NA-10 Implement turns by all jets and large propeller aircraft departing new Runway 26L to a heading of 245 degrees upon crossing the middle marker for Runway 08R approaches. If no middle marker is constructed, the turn location should be defined as 7.1 miles west of the SRP VORTAC. Maintain that heading until reaching 13 DME from the SRP VORTAC.

NA-11 Implement a departure route procedure which overflys the Salt river to a position one mile west of the SRP VORTAC for use by all jets and large propeller aircraft departing Runway 08R. (Extended One DME departure)

Measures Not Recommended

The short term program outlined above includes refinements of all elements retained for further evaluation at the end of Chapter Five, with the exception of a potential restriction of nighttime departure traffic to aircraft meeting the noise levels of F.A.R. Part 36, Stage III and the encouragement of the development of general aviation reliever facilities. The enhanced development of other airports will not result in the reduction of noise contour areas and has consequently been dropped after further evaluation.

For several reasons, a restriction of nighttime departures to Stage III aircraft does not appear to be implementable in the near term, and its justification is questionable given the land use planning standards found acceptable in the community. These reasons include:

- No change in the number or decibel level of total noise events results from the measure.
- Significant constraints on ability of carriers to position aircraft for next-day operation would result from the measure.
- Inconsistent seasonal application to specific flights by passenger carriers would result from implementation.
- Inconsistent seasonal application to specific flights by cargo and express carriers would result from implementation.
- The measure would limit the ability of operators to reschedule specific aircraft on short notice in emergency or seasonal peak conditions.
- Potentially there is a discriminatory differentiation between aviation and land use approaches to noise abatement within the 65-70 Ldn contour range.
- The measure could potentially be challenged on discrimination and restraint of trade grounds.

- NOISE EVENTS

Under the mandated noise metric, Ldn, late night activity is penalized by multiplying its noise energy by ten before reduction to the average level. Therefore, a 727 overflight at 6:59 a.m. counts as much as ten 727 overflights conducted two minutes later, even though the noise energy from each event is equal. Scenarios A and B from

Chapter Five, which evaluated the Stage III noise restriction, assumed the rescheduling of Stage II aircraft from the penalty to the non-penalty hours and their replacement with an equal number of Stage III aircraft of equivalent seating capacity from the daytime hours. The absolute noise energy and number of noise events occurring during a 24-hour period in the airport vicinity would be unchanged by this measure.

- OPERATING CONSTRAINTS

The impact of the Stage III departure restriction on the operating schedules is understated for the summer months in the alternative assessments, owing to the absence of daylight savings time in Arizona, although the assessment of the overall annual condition remains the same. This unique summertime situation results in a large block of morning departures by Stage II aircraft to west coast destinations falling for part of the year within the penalty period and during the remainder of the year outside the penalty period, without in fact changing the absolute time these operations occur. The measure would require that aircraft be changed by the carriers to comply with the local times when the remainder of the national aviation system operates on a different time schedule. For example, the Official Airline Guide for July 1988 indicates that 33 separate departures by Stage II aircraft occur between 10 p.m. and 7 a.m., while in November of 1987, only 16 departures by Stage II air carrier aircraft were scheduled during the penalty period.

The nighttime departures by Stage II passenger aircraft fulfill three separate functions for the operators. First, they allow the end-of-spoke positioning of aircraft for early morning departures from remote locations to arrive at Phoenix in time to connect with the first hub departure blocks. These night flights depart Phoenix between 10 p.m. and midnight. Second, late night departures allow the carriers to position aircraft in midwest or eastern cities for use the next morning in regular schedules. These are generically known as the "red-eye" specials which leave Phoenix in the middle of the night and arrive in their destinations early the next morning. Third, a group of early morning (6 a.m. to 7 a.m.) departures are designed to move passengers to their destinations early in the business day. In the case of eastern cities, the early departure will generally allow a passenger to arrive for afternoon meetings, while west coast passengers will arrive in time for morning meetings. Historically, one or more carriers operating during the nighttime hours will not have equipment in its fleet or on order which will meet Stage III noise levels. This measure would restrict such carriers abilities to reposition aircraft in other cities for next morning operation.

An assessment of the schedules of cargo operators indicates that in November of 1987, 11 weekly departures were scheduled during the penalty hours, and of these, 6 were by Stage II 727 aircraft flown by Federal Express. Without changing the absolute times at which the cargo carriers operate, 26 separate departure operations were scheduled each week during the penalty period during July of 1988. Of these, 21 are by aircraft which cannot meet a Stage III departure requirement. The cargo operators which fly from Phoenix must schedule their flights in time frames which meet national block hour requirements at their primary or secondary hubs. Their flight schedules indicate that the aircraft is either left on the ground in Phoenix for the day, or the aircraft passes through Phoenix enroute to another destination. The departures to primary overnight express hubs located in the midwest generally occur prior to 10 p.m. and are not significantly impacted by late night restrictions, but the departures to regional sort hubs or to other enroute destinations are impacted by a Stage III

restriction. This becomes even more impactive during the summer months when the rest of the country uses daylight savings time. For example, a Federal Express B-727 flight which, during the winter, arrives at Phoenix at 7:20 a.m. and departs at 7:55 a.m. after off-loading local express packages is not penalized. However, that same flight, during the summer, would arrive at 6:20 a.m. and depart at 6:55 a.m., and be prohibited under the Stage III departure restriction. Other Federal Express and Airborne Express flights are similarly effected by this unique time factor.

In addition to the impacts of inconsistent application of the measure to same flights based on seasonal variations, the carriers will be constrained in substituting aircraft on a case by case basis. Mechanical difficulties occasionally require the substitution of an available aircraft for an aircraft under repair. Should a Stage III aircraft scheduled for nighttime departure need repair, the only available replacement would likely be a Stage II aircraft (based on their greater numbers). If the departure restriction were in place, this would result in the requirement that the flight be cancelled, even though the carrier had equipment available to operate. Similar limited availability of equipment is applicable to the provision of extra sections (flights) to meet peak seasonal demands by cargo carriers. These factors appear to restrain interstate trade.

- DISCRIMINATION ISSUES

A measure highly impactive on aviation service, as is the restriction of nighttime departures to aircraft meeting the requirements of F.A.R. Part 36, Stage III must provide substantial noise relief to be justified. Furthermore, to be approved in a Part 150 Noise Compatibility Program, it must be proved not to burden interstate commerce. To determine the effectiveness of the measure in providing this relief, the differences between alternative Scenario B and Scenario C were further examined, both in light of the resulting noise impact reduction and the land use measures recommended later in this chapter. It was found that the 75 Ldn contours under both scenarios were removed from populated areas. Furthermore, the population within the 70 Ldn contour was reduced from 437 to 164 by inclusion of the Stage III restriction measure, a reduction of only 273 persons. The total population within the 70 Ldn contour is reduced from unabated conditions by 97 percent under Scenario C without the measure and by 99 percent under Scenario B with the measure. Therefore, based on the noise reduction achieved by the measure, the impacts on the national transportation system resulting from the local imposition of a Stage III nighttime departure restriction are not warranted to provide noise relief within the 70 Ldn contour.

The population impact reduction benefits derived from the implementation of a Stage III nighttime departure restriction fall primarily within the area lying between 65 and 70 Ldn. The land use program (to be discussed later in this chapter) will not recommend the restriction of noncompatible development within the 65-70 Ldn range since the maintenance of cohesive neighborhoods by continued infilling receives a higher priority than does noise relief within the impacted areas of the city of Phoenix. The argument for the imposition of a Stage III restriction to reduce noise impacts within the 65-70 Ldn range is severely weakened by the absence of rigorous growth restrictions to prevent increased population impacts. This factor alone may be enough justification for the nighttime restriction to be overridden if challenged.

In addition, the potential for being challenged is high if a nighttime Stage III departure restriction is imposed at Phoenix Sky Harbor Airport. The facility is the only air carrier airport

serving the community, and consequently operations by aircraft not compliant with Stage III noise levels cannot be shifted to another facility. Furthermore, this limitation, coupled with the scheduling constraints placed on the operator's ability to fully realize a return on their investment in equipment constrains interstate trade, discriminates against operators not owning Stage III equipment, and requires an inconsistent application of the restriction on the same flight based on seasonal variations of local time.

The Federal Aviation Administration requires the local sponsor to prove that the measure will not be a burden to interstate commerce prior to approval. Only once has this been accomplished, and at that airport, no scheduled flights were effected by the measure. A less restrictive similar measure has been rejected by the FAA at another airport in the Western Region. Furthermore, if the measure were included in the program, the land use program based on its forecast noise reduction would cover too small an area after rejection. Therefore, a mandatory or formal voluntary Stage III nighttime departure restriction is not recommended for inclusion in the noise abatement program.

While the inclusion of a mandatory or voluntary restriction on the use of any specific aircraft or category of aircraft is not recommended, nor is any accelerated conversion to Stage III aircraft included in the recommended plan noise model, the Airport may encourage the carriers to actively program Stage III aircraft into the community. The Airport has determined that it will establish and maintain communications with each carrier to encourage the scheduling of Stage III aircraft into the airport. Airport staff should continue to monitor the proportion of the fleet which is classified as Stage III compliant.

RECOMMENDED SHORT-TERM MEASURES

A brief discussion of the recommended short-term program measures follows.

NA-1 Continue a runway use program calling for the equalization of operational flows to the east and west for both the daytime and nighttime periods.

The equalization of traffic flows to the east and west of the airport during all periods of the day will result in the equal distribution of noise exposure on areas overflown from each runway direction. This measure is one of four noise abatement techniques included in an agreement between the Mayors of the cities of Phoenix and Tempe, and implementation has been attempted for more than two years.

The wind analyses discussed in Chapter Five and Appendix D assessed the preferential and rotational use of the runways. An assessment of the recent operating history of the airport, including both wind and traffic records indicates that Runway 26 flow should be prescribed for calm daytime (7 a.m.-10:00 p.m.) conditions and that at night flows may be equalized by dividing runway use by time-of-day when winds are less than seven knots. Operating records over the past two years indicate a prevalence of easterly traffic flows, even with a designated calm wind flow to the west. This may be the result of operating convenience. The airport and community representatives have been reviewing the use of the runways to determine their utilization. It is recommended that negotiations with the ATCT continue in order to fine tune equalization of runway use.

Airport staff is developing a runway equalization program in concert with the ATCT. This program was offered for

review to the local communities. The program should consider not only the prevailing wind conditions and acceptable tailwind components, but also the efficiency of operating flows and the potential delays associated with arbitrary and frequent changes to operating direction.

The measure could be implemented through adoption of an informal runway use program by the airport and subsequent agreement to the designations between the airport and the ATCT, resulting in a Tower Order and preparation of runway use announcements for distribution to users. The selection of a calm wind runway must be based on the guidance of FAA Order 8400.9 "National Safety and Operational Criteria for Runway Use Programs". Based on local wind directional and velocity data, the use of Runway 26 flows during calm winds should result in the virtual equalization of traffic flows to the east and west during both the day and night on an annual basis.

NA-2 Request airlines adopt the use of FAA Advisory Circular 91-53 or equivalent replacement noise abatement departure procedures by jet air carrier aircraft when departing from all runways. Request that low bypass ratio aircraft reduce power to 1.7 EPR or less during the thrust reduction mode and that high bypass ratio aircraft reduce power to normal climb thrust. Although AC 91-53 does not specify a 1.7 EPR cutback, most airlines have found this level to be acceptable for noise abatement under nearly every condition.

For jet aircraft originally designed for air carrier use, the airport should request that FAA Advisory Circular 91-53 (or equivalent) departure procedures be used for takeoffs from all runways. The reduction of thrust to 1.7 EPR after flap and gear retraction and safe zero-flap velocity has been achieved would, if fully implemented, provide significant reductions in the extent of the aircraft noise contours. It is recommended that the reduced departure thrust be maintained until aircraft have reached an altitude of 4,200 feet MSL (3,000' AGL).

Nearly every airline conducts a variation on the 91-53 departure, but the level to which thrust is reduced is not standardized among carriers. Procedures used by airlines operating from Phoenix Sky Harbor were assessed to estimate the degree to which the recommended thrust reduction might be expected to be used during each of the analysis years. Indications provided by carriers using the airport are that approximately fifty percent of the current operators have already begun use of the measure. For comparative purposes, this fifty percent ratio is applied to the input data for the projected current year (1987) abated noise contours. For future years, it is projected that vigorous implementation of the procedure can result in 67 percent use of all Stage II aircraft except 737's and that 60 percent of the 737's, will use the procedure in 1992. These percentages reflect a hesitancy on the part of some carriers to implement the 1.7 EPR procedure, but its use is expected to be accepted as it is safely used by other carriers. It is further projected that all Stage III aircraft will use the procedure by 1992. By 1997, it is assumed that 90 percent of all departures by Stage II aircraft will use the procedure, and that by the year 2007, all Stage II operations remaining at the airport will use the procedure.

Implementation may be attempted via letters of agreement between the airport and the operators of large aircraft using the facility. The pilot in command of an aircraft must always retain the option to safely operate the aircraft, resulting in a necessity to allow for deviations from the procedure. Should formal letters of agreement prove unsuccessful, the airport may seek voluntary implementation of the measure from the individual carriers, with earliest concentration given to the hub operators at Sky Harbor.

The single event noise levels generated by aircraft using the standard and reduced thrust departure procedures were calculated for B-737 and B-727 aircraft at regular distances along the departure path. It was found that within approximately eight miles of the brake release point, the reduced thrust procedure decreased noise levels by as much as twelve decibels -- a major perceived difference in noise exposure. Beyond eight miles, the reduced thrust procedure produces single event noise levels by the B-727 which are approximately one to two decibels more than those produced by the standard procedure. These differences are not normally perceptible to the human ear.

NA-3 Request the use of NBAA "close-in" or comparable departure procedures by general aviation business jet aircraft when departing from all runways.

For jet aircraft originally designed for general aviation use, the airport should request NBAA Close-In departure procedures for takeoffs from all runways. For aircraft whose flight manuals specify other equivalent procedures, such as "Quiet Flying" for the Gulfstream II or III, the procedures specified in the flight manuals should be substituted. Implementation should be accomplished via pilot educational material provided through the FBO's and the Executive Terminal staff.

NA-4 Implement a left turn by all jets and large propeller aircraft departing Runway 26L to a heading of 245 degrees upon crossing the middle marker for Runway 08R approaches. Maintain that heading until reaching 13 DME from the SRP VORTAC. To enhance traffic separation, assign Runway 26R/L departures based on SID procedure selected. Assign Runway 26L to aircraft using left-turning or straight-out SIDs. Assign Runway 26R to aircraft using right-turning SIDs.

The turning of aircraft departing Runway 26L to a heading of 243 degrees was discussed in Chapter Five. Air Traffic Control personnel have suggested that the designation of a 245 heading would be more appropriate and implementable. The effect of this two degree adjustment in heading is not significant to the noise abatement potential associated with the turn. The measure will turn departing traffic to a route over the lightly populated Salt River floodplain from overflight of more densely populated areas directly west of the airport.

Implementation of the measure will require the revision of SID's from Runway 26L to reflect the turn and initial departure routing. Furthermore, ATC may be required to revise approach routings from the south by light aircraft.

The separation of departing aircraft based on the Standard Instrument Departure procedure to be flown will allow the implementation of the measure and will increase the separation of aircraft as they depart the airport. This increase in separation will enhance the departure capacity of the facility. When in westerly flow, the measure would call for the assignment of Runway 26R to aircraft departing on the Payso and Drake SIDs, while aircraft departing on all other SIDs would be assigned to Runway 26L. Implementation of this measure will require the availability of a second crossover taxiway between the two runways. Such a taxiway is under construction as a part of the Terminal IV project. If additional crossover taxiways are constructed in the future, the measure will be further enhanced.

NA-5 Implement a departure route procedure which overflys the Salt River to a position one mile west of the SRP VORTAC for use by all turbojet and large propeller aircraft departing Runways 08R/L. (One DME departure)

The One DME Departure routing from Runways 08R/L was shown to result in reductions in the number of persons within the 65 Ldn contour east of the airport. While it does not significantly reduce noise impacted population levels in comparison to the other alternatives, the measure will result in a more confined routing of departing traffic to a point further east of the airport than under the current NDB overflight procedure. The measure will delay departure turns along SID routes until aircraft have passed east of McClintock Drive/Hayden Road. This delay will result in the relocation of south-turning departure routes to positions east of Price Road before overflying residential areas south of the river. North of the river, departures will overfly the Indian Reservation east of Pima Road. Annual average noise exposure above 65 Ldn east of the airport will be confined to positions along the initial departure route. Implementation of the measure is in process and will be accomplished via SID revision.

NA-6 Standardize initial departure and final approach routes for helicopter traffic using Sky Harbor Airport.

It is recommended that the FAA ATC develop of a series of specific helicopter routings for rotorcraft traffic while on final approach to or departure from Sky Harbor Airport. Such corridors should, to the extent practical, overfly surface transportation corridors having high traffic volumes. North of the airport, an east-west corridor should overfly Van Buren or Washington Street, while an appropriate routing south of the airport would follow the I-10/Superstition Freeway or Broadway corridors. Helicopters bound to areas in northern Phoenix may be assigned to a route following the new Squaw Peak Expressway or 44th Street while those destined to the Chandler area may be assigned an I-10 routing.

The implementation of these procedures may be influenced by helicopter traffic patterns throughout the entire Phoenix metropolitan area and should not be implemented without consideration of areawide effects.

NA-7 Continue existing runup policies.

This measure recommends the continuation of the airport's current policies restricting aircraft maintenance runup times and locations. These include the prohibition of maintenance runups between 11:00 p.m. and 5:00 a.m. Runups should be restricted to locations on the compass rose located south of Runway 08R-26L or at the America West maintenance facility. Aircraft runups conducted on the new America West apron should be oriented to a heading of 300 degrees, or with adequate dust preventative treatment north of the facility, to a heading of 120 degrees.

NA-8 Encourage airlines to utilize Stage III aircraft, especially for late night departures.

It is recommended that the Airport establish contact with each serving carrier to encourage the use of Stage III aircraft for their Sky Harbor flights, particularly those departures which occur late at night. The gradual conversion of the fleet to aircraft designed with quiet-engine technology, should result in an increasing ability by carriers to accommodate this request. The two carriers having major hub operations at Sky Harbor are making significant strides toward this conversion, using Stage III 737 aircraft. Other carriers are converting, using a wider variety of equipment. Airport staff should monitor the use of Stage III equipment and publish the records of this use in an annual report to be discussed in a later section.

NA 9 - Encourage the use of established Published Visual Approaches during VFR conditions, traffic permitting.

It is recommended that the Airport request ATCT to assign freeway or

power plant approaches to arriving aircraft when practical. The Airport may request that ATCT disapprove requests for short final approaches by large jet aircraft within the boundaries described i the Published Visual Approaches (the Black Mountain Freeway to the west and the power station northwest of the corner of University Drive and McClintock Drive to the east).

LONG-TERM ABATEMENT RECOMMENDATIONS

The short-term (1992) program defined above can result in significant reductions in the area exposed to noise above 65 Ldn from the airport. The master plan's proposed construction of a third parallel runway beyond the five-year Part 150 planning period may provide additional opportunities for noise abatement, and its effects should be considered in projecting long-term noise exposure patterns. If the runway is not constructed, the short-term program is recommended for continuation. It should, however, be reassessed periodically through Part 150 update planning, beginning in 1992, which will reflect future technologies of noise abatement and air traffic control programming. The goal of a long-term noise compatibility program is to restrict the growth of noise impacts in the airport environs and to provide for the effective abatement of noise exposure derived from facility development elements proposed by the master plan. Specific mitigating measures associated with the development of a third parallel runway will be addressed in an Environmental Assessment Report and Environmental Impact Statement. These two documents must be prepared prior to the development of a third runway.

If the proposed third runway becomes a reality, the long-term program should incorporate all elements of the short-term program. Two additional measures proposed for the long-term program are presented in the following paragraphs.

The runway use percentages indicated on Exhibit 7A demonstrate that the new runway would be extensively used for arrivals by both air carrier and commuter aircraft. These percentages were provided by the master plan and indicate the best case for airport capacity. (It must be recognized that occasionally, departures from the new runway would occur when one of the other runways is closed or when high traffic levels demand.) Since the runway is initially programmed for a length of 7,800 feet, the two longer existing runways will typically be selected for departure operations.

The recommendations indicated below reflect the extension of short term measures to the new runway. Those departures by large aircraft which do occur from the new runway should be routed similarly to departures proposed from the existing runways. The One DME standard initial departure procedures proposed from current Runways 8R/L should be revised for use by all jets and large propeller aircraft to include any such aircraft departing new Runway 8R.

Also, departures by such aircraft from proposed Runway 26L should be turned to the 245 heading to avoid overflight of densely populated areas near the west side of the airport. Given the small separation between the two runways, simultaneous departure operations from Runways 26C/L are not considered feasible. Therefore, the use of a turn to a 245 degree heading by large aircraft departing either runway will not result in airspace conflicts between the two facilities. Left-turning SIDs from current Runway 26L should be revised to include departures from the third runway.

NA-9 Implement a turn by all jet and large propeller aircraft departing new Runway 26L to a heading of 245 degrees

upon crossing the middle marker (assuming such is in place) for Runway 08R approaches. If no middle marker is constructed, the turn location should be defined relative to the SRP VORTAC. Maintain that heading until reaching 13 DME from the SRP VORTAC.

NA-10 Implement a departure route procedure which overflys the Salt river to a position one mile west of the SRP VORTAC for use by all jets and large propeller aircraft departing Runway 08R. (Extended One DME departure)

UNRESOLVED NOISE IMPACTS

With the implementation of the noise abatement recommendations outlined above, the area exposed to noise above 65 Ldn will be significantly reduced in both the current and future time frames, although in neither case will it be eliminated. A similar reduction of areas above 70 and 75 Ldn will occur in the near and long terms. The population exposed to noise in excess of 65 Ldn will be reduced significantly in each time frame, while the exposure of noncompatible uses to noise above 75 Ldn will be virtually eliminated within five years and to noise above 70 Ldn within ten years.

Noise exposure levels for the recommended plan for baseline (1987) activity levels are shown in Exhibit 7B. Operations data for the 1987 condition are used to reflect the immediate implementation of the directional equalization and One DME measures and partial implementation of the thrust reduction measures. Traffic separation by SID use and the left turn departure from Runway 26L cannot be implemented until construction of a crossover taxiway is completed.

Anticipated noise exposure for the year 1992 is indicated in Exhibit 7C. This contour assumes the use of the 245 departure heading from Runway 26L. Since the master plan update anticipates the construction of a new parallel runway on the south side of the airport between 1992 and 1997, the 1997 and 2007 forecast noise contours reflect that facility. These contours are presented in Exhibits 7D and 7E, respectively. A numerical comparison of impacts among the baseline and the abated 1987, 1992, 1997 and year 2007 program is shown in Table 7C.

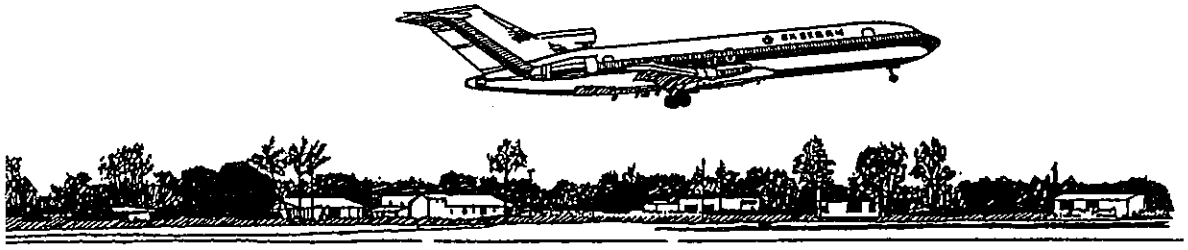
A review of Table 7C indicates that the program, during all four time frames, will result in significant reductions in noise impacts below baseline conditions, in spite of increases in airport operations. The noise abatement plan virtually eliminates severe noise impacts (above 75 Ldn) by 1992 and makes major reductions in the number of persons impacted by significant levels of noise (above 65 Ldn). Tables 7D, 7E, and 7F current and forecast population impacts and land use impacts for the four time periods by area and by Ldn levels.

The noise abatement program will leave unresolved a much more manageable level of potential land use impacts, primarily in the area immediately west of the airport and in northern Tempe. Portions of these areas will remain significantly impacted, as judged by the F.A.R. Part 150 land use compatibility criteria, but generally will be less impacted than is projected for unabated conditions.

It is now prudent to develop a land use management program which seeks to mitigate these unresolved current impacts and protect against future impacts within the federally-defined significant noise level contour of Ldn 65.

TABLE 7C
Comparison Of Unresolved Land Use Impacts
Abated Vs. Unabated Conditions

Type of Impact	Unabated 1987 Baseline	Abated Noise Contours 1987	1992	1997	2007
Sq. Mi. within					
60-65 Ldn	17.0	17.0	18.2	19.0	18.4
65-70 Ldn	8.7	9.1	9.5	9.1	7.5
70-75 Ldn	7.5	6.5	5.0	3.8	3.3
75+ Ldn	5.9	4.7	4.2	4.1	3.5
Total	**39.1**	**37.3**	**36.9**	**36.0**	**32.7**
65+	22.1	20.3	18.7	17.0	14.3
Present Population					
65-70 Ldn	15,116	16,245	13,719	13,325	9,944
70-75 Ldn	11,645	7,781	3,296	1,595	825
> 75 Ldn	4,232	2,566	0	0	0
Total	30,993	26,592	17,015	14,920	10,769
LWP	23,868	19,527	11,458	9,667	6,937
Number of Noise-Sensitive Uses Within 65 Ldn Contour:					
Schools	13	9	9	5	4
Churches	37	30	24	14	9
Hospitals	2	2	1	0	0



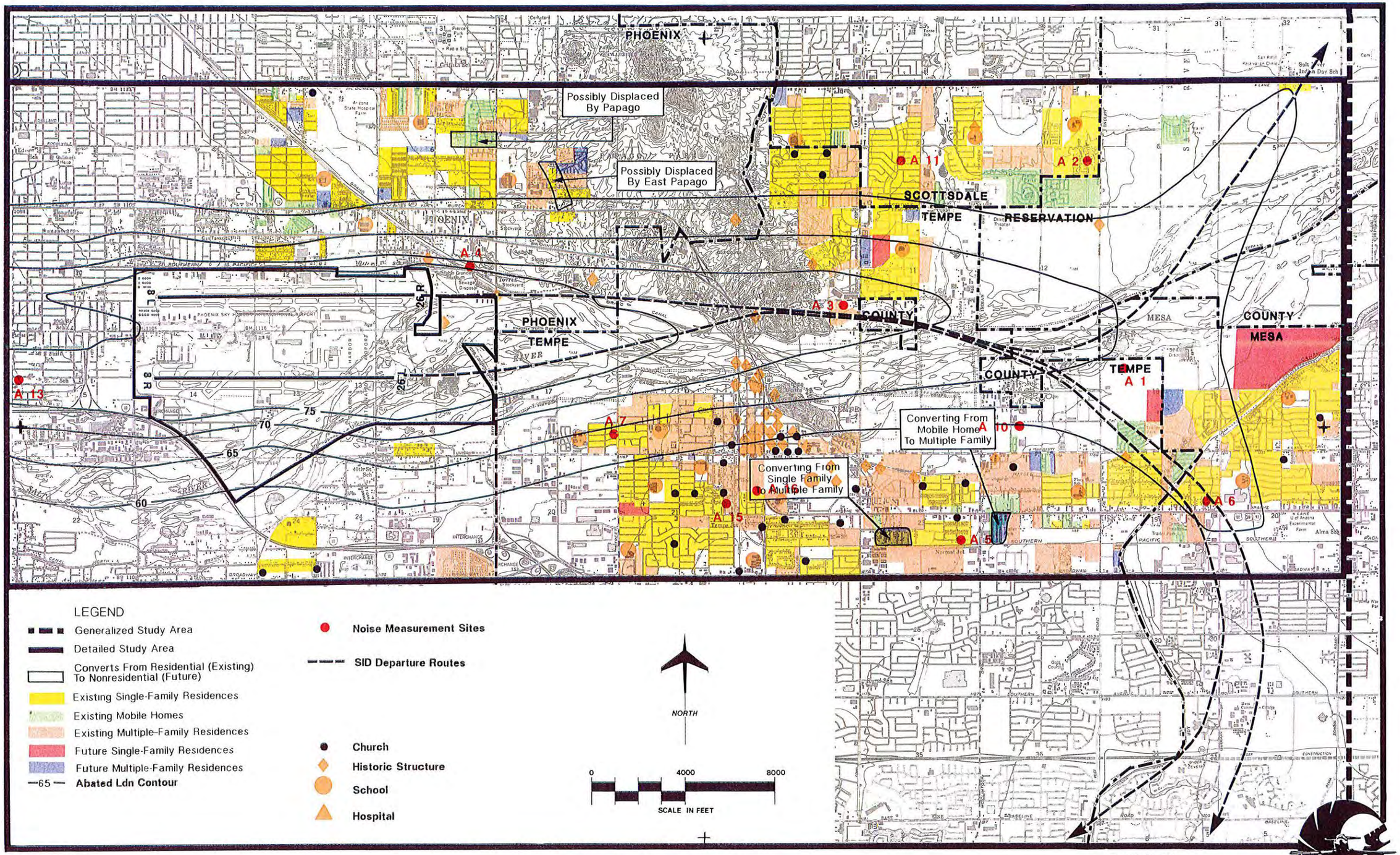


Exhibit 7B
1987 OPERATIONS
NOISE ABATEMENT
PLAN CONTOURS (EAST)

Sky Harbor
INTERNATIONAL AIRPORT

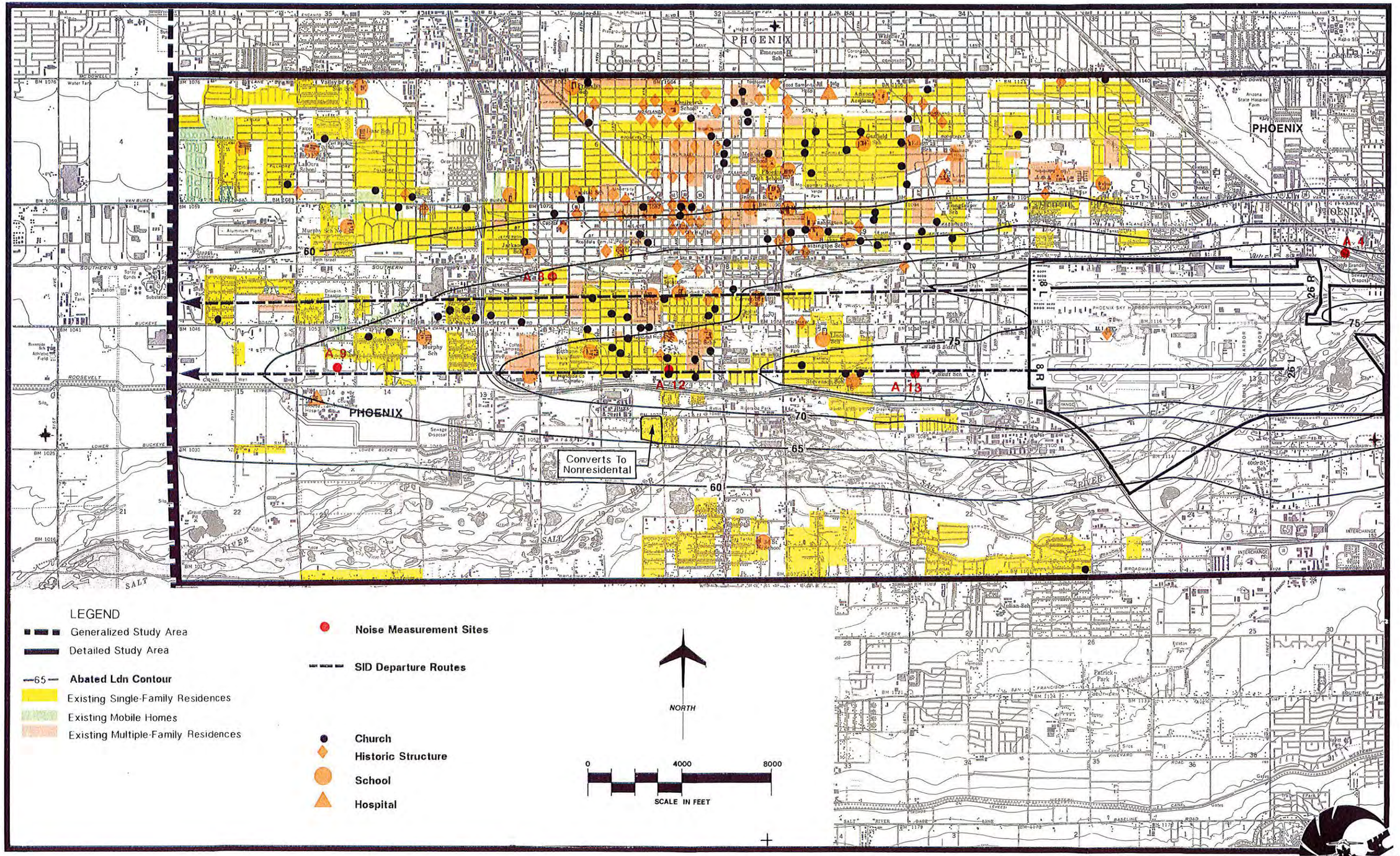


Exhibit 7B
1987 OPERATIONS
NOISE ABATEMENT
PLAN CONTOURS (WEST)

Sky Harbor
INTERNATIONAL AIRPORT

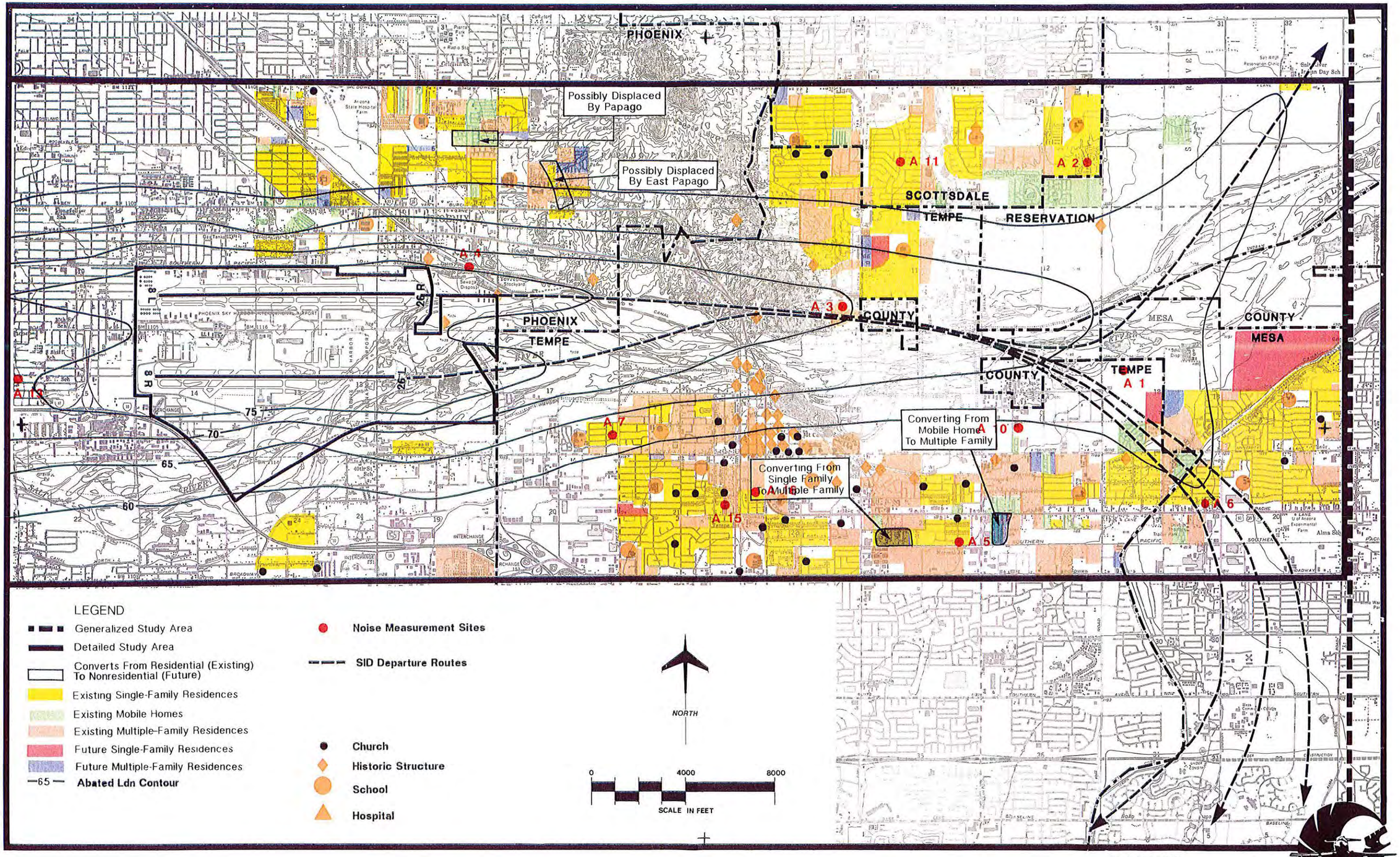


Exhibit 7C
1992 OPERATIONS
NOISE ABATEMENT
PLAN CONTOURS (EAST)

Sky Harbor
INTERNATIONAL AIRPORT

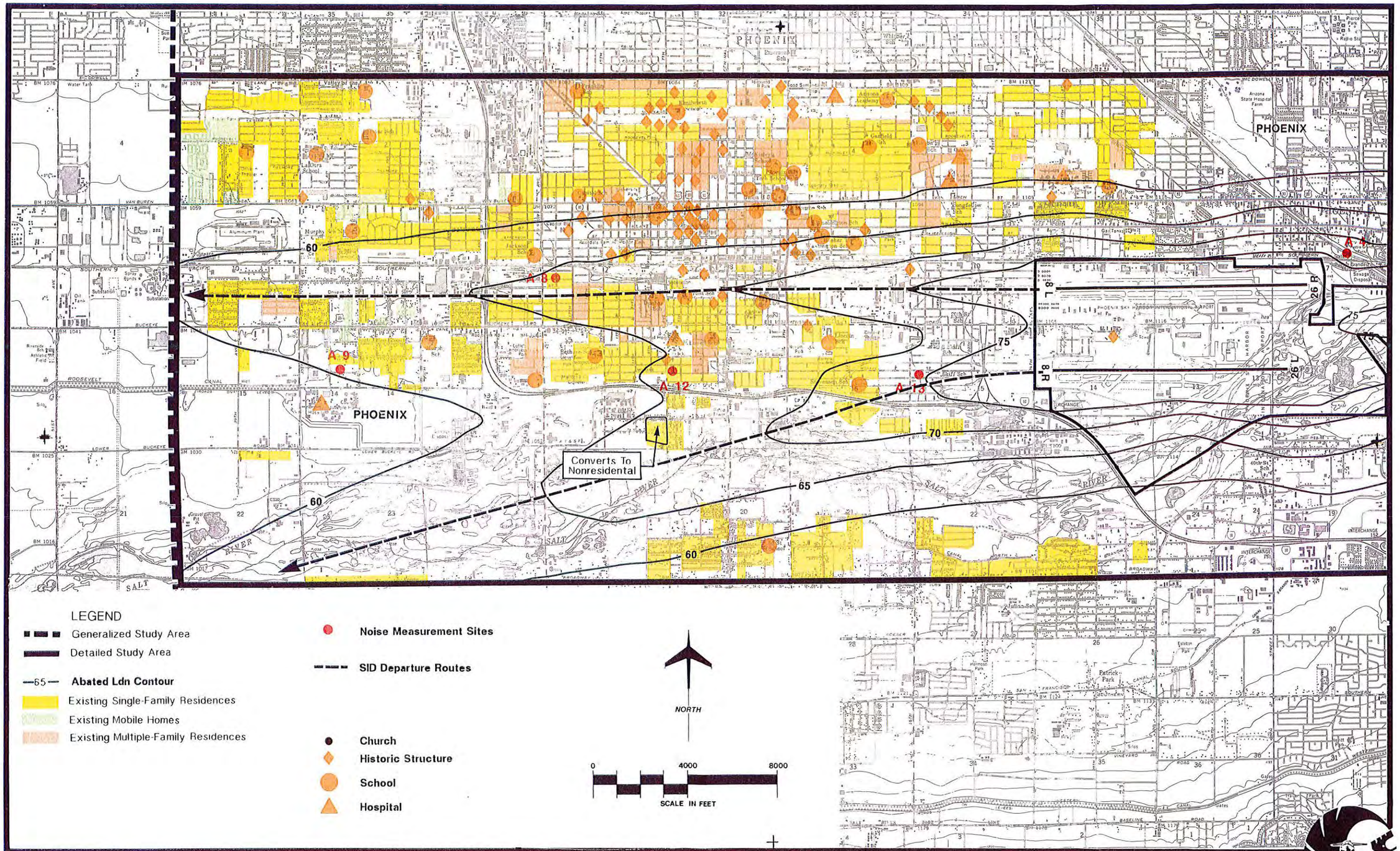


Exhibit 7C
1992 OPERATIONS
NOISE ABATEMENT
PLAN CONTOURS (WEST)

Sky Harbor
INTERNATIONAL AIRPORT

PHOENIX

Possibly Displaced By Papago

Possibly Displaced By East Papago

SCOTTSDALE

TEMPE

RESERVATION

PHOENIX

TEMPE

COUNTY

COUNTY

MESA

COUNTY

TEMPE

MESA

Converting From Mobile Home To Multiple Family

Converting From Single Family To Multiple Family

A 1 A 2 A 3 A 4 A 5 A 6 A 7 A 10 A 11 A 13 A 15

LEGEND

- Generalized Study Area
- Detailed Study Area
- Converts From Residential (Existing) To Nonresidential (Future)
- Existing Single-Family Residences
- Existing Mobile Homes
- Existing Multiple-Family Residences
- Future Single-Family Residences
- Future Multiple-Family Residences
- 65 Abated Ldn Contour
- Noise Measurement Sites
- SID Departure Routes
- Church
- Historic Structure
- School
- Hospital

NORTH

0 4000 8000

SCALE IN FEET

Exhibit 7D
1997 OPERATIONS
NOISE ABATEMENT
PLAN CONTOURS (EAST)

Sky Harbor INTERNATIONAL AIRPORT

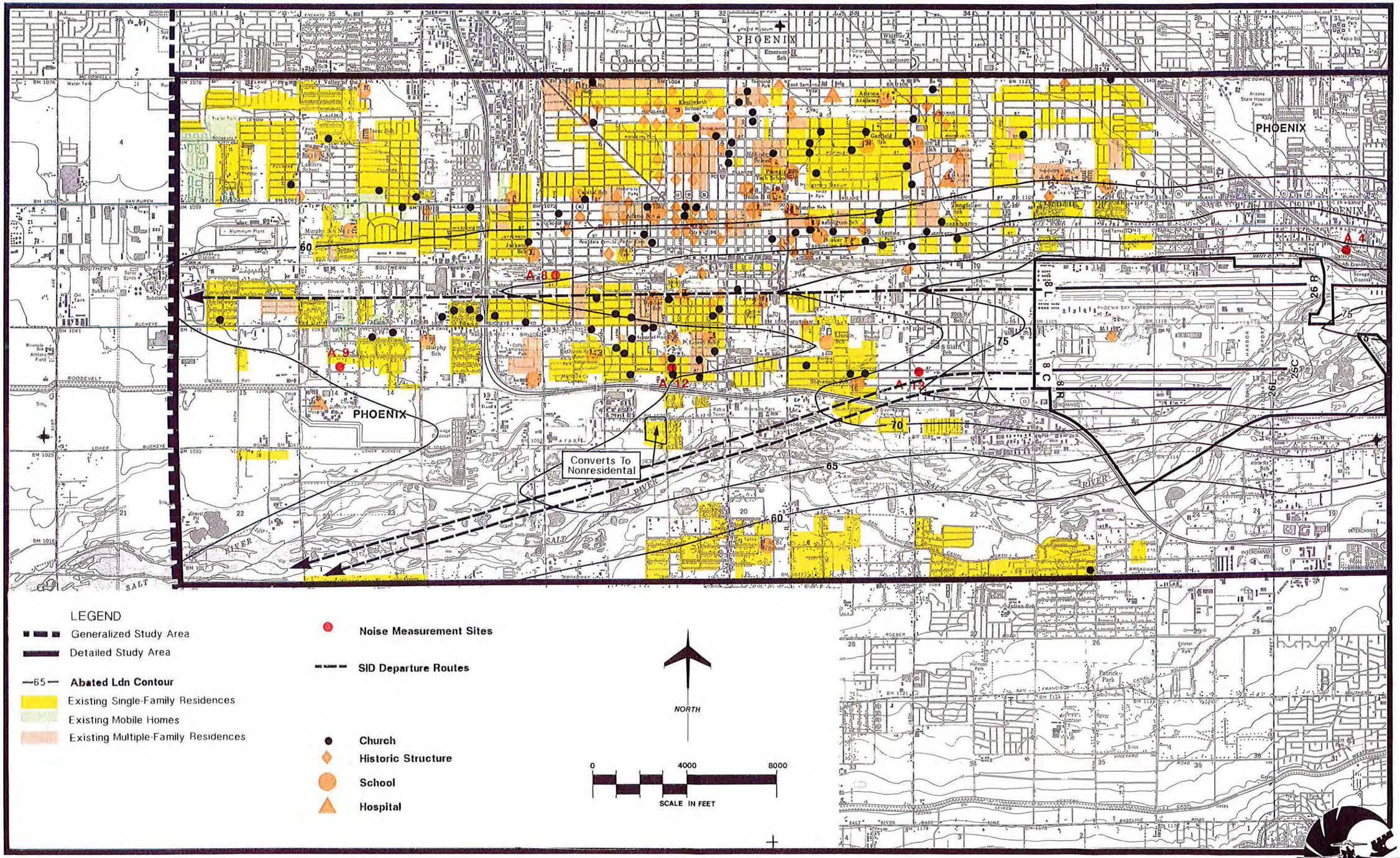
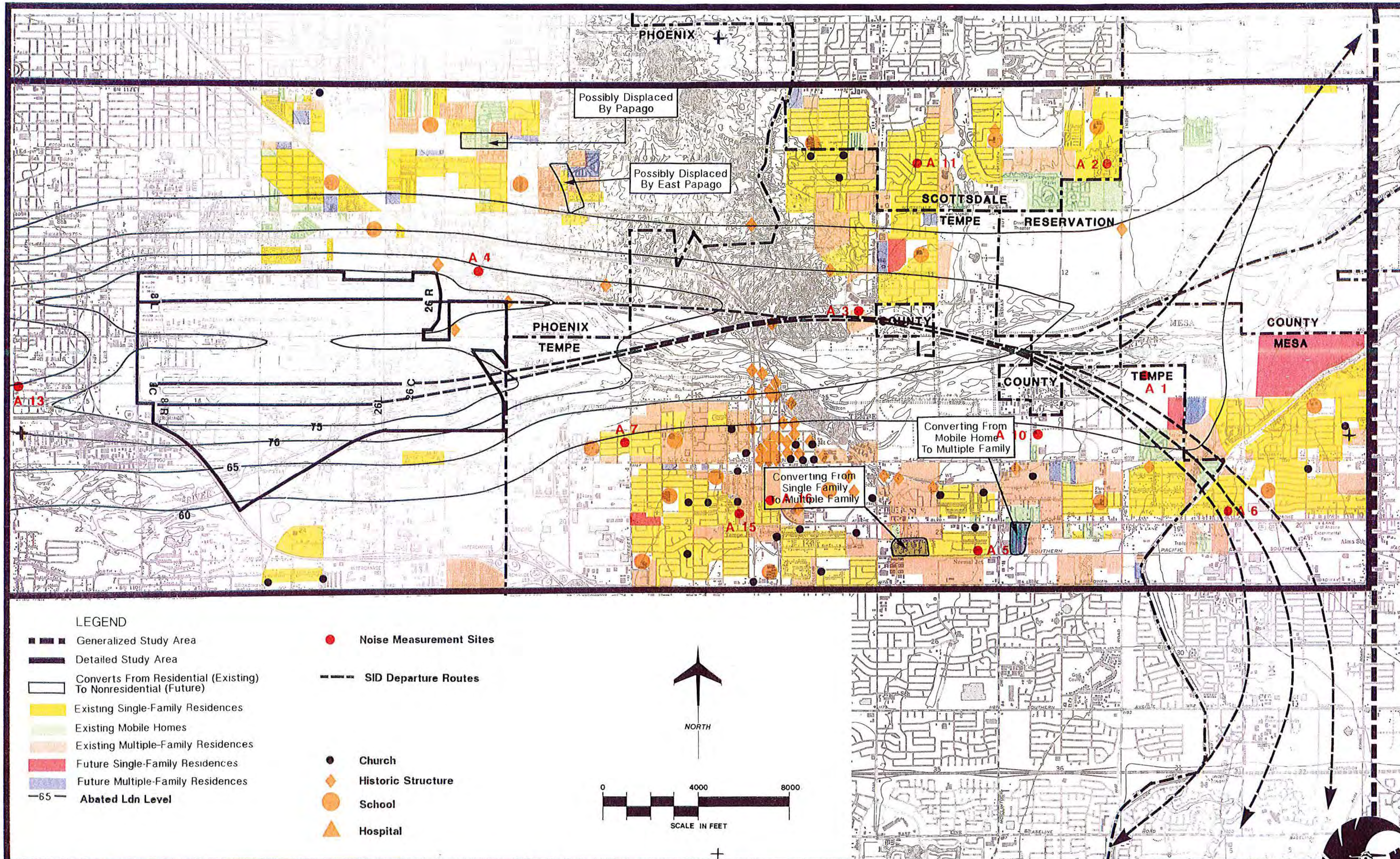


Exhibit 7D
1997 OPERATIONS
NOISE ABATEMENT
PLAN CONTOURS (WEST)

Sky Harbor
INTERNATIONAL AIRPORT



PHOENIX
Possibly Displaced By Papago
Possibly Displaced By East Papago
SCOTTSDALE
TEMPE
RESERVATION
PHOENIX
TEMPE
COUNTY
COUNTY
MESA
TEMPE
COUNTY
Converting From Mobile Home To Multiple Family
Converting From Single Family To Multiple Family
A 1
A 2
A 3
A 4
A 5
A 6
A 7
A 10
A 11
A 13
A 15
75
70
65
60
LEGEND
Generalized Study Area
Detailed Study Area
Converts From Residential (Existing) To Nonresidential (Future)
Existing Single-Family Residences
Existing Mobile Homes
Existing Multiple-Family Residences
Future Single-Family Residences
Future Multiple-Family Residences
65 Abated Ldn Level
Noise Measurement Sites
SID Departure Routes
Church
Historic Structure
School
Hospital
NORTH
0
4000
8000
SCALE IN FEET

Exhibit 7E
2007 OPERATIONS
NOISE ABATEMENT
PLAN CONTOURS (EAST)

Sky Harbor INTERNATIONAL AIRPORT

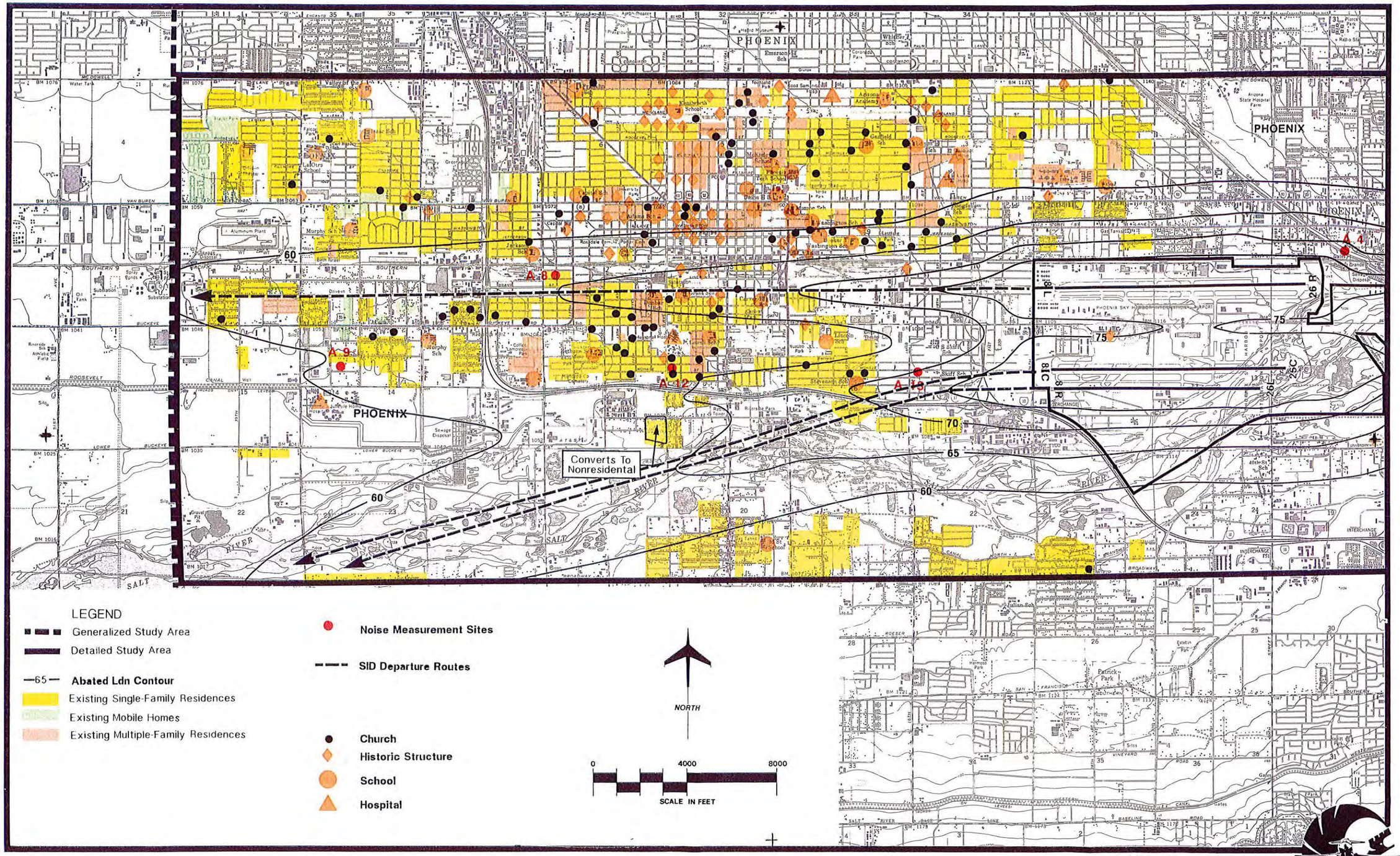


Exhibit 7E
2007 OPERATIONS
NOISE ABATEMENT
PLAN CONTOURS (WEST)

Sky Harbor
INTERNATIONAL AIRPORT

TABLE 7D
Unresolved Impacts
Present Population

1987 Abated vs. Present Population	Ldn 65-70	70-75	75+	Total
PHX-W	10,996	6,621	2,566	20,183
PHX-E	162	0		162
TEMPE	5,087	1,060	0	6,147
TOTAL	16,245	7,781	2,566	26,592
1992 Abated vs. Present Population				
PHX-W	9,974	2,846	0	12,820
PHX-E	197	90	0	287
TEMPE	3,548	360	0	3,908
TOTAL	13,719	3,296	0	17,015
1997 Abated vs. Present Population				
PHX-W	10,502	1,428	0	11,930
PHX-E	220	167	0	387
TEMPE	2,603	0	0	2,603
TOTAL	13,325	1,595	0	14,920
2007 Abated vs. Present Population				
PHX-W	7,245	700	0	7,945
PHX-E	396	125	0	521
TEMPE	2,303	0	0	2,303
TOTAL	9,944	825	0	10,769

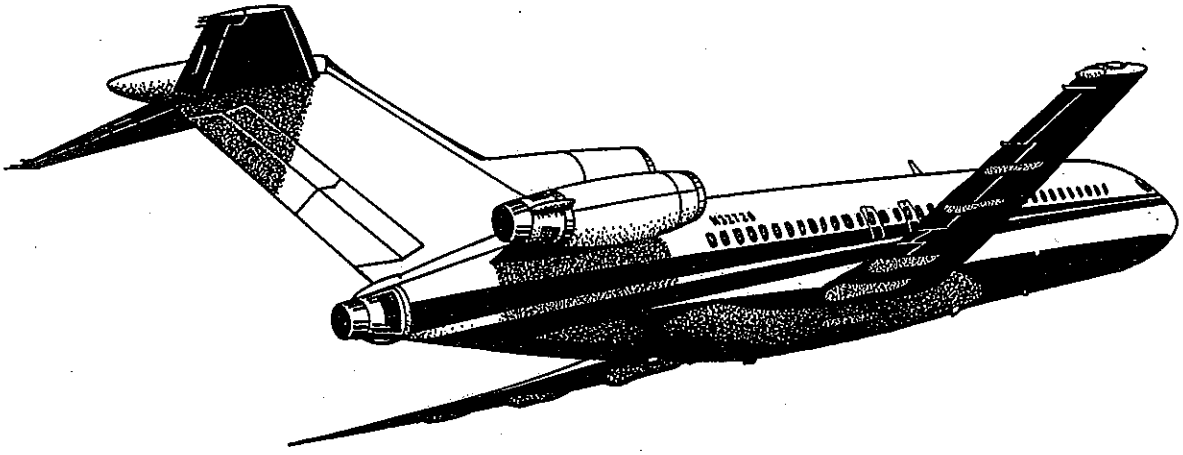
TABLE 7E
Unresolved Impacts
Forecast Population

1987 Abated vs. Present Population	Ldn 65-70	70-75	75+	Total
PHX-W	10,996	6,621	2,566	20,183
PHX-E	162	0	0	162
TEMPE	5,087	1,060	0	6,147
TOTAL	16,245	7,781	2,566	26,592
1992 Abated vs. 1992 Population				
PHX-W	11,404	3,058	0	14,462
PHX-E	167	90	0	257
TEMPE	4,005	500	0	4,505
TOTAL	15,576	3,648	0	19,224
1997 Abated vs. 1997 Population				
PHX-W	10,502	1,428	0	11,930
PHX-E	147	140	0	287
TEMPE	2,643	0	0	2,643
TOTAL	13,292	1,568	0	14,860
2007 Abated vs. 2007 Population				
PHX-W	7,538	751	0	8,289
PHX-E	250	104	0	354
TEMPE	2,360	0	0	2,360
TOTAL	10,148	855	0	11,003

TABLE 7F
Unresolved Impacts
Non-residential Land Uses

1987 Abated	Ldn 65-70	70-75	75+	Total
CHURCH	18	9	3	30
HOSPITAL	1	1	0	2
SCHOOL	3	5	1	9
1992 Abated				
CHURCH	21	3	0	24
HOSPITAL	1	0	0	1
SCHOOL	5	1	0	6
1997 Abated				
CHURCH	14	0	0	14
HOSPITAL	0	0	0	0
SCHOOL	4	1	0	5
2007 Abated				
CHURCH	9	0	0	9
HOSPITAL	0	0	0	0
SCHOOL	4	0	0	4

* Note: All land use impacts are in Phoenix west of airport except one Tempe school in Ldn 65-70 east of airport in 1987.



LAND USE MANAGEMENT PLAN

With the preparation of the Noise Abatement Plan, it is now possible to use the plan's noise contours to complete the evaluation potential land use management measures. Nineteen land use management techniques were discussed in Chapter Six and analyzed in a preliminary way for possible use in the Phoenix-Sky Harbor International Airport Study Area.

The potential land use management techniques were evaluated by the consultant's planning team in accordance with the system described in the last section of Chapter Six (see Tables 6C and 6D). The evaluation was guided, in part, by the comments received from local planning officials at the Land Use Technical Conference, from the Planning Advisory Committee at its latest meetings and from the Phoenix Central City Village Planning Committee. Additionally, local planners attending the Land Use Technical Conference were requested to complete the evaluation matrix. Four completed matrices were returned, two from Phoenix and two from Tempe.

The evaluation summaries are shown in Tables 7G and 7H on the following pages. Table 7G shows the evaluation natrix completed by the consultant team and Table 7H shows the evaluation matrix completed by the four local planners. A comparison of the two matrices shows relatively close similarities between the two sets of scores, considering the different points of view represented (consultant vs. Phoenix vs. Tempe). The consultants, of course, were scoring on the basis of somewhat greater experience on the use of the various techniques for noise compatibility purposes, while the local planners were scoring on the basis of greater experience in applying these kinds of techniques to Phoenix and Tempe.

Of the nineteen measures evaluated, the consultant's and the local planners drew like conclusions on twelve. Of these twelve on which there was general agreement, ten were recommended to be retained and two were recommended to be rejected from further consideration. Of the seven for which there were dissimilar conclusions, five were favored for retention by the local planners and two were favored for retention by the consultant team. The reasons for retention or rejection in the recommended plan by the consultant are provided below.

In addition to the eight techniques which are rejected as inapplicable by the consultant on the basis of the reasons provided below, and the five techniques that were selected, six other techniques were rejected as separate measures. Those six techniques are judged to be applicable in Phoenix and Tempe, but are believed to function best in the local context if placed under the umbrella of other more comprehensive techniques. The rationale for rejecting these six measures as separately applied techniques is also provided below.

REJECTED LAND USE MANAGEMENT MEASURES

Large Lot Zoning

This technique was rejected by local planners and consultants alike. The general rationale was that down zoning of this kind to achieve land use compatibility was politically unacceptable. One of the concerns is that downzoning would result in an unreasonable loss of property value in an area that is experiencing strong suburban residential growth pressure. It would also be in contradiction with local general plan policies which call for higher density development of the scarce supply of remaining undeveloped land. Lastly, large lot zoning would effectively kill any hopes for redevelopment of older areas in Phoenix.

TABLE 7G
Composite Land Use Evaluation Matrix
Completed By Consultant Team

	EVALUATION CRITERIA									
	Utility			Feasibility				Preliminary Ratings		
ALTERNATIVE TECHNIQUES										
Compatible Use Zoning	2	3	3	3	3	3	3	2.5	3	Y
Mobile Home Restriction	3	3	3	2	2	3	3	3	2.6	Y
Large Lot Zoning	2	2	3	2	1	1	3	2	2	N
Noise Overlay Zoning	3	3	3	2	2	3	3	3	2.6	Y
Transfer of Development Rights	3	1	1	3	2	0	3	2	1.8	N
Building Code Changes	3	3	2	2	2	2	3	3	2.2	Y
Subdivision Regulation Changes	2	2	3	3	3	3	3	2	3	Y
Avigation Easements - Required for Subdivision, Building, Occupancy Permit	3	2	3	3	2	3	3	2.5	2.8	Y
Fair Disclosure Policy	3	2	2	3	1	3	3	2.5	2.4	Y
Comprehensive Planning	2	2	3	3	3	3	3	2	3	Y
Capital Improvements Programming	2	2	3	3	3	3	3	2	3	Y
Planning Commission Review	2	2	3	3	3	3	3	2	3	Y
Fee Simple Purchase	1	2	2	2	1	1	3	1.5	2	N
Guaranteed Purchase	1	3	2	2	1	1	3	2	2	N
Redevelopment	3	3	1	2	3	3	3	3	2.4	Y
Land Banking	1	2	2	2	1	1	3	1.5	1.8	N
Noise Easement Purchase	1	2	3	3	3	2	3	1.5	2.8	N
Development Rights Purchase	1	2	3	3	3	2	3	1.5	2.8	N
Soundproofing Program	3	2	3	3	3	3	3	2.5	3	Y

TABLE 7H
Composite Land Use Evaluation Matrix
Completed By Local Planners

	EVALUATION CRITERIA									
	Utility			Feasibility				Preliminary Ratings		
ALTERNATIVE TECHNIQUES										
Compatible Use Zoning	2.25	3	2.5	3	1.75	3	3	2.6	2.7	Y
Mobile Home Restriction	2	2.25	2	2	1.5	3	3	2.1	2.3	Y
Large Lot Zoning	1.25	1.25	2.75	1.75	1.5	1.5	2.5	1.3	2.5	N
Noise Overlay Zoning	2.25	2.5	3	2.25	1.5	3	2.7	2.4	2.5	Y
Transfer of Development Rights	2.25	2	2.25	2.25	2.3	2.5	2	2.1	2.3	Y
Building Code Changes	2.25	2.25	1.8	2	2	3	2	2.3	2.2	Y
Subdivision Regulation Changes	1.5	1.25	3	3	2	1.25	2.75	1.4	2.4	N
Avigation Easements - Required for Subdivision, Building, Occupancy Permit	2.25	2.25	2.3	2	3	2	2.3	2.3	2.1	Y
Fair Disclosure Policy	2	2.5	2.5	2	1.5	3	3	2.3	2.4	Y
Comprehensive Planning	2	3	2.5	2.5	3	3	2	2.5	2.6	Y
Capital Improvements Programming	1.3	1.75	2.25	2.25	3	2.75	2	1.5	2.5	N
Planning Commission Review	2	2.25	3	3	3	3	2.25	2.1	2.9	Y
Fee Simple Purchase	2.5	2.5	1.5	3	2.3	1	1.7	2.5	1.9	Y
Guaranteed Purchase	2.5	2.5	1.5	3	3	1	1	2.5	1.9	Y
Redevelopment	2.25	2	1.25	2	3	3	.8	2.1	2.0	Y
Land Banking	1.5	1.5	1.25	2.25	1.7	2.5	2.3	1.5	2.0	N
Noise Easement Purchase	2.25	1.75	1	1.5	2.7	2.5	2	2.0	1.9	Y
Development Rights Purchase	1	2	1.25	2.25	2.7	2.5	1.7	1.5	1.6	Y
Soundproofing Program	2.75	2.5	2	2	3	2.75	1.7	2.6	2.3	Y

Exhibit 4 - part 2

Transfer Of Development Rights

Development rights transfer involves the creation of a system which enables owners of undeveloped property designated for preservation or very light development to sell their unused development rights to prospective developers of land elsewhere in the area. Although favored by local planners, the transfer of development rights technique was rejected by the consultant because of the extreme complexity of the technique itself in addition to the complexities of inter-jurisdictional cooperation which would probably be required in such a program. Lastly, TDR was rejected because of the extremely limited applicability of the technique in an area that is almost totally developed.

Subdivision Regulations

Although favored by consultant planners, the use of subdivision regulations was eliminated from further consideration in deference to the views of local planners. The local planners gave this technique very low ratings with respect to need, effectiveness, and jurisdictional preference. Their rationale for these low ratings was that there is a very limited need, because of the very limited amount of possible new subdivisions, and there would be a low effectiveness because so few potential buyers would ever see the plat notes provided on the plat sheets as a warning of possible high noise levels over the subdivision.

Capital Improvements Programming

As with subdivision regulations, the use of capital improvements programming was eliminated from further consideration on the basis of the very low utility (need and effectiveness) ratings assigned by the local planners. In general, their view was that there was little in the way of potential capital improvements to the area of future noise impacts that could significantly influence land use compatibility, either positively or negatively. In the consultant planners' view, this probably understates the effectiveness of the technique. However, since capital improvements must be consistent with the general plan, and since it is recommended that this noise compatibility plan be adopted as an element of the Phoenix and Tempe general plans, then there is no compelling reason to link capital improvements programming directly to the land use management plan of the Part 150 Study.

Fee Simple Purchase

The use of a mandatory fee simple purchase program was rejected by consultant planners on the basis of insufficient need. The consultants reasoned that purchase of homes should be used only when noise levels were high, generally above 75 Ldn and in some circumstances above 70 Ldn. Secondly, homes should be purchased only when the community is willing to accept the neighborhood disruption and displacement that would result from such purchases. It is assumed that the local planners rated the technique highly because of its general merits, but that they were unaware of exactly where the abated future noise contours would lie.

Around Sky Harbor Airport, the only area that would be affected by noise levels in the upper end of the Ldn 70-75 range and above, after implementation of the noise abatement plan, are those located in Phoenix directly west of the airport. This area, known as Nuestro Barrio, is an old neighborhood of predominantly Hispanic culture that has already been heavily impacted by acquisition as part of the Sky Harbor Center. The point has been made repeatedly throughout the later phases of the Part 150 Study by representatives of the City of Phoenix and of Nuestro Barrio that a very high priority is now being given to strengthening the remaining neighborhood.

Guaranteed Purchase

The use of a non-mandatory fee simple purchase program, called a guaranteed purchase program, was rejected for the same reasons as for the mandatory fee simple purchase program. Although an advantage of the guaranteed purchase technique is that residents are not forcibly displaced, the effect can sometimes be the same. When a neighborhood is unstable due to prior displacements, low incomes and structural deterioration, as is Nuestro Barrio, it can easily be pushed into a condition of irreversible decline. It is highly probable that a guaranteed purchase effort, initially accepted by some residents and rejected by others, would eventually destablize the neighborhood as neighbors leave, homes are removed, and vacant lots appear.

Land Banking

This technique was also rejected because of the reasons given for the two preceding techniques, which is that it would only apply in the areas west of the airport where residents and the city have determined to attempt to stabilize neighborhoods. Land banking differs from the two preceding techniques in that it defers re-use of the land until a specified later time or for a specified later purpose.

Development Rights Purchase

This technique is used to prohibit the use of vacant, noise impacted property for noise sensitive land uses. It is used only when there are no feasible or acceptable compatible uses for the properties and only when the community is agreed that development of noise sensitive uses should be prohibited at all costs. Finally, it is best used when the airport or local governments do not want to own the properties in fee simple.

The purchase of development rights around Sky Harbor Airport was rejected from further consideration by local planners and consultant planners alike. Both groups rated the technique as not needed. In Tempe, the technique is not needed because there are adequate alternative noise compatible uses proposed as part of the Tempe-Rio Salado Plan. In Phoenix, the city does not want to stifle any efforts toward residential infilling and redevelopment--an indication of the very high priority placed on neighborhood stabilization west of the airport.

LAND USE MANAGEMENT STRATEGIES RETAINED IN PART

Compatible Use Zoning

Initially, compatible use zoning was selected as a technique for use by both consultant and local planners. Compatible use zoning could be used in two ways: first, to change designated zone districts over properties in high noise ares (Ldn 65+) to permit certain noise-compatible uses such as businesses and industries; second, to change the zoning ordinance text to prohibit certain noise-sensitive uses in zones which are intended for noise-compatible uses (e.g. prohibiting nursing homes in commercial districts).

A thorough review of the Phoenix and Tempe zoning maps revealed that there are no parcels of land in private ownership which are vacant, zoned for noise-sensitive uses such as residences, and located within the 1992 abated Ldn 65 contours (the contours selected for use in developing the land use management plan). Moreover, the need to eliminate noise-sensitive uses from industrial and commercial zones can be met through the noise overlay zone. Therefore, compatible use zoning was rejected as a separate land use management technique.

Mobile Home Restriction

Adoption of this measure which restricts additional mobile homes from areas exposed to noise levels of Ldn 65 or greater is recommended by the consultant, but as a part of Noise Overlay Zoning rather than as a separate measure. One of the purposes of the Noise Overlay Zoning is to simplify noise compatibility planning by placing applicable restrictions in one zone which are easy to identify for planners and land users alike. Use of the mobile home restriction in the noise compatibility plan was favored by local planners and the consultant team in the scoring of the land use evaluation matrix.

Building Code Changes

Building code amendments were rejected as a separate measure because noise overlay zoning is considered a simpler but equally effective way of ensuring that new construction in noise-impacted areas is soundproofed. Additional discussion of the use of this technique will be provided in the section on noise overlay zoning.

Required Avigation Easements

A requirement of the dedication of avigation easements for noise as a condition of subdivision and/or building occupancy permits was rejected as a separate measure. This technique was rated highly by both consultant and local planners, but was determined to work more simply under the umbrella of noise overlay zoning. Additional discussion of the use of this technique will be provided in a later section on noise overlay zoning.

Redevelopment

The strategy of redevelopment was given high ratings by both consultant and local planners in the evaluation process. This strategy, as applied around Sky Harbor, generally describes any program in which local funds are used in combination with airport revenues and/or FAA grants to restore noise impacted areas into viable, stable neighborhoods or economic centers. Within the future, abated Ldn 65 noise contour, there appears to be only one area in which a concerted redevelopment program would have obvious merit. This area is the Hispanic community immediately west of the Sky Harbor Center called Nuestro Barrio.

As described earlier under the discussion of Fee Simple Purchase, Nuestro Barrio is a residential area exposed to several destabilizing influences. First, the community suffers from low income, high unemployment and other indicators of poverty. Secondly, the community is exposed to adverse external environmental effects including aircraft noise and changing nearby land use patterns. Finally, the area is composed primarily of small, older homes with deteriorating structural and infrastructural conditions. It is clearly a policy of the City of Phoenix, the Central Village Planning Council, and the Nuestro Barrio Partnership to rehabilitate and stabilize Nuestro Barrio.

The only apparent opportunity to stabilize Nuestro Barrio in the presence of the continuing, although much abated, aircraft noise levels would be through extensive structural soundproofing. This mitigation effort, discussed later as a retained technique under "soundproofing", could be combined with a neighborhood redevelopment program, using aviation funding sources to finance the rehabilitation efforts which have soundproofing value, leaving the remainder to city and other non-aviation sources. Therefore, the use of redevelopment is not retained as a separate land use management technique, but is combined with and considered later under the strategy of soundproofing.

Noise Easement Purchase

The purchase of noise easements is a useful technique to compensate existing resident homeowners for annoyance from high levels of aircraft noise and possible diminution of property rights and property values. This technique does not in any way mitigate noise impacts or reduce noise levels.

Use of the technique around Sky Harbor was rated as needed by local planners in the evaluation process, but was considered to be marginally effective and very costly to the public and the residents . The consultant team was less concerned about the cost but more concerned about the lack of need. The technique was rejected from further consideration because it is believed that the funds used to accomplish the purchases could be more effectively used as part of a large soundproofing program which was favored by both consultant and local planners. Noise easements would be required as a condition of the soundproofing grant.

SELECTED LAND USE MANAGEMENT STRATEGIES

Eleven of the land use management strategies evaluated in Table 6D are acceptable for use in the Phoenix Sky Harbor International Airport environs. Eight of these strategies (discussed above) were combined into two of the other for ease of implementation, leaving five independent strategies.

LU-1 Noise Overlay Zoning

Noise overlay zoning is intended to establish special standards within a noise-impacted area to help mitigate the problems caused by noise. These standards supplement the standards of the underlying zoning classifications.

On the basis of the evaluation scores as rated by the consultant and local planners, it is recommended that both Phoenix and Tempe adopt noise overlay zoning. The outer boundaries of the overlay zones should be based on the abated noise contours for the 1992 noise abatement plan. This is based on the assumption and belief that the recommended noise abatement plan will receive FAA approval and attain fully successful implementation.

It is also recommended that the actual noise overlay zone boundaries be adjusted to follow local streets, roads, highways, natural landscape features, survey lines, or political boundaries to ensure that the ordinance can be effectively administered. A clear set of boundaries that can be easily defined and agreed upon without the need to resort to special studies or contentious hearings before a zoning board of appeals can be extremely helpful in ensuring that the noise overlay zoning will be used and that the process will have credibility.

The proposed noise overlay zone boundaries are shown in Exhibit 7F. As these boundaries are approximations of the actual contour areas, Phoenix and Tempe may wish to make further adjustments to better fit their needs.

Within the noise overlay zones it is proposed that the standards listed in Table 7I apply. This table is based on the land use compatibility guidelines from F.A.R. Part 150 which were discussed in Chapters Four and Six. The table provides for three zones within the noise overlay area based on noise levels: Zone N-1 from 65 to 70 Ldn; Zone N-2 from 70 to 75 Ldn; and Zone N-3 over 75 Ldn.

In Phoenix and Tempe it is proposed that an additional provision be included in the noise overlay zoning ordinance. It is recommended that all residential uses be prohibited in any business or industrial zone within any noise overlay zone. (Given the somewhat cumulative nature of both zoning ordinances,

PHOENIX

SCOTTSDALE

TEMPE

RESERVATION

PHOENIX

TEMPE

COUNTY

COUNTY

MESA

COUNTY

TEMPE

26 R

26 L

8 R

LEGEND

Generalized Study Area

Detailed Study Area

NOISE OVERLAY ZONES

N-1 Ldn 65-70

N-2 Ldn 70-75

N-3 Ldn 75+

NORTH

0 4000 8000

SCALE IN FEET

Exhibit 7F
PROPOSED NOISE OVERLAY ZONE BOUNDARIES (EAST)

Sky Harbor
INTERNATIONAL AIRPORT

LEGEND

Generalized Study Area

Detailed Study Area

NOISE OVERLAY ZONES

N-1 Ldn 65-70

N-2 Ldn 70-75

N-3 Ldn 75+

NORTH

0 4000 8000

SCALE IN FEET

Exhibit 7F
PROPOSED NOISE OVERLAY ZONE BOUNDARIES (WEST)

Sky Harbor INTERNATIONAL AIRPORT

housing is sometimes permitted in business and industrial zones.)

In addition to the standards shown in Table 7I it is proposed that noise easements be secured from all new noise-sensitive development inside the noise overlay zones prior to the issuance of occupancy permits.

The standards shown in the table would prohibit all dwelling types except hotels and motels from locating inside the Ldn 75 contour. In addition, mobile homes would be prohibited in zones subject to noise exceeding 65 Ldn. Noise attenuation would also be required between the Ldn 65 and 75 levels (Zones N-1 and N-2) for all residential uses, hospitals and nursing homes, educational services, cultural activities (including churches), auditoriums and concert halls. These uses would also be prohibited in areas impacted by noise exceeding Ldn 75. The standards shown in the table also require noise attenuation in certain business buildings located within the Ldn 75 contour (Zone N-3). A proposed model noise overlay zoning ordinance is shown in Appendix E.

It should be emphasized that the noise overlay zone provisions should apply only to new construction, but not to improvements to or expansion of pre-existing uses. It is proposed that the builder or developer be required to demonstrate compliance with the noise attenuation performance standards shown in Table 7I. Two alternative methods of meeting this requirement are recommended and described in the noise overlay zoning ordinance in Appendix E.

The ordinance would establish specifications for construction measures assumed to provide the required degree of noise attenuation. The builder could choose to follow these construction specifications or to develop his own design using different construction techniques as long as the design is certified by a registered architect, engineer, or acoustician as capable of meeting or exceeding the performance standard. A building permit would be issued after the building officials are satisfied that the design meets the standards of the ordinance or upon receipt of the certifcate. It would then become the responsibility of the local building inspector to ensure that the design is faithfully executed on the site.

In summary, the recommended noise overlay zoning contains the following features:

- Soundproofing of new noise-sensitive land uses.
- Avigation easement required.
- Special zoning restrictions against certain noise sensitive land uses in high noise areas.
- Prohibition of mobile homes in Ldn 65 contour.

LU-2 Fair Disclosure Policy

Fair disclosure policies may be implemented in one or both of two ways: a legally binding requirement for licensed real estate agents to inform prospective buyers of residential property that the property is exposed to significant levels of aircraft noise; and an informal program of the airport to call attention to aircraft noise exposure on local neighborhoods and the significance of such exposure. Presently, the State of Arizona controls all legislation regulating the conduct and requirements of real estate agents dealing in intrastate transactions. It is believed that formal fair disclosure requirement could only be implemented by Phoenix and Tempe if the State passed new enabling legislation to that effect.

To ensure that prospective new residents are completely aware of the aircraft noise exposure in the airport vicinity, it is recommended that the cities of Phoenix and Tempe jointly seek

TABLE 7I
Land Use Compatibility Standards
Phoenix Sky Harbor International Airport

SLUCM No.	Land Use Name	Noise Zones/Levels in Ldn N-1 65-70	N-2 70-75	N-3 75+
10	**Residential**			
11	Household Units			
11.11	Single-Units-detached	Y[1,5]	Y[1,5]	N
11.12	Single-Units-semi-detached	Y[1,5]	Y[1,5]	N
11.13	Single Units-attached row	Y[1,5]	Y[1,5]	N
11.21	Two Units side-by-side	Y[1,5]	Y[1,5]	N
11.22	Two Units over-under	Y[1,5]	Y[1,5]	N
11.31	Apartments - walk-up	Y[1,5]	Y[1,5]	N
11.32	Apartments - elevator	Y[1,5]	Y[1,5]	N
12	Group Quarters	Y[1,5]	Y[1,5]	N
13	Residential Hotels	Y[1,5]	Y[1,5]	N
14	Mobile Home in and out of Parks[6]	N	N	N
15	Transient Lodgings, Hotels, Motels	Y[1,5]	Y[1,5]	Y[3,5]
16	Other Residential	Y	Y	N
20	**Manufacturing**			
21	Food & kindred products	Y	Y	Y
22	Textile Mill products	Y	Y	Y
23	Apparel & other finished products made from fabrics, leather, & similar materials	Y	Y	Y
24	Lumber & wood products (except furniture)	Y	Y	Y
25	Furniture & fixtures	Y	Y	Y
26	Paper & allied products	Y	Y	Y
27	Printing, publishing, & allied industries	Y	Y	Y
28	Chemicals & allied products	Y	Y	Y
29	Petroleum refining and related industries	Y	Y	Y
31	Rubber & misc. plastic	Y	Y	Y
32	Stone, clay, & glass products - mfg.	Y	Y	Y
33	Primary metal ind.	Y	Y	Y

TABLE 7I (continued)
Land Use Compatibility Standards
Phoenix Sky Harbor International Airport

SLUCM No.	Land Use Name	Noise Zones/Levels in Ldn N-1 65-70	N-2 70-75	N-3 75+
30	**Manufacturing (cont.)**			
34	Fabricated & metal products - mfg.	Y	Y	Y
35	Professional, scientific, & controlling instruments; photographic & optical goods; watches & clocks - mfg.	Y	25	30
39	Misc. mfg.	Y	Y	Y
40	**Transportation, communication and utilities**			
41	Rail transportation	Y	Y	Y
42	Motor vehicle trans.	Y	Y	Y
43	Aircraft transportation	Y	Y	Y
44	Marine craft transp.	Y	Y	Y
45	Hwy. & st. right-of-way	Y	Y	Y
46	Automobile parking	Y	Y	Y
47	Communication	Y	Y	Y
48	Utilities	Y	Y	Y
49	Other transportation, comm., & utilities	Y	Y	Y
50	**Trade**			
51	Wholesale trade	Y	Y	Y
52	Retail trade-bldg. materials, hardware, & farm equipment	Y	Y	Y[3]
53	Retail trade - general merchandise	Y	Y	Y[3]
54	Retail trade - food	Y	Y	Y[3]
55	Retail trade - auto	Y	Y	Y[3]
56	Retail trade - apparel & accessories	Y	Y	Y[3]
57	Retail trade - furniture home furnishings	Y	Y	Y[3]
58	Retail trade - eating & drinking est.	Y	Y	Y[3]
59	Other retail trade	Y	Y	Y[3]
60	**Services**			
61	Finance, insurance, & real estate services	Y	Y	Y[3]
62	Personal services	Y	Y	Y[3]
62.4	Cemeteries	Y	Y	N

TABLE 7I (continued)
Land Use Compatibility Standards
Phoenix Sky Harbor International Airport

SLUCM No.	Land Use Name	Noise Zones/Levels in Ldn N-1 65-70	N-2 70-75	N-3 75+
63	Business services	Y	Y	Y[3]
64	Repair services	Y	Y	Y[3]
65	Professional services	Y	Y	Y[3]
65.1	Hospitals, nursing homes	Y[2,5]	Y[3,5]	N
65.1	Other medical fac.	Y[2,5]	Y[3,5]	N
66	Contract construction services	Y	Y	Y
67	Governmental services	Y	Y[2]	Y[3]
68	Education services	25,5	30,5	N
69	Misc. services	Y	Y	Y[3]
70	**Cultural, entertainment, and recreational**			
71	Cultural activities (including churches)	25,5	30,5	N
71.2	Nature exhibits	Y	Y	N
72	Public assembly	25	30	N
72.1	Auditoriums, concert halls	25,5	30,5	N
72.11	Outdoor music shells, amphitheaters	N	N	N
72.2	Outdoor sports arenas, spectator sports	Y[4]	N	N
73	Amusement	Y	Y	N
74	Recreational activities (including golf courses, riding stables, water recreation)	Y	Y	Y
75	Resorts & group camps	Y	N	N
76	Parks	Y	Y	Y
79	Other cultural, entertainment, & recreation	Y	Y	N

Source: Adapted by Coffman Associates, Inc. from **Guidelines for Considering Noise In Land Use Planning and Control**, Federal Interagency Committee on Urban Noise, June 1980.

TABLE 7I (continued)
Land Use Compatibility Standards
Phoenix Sky Harbor International Airport

NOTES FOR TABLE 7I

1 All residences in the N-1 and N-2 Zones are marginally noise compatible. As a condition of issuance of a building permit, the builder of the dwelling shall soundproof to achieve a 25 dB reduction from outdoor noise levels (NLR) in the N-1 Zone and a 30 dB NLR in the N-2 Zone. All such soundproofed residential units should be provided with heating, cooling, and ventilation systems capable of permitting closed windows and doors year round. An avigation easement for noise also shall be provided to the City of Phoenix.

Soundproofing will not eliminate outdoor noise problems. However, building location and site planning, design and use of berms and barriers can help mitigate outdoor noise exposure particularly from ground level sources. Measures that reduce noise at a site should be used wherever practical in preference to measures which only protect interior spaces.

2 Measures to achieve NLR of 25 must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas or where the normal noise level is low.

3 Measures to achieve NLR of 30 must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas or where the normal noise level is low. Motels and hotels in Ldn 75 contour must achieve NLR of 35 in all areas.

4 Land use compatible provided special sound amplification system is installed.

5 A noise easement and non-suit covenant should be provided to the City of Phoenix for all new residential development and other specified noise-sensitive uses.

6 Includes mobile homes and recreational vehicles as defined in the Phoenix Zoning Ordinance.

KEY TO TABLE 7I

SLUCM **Standard Land Use Coding Manual,** U.S. Urban Renewal Administration and Bureau of Public Roads, 1965.

Y (Yes) Land use and related structures compatible without restrictions.

N (No) Land use and related structures are not compatible and shall be prohibited.

NLR Noise Level Reduction (outdoor to indoor) to be achieved through incorporation of noise attenuation into the design and construction of the structure.

25 or 30 Land Use and related structures generally compatible; measures to achieve NLR of 25 or 30 dB must be incorporated into design and construction of structure.

sponsorship of new legislation to permit a local fair disclosure rule. A sample fair disclosure form, such as would be signed by an intended buyer, is provided in Appendix E.

While a legally mandated fair disclosure policy does not appear to be possible around Phoenix Sky Harbor International Airport at this time, an informal effort to explain the noise compatibility needs of the airport is recommended for immediate adoption. This would involve efforts by the airport management and the two cities to inform the public, government officials, real estate people, and lenders about the airport and the need for land use compatibility in the area. Efforts should be made to speak with local chambers of commerce, service clubs, planning commissions, city councils, and real estate and lenders organizations. The wide distribution of the Part 150 study summary brochure is also suggested.

It is important that copies of the final technical reports for the Part 150 study be available for public review. At a minimum, they should be placed at public libraries and at municipal offices in the study area.

It is particularly important that land use planning officials have a current version of the Part 150 Noise Compatibility Program and are kept up-to-date on proposed changes in the plans.

LU-3 Comprehensive Planning

It is proposed that Phoenix and Tempe adopt the final Part 150 Study as the airport compatibility element of their general plans. They should amend their current general plan documents as necessary so as to give the airport compatibility element full force and effect. The City of Scottsdale, Maricopa County, the Indian community and the City of Mesa may also elect to adopt the Part 150 Plan to serve as a guide in future development decisions.

LU-4 Planning Commission

It is recommended that guidelines be adopted for planning commissions, boards of zoning adjustment and planning departments in Phoenix and Tempe requiring them to consider the impact of airport noise on community development proposals and applications for variances and special uses. The proposed noise overlay zones in Phoenix and Tempe will spell out in considerable detail the uses that are acceptable or unacceptable, and the noise attenuation measures that are required, in the noise-impacted area. However, cases may arise on occasion where the noise overlay zones do not apply, leaving the planning commission, board of zoning appeals, or planning department to make judgments as to the advisability of a development proposal. The adoption of internal review procedures requiring the consideration of airport noise on special development proposals would help ensure that this important concern is not neglected.

The following guidelines should be considered.

- Determine the sensitivity of the subject land use to aircraft noise exposure levels. The land use compatibility requirements shown in Table 7J can be used for this purpose.

- Discourage the approval of rezonings, exceptions, variances, conditional uses, and special uses which introduce noise-sensitive development into areas impacted by noise exceeding Ldn 65.

- Locate noise-sensitive activities indoors and on the side of the building opposite the airport and/or flight tracks to the extent possible.

- Locate noise-sensitive public facilities outside the Ldn 65 contour, if possible; otherwise require building construction to attenuate interior noise levels to 45 Ldn.

- Secure noise easements from noise-sensitive development, as defined by the noise overlay zone, approved within the Ldn 65 contour.

- Use the orientation, design, height and landscaping of noise-compatible uses to screen residences and other noise sensitive uses from ground noise generated at the airport.

- Advise prospective developers at the earliest opportunity during building and other land use reviews of the existing and anticipated noise levels over the property under consideration.

- Advise the airport management of development proposals involving noise-sensitive land uses within the noise overlay zones, beneath flight tracks, or near areas of frequent noise complaints.

LU-5 Soundproofing

Soundproofing of existing noise-sensitive land uses was rated very highly by both consultant and local planners. Soundproofing may be applied to all type of residences, nursing homes, hospitals, schools, churches, and any other use for which it can be clearly demonstrated that aircraft noise substantially interferes with customary indoor activities. A condition of a soundproofing program should be that the owner grant the airport an avigation easement for noise and sign a nonsuit covenant. The proposed soundproofing program for the Sky Harbor vicinity is comprised of high-priority, near-term actions and lower-priority, long-term actions. Both sets of actions consist of soundproofing programs to be operated by the City of Phoenix and the City of Tempe, in their respective jurisdictions.

The near-term program includes eligible residences and schools in the Ldn 70 contour of the 1992 noise abatement program. Small, adjoining tracts of residences and schools in the Ldn 65-70 contour range are also included in the near-term program. The near-term program is scheduled to be implemented by 1992. The long-term program, scheduled to be implemented after 1992 (but earlier if possible), includes eligible residences in the higher levels of the Ldn 65-70 range not covered by the near-term program. The locations of these areas are shown in Exhibit 7G.

Homes in areas zoned industrial or commercial were excluded from the short- and long-term programs since they are in structures which can transition to nonresidential use relatively easily. Homes on scattered arrangements lacking neighborhood identity in areas outside of the Ldn 70 contour were also excluded from the long-term program. Large tracts of homes in the lower ranges of the Ldn 65-70 contour band were excluded from the long-term program because most homes subject to those levels do not usually qualify for FAA funding assistance.

As indicated earlier in the discussions of rejected measures, a portion of the recommended soundproofing program is combined with a redevelopment program. All of the areas recommended for soundproofing in Phoenix are composed of older, smaller homes, many of which are in varying degrees of structural deterioration. As such, it would be an inefficient investment of funds to install thousands of dollars worth of soundproofing in a home that was in a spiral of deterioration. Therefore, for all Phoenix areas, it is recommended that soundproofing of sub-standard dwellings be implemented only as part of a neighborhood rehabilitation program.

The homeowner of a sub-standard dwelling could take private action to bring it up to code or could wait for the public rehabilitiation program. The rehabilitation program would focus on heating, electrical, plumbing, roofing,

foundation, exterior appearance, etc., while the soundproofing program would focus on insulation, caulking, fresh air ventilation system, double-glazed windows, window sashes, door framing, solid core exterior doors, storm doors, acoustical baffling of exterior vents and openings, etc. Air conditioning may be used as a means of providing fresh air exchange, in which case, the homeowner would be required to pay all costs above those of non air conditioned fresh air system. Many of the soundproofing features will not only yield large savings in energy costs for the homeowner but will also contribute to the structures rehabilitation. The city's housing rehabilitation program will benefit from the aviation-user funds contributed to the program, while the airport interests will be relieved of the responsibility of operating a large soundproofing program.

It must be stressed that, under FAA rules, no home or other structure automatically qualifies for soundproofing funds even when located in the Ldn 65 contour. It is necessary to measure each homes interior and exterior sound measurements to determine its attenuation characteristics. The actual attenuation of the structure (in dBA) is subtracted from the computer-calculated aircraft Ldn value of the site to determine if interior Ldn levels in sleeping areas will be above 50. If so, the structure will then be qualified for FAA funding assistance. For instance, a home at the Ldn 70 contour level, with a measured 20 dBA attenuation value, would qualify. Since most homes have attenuation values of between 15 and 20 dBA, it is rare for a home on the Ldn 65 contour to qualify.

Traditionally, the soundproofing programs begin with small pilot projects in which the management system is established, consultants, suppliers and contractors are located, techniques are reviewed and tested, and results are monitored. When the program is capable of functioning smoothly on a large scale, the soundproofing efforts are undertaken on a large scale. Since much of the Phoenix program will probably be coupled with neighborhood rehabilitation, it is especially important that pilot programs be established at first.

As indicated earlier in Chapter 6, estimates by a local soundproofing consultant indicate that the average soundproofing of a typical eligible small Phoenix home in the program will be approximately $10,000 while that of a typical eligible larger Tempe home in the program will be approximately $15,000. Both amounts include cost of administrative, legal, consulting, contractor and materials.

There are a total of approximately 2,064 dwelling units in the recommended soundproofing program, 1,353 in Phoenix and 711 in Tempe. Of those in Phoenix, 743 are in the Ldn 70 contour (all in the near-term program) and 610 are in the Ldn 65-70 contour band (843 in the near-term program and 510 in the long-term program). Of those in Tempe, 144 are in the Ldn 70 contour and 567 are in the Ldn 65-70 contour range. All units in Tempe are proposed to be soundproofed in the near-term program. The locations of these areas are shown in Exhibit 7G.

There is one school included in the Ldn 70 contour in Nuestro Barrio east of 7th Street. However, this school is a new, earth-sheltered structure that should require no additional soundproofing. Included in the recommended soundproofing program are six Phoenix schools located in the 1992 abated Ldn 65-70 contour band. The locations of these schools are shown in Exhibit 7G.

Only detailed acoustical evaluation can determine which of these structures should be soundproofed. For all six schools included in the recommended soundproofing program, the Phoenix school system should be the final judge of whether to enter into the soundproofing program. The intent of this Part 150 Study is to qualify the city for the 75% FAA matching grants to accomplish the program if the school officials desire to participate as a project sponsor. A typical, rule-of-

PHOENIX
SCOTTSDALE
TEMPE
RESERVATION
PHOENIX
TEMPE
COUNTY
COUNTY
TEMPE
MESA
COUNTY
MESA
26R
8R
26L
75
70
65
INTERCHANGE
INTERCHANGE
INTERCHANGE
RIVER
SOUTHERN
PACIFIC
BROADWAY
BASELINE
SALT RIVER
Salt River Reservation Clinic
Salt River Indian Day Sch
Arizona State Hospital Farm
Crosscut Canal
Grand Canal
Normal Jct
Trailer Park
Golf Course
Stadium
Maricopa Cemetery
U of Arizona Experimental Farm
Peterson Nurseries
Alma Sch
UNDER CONSTRUCTION

LEGEND

- Generalized Study Area
- Detailed Study Area
- —65— 1992 Abated Noise Contour
- Residences-Near Term

NORTH

0 4000 8000

SCALE IN FEET

Exhibit 7G
PROPOSED LOCATIONS OF SOUNDPROOFING PROGRAMS (EAST)

Sky Harbor
INTERNATIONAL AIRPORT

LEGEND

- Generalized Study Area
- Detailed Study Area
- —65— **1992 Abated Noise Contour**
- **Residences-Near Term**
- **Residences-Long Term**
- **Schools**

NORTH

0 4000 8000

SCALE IN FEET

Exhibit 7G
PROPOSED LOCATIONS OF SOUNDPROOFING PROGRAMS (WEST)

Sky Harbor INTERNATIONAL AIRPORT

thumb cost of school soundproofing is approximately $500,000, but the actual amount can vary widely -- probably less for smaller schools such as are located west of the airport.

POPULATION IMPACTS AFTER LAND USE MITIGATION

Table 7I shows the population impacted by noise assuming full implementation of the Noise Compatibility Plan, including all recommended noise abatement and land use management measures. The table depicts existing residents remaining within the Ldn 65, 70 and 75 contours in 1987, 1992, 1997 and 2007, minus any residents of homes which are soundproofed or found to be adequately soundproofed.

The total number of significantly noise-impacted residents can be expected to drop from 30,993 today (1987) to 4,054 by 2007 due to a combination of effects from quieter aircraft, noise abatement measures, and the soundproofing programs. This represents an 87% reduction in impacts over the 20-year period.

TABLE 7I
Population Impacts
(Current Population)

Scenario	Community	Ldn Level 65-70	70-75	75+	Total
1987 Unabated	Phoenix	8,781	9,415	4,232	22,248
	Tempe	6,335	2,230	0	8,565
	Total	**15,116**	**11,645**	**4,232**	**30,993**
1987 Noise Abated Only	Phoenix	11,158	6,621	2,566	20,345
	Tempe	5,087	1,060	0	6,147
	Total	**16,245**	**7,781**	**2,566**	**26,592**
1992 W/Mitigation*	Phoenix	11,274	373	0	11,647
	Tempe	2,565	140	0	2,705
	Total	**13,839**	**513**	**0**	**14,352**
1997 W/Mitigation	Phoenix	8,596	35	0	8,631
	Tempe	1,183	0	0	1,183
	Total	**9,779**	**35**	**0**	**9,814**
2007 W/Mitigation	Phoenix	3,534	0	0	3,534
	Tempe	520	0	0	520
	Total	**4,054**	**0**	**0**	**4,054**

* Mitigation includes effects of noise abatement measures and land use management measures. Residents of homes that are soundproofed, or are found to be adequately soundproofed already, are considered to be no longer impacted for the purposes of this comparison.

IMPLEMENTATION PLAN

While the noise abatement and land use measures outlined in the previous sections should significantly reduce the degree of aviation noise exposure on the residents of areas surrounding the airport, no real gains will be accomplished unless the plan is implemented. The following section discusses program implementation and provides a schedule which outlines the recommended timing of each measure in order to bring the plans to fruition.

INITIATING ACTIONS SHORT-TERM NOISE ABATEMENT PLAN

It is recommended that the following actions be taken as soon as practical in order to implement the short-term measures of the recommended plan and to set in motion the noise exposure reduction. A list of documents which must be created or amended to implement the plan is contained later in this chapter.

NA-1 Establish a preferential runway use program calling for departures to the west under specified calm wind conditions.

It is recommended that the airport and community representatives continue to closely monitor the utilization of the runways and continue negotiations with the FAA ATCT to equalize traffic flows to both the east and west. Airport noise abatement staff and ATCT are developing a preferential runway equalization program which takes into consideration the recent operational history of the airport and uses that history to define optimum operating flows. The data indicate that during daylight hours, Runways 26R/L should be designated as preferred for departure when winds are rated as calm and of more than four knots from headings 180 through 360. During nighttime hours, the hours of preferred flow to the east or to the west should be separated by time to equalize traffic flows. A late night runway change may be accomplished without serious disruption of operations due to the low night activity levels. The time of such a change should be continually reviewed in conjunction with actual operating times to fine tune the equalization of flow. These preferences will, according to local long-term wind records, result in the equalization of traffic flows to the east and west of the airport.

The Airport's program of runway equalization should be an informal runway use program implemented via the designation of preferential runways. All preferential runway selections and definitions should be made in compliance with FAA Order 8400.9. The airport may designate the westerly flow as preferred for use under the above specified wind conditions. In either case, a letter of agreement should be endorsed between the ATCT, TRACON and the airport sponsor to outline the runway equalization preference.

Information regarding the measure should be distributed to all tenants and potential users via letter and publication in the **Airmen's Information Manual** and regional **Airport Facility Directory.** It should remain the prerogative of the pilot in charge to request the use of a different runway if he/she feels it necessary to protect the safety of his/her passengers and aircraft. The airport should communicate with each user air carrier to solicit endorsement of the equalization program on an informal basis. Users which consistently operate in contradiction to the preferred flows should be contacted to encourage their participation in the noise abatement runway use program.

NA-2/3 Establish departure thrust reduction procedures.

The airport should adopt the FAA's Advisory Circular 91-53 and NBAA's Close-In Noise Abatement Departure procedures as preferred for use by turbo-jet aircraft departing from all runways at the airport. The airport should solicit a letter of agreement from

each scheduled operator pledging to use the procedure, unless precluded by reason of operational safety. The agreement should call for reductions to normal climb thrust for high-bypass ratio engined aircraft, reduction to no more than 1.7 EPR for low-bypass ratio two and three engine aircraft originally designed for air carrier use, and for thrust to be reduced to normal climb thrust for aircraft with slow flap retraction rates, all at altitudes provided in the guidelines. Amend the Standard Instrument Departure Procedures to incorporate encouraged use of thrust cutbacks notations for turbo-jet departures. Post notice of encouraged use of NBAA procedures at terminal, pilots' lounges, FBO's, and corporate hangars. Publish in **Airmen's Information Manual** and **Airport Facility Directory.** Install signs adjacent to the taxiways at runway ends to remind jet pilots of noise abatement departure procedures.

NA-4 Implement, at the middle marker, a left-turn to a heading of 245 degrees by all jet and large propeller aircraft departing on Runway 26L and using the Mobie, Stanfield or Buckeye SIDs.

The first step to implementing this procedure is to construct a second cross field taxiway between the two runways. This is to be accomplished during the construction of Terminal IV and is expected to begin in 1989. Prior to the completion of the taxiway, a letter of agreement between the airport, the ATCT and TRACON may be prepared. This agreement should outline the understanding that when both runways are in service and the departure flow is to the west, aircraft using the Payso or Cooper SIDS will be typically assigned to Runway 26R and aircraft using the Mobie, Stanfield, or Buckeye SIDs will be typically assigned to Runway 26L. Failure to implement this measure could result in airspace crossing conflicts as aircraft turn to their enroute courses thirteen miles west of the VORTAC.

The left-turn procedure may be implemented through the revision of the Mobie, Stanfield and Buckeye Standard Instrument Departure procedures to reflect the turn at the middle marker of the Runway 08R ILS, located 0.4 miles west of the runway end. The turn location 13 DME west of the SRP VORTAC should be retained. ATC and TRACON will be responsible for revision of the procedures, but airport management should request their development. The measure will need to be flight tested to assure its safety, a process which will be initiated by air traffic personnel. ATC should begin redesign, as necessary, of approach procedures for small aircraft southwest of the airport which may conflict with the recommended departure procedure.

NA-5 Implement a departure route procedure from Runways 08R/L for all jet and large propeller aircraft to overfly the Salt River to a position one mile west of the SRP VORTAC.

This measure has been referred to as the One DME departure procedure. The measure has been designed by ATC and TRACON and implementation was scheduled in late 1988. The measure calls for aircraft flying the SIDs from Runway 08L to proceed along runway heading to intercept the SRP 265 radial, while departures on Runway 08R turn left to a heading of 070 degrees to intercept the same radial. Upon intercepting the radial all aircraft fly that radial until reaching a location one mile west of the VORTAC (at approximately McClintock Drive) where turns to enroute courses are initiated.

NA-6 Standardize initial departure and final approach routes by helicopters using Sky Harbor Airport.

Analysis and revision of the helicopter traffic flows into and from the airport are beyond the scope of the Part 150 Study because they can impact helicopter traffic patterns within the entire

metropolitan region. However, this planning process has indicated a community concern relative to helicopter noise levels, although helicopters operating to and from Sky Harbor have virtually no effect on the location of the airport's noise contours. The Airport should encourage the TRACON and ATC, in consultation with the airport and area wide planning agencies, to develop standard helicopter approach and departure routes to and from Sky Harbor. The goal of such an analysis should be to structure standardized routes for such traffic which take advantage of the presence of noise compatible corridors on the ground. The structuring of traffic routes to accommodate a single airport may seriously impact operations at several other facilities and should not be considered alone.

NA-7 **Continue existing runup policies.**

No implementing action is required on this measure.

NA-8 Encourage airlines to utilize Stage III aircraft, especially for late night departures.

The Airport should contact each carrier serving the community with scheduled air service with requests encouraging the use of Stage III aircraft, particularly during the night hours. A periodic dialogue between the parties may be found advantageous for continuing implementation of this recommendation. Airport staff should initiate filing methods designed to record, by aircraft type, operation type, time of operation, and carrier the proportion of traffic which meets Part 36, Stage III as compared with Stage II noise levels. The results of this record keeping effort should be published in a annual report to the community on the implementation and effects of the noise compatibility plan. As additional incentive, positive publicity should be provided for individual carrier achievements in the conversion of traffic to Stage III equipment.

NA-9 Encourage the use of established Published Visual Approaches during VFR conditions, traffic permitting.

The procedure for visual approaches has been implemented. The Airport should request the ATCT to deny short final approaches by large jets which intercept the final approach segment within the designated visual approach reference points, or at altitudes below those recommended in the published approaches.

INITIATING ACTIONS
LONG-TERM ABATEMENT PLAN

The initiating actions necessary for a long-term program of noise abatement depend upon the resolution of the question of a third parallel runway. If no runway is constructed, the short-term program should be continued, and if its full implementation has not been achieved, appropriate initiating actions should continue.

If, on the other hand, a third runway is constructed at Sky Harbor south of existing Runway 08R-26L, additional actions will be required to implement the two noise abatement recommendations associated with the use of that facility. Each is discussed in the following paragraphs.

NA-10 Implement a turn by all jet and large propeller aircraft departing new Runway 26L to a heading of 245 degrees upon crossing the middle marker (assuming such is in place) for Runway 08R approaches. If no middle marker is constructed, the turn location should be defined relative to the SRP VORTAC. Maintain that heading until reaching 13 DME from the SRP VORTAC.

NA-11 Implement a departure route procedure which overflys the Salt river to a position one mile west of the SRP VORTAC for use by all jets and large propeller aircraft departing Runway 08R. (Extended One DME departure)

Departures from proposed Runway 08R which use SIDs should be routed via a heading of 070 degrees to intercept the 265 radial from the SRP VORTAC and continue from that interception to fly the One DME departure procedure. The anticipated geometrics of the runways will result in SID departures from proposed Runway 08R being flown along a course virtually identical to those flown from existing Runway 08R.

The left turn to a 245 degree heading proposed from Runway 26L for the short term should be duplicated for the new runway, if constructed. This measure will retain the benefits derived by routing traffic over less-densely developed areas.

The actions required to initiate both measures are to request ATC and TRACON to prepare SIDs reflecting departure from the appropriate runway. From new Runway 26L, the turn for Mobie, Stanfield and Buckeye departures should be revised, while from runway 08R, all SIDs should be addressed.

INITIATING ACTIONS SHORT-TERM LAND USE MANAGEMENT PLAN

The following actions listed in Table 7J should be taken as soon as possible in order to set in motion the time consuming efforts to establish local land use regulations for noise, obtain state enabling legislation for fair disclosure (if required) and establish a pilot program for soundproofing. A list of documents which must be created or amended to implement portions of the plan is contained later in this chapter.

LU-1 Noise Overlay Zoning

Both Tempe and Phoenix should adopt noise overlay zoning which sets special requirements and standards for development of noise sensitive land uses in areas exposed to high levels of aircraft noise. Tempe should amend City Ordinance No. 808, Zoning of the City of Tempe, and Phoenix should amend City Ordinance No. G-449, the Zoning Ordinance for the City of Phoenix, to include the provisions of the proposed noise overlay zoning. Suggest wording of the amendment is provided in Appendix E, subject to City attorney review. Both Phoenix and Tempe should also amend the official city zoning maps to contain the Noise Overlay Zoning boundaries as adopted from the suggested boundaries shown in Exhibit 7F.

LU-2 Fair Disclosure Policy.

In initiating implementation of this recommendation, it is first necessary to determine if state enabling legislation is required and does not exist. Presumably, the municipal attorneys and State Attorney General will make that determination. If State enabling legislation must be obtained, then that would be the next required step.

Having resolved the State enabling issue, the local ordinances should then be passed establishing a fair disclosure requirement for listing and sale of all property within a specified area. It is suggested that the outermost Ldn 65 contour for the current and forecast conditions could be the basis for the area of required notification. A sample format of a fair disclosure statement is provided in Appendix E.

LU-3 Comprehensive Planning

In adopting this Part 150 Noise Compatibility Plan as an element of their General Plans, Phoenix and Tempe have two options. First, they may adopt the entire study as published and retain official copies for public inspection in their offices, or they may extract pertinent background data and recommendations and publish them in a reorganized document.

LU-4 Planning Commission Review

Items which the planning commissions boards of zoning adjustment and planning staff of Phoenix and Tempe could adopt for use in internal review

actions are shown in the Selected Measures section of this chapter. Routine, conscious consideration of these guidelines will aid them in considering the impact of aircraft noise on community development proposals, applications for variances and special uses, and rezoning requests. Local staff should be able to add to this list once they are accustomed to working with it.

LU-5. Soundproofing

The customary initiation of a soundproofing program begins with pilot programs of each community to establish an administrative organization and procedures, identify areas and home within areas to be measured for noise attenuation, arrangements for acoustical consultants, and funding. These efforts should identify two small areas in Phoenix (say, one north of the airport and one in Nuestro Barrio) and two small areas in Tempe (say, one in the newer townhouse development and one in the older single-family home development). Each area could contain 5 to 10 homes. These homes should then be soundproofed in various ways and the results tested for effectiveness, costs, and difficulty.

The FAA will provide funding assistance for such programs, but it is recommended that the pilot program not be delayed for the time required to get FAA funds. After the pilot programs are complete the two communities should establish a prioritized implementation schedule and apply for FAA funds to carry it out.

At the same time that Phoenix develops its pilot program for soundproofing, it should establish a pilot program for a joint neighborhood rehabilitation program on the same scale. Problems to be worked out include defining the total joint improvements to be made to homes, the eligible costs for FAA funding assistance, and administration and technical training requirements.

The Phoenix school system should initiate its own pilot program if it desires to participate. This program should be handled separately because the problems and techniques are so different and since the School Board must set its own priorities for use of its local funds to match the Federal grants.

TABLE 7J
Actions Required To Implement Elements of PHX Part 150 Noise Compatibility Plan

Resolutions:

1. City of Phoenix and City of Tempe Councils adopt resolution notifying the FAA that they generally concur with the recommendations of the Noise compatibility Program and that they will attempt in "good faith" to implement the recommendations.

2. If necessary, City of Phoenix Aviation board designate Runway 26R/L as preferred for use during calm wind conditions (see text of recommendation NA-1 for specifics).

3. City of Phoenix Aviation Board adopt FAA AC 91-53 and NBAA Close-In Departure Procedure as encouraged for use by jet aircraft using Phoenix Sky Harbor International Airport (see text of recommendations NA-2 and NA-3 for specifics).

TABLE 7J (Continued)
Actions Required To Implement Elements of
PHX Part 150 Noise Compatibility Plan

4. City of Phoenix Aviation Board request FAA ATCT and TRACON revise Standard Instrument Departure procedures for the airport to incorporate recommended departure routes east and west of the airport (see text of recommendations NA-4 and NA-5 for specifics).

5. When proposed Runway 08R-26L is constructed, City of Phoenix Aviation Board request that FAA ATCT and TRACON prepare Standard Instrument Departure procedures from Runway 26L to reflect a noise abatement left turn from runway heading to 245 degrees. Also request the revision of SIDs from Runway 08R to incorporate One DME departure procedure (see text of recommendations NA-8 and NA-9 for specifics).

6. City of Phoenix and City of Tempe Councils adopt resolution directing planning commission, planning staff, and board of zoning adjustment to develop and use guidelines which consider aircraft noise in discretionary project review actions.

7. Phoenix school board direct appropriate staff unit to establish a pilot program to evaluate techniques, priorities, and management systems for soundproofing eligible schools.

8. City of Tempe Council direct appropriate agency to establish a pilot program to evaluate need for and techniques of soundproofing as well as administrative requirements.

9. City of Phoenix Council select an appropriate agencies to establish a pilot program to evaluate the need for and techniques of soundproofing and to establish a combined pilot soundproofing and rehabilitation program.

Ordinances and Legislation

1. City of Phoenix and City of Tempe adopt the Part 150 Study as the noise compatibility element of the General Plans.

2. Arizona legislature enact legislation enabling fair disclosure requirements around civilian airports.

3. City of Tempe and City of Phoenix Councils enact ordinances requiring fair disclosure of high aircraft noise levels when listing and selling all real property.

4. City of Tempe and City of Phoenix Councils adopt noise overlay zoning and amend appropriate zoning maps and text.

Letters of Agreement

1. Amend current Letters of Agreement between PHX ATCT, TRACON, scheduled carriers and airport management to reflect preferential runway selection criteria for departures on Runway 26R/L for both daylight and nighttime periods (see text of recommendation NA-1 for specifics).

TABLE 7J (Continued)
Actions Required To Implement Elements of
PHX Part 150 Noise Compatibility Plan

2. Solicit Letters of Agreement between Airport and each scheduled or based jet operator endorsing the provisions of FAA AC 91-53 (or NBAA Close-In) thrust reduction procedures and specifying a 1.7 EPR or less thrust preferred for noise abatement portion of climb segment by aircraft with high-bypass ratio engines (see text of recommendations NA-2 and NA-3 for specifics).

3. Prepare Letter of Agreement between PHX ATCT, TRACON and airport management to reflect assignment of departure runways based on SID selected from Runways 26R/L (see text of recommendation NA-4 for specifics).

Tower Orders

1. Prepare sequential Tower Orders reflecting each of the noise abatement measures as it is adopted or implemented.

Airmen's Information Manual/Airport Facility Directory

1. If necessary, add calm wind preferential runway use program information. (recommendation NA-1)
2. Add 91-53 and NBAA Close-In departure procedures. (recommendations NA-2 and NA-3)

PHX Pilot's Guide

Publish Phoenix Sky Harbor International Airport Pilot's Information Bulletins or brochures outlining all measures adopted as a portion of the noise abatement program. Distribute copies to all FBO's, pilot lounges, airlines, and within the terminal building. The guide should include both narrative and maps to highlight abatement procedures and sensitive land use areas.

Signs and Notices

At ends of all runways, place signs which read "Noise Abatement Procedures In Effect. Use Of 91-53 or NBAA Close-In Departure Procedure Is Encouraged. Consult Instrument Charts for Details"

IMPLEMENTATION SCHEDULE

The implementation schedule outlined in Table 7K is based on the assumption that the airport administration, various elements of the Federal Aviation Administration, and local land use jurisdictions will expeditiously review the recommendations and supporting rationale of the program and will aggressively implement the plan so as to complete all actions as soon as practical. Several of the noise abatement and land use management actions may be initiated in the near-term; however, other short-term measures must rely on the completion of a new cross field taxiway or completion of local area plans. Long-term aviation related measures are dependent upon the construction of a third parallel runway.

It is assumed here that no major interruptions of implementation in the short-term program will result from litigation or from an EIS process. Minor

interruptions and obstacles are allowed for in the schedule. In summary, we believe that the schedule is realistic if the program is implemented aggressively by the airport and the communities and if the general public and participating governmental agencies work to support the plan.

IMPLEMENTATION RESPONSIBILITIES

The agencies and groups with the primary responsibilities for implementing the program are listed in Table 7L at the end of the chapter. Overriding responsibilities rest with the airport management and the Federal Aviation Administration, with participatory roles being played by airport users, local and regional planning agencies and others. The airport operator must be prepared to play the lead role in managing and coordinating the entire program. While the airport has direct authority over only limited aspects of the recommended program, it is essential that it be involved in consultations with the various implementing agencies to encourage their cooperation in putting the program in place.

The airport management also has an important public relations role to play in informing the public and local government officials about the airport and the need for land use compatibility in the airport area. In addition to informal efforts to communicate with local officials and community groups, the wide distribution of the Part 150 Study summary brochure is suggested. It is also important that copies of the final technical reports for the Part 150 Study be available for public review. At a minimum, they should be placed at public libraries and at local government offices in the area.

TABLE 7K
Implementation Schedule
Program Measures

		Begin Year	Complete Year
NA-1	Calm-wind Preferential Use Program	1988	1989
NA-2/3	91/53 and NBAA Departure Procedures	1988	2000
NA-4	Runway 26L Departure Turn to 245 Heading	1990	1991
NA-5	Runway 08R/L Departure Route to One DME	1988	1989
NA-6	Investigate Helicopter Route Corridorization	1989	1990
NA-7	Continue Existing Runup Policies	1989	1989
NA-8	Encourage Stage III Operations	1989	2007
NA-9	Encourage Published Visual Approach Use	1989	2007
NA-10	Revise One DME for proposed Runway 08R	Unknown*	Unknown*
NA-11	Proposed Runway 26L Departure Turn to 245 Heading	Unknown*	Unknown*
LU-1	Noise Overlay Zoning	1989	1990
LU-2	Fair Disclosure Policy	1989	1990
LU-3	Comprehensive Planning	1989	1989
LU-4	Planning Commission Review	1989	1989
LU-5	Soundproofing	1989	1995

* Implementation is dependent upon the construction of proposed new parallel Runway 08R-26L. Should the construction not be accomplished, the associated measures are not recommended.

The FAA is involved in the development and review of this plan at the local, regional and national level, as well as at functional levels such as air traffic control, for such items as safety standards, and planning. The FAA will also be involved in the review and approval of grant applications for funding various items incorporated into this program. The Aviation Trust Fund, financed from various excise taxes on airport users and administered by FAA, is, aside from bonding, the largest potential source of outside capital improvements financing for the airport. These funds potentially are available for land acquisition and airport improvements. Additionally, the FAA provides technical assistance and facilities such as navigational aids and will have the primary responsibility in managing the recommended air traffic control measures.

The air carrier, commuter and general aviation users, and indirectly the flying public, participate in the noise abatement procedures and in the plan implementation by virtue of fuel and ticket taxes, and other charges, as well as the direct implementation of recommended operating procedures. These interests are usually willing to pay the cost of abating their noise, but only if local government is will take action to prevent additional encroachment by noise-sensitive land uses.

Of course, the general public have played an important role in airport issues at Phoenix Sky Harbor International Airport and will continue to do so. The public's role in implementing the program can come in two forms: pressure to maintain momentum and participation in the plan; and support during critical stages of plan implementation.

Responsibility for Noise Abatement Measures

The air traffic control tower at the airport and the TRACON for the area will have the chief responsibility in implementing all of the operational noise abatement recommendations addressing runway use and flight routes. The airport has the responsibility to consult with the tower to ensure that the procedures continue to be followed, to learn of any possible problems with the procedures, and to help in making any needed adjustments to the procedures. The aircraft operators, including the air carriers and the National Guard, have the responsibility to fly the procedures and designated flight routes to the best of their ability.

The jet operators, with the exception of the military operators, will be responsible for flying their aircraft in accordance with the guidelines of FAA AC 91-53 or NBAA Close-In (or equivalent) departure thrust reduction procedures.

The measure calling for the development of helicopter routings will fall within the jurisdiction of several agencies. It appears that the lead agencies will be the FAA ATCT and the TRACON, with input provided by the airport and the Maricopa Association of Governments.

Responsibility for Land Use Management Measures

Primary responsibility for implementing the recommendations of the Land Use Management Plan rests with the City of Phoenix and the City of Tempe, through their appropriate land use regulatory agencies and their neighborhood rehabilitation agencies. The noise overlay zoning comprehensive planning and planning commission review measures should be initiated by a formal request of the City Councils to the city planning commissions and staffs.

Responsibility for the fair disclosure policy should apply to the City of Phoenix and City of Tempe, working in concert to promote legislation which will enable the cities to require fair disclosure. Once passed, the two councils must then enact local

ordinances establishing the fair disclosure program in Phoenix and Tempe.

The responsibility for the soundproofing measure also falls on the two cities and the Phoenix school system. The airport proprietor has acted as the agent to conduct this Part 150 Study and to qualify the two communities for FAA soundproofing grants. Additionally, the airport proprietor should collect the local share of the soundproofing program out of airport revenues, particularly landing fees.

CONTINUING PROGRAM

The success of the Noise Compatibility Program requires not only an initial effort to implement the proposed noise abatement and land use management recommendations but also a continuing effort to monitor the effectiveness of the program and to identify new or unanticipated problems and changing conditions. Several components of a Continuing Program are recommended at Phoenix Sky Harbor International Airport. They are discussed below and summarized in Table 7G.

CP-1. Noise Monitoring and Contour Updating

It is important that airport management take steps to evaluate participation in the recommendations of the noise abatement plan. If significant deviations are observed, the airport management should promptly investigate the reasons for any deviations and relay its concerns and findings to the appropriate officials. It is also important that airport management periodically check with the air carriers, the National Guard and air traffic control regarding the status of the Plan's implementation. This can serve to stress the importance the airport places on the program while providing an opportunity to find out about difficulties with the application of the program.

The recommended noise abatement plan for the airport does not warrant a permanent noise measurement program designed to continuously monitor noise levels at permanent stations in the airport vicinity. The installation of a continuous measurement system is justified if measures are implemented which set specific noise limits at specific locations. Such measures are not recommended in this program.

However, the average noise levels in the airport environs should be monitored through periodic measurement at a series of standard sites. The Airport has previously established several sites which are used to monitor noise levels on an infrequent basis. It has also acquired several measurement units capable of providing cumulative noise levels.

It is recommended that a structured program of noise measurement be implemented to periodically measure average noise levels so as to determine the adequacy of noise modeling to reflect actual noise conditions. A program consisting of no less than ten consecutive days of continuous measurement at each location is recommended each calendar quarter. The cumulative average day Ldn noise levels should then be calculated for each consecutive four quarter period. These averages will allow the airport to remain current in its knowledge of existing noise levels throughout the area.

It is further recommended that Ldn contour maps be reviewed every two years and updated if equivalent noise energy levels change by more than 17 percent from existing or anticipated conditions. Taking runway utilization, activity levels, fleet mix, and weather conditions into account, noise levels

(measured in Ldn) should be mapped and compared to previously calculated noise contours and to measured annual averages at the monitoring sites to identify any major discrepancy between what actually occurs and what was predicted to occur. The trigger mechanism for recalculation of noise contours may be the exceedence of a 17 percent change in the cumulative noise energy as indicated by the FAA's Area Equivalency Method (AEM) for estimation of noise contour areas or a variation of 1.5 Ldn over the average of four consecutive quarters between measured and modeled noise levels at any single measurement site.

Continuous flight track monitoring has been suggested to enforce compliance with the use of flight route measures. The technology is not yet available to continuously monitor flight tracks and have that information immediately available to the airport so as to respond to individual deviations. However, technology is available which will allow the airport to periodically sample flight track data or determine the degree to which a flight or large group of flights deviates from a predefined flight route. Such technology, when commercially available, would allow the airport to draw periodic samples of overflight information for specific locations in the community and may be of interest in evaluating the effectiveness of the recommended traffic routings. After system acquisition, such tracking may be accomplished during the quarterly noise measurement program.

Without a direct interface with air traffic control radar, the system is not yet capable of providing rapid information returns for immediate noise complaint follow up. The best systems available in 1988 for flight track monitoring require approximately two weeks to acquire and process the desired information. This process requires the full participation of the TRACON for implementation, and historically, the FAA has not made radar flight tapes available for enforcement purposes.

CP-2. Complaint Response

The complaint response function of the airport staff refers to those activities which record and analyze noise complaints. They include compilation of a noise complaint file, initial response to those complaining, follow up actions and evaluation of individual complaints where possible, and recurrent reports. The airport currently uses an recording methodology to which no changes are recommended. These complaints should be periodically assessed to determine if trends are developing in noise complaints which may be addressed by either staff or contract personnel to determine the advisability of refinements to the recommended plan.

CP-3. Plan Review and Evaluation

A process should be established which provides for the continuing review and evaluation of refinements to the Part 150 Plan. The following process is suggested:

- Periodic review of the plan and any procedural changes suggested by the airport staff, the aviation industry, local planning agencies, or the general public, including preparation of technical descriptions of the proposal and its feasibility and cost. A noise abatement committee may be established, perhaps using members of the Planning Advisory Committee, to conduct this review with assistance from airport noise abatement staff.

- Review by the FAA to determine feasibility and impact of any proposed changes on the air traffic system.

- Review and written response by affected operators, including the number of operations impacted and its anticipated costs or savings.
- Development of a supplemental technical report by noise abatement staff, or updating of the Plan document.

- Publication of an annual report on progress toward full implementation of the Noise Compatibility Program.

It is anticipated that a complete plan update will be needed in 1992 to respond to changing conditions in the local area and in the volatile aviation industry. As a general rule of thumb, a plan update can be anticipated every five to eight years. This update may be needed sooner, however, if planning for major development such as a new runway proceeds or major deviations between forecast and actual operations and fleet mix present themselves and are reflected by periodic measurement.

The airport sponsor should be responsible for publication of the annual report. The report should provide information on measured noise levels, status of program implementation, and a review of the plan evaluation process. It may include annual updates of the noise contours, but these are not considered necessary.

PROGRAM COSTS

Estimated costs for implementing the Noise Compatibility Program are cited in Table 7L, the summary table at the end of the chapter. Most of the measures are expected to involve only relatively minor administrative expenses. Airport users, namely operators of jets and large propeller aircraft, are anticipated to incur slightly increased operating costs as a result of the SID revisions, but these are expected to be small. Direct costs are quantified below and include administrative and legal costs, as well as flight time costs, as applicable. All costs are in 1987 dollars.

Noise abatement measure NA-1 is expected to require staff administrative time to continue negotiation with the ATCT and TRACON for runway equalization or, failing achievement of a balanced flow, to revise operating orders to implement preferential calm wind procedures, but operating costs are not expected to change from those of the currently authorized runway utilization. Measures NA-2 and NA-3 will require administrative costs to communicate with users and to finalize letters of agreement. The operating cost reduction for the departure thrust cutback procedure should be offset by increased costs of delayed climb to cruise altitude. The cost associated with on-airfield signing at runway ends is minimal.

The separation of westerly departure flows between the two runways (measure NA-4), based on SID selected, will result in an unknown increase in the ground taxi time for some departing flights, but the costs associated with delays for flight separation will be decreased as a result of the measure. The cost of the cross field taxiway which makes this measure feasible is assigned to the Terminal IV construction project and not to the noise abatement program. Any unanticipated additional cross field taxiways which may be built in the future would benefit the noise abatement program, but not necessarily be required by it.

The initial departure routing procedures (measures NA-4 and NA-5) will, using block hour operating cost data provided in the Winter 1988 edition of the **World Aviation Directory**, cost an estimated $150,000 dollars per year (1992 operations levels) for the scheduled carriers to fly. In addition to the operating costs of the turn measures, the ATCT will incur administrative expenses in evaluating the procedures and revising the affected SIDs to reflect the initial departure routings. The ATCT may also incur the cost of preparing an environmental impact statement for the departure turn from Runway 26L.

Measures NA-6 and NA-7, as well as the recommended measures of the continuing program (CP-1, CP-2 and CP-3), are administrative in nature. The development of initial and final helicopter flight corridors may be accomplished by ATCT and TRACON administrative staff. The continued runup policy will incur only

administrative costs as well. The continuing program measures should not require additional staffing, but the periodic Part 150 update and annual reporting are expected to incur costs beyond staff time. As a planning guideline, a cost of $300,000 for each full update of the Part 150 Study is suggested, while the annual report production should be budgeted for $15,000 each year. Periodic contour updates likely will be required, for which the airport will incur additional unidentified costs which should not exceed $10,000 annually for simple contour analyses.

The implementation of the administrative measures encouraging the greater use of Stage III aircraft, particularly during nighttime departure operations (NA-8), and the greater use of established Visual Approach Procedures (NA-9), will have little impact on program costs. Since recommendation NA-8 is not a requirement, the cost of conversion should be gradually absorbed in the operating budgets of the serving carriers. The more frequent use of established visual approaches could result in higher operating costs for aircraft now turning to short final approaches, but lesser costs for those now vectored to instrument approach intercept positions which are several miles farther from the airport than the visual approach intercepts. The net result of the approach measure is expected to reduce overall operating costs.

In the longer-term, if proposed Runway 08R-26L is constructed, administrative costs will be incurred by the airport and FAA for the development of departure procedures (NA-10 and NA-11).

Several measures of the Land Use Management Plan are administrative in nature and thus cannot be quantified, although their cost is relatively low. Measures LU-1 (Noise Overlay Zoning), LU-2 (Fair Disclosure Policy), LU-3 (Comprehensive Planning), and LU-4 (Planning Commission Review) are all basically administrative measures. Measure LU-4, also has added costs to real estate agents, public costs of enforcement and education, and potential depreciation costs to property owner/sellers. These costs cannot be quantified at this time (in the absence of details on the exact nature of the fair disclosure program as eventually established), but they are not anticipated to be large.

The major cost for the Land Use Measures will be for the soundproofing program (LU-5). Using the rules of thumb cited earlier ($15,000 per Tempe dwelling, $10,000 per Phoenix dwelling and $500,000 per school), it is calculated that the near-term soundproofing program will cost $16,530,000 and the long-term program will cost $10,665,000 for a total program cost of $27,195,000. This amount is actually a worst case estimate since it is not likely that all of the schools would qualify for funds, especially those at the edge of the 1992 Ldn 65 contour, and it is not likely that all of the homes in the long-term program would qualify. In both cases, it is probable that some schools and many homes in the lower noise exposure range would test out as having sufficient noise attenuation already.

POTENTIAL SOURCES OF FUNDS

As indicated earlier in this section, the estimated cost of the Noise Compatibility Program is comprised of administrative costs, operating costs, and the direct cost of minor taxiway signing. The cost of monitoring software for the continuing program, although administrative in nature, may be eligible for special project funding.

The administrative expenses involved with all of the recommended measures will have to be absorbed by the agencies and organizations involved. Any increases in operating costs will be borne by the aircraft operators, and ultimately, in many cases, the traveling public or freight customer.

The Airport Improvement Program (AIP) administered by the FAA is a source of

funding for Part 150 Study updates and for specialized follow-on investigations.

The airport itself is the primary source of administrative funding. Assuming that the FAA provides full eligible participation in follow-on activities, the airport would have to provide the local share of the eligible costs, as well as funding for the administrative costs for operation of the noise abatement program.

Sources of funds to complete the land use management program are city budgets the Phoenix school district budgets, the FAA and airport revenues. The City budgets should fund all administrative costs of measures LU-1, LU-2, LU-3 AND LU-4. The soundproofing program (LU-5) should be keyed to receipt of FAA grants in aid out of the Airport Improvement Program. These grants should cover up to 75% of the cost of the entire soundproofing program including administrative costs.

The Phoenix School District should pay for its 25% local share of soundproofing schools since these costs will be more than offset by energy savings and structural improvements. The airlines operating at Sky Harbor should finance the 25% local share of soundproofing dwellings. These funds would be raised by the City of Phoenix through the customary landing fee sources.

SUMMARY

The recommended elements of the Noise Compatibility Plan are summarized in Table 7L. Each element is defined in terms of its cost, timing, responsible agent, and source of funds. As can be seen from the table, there are four measures that are clearly costly. The three noise abatement procedures will cost the airlines approximately $350,000 per year in extra flight time. One land use management measure, soundproofing, will cost the airlines an additional $6.0 million over approximately 5 years. The Phoenix school district could spend as much as $750,000 for its local share. The vast bulk of funds would be from the FAA -- $20.4 million.

None of the proposed measures should in any way degrade aviation safety; any which are determined to be risky by FAA review will be dismissed. Nor are any so restrictive or expensive as to degrade airline service to Phoenix. Lastly, each land use measure was selected cautiously with the objective of proposing nothing that should significantly retard rehabilitation, replacement and infilling in the nearby residential areas of Phoenix. For Tempe, sensitivity was given to avoiding destabilizing neighborhoods and to ensure that the Temple Rio Salado Plan is neither thwarted nor is going to exacerbate noise conflicts with land uses to the east of the airport.

What is derived from this plan is a realistic and achievable program which, in combination with the continued acquisition of quieter aircraft by the airlines, will reduce the number of people significantly impacted by noise by 85% over the next two decades, with immediate reductions and continued progress over the planning period. Such a program can unquestionably be accomplished through the diligent efforts of the City of Phoenix, the City of Tempe, the local airlines, and the FAA.

TABLE 7L
Summary of Noise Compatibility Program Implementation 1988 - 2007

Measure	Cost to Airport/ FAA/Local Govt.	Cost to PHX Airlines	Timing	Lead Responsibility	Potential Funding Sources
NOISE ABATEMENT PLAN					
NA-1. Runway Flow Equalization	Administrative	No Net Cost	1989-1990	Airport, FAA Tower, Users	Operating Budgets
NA-2/3. Thrust Cutbacks	Administrative $2-20,000 Signs	None Significant	1989-2007	Jet Operators, Airport	Operating Budgets
NA-4. 245 Departure Runway 26L	Administrative	$250,000 Flight Cost/Yr.	1990-1991	FAA Tower Airport Users	Operating Budgets
NA-5. One DME Departure	Administrative	<$100,000> Flight Cost/yr	1989	FAA Tower Airport Users	Operating Budgets
NA-6. Helicopter Routes	Administrative	--	1989-1990	FAA Tower FAA TRACON MAG	Operating Budgets
NA-7. Continue Runup Policies	Administrative	--	1989	Airport Users	Operating Budgets
NA-8. Encourage Stage III Use	Administrative	--	1989-2007	Airport Users Airport	Operating Budgets
NA-9. Encourage Published Visual Approach Use	Administrative	--	1989-2007	Airport FAA Tower Users	Operating Budgets
NA-10. Revise One DME Departure (New Rwy. 8R)	Administrative	<$100,000> Flight Cost/yr	Unknown	FAA Tower Airport Users	Operating Budgets
NA-11. Revise 245 Departure (New Rwy. 26L)	Administrative	$250,000/yr.	Unknown	Airport Tower Users	Operating Budget
LAND USE MANAGEMENT MEASURES					
LU-1. Noise Overlay Zoning	Administrative	None	1989-1990	Phoenix Tempe	Operating Budget
LU-2. Fair Disclosure Policy	Administrative	Uncertain but probably not significant	1989-1990	Phoenix Tempe State Realtors	Operating Budget
LU-3. Comprehensive Planning	Administrative	None	1989-1990	Phoenix Tempe	Operating Budget
LU-4. Planning Commission Review	Administrative	None	1989-1990	Phoenix Tempe	Operating Budgets
LU-5. Soundproofing	$21,145,000	$6.05 Million	1989-1995	FAA Airlines PHX School Dist Phoenix Tempe	FAA, AIP Landing Fees Operating Budgets
CONTINUING PROGRAM					
CP-1. Noise Monitoring/Contour Update	Administrative $25,000/year	--	Ongoing	Airport	Operating Budgets
CP-2. Complaint Response	Administrative	--	Ongoing	Airport	Operating Budgets
CP-3. Plan Review and Evaluation	Administrative $15,000/year $300,000/5-8 yrs.	--	Ongoing	Airport	Operating Budget AIP Grant for Update of Plan

Exhibit 5

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 Final 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.

Implementation Date	Element
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 NFTMS 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

ATTEST:

Vicky Miel
City Clerk

APPROVED AS TO FORM:

Michael D. House
ACTING City Attorney

REVIEWED AND APPROVED:

Thelda Williams
THELDA WILLIAMS
Mayor, City of Phoenix

City of Tempe,
a municipal corporation

NEIL GIULIANO, Mayor

By: Neil Giuliano

ATTEST:

Helen R. Fowler
City Clerk

APPROVED AS TO FORM:

David R. Merkel
City Attorney

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

Exhibit 6

PHOENIX SKY HARBOR
INTERNATIONAL AIRPORT

Chapter Six
NOISE COMPATIBILITY PROGRAM

Chapter Six

NOISE COMPATIBILITY PROGRAM

The updated F.A.R. Part 150 Noise Compatibility Program for Phoenix Sky Harbor International Airport includes measures to abate aircraft noise, control land development, mitigate the impact of noise on non-compatible land uses, and implement and update the program. F.A.R. Part 150 requires that the program apply to a period of no less than five years into the future, although it may apply to a longer period if the sponsor so desires. This Noise Compatibility Program has been developed based on a planning period through the year 2015.

The objective of the noise compatibility planning process has been to improve the compatibility between aircraft operations and noise-sensitive land uses in the area, while allowing the airport to continue to serve its role in the community,

state, and nation. The Noise Compatibility Program includes four elements aimed to satisfy this objective.

- The **Noise Abatement Element** includes noise abatement measures selected from the alternatives evaluated in Chapter Four, Noise Abatement Alternatives.

- The **Noise Mitigation Element** includes measures to mitigate or reduce the impact of aircraft noise on existing noise-sensitive land uses within the airport noise contours. Potential mitigation alternatives were evaluated in Chapter Five, Land Use Alternatives.

- The **Land Use Planning Element** includes recommended planning policies and land use

regulations for Phoenix, Tempe, Scottsdale, the Salt River Pima-Maricopa Indian Community, and Maricopa County selected from the measures evaluated in Chapter Five, Land Use Alternatives.

- The **Program Management Element** includes procedures and documents for implementing the recommended noise abatement, land use planning, and mitigation measures, monitoring the progress of the program, and updating the Noise Compatibility Program.

The recommendations of the updated Noise Compatibility Program are summarized in **Table 6F** at the end of the chapter. That table includes a brief description of each recommended measure, the entity responsible for implementing each measure, the cost of each measure, the proposed timing for implementation of the measure, and potential sources of funding.

NOISE ABATEMENT AND LAND USE MEASURES DROPPED FROM CONSIDERATION

Several noise abatement and land use alternatives were evaluated in this study. These were discussed with the Planning Advisory Committee, local citizens, and government officials. As a result of the public review process, and consultation with the airport staff, 12 noise abatement, five mitigation, and ten land use measures are recommended.

Before describing the selected noise abatement and land use measures, it is appropriate to discuss the measures which deserved further consideration in Chapters Four and Five but were subsequently eliminated in the review process.

NOISE ABATEMENT ALTERNATIVES

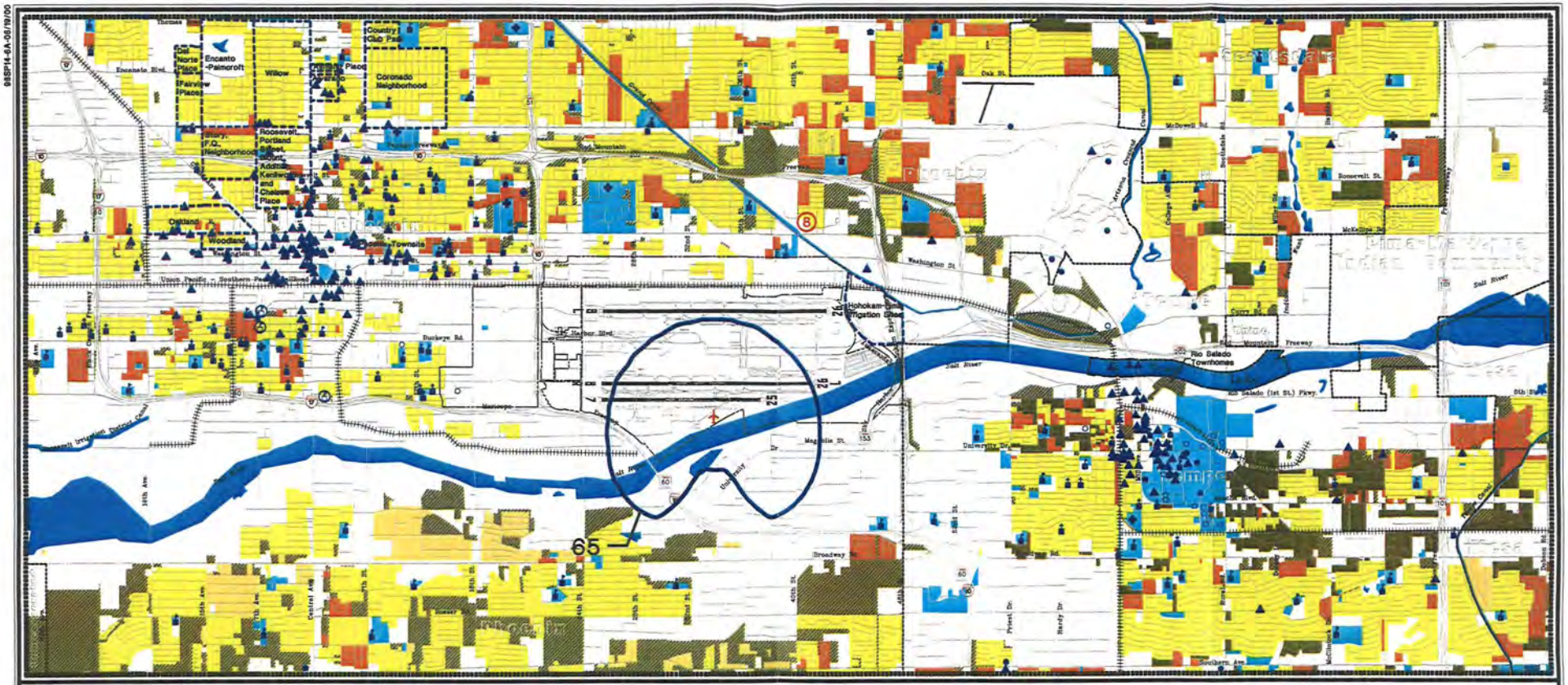
Chapter Four considered two potential locations for a run-up facility. A third location was identified during the review process. This run-up location is immediately south of new parallel Taxiway G and east of the national guard facilities. **Exhibit 6A** depicts the suggested location and noise contours of the run-up facility. The noise impact analysis indicated that no noise sensitive land uses would be impacted by run-ups in this location. Consequently this run-up location is a viable location for a run-up facility.

An additional runway use alternative was identified during the review of Chapter Four, Noise Abatement Alternatives. The following section outlines the proposed runway use alternative and the results of the analysis.

Alternative 7 - Runway 8L/R Straight-out Departure Procedure

Goals

This alternative seeks to promote airport operational efficiency while keeping departing aircraft over noise



LEGEND

- Airport Property
- Municipal Boundaries
- Study Area
- Run-up dBa-Lmax Noise Contours
- Historic District Boundaries
- (10) Noise Monitor Terminal
- Rural Residential (0-1 du/ac)
- Large Lot Residential (1.1-2 du/ac)
- Small Lot Residential (2.1-5 du/ac)
- Medium Density Residential (5.1-15 du/ac)
- High Density Residential (15+ du/ac)
- Water
- Noise-Sensitive Institutions
- Place of Worship
- School
- Charter School
- Hospital
- Museum
- Library
- Historic Structure
- Residence Halls
- Community Center
- Potential Residential Development Areas
- Potential Noise-Sensitive Institutions

Source: Coffman Associates and Brown-Buntin Associates Analysis.

Aerial Photography Land Use Interpretation September 1998.

NORTH

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SCALE IN FEET

PHOENIX SKY HARBOR INTERNATIONAL AIRPORT

Exhibit 6A

PHOENIX SKY HARBOR INTERNATIONAL AIRPORT
AIRCRAFT RUN-UP NOISE ENCLOSURE

compatible corridors east of the airport. With the aid of RNAV (Area Navigation) technology, aircraft could depart Runways 8L/R and 7 and remain within the 4DME gate while not converging into a single departure track as specified in the 4DME procedure.

Procedure

Aircraft departing Runways 8L/R would use RNAV or similar navigational aid to fly a straight-out departure to the PXR VOR 4DME gate. Aircraft departing Runway 7 would then intercept the straight-out departure track from Runway 8R and fly to the 4 DME gate. Aircraft would continue on a straight-out departure heading until being released on course headings.

For noise modeling purposes, the 2004 baseline input was modified to reflect straight-out departures from Runways 8L/R and a departure turn for aircraft departing Runway 7. Although it is estimated that only 83 percent of aircraft using Sky Harbor have RNAV capabilities, runway use percentages were modified to reflect 100 percent of aircraft using this procedure in order to achieve the most conservative noise impact counts.

Noise Effectiveness

The noise contours depicted in **Exhibit 6B** illustrates the effects of this procedure. The size and shape of the alternative noise contours vary somewhat from the 2004 baseline contours east of the airport due to the straight-out departure procedure. The alternative 65 DNL contour is wider both north and south of the departure path and forms two distinct lobes instead of one. Both the 70 DNL and 75 DNL contours become elongated and extend further east of the airport with the use of this procedure. No changes to the noise contours west of the airport are encountered. Increased noise and overflights would be experienced by Tempe both southeast and northeast of the airport.

Table 6A presents the population impacts for this alternative. This alternative affects 2,331 additional people than the baseline condition. A number of existing residential dwellings are brought into the 65-70 DNL contour southeast of the airport in Tempe. In addition, a number of future potential dwellings are also added northeast of the airport. A small area of high density residential east of the airport would be removed from the noise contours with the implementation of this alternative. The level-weighted population, an estimate of the number of people actually annoyed by noise, increases to 9,271 from 8,377 with this procedure.

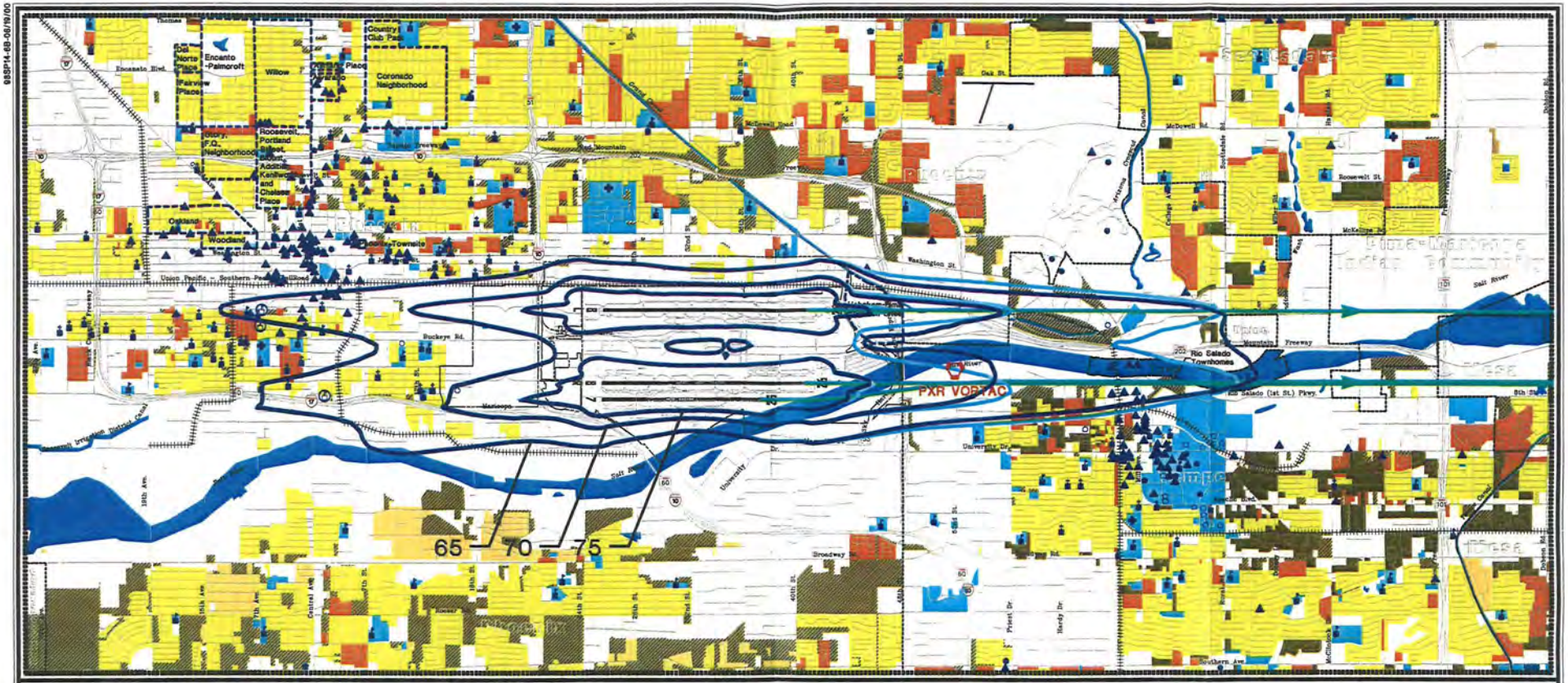
A breakdown of the increase or decrease in population from the 2004 baseline and Alternative7 noise contours is presented in **Table 6B**. This reveals that 774 people have more noise with the existing land use conditions with the use of this alternative. Given the potential for future development, both the 2004 baseline and Alternative 7 noise contours would impact additional individuals (see **Table 6A**). The implementation of Alternative 7 would impact 1,557 additional individuals

than the 2004 baseline operations. Individuals were added to the 65-70 DNL contour in the existing (744) and ultimate (1,557) land use conditions. While no individuals were added or removed from the 70-75 DNL contours during existing land use conditions, 64 were added to the ultimate land use scenario. Neither the existing or ultimate land use conditions contain individuals within the 75 DNL contour. A total of 2,331 individuals would receive additional noise impacts with the implementation of this alternative versus 2004 baseline operations.

TABLE 6A
Population Impacted By Noise
Alternative 7 - Runway 8L/R Straight-out Departure Procedure

DNL Range	2004 Baseline	Alternative 7	Net Change
Existing Population[1]			
Phoenix			
65-70	4,455	4,455	0
70-75	0	0	0
75+	0	0	0
Tempe			
65-70	3,329	4,103	+ 774
70-75	0	0	0
75+	0	0	0
Subtotal	7,784	8,558	+ 744
Potential Population[2]			
Phoenix			
65-70	1,188	1179	- 9
70-75	0	10	+ 10
75+	0	0	0
Tempe			
65-70	13,106	14,608	+ 1,502
70-75	117	171	+ 54
75+	0	0	0
Subtotal	14,411	15,787	**+ 1,557**
Total	22,195	24,345	+ 2,331
LWP	8,377	9,271	894

Notes:
1. Existing population based on 1999 housing counts.
2. Based on additional potential new dwelling units in 2004 reflecting current land use plans and zoning.



LEGEND

- Airport Property
- Municipal Boundaries
- Study Area
- 2004 Baseline DNL Noise Contour
- Alternative DNL Noise Contour
- Departure Tracks
- Historic District Boundaries
- Rural Residential (0-1 du/ac)
- Large Lot Residential (1.1-2 du/ac)
- Small Lot Residential (2.1-5 du/ac)
- Medium Density Residential (5.1-15 du/ac)
- High Density Residential (15+ du/ac)
- Water
- Noise-Sensitive Institutions
- Place of Worship
- School
- Charter School
- Hospital
- Museum
- Library
- Historic Structure
- Residence Halls
- Community Center
- Potential Residential Development Areas
- Potential Noise-Sensitive Institutions

Source: Coffman Associates and Brown-Buntin Associates Analysis.

Aerial Photography Land Use Interpretation September 1998.

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SCALE IN FEET

PHOENIX SKY HARBOR INTERNATIONAL AIRPORT

Exhibit 6B
ALTERNATIVE 7 - RUNWAY 8L/R
STRAIGHT-OUT DEPARTURE PROCEDURE

Operational Issues

The use of a straight-out departure procedure would also mitigate current concerns associated with the adverse air traffic conditions generated by the use of the 4DME procedure as traffic volume continues to increase. The use of this procedure would increase ATC flexibility and increase the airport's operational capacity by allowing simultaneous departures during Visual Meteorological Conditions (VMC) from Runways 8L/R. The use of RNAV technology would help maintain aircraft over pre-established departure corridors. Aircraft utilizing this procedure would likely require RNAV.

Air Service Factors

This alternative would increase airport capacity and reduce delays in an eastern air traffic flow in visual conditions. In addition, Air Traffic Control will gain the ability to adequately space and sequence departing aircraft. No negative air service factors are anticipated.

TABLE 6B
Population Increase or Decrease with Alternative 7

2004 vs. Alt. 7	65-70	70-75	75+	Net Impact
Existing Land Use	774	0	0	+ 744
Ultimate Land Use	+ 1,493	+ 64	0	+ 1,557
Totals	+ 2,267	64	0	+ 2,331

Costs

There are no negative operational costs associated with this alternative. The use of this alternative would decrease departure delays and mitigate adverse air traffic conditions currently associated with the 4DME procedure.

This procedure would bring noise sensitive land uses into the 65 DNL noise contours that were not previously exposed to aircraft noise above 65 DNL. Therefore, an Environmental Assessment (EA) would have to be prepared and impacts would have to be mitigated. This would also be sizeable given the number of homes added to the noise contours.

Environmental Issues

As previously mentioned, the current policy of the FAA is to require an EA on most noise abatement procedures, particularly those that expose residential areas to new or increased aircraft noise. Consequently, an EA probably would be required in this case.

Implementation

Prior to an adoption of straight-out departures from Runways 8L/R, revisions of the 1994 IGA between the cities of Phoenix and Tempe, and the Airport's 1993 EIS, would be required. This departure procedure would be

implemented by ATC. A Tower Order would define instructions to be issued by controllers. An RNAV Departure Procedure would likely need to be established and would aid in the containment of aircraft through the 4DME gate. Information regarding the procedure also could be published in a Notice to Airmen (NOTAM).

Conclusion

A straight-out departure from Runways 8L/R would introduce additional dwelling units to aircraft noise above 65 DNL both north and south of the Salt River corridor. The current use of the 4 DME procedure for Runway 8L/R and 7 appears to be a more suitable procedure for noise abatement purposes. The continued use of the 4DME procedure currently has and will have increasingly adverse effects on airport capacity and air traffic safety as air traffic continues to increase at Phoenix Sky Harbor International Airport.

LAND USE ALTERNATIVES

Chapter Five considered the adoption of an Airport Influence Area for Sky Harbor International Airport (Revised Arizona Statute Section 28-8485). A recent revision (May 2000) of Revised Arizona Statute Section 28-8486 Public Airport Disclosure requires the recording of this public airport disclosure map in the office of the county recorder in each county that contains property in the vicinity of the public airport. This map is therefore sufficient to notify ***current owners*** and ***potential purchasers*** that the property of interest is located in or outside of a territory in the vicinity of a public airport. Thus, the revision to Arizona Revised Statute 28-8486 eliminates the need to establish an Airport Influence Area under Arizona Revised Statute Section 28-8485. A real estate map meeting the requirements of Arizona Revised Statute 28-8486 is in the final development stages for Phoenix Sky Harbor International Airport.

The designation of an airport planning area based upon the 1999 65 DNL noise exposure contours and radar flight track information was reduced to the squared-off 1999 65 DNL noise contour boundary based upon comments from the August 30, 2000 public hearing and subsequent meetings with City agencies. This new area is referred to as the Noise Contour Planning Boundary (NCPB). The NCPB is used for the purposes of applying land use recommendations that reduce the likelihood of future additional incompatible land use development.

The Airport felt it was inappropriate to offer programs that randomly acquire property in the airport vicinity and instead focus on a voluntary acquisition area inside the highest noise contour levels. Therefore, purchase assurance and sales assistance alternatives were eliminated from consideration.

NOISE ABATEMENT ELEMENT

The recommended noise abatement measures are described in this section. They include existing measures to be retained and new measures.

EXISTING MEASURES TO BE RETAINED

1. Continue the runway use program calling for the equalization of departure operations to the east and west for both daytime and nighttime.

Description. Runway use is determined by the direction of the wind. During periods of calm winds (less than 5 knots), the airport can operate in either direction. However, switching runway use direction can be very difficult because changes generally cannot occur in a timely fashion due to the large number of aircraft that have to be re-sequenced.

By equalizing aircraft operations to both the east and west, the overall noise impacts can be distributed equitably. This helps ensure that certain individuals do not receive concentrated amounts of aircraft noise.

Relationship to 1989 NCP. This a continuation of Noise Abatement Measure 1 which was included in the 1989 NCP and approved by the FAA for purposes of F.A.R. Part 150.

Implementation Actions. As an existing Noise Abatement Policy, no additional implementation actions are necessary. The City of Phoenix should continue to monitor aircraft activity at the airport to ensure aircraft operators are complying with this policy.

Costs and Funding. Since this is an existing policy, no new costs would be incurred by the City of Phoenix airport users.

Timing. This is an existing measure which is recommended to be continued through the future.

2. Continue promoting use of AC 91-53A Noise Abatement Departure Procedures by air carrier jets.

Description. The City of Phoenix should continue promoting the use of noise abatement departure procedures in Advisory Circular (AC) 91-53A by airlines operating jet aircraft over 75,000 pounds, certificated gross takeoff weight.

Throughout the 1980s and early 1990s, the FAA and the airlines did considerable work in studying noise abatement departure procedures. In 1993, the FAA published an advisory circular (91-53A) describing general parameters for two alternative noise abatement departures. (A copy of FAA AC 91-53A is in **Appendix G.**) Both involve thrust reductions soon after takeoff, but at an altitude no less than 800 feet above the ground. The procedures differ as to when the flaps should be retracted – either before or after the thrust reduction. Both reduce aircraft noise, but the "close-in" procedure, involving thrust reduction before flap retraction tends to produce greater noise reduction near the runway end, while the "distant" procedure, involving thrust reduction after flap retraction, tends to produce greater noise reduction further from the airport.

The airlines have implemented the AC 91-53A guidelines, although the specific details vary among the airlines based on their own operating philosophies and system needs. The airlines now routinely use noise abatement departures in accordance with the AC 91-53A criteria.

Relationship to 1989 NCP. This a continuation of Noise Abatement Measure 2 which was included in the 1989 NCP and approved by the FAA for purposes of F.A.R. Part 150.

Implementation Actions. No specific implementation actions are needed. Noise abatement departures are routinely used by air carrier jet aircraft in accordance with airline policy and wind, weather, and runway surface conditions. The City of Phoenix should continue to notify the airlines of the importance it places on noise abatement departure procedures to ensure the airlines continue using them at Phoenix.

Costs and Funding. As an existing procedure, no additional costs would be borne by the airport users. The City of Phoenix will incur normal administrative costs for informational efforts.

Timing. This is an existing procedure which is recommended to continue.

3. Continue promoting use of NBAA noise abatement procedures, or equivalent manufacturer procedures, by general aviation jet aircraft.

Description. The City of Phoenix should actively encourage jet operators to use the National Business Aviation Association (NBAA) Approach and Landing Procedure and Standard Noise Abatement Departure Procedures, or equivalent quiet flying procedures developed by aircraft manufacturers. The NBAA standard procedure involves the management of thrust, flap settings, speed, and climb rate to reduce noise quickly after takeoff. (A complete description of the procedure is in **Appendix G.**) Some aircraft manufacturers have also developed and published similar procedures specifically for their own aircraft.

The NBAA has also published noise abatement approach procedures for jet aircraft. These include the use of minimum approach flap settings, maintaining minimum speed, and minimizing the use of reverse thrust after landing, consistent with safety. These procedures also included in **Appendix G.**

Relationship to 1989 NCP. This a continuation of Noise Abatement Measure 3 which was included in the 1989 NCP and approved by the FAA for purposes of F.A.R. Part 150.

Implementation Actions. As an existing policy, no specific implementation actions are required. The City of Phoenix should continue to actively inform local fixed base operators and jet aircraft owners of this policy.

Costs and Funding. Since this is an existing policy, no additional costs would be borne by the users. The City of Phoenix will incur normal administrative costs for informational efforts.

Timing. This is an existing policy which is recommended to continue.

4. Continue DP procedure from Runway 26L requiring a turn to a 240-degree heading.

Description. A published Departure Procedure (DP) from Runway 26L requires a turn to a 240-degree heading. This procedure reduces the number of overflight of noise sensitive land uses west of the airport along the Runway 26L centerline. This procedure also enhances aircraft separation and flow when aircraft are departing from Runways 26L\R.

Relationship to 1989 NCP. This is essentially a continuation of Noise Abatement Measure 4 from the 1989 NCP which recommended that the City of Phoenix work with the local FAA tower to establish a departure turn to 245-degrees (a 240-degree turn was implemented). This was approved by the FAA.

Implementation Actions. As an existing policy, no specific implementation actions are required.

Costs and Funding. Since this is an existing policy, no additional costs would be borne by the users, the City of Phoenix, or the FAA Airport Traffic Control Tower.

Timing. This is an existing policy which is recommended to continue.

5. Continue the 4 DME departure route procedure which overflies the Salt River by all jets and large propeller aircraft departing Runways 8L/R.

Description. The 4 DME departure procedure requires all jet aircraft and all large turboprop aircraft (over 12,500 pounds) departing to the east on Runways 8L and 8R to fly 4 nautical miles from the distance measuring equipment before turning on any ATC assigned heading. (This procedure replaces the One DME procedure recommended by the NCP, since the VORTAC was relocated.) Compliance with the 4 DME procedure was clarified in June 1998 to require the aircraft to pass through a 5,500-foot wide gate, running north/south, 4 DME east of the PXR VORTAC. The resulting flight paths are concentrated over the Salt River bed. It should be noted that this procedure does limit capacity at the airport which has significant cost implications for the airlines, airport customers, and local business sectors

dependent on the airport. In addition, as air traffic volume at the Phoenix Sky Harbor International Airport continues to grow, the continued viability of the 4DME procedure with respect to the safety of converging flight paths in high aircraft activity situations must be assessed.

Relationship to 1989 NCP. This is a continuation of Noise Abatement Measure 5 from the 1989 NCP. This was approved by the FAA.

Implementation Actions. As an existing policy, no specific implementation actions are required.

Costs and Funding. Since this is an existing policy, no additional costs would be borne by the users, the City of Phoenix, or the FAA Airport Traffic Control Tower.

Timing. This is an existing policy which is recommended to continue.

6. Continue requiring compliance with the Airport's Engine Test Run-Up Policy.

Description. Currently there is a prohibition on maintenance engine run-ups between 11:00 p.m. and 5:00 a.m. This policy reduces the impact of loud and long duration run-up noise on nearby residential areas during the nighttime hours.

Relationship to 1989 NCP. This a continuation of Noise Abatement Measure 7 which was included in the 1989 NCP and approved by the FAA for purposes of F.A.R. Part 150.

Implementation Actions. Since this is an existing policy, no specific implementation actions are necessary.

Costs and Funding. As an existing policy, no additional costs would be borne by the City of Phoenix or airport users. The City of Phoenix will continue to incur routine administrative costs in ensuring compliance with the rule.

Timing. This is an existing procedure which is recommended to continue.

NEW MEASURES

Six noise abatement measures currently not implemented are recommended for implementation as listed below.

7. Implement the 4 DME departure route procedure for all jets and large propeller aircraft departing Runway 7.

Description. The 1989 NCP recommended and the 1994 Inter Governmental Agreement (IGA) between the City of Phoenix and the City of Tempe established the use of the 4 DME departure procedure for all jets and large propeller (over 12,500 pounds) aircraft departing Runway 7. The 4 DME departure procedure would require these aircraft departing to the east on Runway 7 to fly 4 nautical miles from the distance measuring equipment (the relocated Phoenix VORTAC) before turning on any ATC assigned heading. (This procedure replaces the One DME procedure recommended by the 1989 NCP, since the VORTAC was relocated.)

Relationship to 1989 NCP. This measure was included as a long term recommendation in the 1989 NCP and is to be implemented when Runway 7-25 is opened.

Implementation Actions. This is proposed as an addition to the existing departure procedures from Runway 8L/R. FAA Flight Standards Division would be charged with the revision of the established departure procedures to include the 4 DME procedure from Runway 7.

It does not appear that this procedure would require an environmental assessment as the procedure would not direct aircraft over noise-sensitive areas at altitudes below 3,000 feet AGL. Neither does the procedure cause increased noise within the 65 DNL contour in residential areas. Decisions about the need for an environmental assessment, however, must be made by the FAA.

Costs and Funding. Administrative costs will be borne by the FAA Flight Standards Division in establishing this procedure. The FAA may incur additional administrative costs in undertaking any potential environmental review needed.

Airport users will continue to incur operational costs due to delays during peak periods in an eastern flow when this procedure is in effect.

Timing. This is recommended for implementation simultaneously with the opening of the Runway 7-25, anticipated in 2000.

8. Direct propeller aircraft departing Runway 7 to turn to a 120-degree heading upon reaching the end of the runway.

Description. Propeller aircraft departing Phoenix Sky Harbor International Airport on Runway 7 would turn right at the runway end to approximately a 120-degree heading. The aircraft would continue to climb on this heading until being released to course headings. This procedure would concentrate traffic over a commercial/industrial corridor and Interstate 10 southeast of the airport. It is suggested that this procedure apply only to propeller-powered aircraft because of the early turn that is required for this procedure.

Relationship to 1989 NCP. This is a new measure not included in the 1989 NCP.

Implementation Actions. This procedure would primarily be implemented by ATC. A Tower Order would define instructions to be issued by controllers. Information regarding the procedure also could be published in a Notice to Airmen (NOTAM).

It does not appear that this procedure would require an environmental assessment as the procedure would not direct aircraft over noise-sensitive areas at altitudes below 3,000 feet AGL. Neither does the procedure cause increased noise within the 65 DNL contour in residential areas. Decisions about the need for an environmental assessment, however, must be made by the FAA.

Costs and Funding. Administrative costs will be borne by the FAA Air Traffic Control Tower in establishing a Tower Order for this procedure. The FAA may incur additional administrative costs in undertaking any potential environmental review needed.

The only user costs of this procedure might be slightly decreased departure delays due to departure separation requirements. These likely would not be sizeable since some propeller aircraft are currently being turned to the southeast when departing Runway 8R.

Timing. This is recommended for implementation after FAA review and approval of the NCP. This is anticipated in 2001.

9. Direct aircraft departing Runway 25 to turn to a 240-degree heading upon reaching the end of the runway.

Description. The 1989 NCP recommended and the 1994 Inter Governmental Agreement (IGA) between the City of Phoenix and the City of Tempe established a standard instrument departure (SID) procedure for Runway 25. This agreement consists of a requirement that aircraft departing from Runway 25 turn to a 245-degree heading (It is suggested that a 240-degree turn be implemented to remain consistent with the Runway 26L departure turn procedure). This procedure reduces the number of overflight of noise sensitive land uses west of the airport along the Runway 25 centerline. This procedure also enhances aircraft separation and flow when aircraft are departing from Runway 26R.

Relationship to 1989 NCP. This measure was included as a long term recommendation in the 1989 NCP and is to be implemented when Runway 7-25 is opened.

Implementation Actions. This is proposed as an addition to the existing standard instrument departure procedures from Runway 26L/R. FAA Flight Standards Division would be charged with the revision of the established departure procedures to include the 240-degree departure turn procedure from Runway 25.

It does not appear that this procedure would require an environmental assessment as the procedure would not direct aircraft over noise-sensitive areas at altitudes below 3,000 feet AGL. Neither does the procedure cause increased noise within the 65 DNL contour in residential areas. Decisions about the need for an environmental assessment, however, must be made by the FAA.

Costs and Funding. Administrative costs will be borne by the FAA Flight Standards Division in establishing this procedure. The FAA may incur

additional administrative costs in undertaking any potential environmental review needed.

Airport users are not anticipated to incur additional operational costs because this turn procedure is currently being implemented on Runway 26L.

Timing. This is recommended for implementation simultaneously with the opening of the Runway 7-25, anticipated in 2000.

10. Establish a side-step approach to Runway 25 for noise abatement.

Description. The 1994 Inter Governmental Agreement (IGA) between the City of Phoenix and the City of Tempe established a "side-step" approach procedure for aircraft on final approach to Runway 25. This agreement *consists* of a requirement that aircraft on approach to Runway 25 would maintain an alignment with Runway 26L until reaching a point approximately three miles east of the runway (Sun Devil Stadium and Mill Avenue) followed by a turn to align with Runway 25 (approximately 800 feet south of the Runway 26L final approach course). The use of this "side-step" approach to Runway 25 is also supported in the Airport's 1993 EIS. Upon approach, the decision to execute a "side-step" approach versus a straight-in approach would ultimately be at the pilot's discretion.

Relationship to 1989 NCP. This measure was included as a long term recommendation in the 1989 NCP and is to be implemented when Runway 7-25 is opened.

Implementation Actions. This is proposed as a visual approach procedure. FAA Flight Standards Division would be charged with the establishment of visual side-step approach to Runway 25.

It does not appear that this procedure would require an environmental assessment as the procedure would not direct aircraft over noise-sensitive areas at altitudes below 3,000 feet AGL. Neither does the procedure cause increased noise within the 65 DNL contour in residential areas. Decisions about the need for an environmental assessment, however, must be made by FAA.

Costs and Funding. Administrative costs will be borne by the FAA Flight Standards Division in establishing this procedure. The FAA may incur additional administrative costs in undertaking any potential environmental review needed.

Airport users will incur increased operational costs due to delays during peak periods in a western flow when this procedure is in effect.

Timing. This is recommended for implementation simultaneously with the opening of the Runway 7-25, anticipated in 2000.

11. Encourage the use of DGPS, RNAV, and FMS equipment to enhance noise abatement navigation.

Description. In the future, the use of Differential Global Positioning System (DGPS), Area Navigation (RNAV), and Flight Management System (FMS) technology will be used to better define approach and departure routes. As equipment, flight standards, and use of this equipment becomes common place, efforts to refine noise abatement departure and arrival routes should be undertaken.

Relationship to 1989 NCP. This is a new measure that was not included in the 1989 NCP.

Implementation Actions. The City of Phoenix Aviation Department should monitor the progress, development, and integration of DGPS, RNAV, and FMS technology and encourage its use to refine noise abatement route procedures.

Costs and Funding. Administrative costs will be borne by the City of Phoenix and FAA Flight Standards Division in refining noise abatement procedures.

Timing. This is recommended for implementation after FAA review and approval of the NCP. This is anticipated in 2001.

12. Build engine maintenance run-up enclosure.

Description. An engine maintenance run-up enclosure should be built to attenuate noise from maintenance run-ups. The facility should be designed to accommodate the largest aircraft now conducting run-ups or those which may conceivably be expected in the future. This is anticipated to be the Boeing 757 aircraft. It is also suggested that the facility be designed to handle conventional corporate jets with the highest mounted engines as well as propeller-driven aircraft.

A three-sided enclosure is envisioned which may possibly have doors on one end to fully enclose all four sides. An example of one potential run-up enclosure design is shown on Exhibit 4N after page 4-46 in Chapter Four.

The City of Phoenix should establish policies governing the use of the run-up enclosure. All maintenance run-ups done at more than idle power should be required to use the facility. The City of Phoenix could consider allowing maintenance run-ups in the facility at night if experience demonstrates that no adverse noise impacts are being caused in residential areas. (Maintenance run-ups are currently prohibited after 11:00 p.m. and before 5:00 a.m.) If it is decided to release the nighttime prohibition on maintenance run-ups, the City of Phoenix should allow this only on a trial basis at first, and collect data on the noise output produced by the run-ups out in the community. If the noise levels are moderate, and if the complaint record indicates that no problems are being caused, the City of Phoenix could consider allowing nighttime run-ups in the enclosure on a permanent basis.

Relationship to 1989 NCP. This is a new measure that was not included in the 1989 NCP.

Implementation Actions. This measure is the responsibility of the City of Phoenix. They should contract with an acoustical engineer to develop detailed design specifications and then open a request for proposals and cost quotations. After selecting a contractor, any required environmental reviews must be conducted before starting construction.

Costs and Funding. This is estimated to cost approximately $2.0 million. It will be eligible for up to 80 percent funding through the noise set-aside of the Federal Airport Improvement Program. The local share must be provided through the Airport's capital budget.

Timing. For planning purposes, this is projected for the years 2001 - 2002. This allows time for design and any required environmental reviews.

13. Support 161st Air Refueling Wing of the Arizona Air National Guard's efforts to re-engine KC-135 Aircraft.

Description. The 161st Air Refueling Wing KC-135 aircraft are currently equipped with older TF-33 engines. The Air Refueling Wing is attempting to obtain new CFM-56 engines for the KC-135 fleet. Funding for new engines, however, is currently not available. The City of Phoenix should support the efforts of the 161st Air Refueling Wing via contacting local, state and federal representatives to lobby for military funds for engine replacement.

Relationship to 1989 NCP. This is a new measure that was not included in the 1989 NCP.

Implementation Actions. The City of Phoenix Aviation Department should monitor the progress of the 161st Air Refueling Wing efforts and provide support via contacting local, state and federal representatives to lobby for military funds for engine replacement.

Costs and Funding. Administrative costs will be borne by the City of Phoenix.

Timing. This is recommended for implementation after FAA review and approval of the NCP. This is anticipated in 2001.

NOISE CONTOURS

The recommended noise abatement measures do not involve any changes that would alter the 1999 baseline noise exposure contours, shown in **Exhibit 6C**. Noise contours projected for the years 2004 and 2015, however, would change with implementation of the proposed new noise abatement measures. The updated future noise contours are shown in **Exhibits 6D** and **6E**. For the most part, the noise contours would be smaller to the east and bow out slightly more to the south than projected in the baseline noise

analysis presented in Chapters Two and Three of the *Noise Exposure Maps* document. (See Exhibits 3C and 3D after pages 3-9 and 3-14 in Chapter Three.) A comparison of the noise impacts of the Noise Compatibility Plan contours with the baseline contours is presented later in this chapter.

NOISE MITIGATION ELEMENT

The recommended noise mitigation measures for the Phoenix Sky Harbor International Airport vicinity are presented below. One is a continuation of an existing mitigation measures. The other four are new measures. They are summarized in **Table 6F** at the end of this chapter.

1. **Sound insulate single family homes within the 1992 65 DNL contour and single family homes outside the 1992 65 DNL contour but inside the 1999 65 DNL contour.**

Description. The City of Phoenix has developed acoustical treatment programs for single family homes based on recommendations of the 1989 Part 150 Noise Compatibility Program. Currently, 153 homes have been insulated to date. Another 250 homes are scheduled for sound insulation and are currently in the design process. The location of the homes that received sound insulation to date are shown in **Exhibit 6F**.

Typical acoustical treatment measures include the installation of acoustical doors and windows, insulation, and forced air heating and air conditioning systems. The estimated average cost of treating these homes is approximately $30,000 each. This covers the acoustical treatment cost, engineering and administrative costs, plus a $5,000 allowance for code deficiency repairs. The acoustical treatment costs are eligible for 80 percent Federal funding. The remaining 20 percent, plus the $5,000 code deficiency allowance, is covered through the City of Phoenix's operating budget, passenger facility charges (PFCs), and bonds.

The updated noise contours for the year 1999, shown in **Exhibit 6F**, show less noise over Phoenix off the extended centerline of Runway 8L-26R to the west, to the southwest along the Salt River, and in Tempe to the northeast along the Indian Bend Wash. The updated noise contour increases in size in Phoenix along Interstate 17 to the west and in Tempe to the east along Rio Salado Parkway.

The City of Phoenix could consider expanding the boundaries of the residential acoustical treatment program to include 245 additional homes in the 1999 65 DNL noise contour. Approximately 2,420 homes would be included in the proposed acoustical treatment program. At an average cost of $30,000 per home, the total acoustical treatment cost would be $72.6 million. Approximately $36.0 million would be eligible for Federal funding through the noise set-aside of

LEGEND

- Airport Property
- Municipal Boundaries
- Study Area
- DNL Noise Contour
- Historic District Boundaries
- Rural Residential (0-1 du/ac)
- Large Lot Residential (1.1-2 du/ac)
- Small Lot Residential (2.1-5 du/ac)
- Medium Density Residential (5.1-15 du/ac)
- High Density Residential (15+ du/ac)
- Water
- Noise-Sensitive Institutions
- Place of Worship
- School
- Charter School
- Hospital
- Museum
- Library
- Historic Structure
- Residence Halls
- Community Center

Source: Coffman Associates and Brown-Buntin Associates Analysis.

Aerial Photography Land Use Interpretation September 1998.

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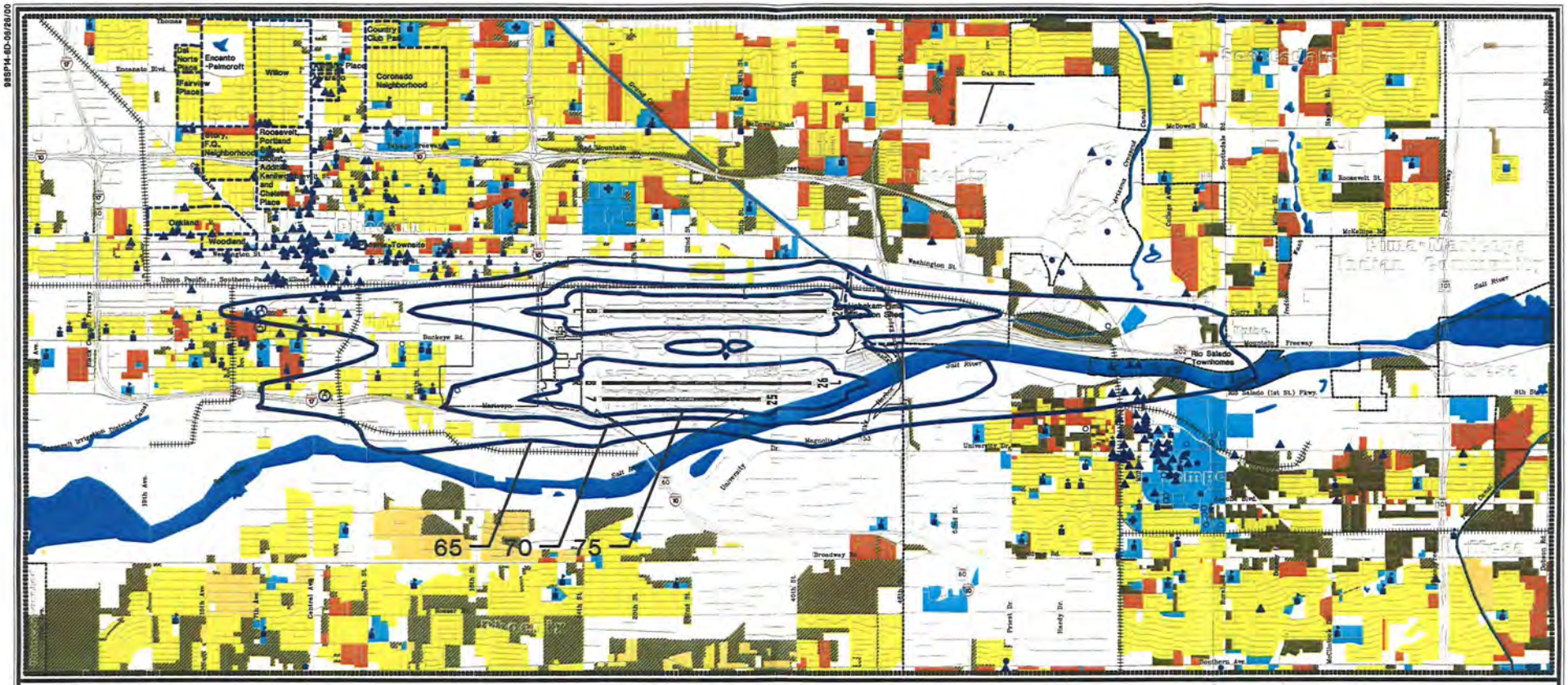
PHOENIX SKY HARBOR INTERNATIONAL AIRPORT

Exhibit 6C

PHOENIX SKY HARBOR INTERNATIONAL AIRPORT
1999 NOISE EXPOSURE MAP WITH EXISTING LAND USE



LEGEND

- Airport Property
- Municipal Boundaries
- Study Area
- 2004 Baseline DNL Noise Contour
- Historic District Boundaries
- Rural Residential (0-1 du/ac)
- Large Lot Residential (1.1-2 du/ac)
- Small Lot Residential (2.1-5 du/ac)
- Medium Density Residential (5.1-15 du/ac)
- High Density Residential (15+ du/ac)
- Water
- Noise-Sensitive Institutions
- Place of Worship
- School
- Charter School
- Hospital
- Museum
- Library
- Historic Structure
- Residence Halls
- Community Center
- Potential Residential Development Areas
- Potential Noise-Sensitive Institutions

Source: Coffman Associates and Brown-Buntin Associates Analysis.

Aerial Photography Land Use Interpretation September 1998.

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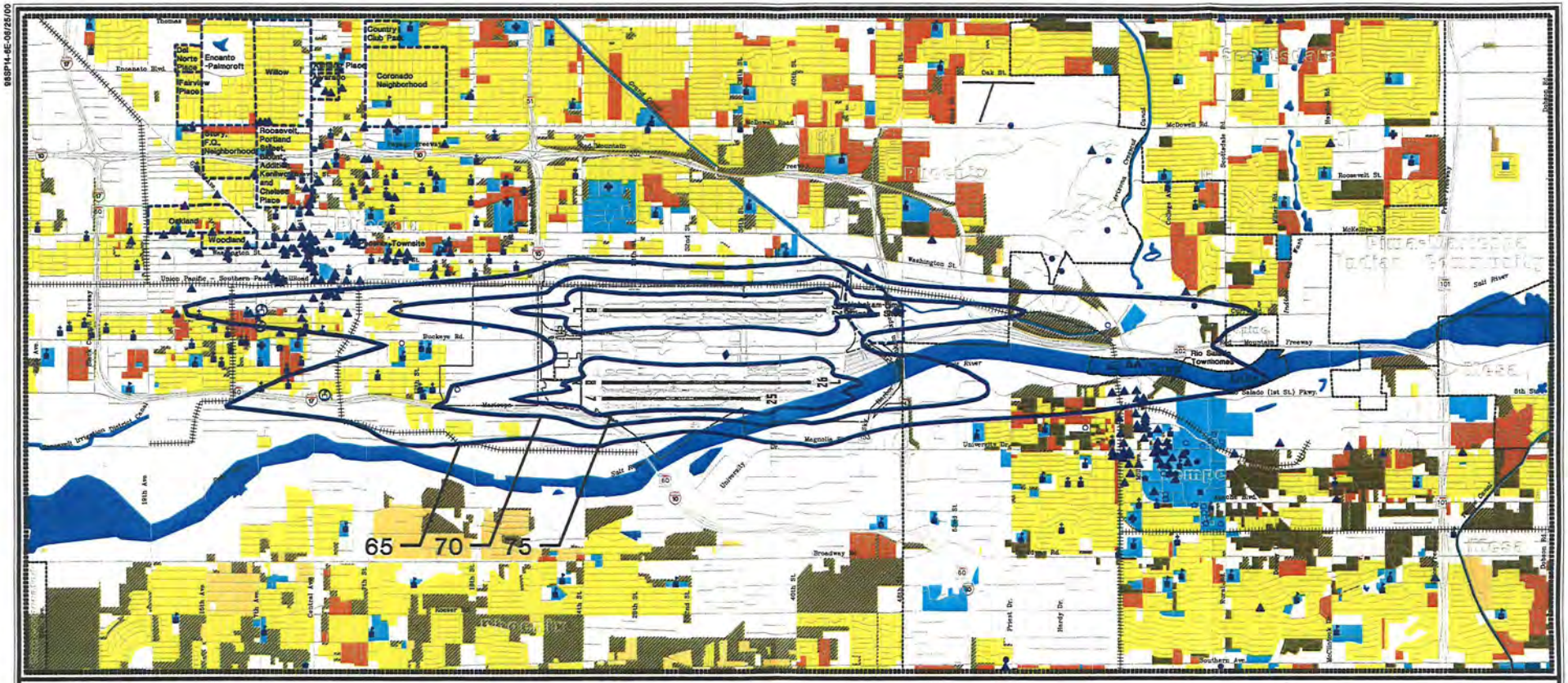
PHOENIX SKY HARBOR INTERNATIONAL AIRPORT

Exhibit 6D

PHOENIX SKY HARBOR INTERNATIONAL AIRPORT
2004 AIRCRAFT NOISE EXPOSURE WITH NOISE COMPATIBILITY PROGRAM



LEGEND

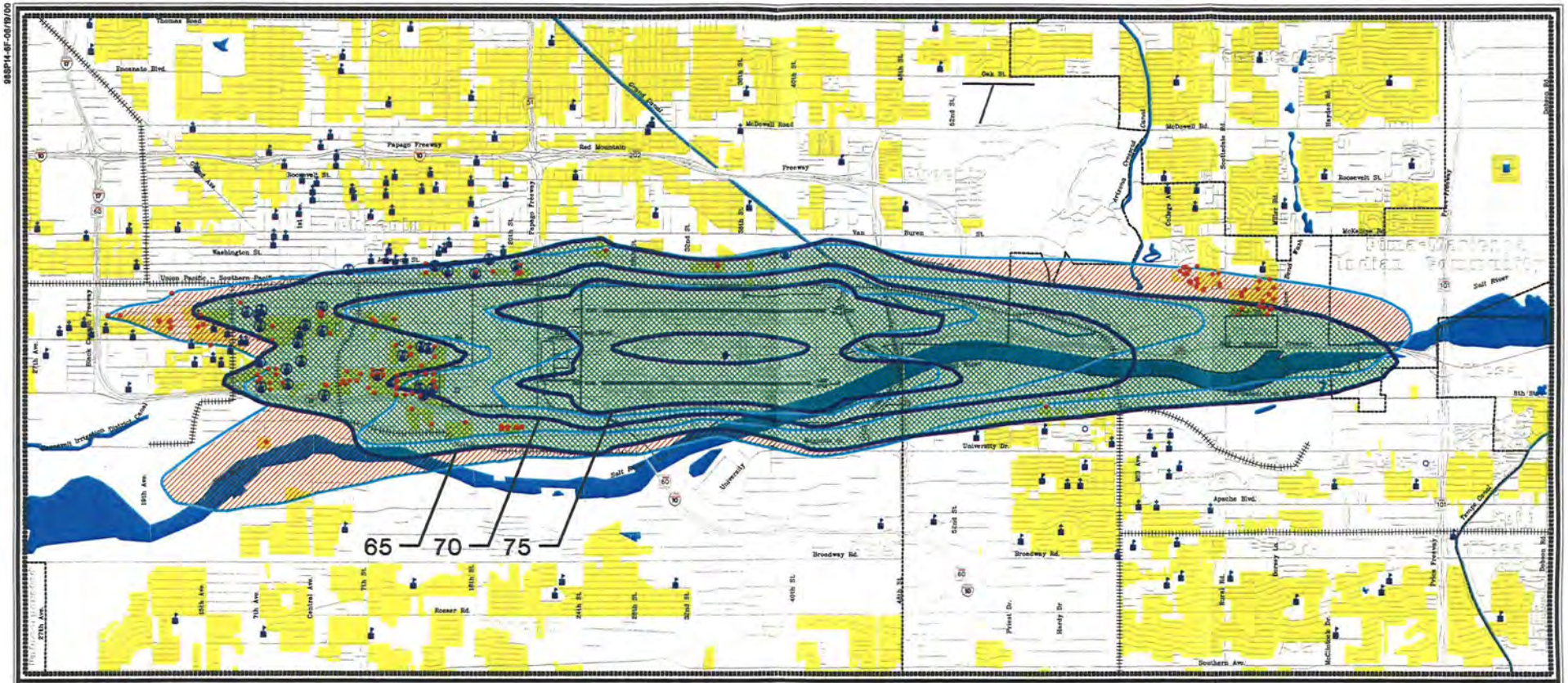
- Airport Property
- Municipal Boundaries
- Study Area
- DNL Noise Contour
- Historic District Boundaries

Source: Coffman Associates and Brown-Buntin Associates Analysis.

PHOENIX SKY HARBOR INTERNATIONAL AIRPORT

Exhibit 6E

PHOENIX SKY HARBOR INTERNATIONAL AIRPORT
2015 NOISE EXPOSURE WITH NOISE COMPATIBILITY PROGRAM



LEGEND

- Airport Property
- Municipal Boundaries
- Study Area
- 1992 Noise Exposure Contour
- 1999 Noise Exposure Contour
- Small Lot Residential (2.1-5 du/ac)
- Acoustically Treated Homes
- Schools
- Place of Worship
- Community Centers
- Acoustical Treatment Area Funded by Phoenix Aviation Department.
- Acoustical Treatment Area Eligible for Federal Funding from Airport Improvement Program Noise Set-a-side.
- Schools Eligible for Acoustical Treatment
- Place of Worship Eligible for Acoustical Treatment

Source: Maricopa Association of Governments, Updated by Coffman Associates.

Noise Exposure Map Documentation for Phoenix Sky Harbor International Airport, 1987.

Aerial Photography Land Use Interpretation September 1998.

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PHOENIX SKY HARBOR INTERNATIONAL AIRPORT

Exhibit 6F

PHOENIX SKY HARBOR INTERNATIONAL AIRPORT
RECOMMENDED ACOUSTICAL TREATMENT PROGRAM

the Airport Improvement Program. The remaining $36.5 million would be covered through bonds, PFCs, and the City of Phoenix's aviation operation budget.

As a condition of participation in the acoustical treatment program, the City of Phoenix requires homeowners to grant an avigation easement which is intended to prevent the imposition of Federal income taxes on a homeowner who would otherwise receive the acoustical treatment improvements without exchanging anything in return. While not universal, this is a very common feature of sound insulation programs around the country. In exchange for the home improvements, the property owner conveys an easement granting the Airport the right to operate aircraft in the area, with all attendant noise effects of aircraft operations, without being sued by the grantor (unless a significant increase in aircraft noise levels occurs). Since the easement runs with the land, it also helps to serve as a fair disclosure notice to future buyers of the home. A copy of the easement used in the Airport's acoustical treatment program is in **Appendix F**. Examples of easements used by other airports in their sound insulation programs are also in **Appendix F**.

It should be noted that easements were not required by the City in the pilot program for the acoustical treatment program. The City has required and obtained signed avigation easements for homes acoustically treated since the pilot program, but to date the avigation easements have not been recorded with the Maricopa County Recorder.

Some of the property shown in the acoustical treatment eligibility area was discussed in Chapter Five as possibly being considered for acquisition and redevelopment. If that option is not pursued, acoustical treatment would be an alternative that could be offered to those homeowners. However, several of these dwellings do not meet building code or are not constructed on solid foundations and would require extensive renovation to meet the City's building codes.

There are several agencies and organizations that may be able to provide assistance in leveraging the acoustical treatment program funding with housing rehabilitation funding. Some of these entities and programs include the U.S. Department of Housing and Urban Development (HUD), Arizona Department of Commerce - Department of Housing and Infrastructure, City of Phoenix - Neighborhood Services and Housing Departments, and the Phoenix Revitalization Corporation. The City of Phoenix should try to coordinate these agencies and their housing assistance programs with the acoustical treatment program. The housing assistance programs should be used for general property improvements and corrections of code violations, while the City of Phoenix's acoustical treatment funding could be directed to acoustical treatment. This would help promote the City's objectives of neighborhood preservation.

Relationship to 1989 NCP. This is a continuation and expansion of Land Use Measure 5 from the 1989 NCP which recommended (1) that the City of Phoenix participate in a sound insulation program for noise-affected homes and (2) that the City of Phoenix acquire avigation easements over existing incompatible land uses inside the 65 DNL noise contour.

Implementation Actions. After FAA approval of the updated Noise Compatibility Program, the City of Phoenix should revise its acoustical treatment eligibility area maps to show the expanded area on the north side. No additional implementation actions are required. The acoustical treatment program requires ongoing management.

Cost and Funding. Costs of the acoustical treatment program have averaged approximately $30,000 per house. Based on an estimate of 2,420 untreated homes remaining in the eligibility area, the total cost to complete this program would be $72,600,000, assuming all eligible homeowners participate.

The City of Phoenix has received funding from the FAA through the noise set-aside of the Airport Improvement Program (AIP). It should be noted that homes within the 1999 65 DNL contour are eligible for up to 80 percent funding (this does not include the $5,000 for building code deficiencies) from the noise set-aside of the Airport Improvement Program. The local match will continue to be provided through the Sky Harbor International Airport's capital budget. Homes outside the 1999 65 DNL contour but inside the 1992 65 DNL noise contour must be funded by the Airport's capital budget.

Timing. This is currently being implemented. The City of Phoenix intends to continue until the owners of all eligible homes have been given the opportunity to participate in the program. The pace of the program will depend on the amount of available funding.

2. Sound Insulate approximately ten schools within the 1999 65 DNL contour.

Description. To date, the City of Phoenix has not developed acoustical treatment programs for the six schools recommended in the original Part 150 Noise Compatibility Program. All six of these schools continue to be within the 1999 65 DNL noise exposure contour. In addition, three charter and one preschool have been identified within the 65 DNL noise contours. Pending a feasibility study, the ten schools include Lowell Elementary, Herrera Elementary, Annott Elementary, Dunbar, Maricopa Skills Center, Gateway Community College, Tertulia, Enterprise, Friendly House, and the Phoenix Day Preschool. The schools and community centers are depicted on **Exhibit 6F**.

Relationship to 1989 NCP. This is an continuation of Land Use Measure 5 from the 1989 NCP.

Implementation Actions. After FAA approval of the updated Noise Compatibility Program, the City of Phoenix will need to secure funding for the acoustical treatment of the eligible schools. It will then need to retain the services of acoustical engineers with expertise in sound insulation of existing structures. They must coordinate with the school operators in undertaking an inspection of the buildings to develop a work write-up and detailed specifications for the treatment program. The City of Phoenix, in association with the school owner, can then request bids from qualified contractors.

Cost and Funding. Costs of acoustically treating the schools are not possible to reliably estimate without an on-site inspection by a qualified specialist. For planning purposes only, the costs of treating the six schools are estimated at $3 million each, including contingencies. This is roughly based on the costs to acoustically treat schools near other airports.

This project would be eligible for FAA funding through the noise set-aside of the AIP. The acoustical treatment costs are eligible for up to 80 percent funding through the AIP. The local match will continue to be provided through the City of Phoenix's capital budget.

Timing. These schools will be eligible for treatment after approval of the updated Noise Compatibility Program by the FAA, expected in 2001.

For planning purposes, acoustical treatment of the schools and preschools is projected for 2003 to 2006.

3. Acoustical Treatment of Community Center and place of worship classrooms/meeting rooms within the 1999 65 DNL contour.

Description. It is recommended that the class/meeting rooms within the two community centers and two places of worship within the 1999 70-75 DNL noise contours and one community center and 20 places of worship within the 65-70 DNL noise contour be added to the acoustical treatment program. The community centers and places of worship are depicted on **Exhibit 6F**.

Relationship to 1989 NCP. This is a new measure that was not included in the 1989 NCP.

Implementation Actions. After FAA approval of the updated Noise Compatibility Program, the City of Phoenix will need to secure funding for a feasibility study and the acoustical treatment of eligible Community Centers and Places of Worship class/meeting rooms. It will then need to retain the services of acoustical engineers with expertise in sound insulation of existing structures. They must coordinate with the owners and operators in undertaking an inspection of the buildings to develop a work write-up and detailed specifications for the treatment program. The City of

Phoenix, in association with the owner/operators, can then request bids from qualified contractors.

Cost and Funding. Costs of acoustically treating the class/meeting rooms within the Community Centers and Places of Worship are not possible to reliably estimate without an on-site inspection by a qualified specialist. For planning purposes only, the costs of treating class/meeting rooms within the Community Centers and Places of Worship are estimated at $300,000 each, including contingencies for a total of $7.5 million.

This project would be eligible for FAA funding through the noise set-aside of the AIP. The acoustical treatment costs are eligible for up to 80 percent funding through the AIP. The local match will continue to be provided through the City of Phoenix's capital budget.

Timing. Class/meeting rooms within eligible Community Centers and Places of Worship will be eligible for treatment after approval of the updated Noise Compatibility Program by the FAA, expected in 2001.

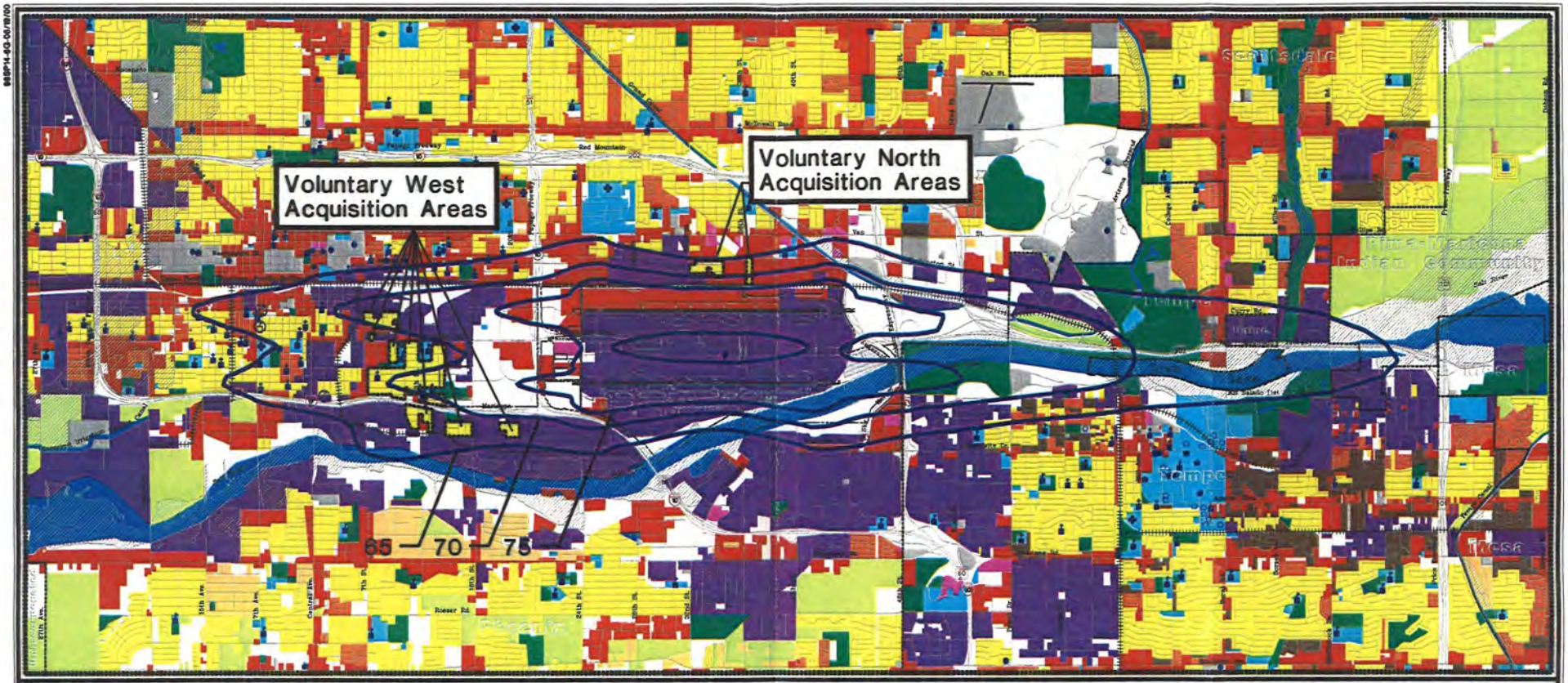
For planning purposes, acoustical treatment of the schools and preschools is projected for 2003 to 2006.

4. *Voluntary Acquisition and Redevelopment:* Acquire dwellings north and west (to 7th Street) of the airport within the 1999 70 DNL contour.

Description. One thousand one hundred eleven dwellings are recommended for acquisition. Not only are these homes exposed to loud cumulative noise, but most are so near the airport that they also experience very high single event noise from aircraft takeoffs and landings. **Exhibit 6G** shows the location the of homes recommended for acquisition. Fifty-seven single-family and 12 duplexes are located immediately north of the Airport. These residential areas receive noise between 65 and 75 DNL in 1999, and are somewhat isolated from other neighborhoods by surrounding industrial development. The remaining 1,042 dwellings, located west of the Airport out to 7th Street, that are between the 1999 65 and 75 DNL noise exposure contours. This includes 51 homes that have already been sound insulated.

Relationship to 1989 NCP. This is a new measure that was not included in the 1989 NCP.

Implementation Actions. A voluntary acquisition, clearance, and redevelopment program would be best administered by the City of Phoenix. The City of Phoenix has the legal authority to accept Federal funding for purchasing noise impacted residential property and would be the most appropriate entity to handle any subsequent redevelopment plans and projects in the area. It is also the most appropriate forum for weighing the importance of legitimate, but potentially competing, public interests, such as the need for airport



LEGEND

- Airport Property
- Municipal Boundaries
- Study Area
- 1999 DNL Contour
- Agriculture
- Rural Residential (0-1 du/ac)
- Large Lot Residential (1.1-2 du/ac)
- Small Lot Residential (2.1-5 du/ac)
- Medium Density Residential (5.1-15 du/ac)
- High Density Residential (15+ du/ac)
- Hotels, Motels, & Resorts
- Commercial / Office
- Public
- Park & Open Space
- Water
- Industrial
- Vacant
- 100-Year Floodplain
- Noise-Sensitive Institutions
- Place of Worship
- School
- Charter School
- Hospital
- Museum
- Library
- Residence Halls
- Community Center
- Voluntary Acquisition Areas

Source: Maricopa Association of Governments, Updated by Coffman Associates.

Aerial Photography Land Use Interpretation September 1998.

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PHOENIX SKY HARBOR INTERNATIONAL AIRPORT

Exhibit 6G

PHOENIX SKY HARBOR INTERNATIONAL AIRPORT
VOLUNTARY PROPERTY ACQUISITION

compatibility, the need for employment opportunities, and the need to preserve affordable housing.

If the City of Phoenix was willing to consider voluntary acquisition and redevelopment as a matter of policy, numerous important details would have to be addressed. Among these are the pace and phasing of acquisition, what to do about residents choosing not to relocate, and the proper care and management of vacant lots. A residential relocation plan must consider the availability of alternative housing and the effects of large scale residential removal on local institutions such as schools and churches. Redevelopment plans must emphasize the creation of visual buffers between industrial areas and the remaining residential areas and efficient traffic flow through the redeveloped area so the project does not inadvertently create blighting influences.

Cost and Funding. The cost of the acquisition and redevelopment program are potentially enormous. The number of dwellings in the two redevelopment areas include approximately 1,042 single family homes and 12 duplexes. Consideration should also be given to including the 51 homes that have been sound insulated in the two identified redevelopment areas. Purchase prices for single family homes is estimated at $65,000 based on recent home acquisitions in these areas, the estimate for duplexes is $100,000, relocation costs could be up to $22,500 per household, and demolition and hazardous material abatement could be up to $18,000 per building. The total estimated cost for acquisition and redevelopment would be $118.4 million. At least part of these costs would be offset by revenues from the sale or lease of the land for redevelopment.

A majority of the costs of this program would be eligible for up to 80 percent Federal funding through the noise set-aside of the Airport Improvement Program. Fifty-one homes within the voluntary acquisition area homes would not be eligible for additional Federal funding because they received Federal funds to be acoustically treated. The City of Phoenix would have to determine the most appropriate source for the local match.

The airport must comply with the Federal Uniform Relocation Assistance and Real Property Acquisition Act because Federal funds are being used. (See 49 CFR Part 24.) Under these regulations, the fair market value of the home is established through professional appraisals. The homeowner is also entitled to reimbursement of moving expenses and compensation for other relocation expenses (such as closing costs and incidental expenses for a new home, and compensation for a higher interest rate on the new mortgage) up to a maximum of $22,500. If the maximum relocation benefit, in addition to the sale price of the home, is not enough to assure the displaced person of acquiring comparable housing or, in any case, decent, safe, and sanitary housing, additional relocation payments may be

available, subject to a case-by-case review.

Timing. The City of Phoenix can start this acquisition program after approval of the Noise Compatibility Program by the FAA. The voluntary acquisition program could be offered as early as 2001 if funding is available.

5. Exchange dwellings impacted within the 70 DNL noise contour with a dwelling outside the 65 DNL noise contour.

Description. As an alternative to a large acquisition program, a voluntary program could be setup that exchanges a dwelling within the voluntary acquisition area with a new replacement dwelling constructed outside the 65 DNL noise exposure contours. In this program, the owner of a home within the acquisition areas identified on **Exhibit 6G** would give the title of the noise impacted home to the program sponsor in exchange for the title of the new home outside the 1999 65 DNL noise contour. The home within a voluntary acquisition area would then be demolished and property would be held or sold for a noise compatible use.

Relationship to 1989 NCP. This is a modified version of Noise Mitigation Measure 2 from the original 1989 NCP. It was recommended that the City of Phoenix survey the local community to determine if local residents would be interested in this program. This measure has never been implemented.

Implementation Actions. A voluntary dwelling exchange program would be best administered by the City of Phoenix. The City of Phoenix has the legal authority to accept Federal funding and would be the most appropriate entity to handle any subsequent redevelopment plans and projects in the area. Numerous important details would have to be addressed if the City of Phoenix is willing to consider voluntary dwelling exchange and clearance and redevelopment of exchanged dwellings outside the 1999 65 DNL noise contours. Among these are the location of replacement dwellings, who would be responsible for the outstanding mortgage balance (if any) on the exchange dwelling, and the proper care and management of new vacant lots. In addition, dwelling exchange programs must consider the timing and availability of replacement housing outside the 65 DNL contour and the effects of large scale residential removal on local institutions such as schools and places of worship. Redevelopment plans must emphasize the creation of visual buffers between industrial areas and the remaining residential areas and efficient traffic flow through the redeveloped area so the project does not inadvertently create blighting influences.

Cost and Funding. The cost of dwelling exchange program for the

voluntary acquisition areas depicted on **Exhibit 6G** will essentially be the same as the acquisition program. For planning purposes, it is estimated this program would cost $11.8 million. This assumes that ten percent of residents would use the dwelling exchange program. However, the costs of this program would be eligible for only 50 percent Federal funding through the noise set-aside of the Airport Improvement Program based upon a similar program implemented in Louisville International Airport.

Timing. This program would be offered concurrently with the voluntary acquisition program. It would begin after FAA approval of the updated Noise Compatibility Program, expected by the year 2001.

LAND USE PLANNING ELEMENT

The recommended land use planning measures for the Phoenix Sky Harbor International Airport vicinity are presented below. They are summarized in **Table 6F** at the end of this chapter.

1. Update General Plans to reflect the 1999 noise contour planning boundary from Part 150 Study as basis for noise compatibility planning.

Phoenix, Tempe, Scottsdale, Salt River Pima-Maricopa Indian Community, and Maricopa County should amend their general plans to show the 1999 noise exposure contour planning boundary (NCPB) for Phoenix Sky Harbor International Airport. **Exhibit 6H** shows the NCPB for Phoenix Sky Harbor International Airport. It includes land within the squared-off 1999 65 DNL noise exposure contour.

Relationship to 1989 NCP. This is a continuation and update of Land Use Measure 3 from the 1989 NCP which recommended Phoenix and Tempe adopt the final Part 150 Study as the airport compatibility element of their general plans.

Implementation Actions. This policy can be established by each jurisdiction (Phoenix, Tempe, Salt River Pima-Maricopa Indian Community, and Maricopa County) amending their general plans.

Cost and Funding. Adoption of this measure would involve administrative expenses for Phoenix, Tempe, Salt River Pima-Maricopa Indian Community, and Maricopa County. These would have to be borne by the operating budgets of each jurisdiction.

Timing. Amendments to general plans take time to prepare and process. The Growing Smarter legislation requires communities to update and re-adopt their General Plans by the end of 2001. This would be an ideal opportunity to incorporate the appropriate airport related amendments into the General Plans.

2. Amend General Plan designations to reflect existing compatible and existing lower density land uses within the NCPB.

Description. Several areas within the NCPB are developed with compatible land uses, but are planned for noncompatible land uses or higher concentrations of noncompatible land uses. In addition, two areas west of the Airport are developed with low density residential that are planned for higher concentrations of residential. It is recommended that within the NCPB that general plan designations be amended to reflect the existing compatible land uses or lower density residential use. **Exhibit 6J** depicts the General Plan designations within the NCPB to be amended.

Relationship to 1989 NCP. This is a new measure that was not included in the 1989 NCP.

Implementation Actions. This measure would be implemented through general plan amendments reflecting this policy by the City's of Phoenix and Tempe.

Cost and Funding. This measure would involve administrative expenses. Funding would come from the operating budgets of each jurisdiction.

Timing. For planning purposes, implementation is projected for 2001 to allow time for preparation and processing of the amendments.

3. General Plan Amendment: Amend Mixed Use designations within the 1999 65 DNL contour to exclude residential.

Description. Large areas of planned mixed-use (which allows high concentrations of residential development) east of the airport and within Tempe should be amended. Developing a new mixed use category that does not allow residential inside the 1999 65 DNL noise exposure contour is recommended.

Relationship to 1989 NCP. This is a new measure that was not included in the 1989 NCP.

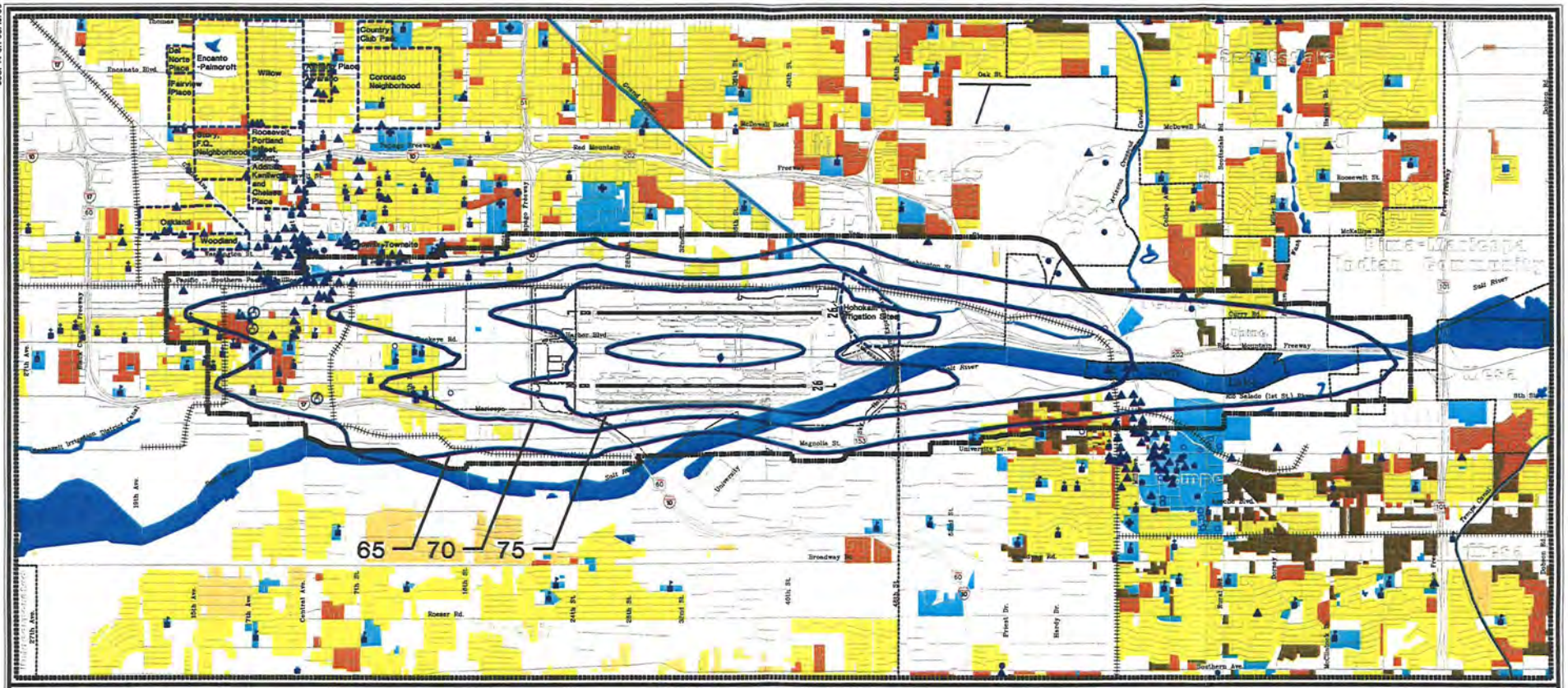
Implementation Actions. This measure would be implemented through general plan amendments reflecting this policy by the City's of Phoenix and Tempe.

Cost and Funding. This measure would involve administrative expenses. Funding would come from the operating budgets of each jurisdiction.

Timing. For planning purposes, implementation is projected for 2001 to allow time for preparation and processing of the amendments.

4. Enact guidelines specifying noise compatibility criteria for the review of development projects within NCPB.

Description. It is recommended that Phoenix, Tempe, and the Salt River



LEGEND

- Airport Property
- Municipal Boundaries
- Study Area
- Historic District Boundaries
- Noise Contour Planning Boundary
- 1999 DNL Noise Exposure Contour
- Rural Residential (0-1 du/ac)
- Large Lot Residential (1.01-2 du/ac)
- Small Lot Residential (2.01-5 du/ac)
- Medium Density Residential (5.01-15 du/ac)
- High Density Residential (15+ du/ac)
- Water
- Noise-Sensitive Institutions
- Place of Worship
- School
- Charter School
- Hospital
- Museum
- Library
- Historic Structure
- Residence Halls
- Community Center

Source: Coffman Associates and Brown-Buntin Associates Analysis.

Air Carrier Activity for August 20, 1998.
Commuter Activity from May 1 to May 16, 1998.
General Aviation Activity from May 1 to May 31, 1998.

Aerial Photography Land Use Interpretation September 1998.

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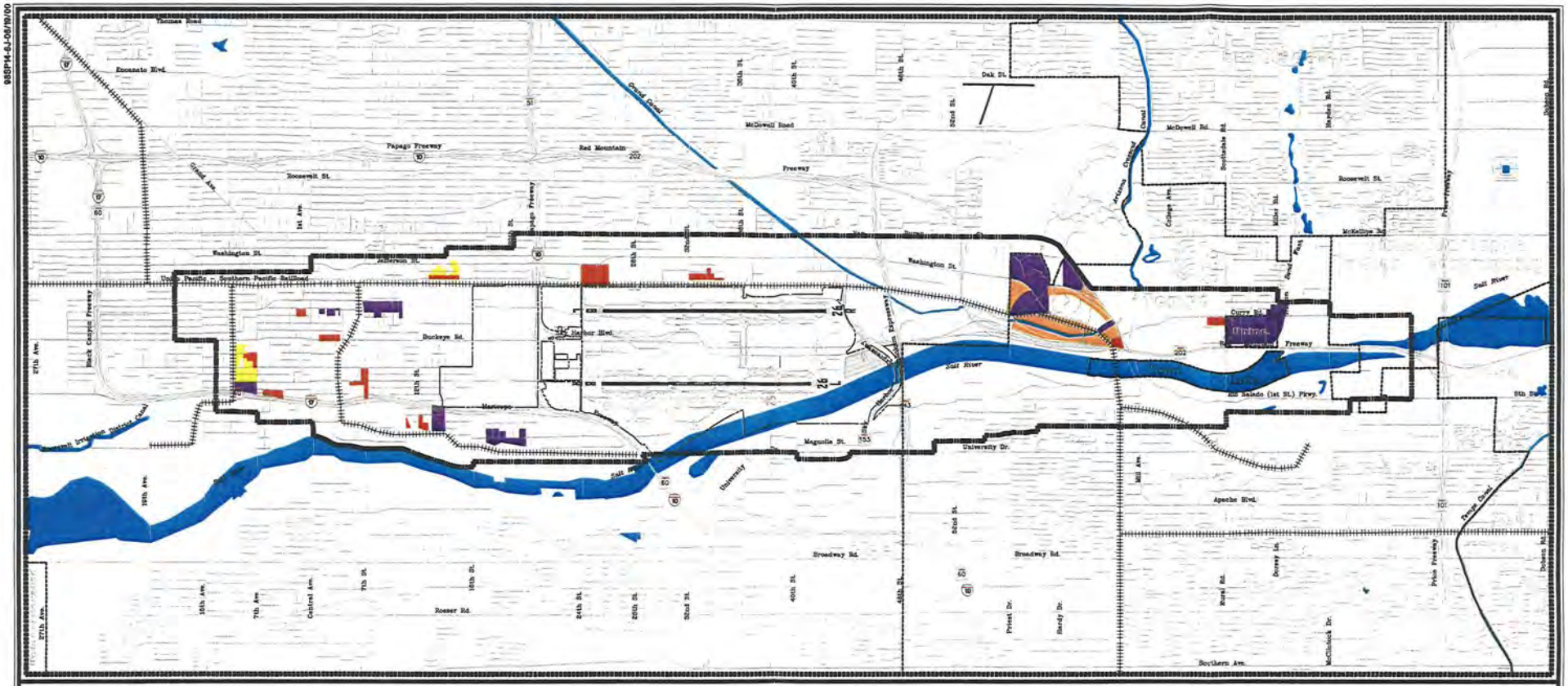
PHOENIX SKY HARBOR INTERNATIONAL AIRPORT

Exhibit 6H
PHOENIX SKY HARBOR INTERNATIONAL AIRPORT
RECOMMENDED NOISE CONTOUR PLANNING BOUNDARY



LEGEND

- Airport Property
- Municipal Boundaries
- Study Area
- Noise Contour Planning Boundary
- Existing Small Lot Residential Planned for Higher Density Residential
- Open Space Planned for Mixed Use Development
- Existing Commercial / Office areas Planned for Noise Sensitive Uses
- Existing Industrial Planned for Noise Sensitive Uses
- Water

Source: General Plan for Phoenix 1985-2000, General Plan Scottsdale, Arizona, City of Tempe General Plan 2020, 1983 General Development Plan of the Salt River Pima-Maricopa Indian Community, Updated by Coffman Associates.

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PHOENIX SKY HARBOR INTERNATIONAL AIRPORT

Exhibit 6J

PHOENIX SKY HARBOR INTERNATIONAL AIRPORT
RECOMMENDED GENERALIZED LAND USE PLAN AMENDMENTS

Pima-Maricopa Indian Community adopt airport land use compatibility guidelines for discretionary review of development projects within the 1999 65 DNL noise exposure contour planning boundary (NCPB). Adding these guidelines to the general plans would add little cost or administrative burden to the review process. A simple checklist could be prepared listing the important factors to consider in reviewing development proposals within the 1999 65 DNL noise exposure contour. The following criteria are suggested:

A. Determine the sensitivity of the subject land use to aircraft noise levels. The F.A.R. Part 150 land use compatibility table can be used for this purpose. (See Exhibit 3A in Chapter Three of the Phoenix Noise Exposure Map Update.)

B. Advise the airport management of development proposals involving noise-sensitive land uses within the NCPB.

C. Locate noise-sensitive public facilities outside the NCPB, if possible. Otherwise, require building construction to provide an outdoor to indoor noise level reduction of 25 decibels within the 65-70 DNL range. Also, require the dedication of noise and avigation easements to the City of Phoenix as the airport proprietor and the recording of a fair disclosure agreement and covenant noting the proximity of the airport and the existing and projected airport noise contours.

D. Discourage the approval of rezonings, exceptions, variances, and conditional uses which introduce noise-sensitive development into areas exposed to noise exceeding 65 DNL.

E. Where noise-sensitive development within the NCPB must be permitted, encourage developers to incorporate the following measures into their site designs.

(1) Where noise-sensitive uses will be inside a larger, mixed use building, locate noise-sensitive activities on the side of the building opposite the airport or, if the building is beneath a flight track, opposite the prevailing direction of aircraft flight.

(2) Where noise-sensitive uses are part of a larger mixed use development, use the height and orientation of compatible uses, and the height and orientation of landscape features such as natural hills, ravines and man-made berms, to shield noise-sensitive uses from

ground-noise generated at the airport.

Relationship to 1989 NCP. This is a continuation and updated of Land Use Measure 4 from the 1989 NCP which recommended development guidelines be adopted for Phoenix and Tempe.

Implementation Actions. Phoenix, Tempe, and the Salt River Pima-Maricopa Indian Community must approve these amendments by ordinance.

Cost and Funding. This will involve administrative expenses that will have to be covered through the operating budget of each jurisdiction.

Timing. For planning purposes, implementation is planned for 2001.

5. Retain compatible land use zoning within the NCPB.

Description. There are several areas within the NCPB are currently zoned for compatible use. When possible, the areas that are zoned for compatible use should be maintained. These areas are depicted on **Exhibit 6K** in dark red (Commercial/Office), dark purple (Industrial), and dark green (Park & Open Space).

Relationship to 1989 NCP. This is a new measure that was not included in the 1989 NCP.

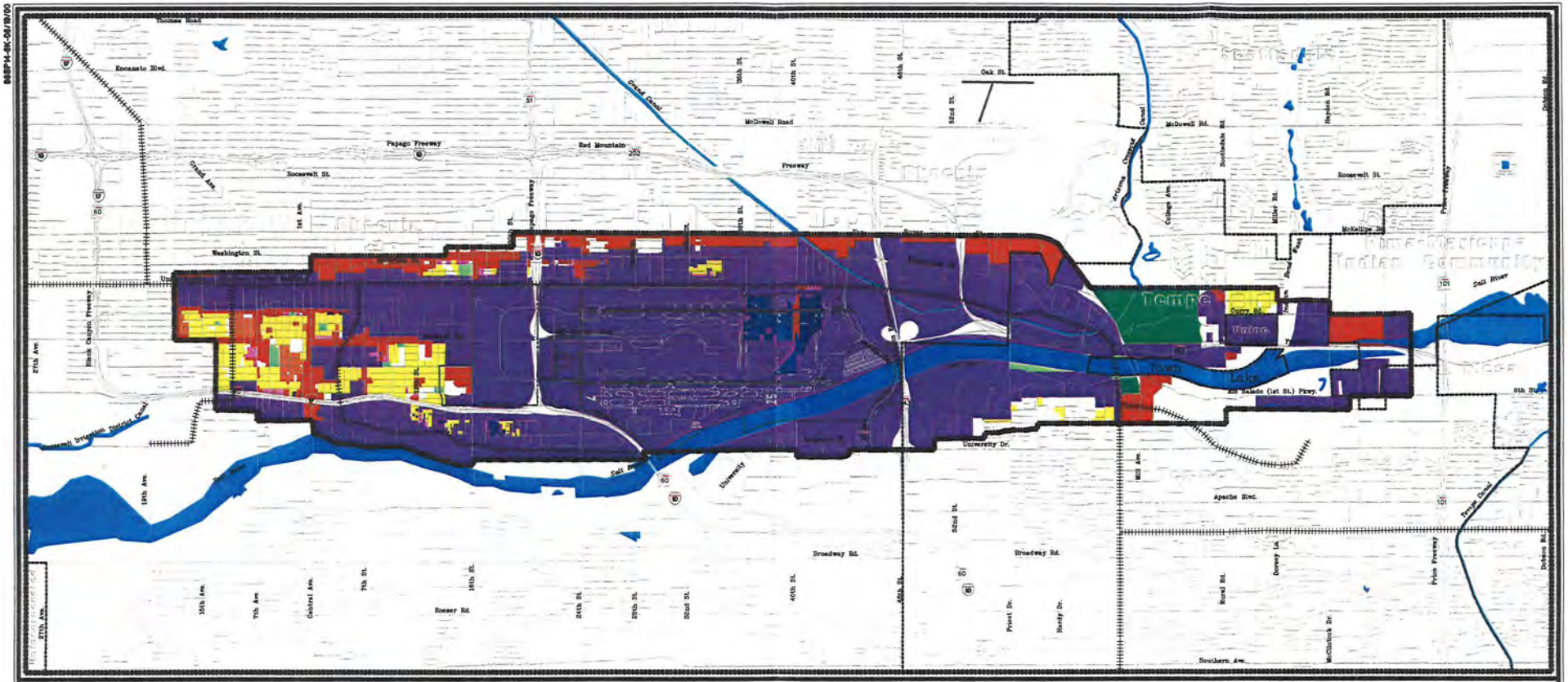
Implementation Actions. Phoenix, Tempe, and the Salt River Pima-Maricopa Indian Community should monitor land use actions within the NCPB and discourage rezoning within these areas.

Cost and Funding. This will involve administrative expenses that will have to be covered through the operating budget of each jurisdiction.

Timing. For planning purposes, implementation is planned for 2001.

6. Amend Zoning Map to reflect General Plan and existing compatible land uses within the NCPB.

Description. Consideration should also be given to encourage the rezoning areas to compatible land uses(commercial or industrial) within the NCPB that are currently developed with compatible land uses, but are zoned for non-compatible land uses. **Exhibit 6K** depicts several areas that are developed with compatible land uses but, are zoned for non-compatible land uses. These areas are identified on **Exhibit 6K** with pink and dark blue colors. Rezoning these areas to current compatible land uses should be encourage. In addition, several existing parks and open space areas west of the Airport are zoned for noise sensitive uses. To the east, a large area at the intersection of Curry and Miller Roads is currently developed in low density residential but zoned for higher density residential. These areas are identified on **Exhibit 6K** with yellow, orange, and light green colors.



LEGEND

- Airport Property
- Municipal Boundaries
- Study Area
- Noise Contour Planning Boundary
- Existing Commercial / Office areas
- Existing Industrial
- Existing Park & Open Space
- Water
- Existing Small Lot Residential Zoned for Higher Density Residential
- Existing Medium Density Residential Zoned for Higher Density Residential
- Existing Commercial / Office areas Zoned for Noise Sensitive Uses
- Existing Industrial Zoned for Noise Sensitive Uses
- Existing Park & Open Space Zoned for Noise Sensitive Uses

Source: Maricopa County, City of Phoenix, City of Tempe, City of Mesa, City of Scottsdale, and Pima-Maricopa Indian Community Zoning Maps. Updated by Coffman Associates.

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PHOENIX SKY HARBOR INTERNATIONAL AIRPORT

Exhibit 6K

PHOENIX SKY HARBOR INTERNATIONAL AIRPORT
RECOMMENDED ZONING AMENDMENTS

Relationship to 1989 NCP. This is a new measure that was not included in the 1989 NCP.

Implementation Actions. Phoenix, and Tempe should encourage rezoning when appropriate

Cost and Funding. This will involve administrative expenses that will have to be covered through the operating budget of each jurisdiction.

Timing. For planning purposes, implementation is projected for 2001.

7. Encourage rezoning several large tracts of land currently developed with low density residential but zoned for higher density non-compatible land uses within the 1999 65 DNL noise exposure contour.

Description. The City of Phoenix should encourage rezoning several large tracts of land currently developed with low density, residential but zoned for higher density non-compatible land uses within the 1999 65 DNL noise exposure contour west and northeast of the Airport. The large tracts, depicted in orange and yellow colors on **Exhibit 6K,** of low and medium density residential land west of the Airport are currently zoned for high density residential.

Relationship to 1989 NCP. This is a new measure that was not included in the 1989 NCP.

Implementation Actions. Phoenix, and Tempe encourage rezoning these areas when appropriate.

Cost and Funding. This will involve administrative expenses that will have to be covered through the operating budget of each jurisdiction.

Timing. For planning purposes, implementation is projected for 2001.

8. Enact overlay zoning to provide noise compatibility land use standards near Airport.

Description. In order to fully promote airport compatibility throughout the Phoenix Sky Harbor International Airport area, it is recommended that Phoenix, Tempe, the Salt River Pima-Maricopa Indian Community, and Maricopa County amend their respective zoning ordinances to include overlay zoning. The suggested overlay zoning boundaries are depicted on **Exhibit 6L** with standards in **Table 6C**.

Relationship to 1989 NCP. This is a continuation and update of Land Use Measure 1 from the 1989 NCP which was not implemented.

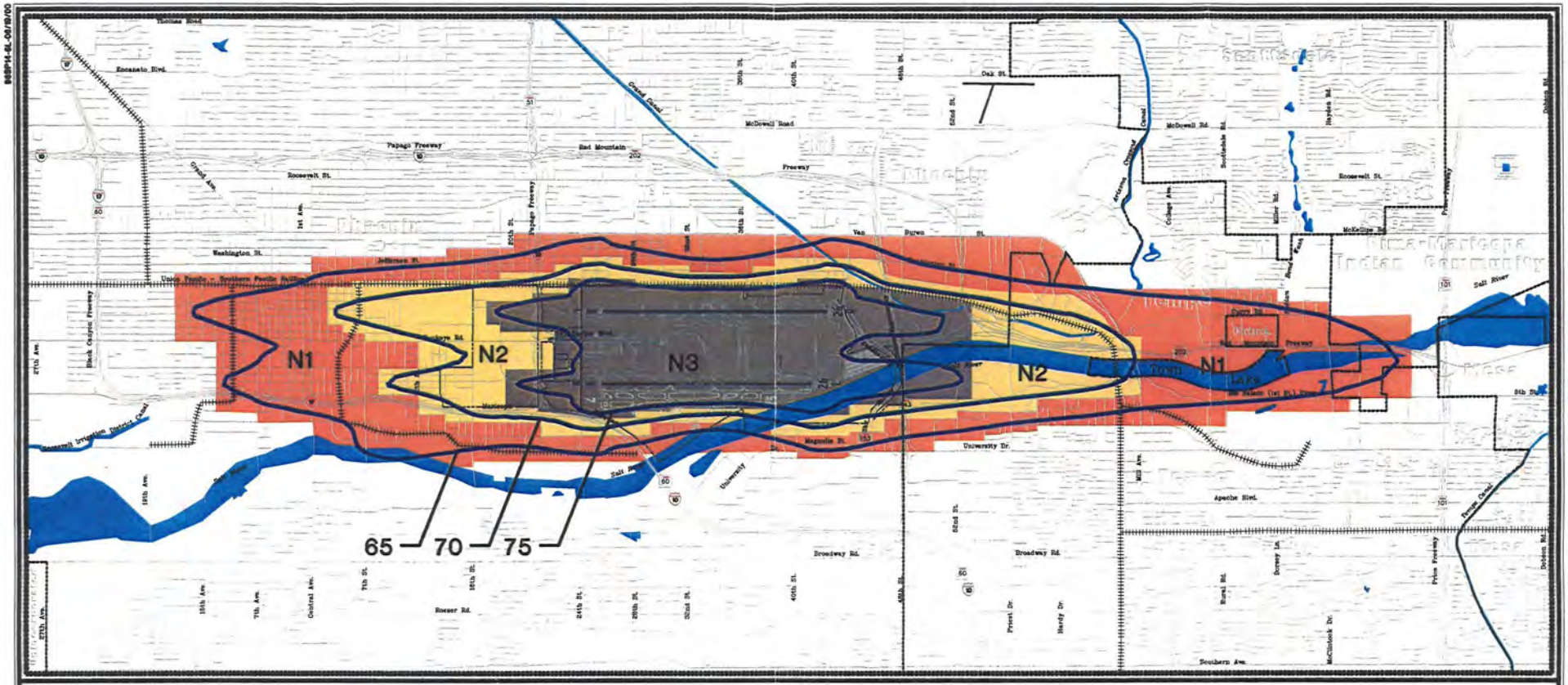
Implementation Actions. Phoenix, Tempe, the Salt River Pima-Maricopa Indian Community, and Maricopa County must approve these amendments by ordinance.

Cost and Funding. This will involve administrative expenses that will have to be covered through the operating budget of each jurisdiction.

Timing. For planning purposes, implementation is projected for 2001.

TABLE 6C
Potential Land Use Compatibility Standards
Phoenix Sky Harbor International Airport

SLUCM No.	Land Use Name	Noise Zones/Levels in DNL		
		N-1 65-70	N-2 70-75	N-3 75+
10	**Residential**			
11	Household Units	Y[1,5,7]	Y[1,5,7]	N
11.11	Single Units - detached	Y[1,5,7]	Y[1,5,7]	N
11.12	Single Units - semi-detached	Y[1,5,7]	Y[1,5,7]	N
11.13	Single Units - attached row	Y[1,5,7]	Y[1,5,7]	N
11.21	Two Units side-by-side	Y[1,5,7]	Y[1,5,7]	N
11.22	Two Units over-under	Y[1,5,7]	Y[1,5,7]	N
11.31	Apartments - walk-up	Y[1,5,7]	Y[1,5,7]	N
11.32	Apartments - elevator	Y[1,5,7]	Y[1,5,7]	N
12	Group Quarters	Y[1,5,7]	Y[1,5,7]	N
13	Residential Hotels	Y[1,5]	Y[1,5]	N
14	Mobile Home in and out of Parks[6]	N	N	N
15	Transient Lodgings, Hotels, Motels	Y[1,5]	Y[1,5]	Y[3,5]
16	Other Residential	Y	Y	N
20	**Manufacturing**			
21	Food & kindred products	Y	Y	Y
22	Textile Mill products	Y	Y	Y
23	Apparel & other finished products made from fabrics, leather, & similar materials	Y	Y	Y
24	Lumber & wood products (except furniture)	Y	Y	Y
	Furniture & fixtures			
25	Paper & allied products	Y	Y	Y
26	Printing, publishing, & allied industries	Y	Y	Y
27	Chemicals & allied products	Y	Y	Y
28	Petroleum refining and related industries	Y	Y	Y
29	Rubber & misc. plastic	Y	Y	Y
	Stone, clay, & glass products - mfg.			
31	Primary metal ind.	Y	Y	Y
32	Fabricated & metal products - mfg.	Y	Y	Y
33	Professional, scientific, & controlling	Y	Y	Y
34	instruments; photographic & optical goods;	Y	Y	Y
35	watches & clocks - mfg.	Y	25	30
	Misc. mfg.			
39		Y	Y	Y



LEGEND

- Airport Property
- Municipal Boundaries
- Study Area
- 1999 Noise Exposure Contour
- Recommended Noise Overlay Zone 1 (DNL 65-70)
- Recommended Noise Overlay Zone 2 (DNL 70-75)
- Recommended Noise Overlay Zone 3 (DNL 75+)

Source: Maricopa Association of Governments, Updated by Coffman Associates.

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PHOENIX SKY HARBOR INTERNATIONAL AIRPORT

Exhibit 6L

PHOENIX SKY HARBOR INTERNATIONAL AIRPORT
RECOMMENDED NOISE OVERLAY ZONES

TABLE 6C (Continued)
Potential Land Use Compatibility Standards
Phoenix Sky Harbor International Airport

SLUCM No.	Land Use Name	Noise Zones/Levels in DNL		
		N-1 65-70	N-2 70-75	N-3 75+
40	**Transportation, communication, and utilities**	Y	Y	Y
41	Rail transportation	Y	Y	Y
42	Motor vehicle transportation	Y	Y	Y
43	Aircraft transportation	Y	Y	Y
44	Marine craft transportation	Y	Y	Y
45	Hwy. & st. right-of-way	Y	Y	Y
46	Automobile parking	Y	Y	Y
47	Communication	Y	Y	Y
48	Utilities	Y	Y	Y
49	Other transportation, communication, and utilities	Y	Y	Y
50	**Trade**			
51	Wholesale trade	Y	Y	Y
52	Retail trade - bldg. materials, hardware, & farm equipment	Y	Y	Y[3]
53	Retail trade - general merchandise	Y	Y	Y[3]
54	Retail trade - food	Y	Y	Y[3]
55	Retail trade - auto	Y	Y	Y[3]
56	Retail trade - apparel & accessories	Y	Y	Y[3]
57	Retail trade - furniture home furnishings	Y	Y	Y[3]
58	Retail trade - eating & drinking est.	Y	Y	Y[3]
59	Other retail trade	Y	Y	Y[3]
60	**Services**			
61	Finance, insurance, & real estate	Y	Y	Y[3]
62	Personal services	Y	Y	Y[3]
62.4	Cemeteries	Y	Y	N
63	Business services	Y	Y	Y[3]
64	Repair services	Y	Y	Y[3]
65	Professional services	Y	Y	Y[3]
65.1	Hospitals, nursing homes	Y[2,5]	Y[3,5]	N
65.1	Other medical facilities	Y[2,5]	Y[3,5]	N
66	Contract construction services	Y	Y	Y
67	Government services	Y	Y[2]	Y[3]
68	Education services	25,[5]	30,[5]	N
69	Misc. services	Y	Y	Y[3]

TABLE 6C (Continued)
Potential Land Use Compatibility Standards
Phoenix Sky Harbor International Airport

SLUCM No.	Land Use Name	Noise Zones/Levels in DNL N-1 65-70	N-2 70-75	N-3 75+
70	**Cultural, entertainment, and recreational**			
	Cultural activities (including churches)			
71	Nature exhibits	25,[5]	30,[5]	N
71.2	Public assembly	Y	Y	N
72	Auditoriums, concert halls	25	30	N
72.1	Outdoor music shells, amphitheaters	25,[5]	30,[5]	N
72.11	Outdoor sports arenas, spectator sports	N	N	N
72.2	Amusement	Y[4]	N	N
73	Recreational activities (including golf courses,	Y	Y	N
74	riding stables, water recreation)	Y	Y	Y
	Resorts & group camps			
75	Parks	Y	N	N
76	Other cultural entertainment & recreation	Y	Y	Y
79		Y	Y	N

Source: Adapted by Coffman Associates, Inc. from **Guidelines for Considering Noise In Land Use Planning and Control**, Federal Interagency Committee on Urban Noise, June 1980.

TABLE 6C (Continued)
Land Use Compatibility Standards
Phoenix Sky Harbor International Airport

NOTES FOR TABLE 6C

[1] All residences in the N-1 and N-2 Zones are marginally noise compatible. As a condition of issuance of a building permit, the builder of the dwelling shall soundproof to achieve a 25 dB reduction from outdoor noise levels (NLR) in the N-1 Zone and a 30 dB NLR in the N-2 Zone. All such soundproofed residential units should be provided with heating, cooling, and ventilation systems capable of permitting closed windows and doors year round. An avigation easement for noise also shall be provided to the City of Phoenix.

Soundproofing will not eliminate outdoor noise problems. However, building location and site planning, design and use of berms and barriers can help mitigate outdoor noise exposure particularly from ground level sources. Measures that reduce noise at a site should be used wherever practical in preference to measures which only protect interior spaces.

[2] Measures to achieve NLR of 25 must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise-sensitive areas or where the normal noise level is low.

[3] Measures to achieve NLR of 30 must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise-sensitive areas or where the normal noise level is low. Motels and hotels in Ldn 75 contour must achieve NLR of 35 in all areas.

[4] Land use compatible provided special sound amplification system is installed.

[5] A noise easement and non-suit covenant should be provided to the City of Phoenix for all new residential development and other specified noise-sensitive uses.

[6] Includes mobile homes and recreational vehicles as defined in the Phoenix Zoning Ordinance.

[7] **A fair disclosure agreement and covenant shall be recorded as a condition of development approval for all permitted uses.**

KEY TO TABLE 6C

SLUCM	**Standard Land Use Coding Manual**, U.S. Urban Renewal Administration and Bureau of Public Roads, 1965.
Y (Yes)	Land use and related structures compatible without restrictions.
N (No)	Land use and related structures are not compatible and shall be prohibited.
NLR	Noise Level Reduction (outdoor to indoor) to be achieved through incorporation of noise attenuation into the design and construction of the structure.
25 or 30	Land use and related structures generally compatible; measures to achieve NLR of 25 or 30 dB must be incorporated into design and construction of structure.

9. Subdivision Regulation Amendment: Require recording of fair disclosure agreements and covenants and overflight easements within the NCPB.

Description. Phoenix, Tempe, the Salt River Pima-Maricopa Indian Community, and Maricopa County should amend their respective subdivision regulations to support the relevant requirements of Airport Overlay Zoning Ordinance as it is recommended to be amended. Specifically, it should be amended to require the recording of fair disclosure agreements and covenants within the Airport Planning Area Zone and the dedication of avigation easements within Airport Overlay Zone 1. This would apply only to new subdivisions. This will ensure that these are taken care of even if no rezoning actions are required prior to subdivision approval. A copy of a suggested amendment to the subdivision regulations is in **Appendix G**.

Relationship to 1989 NCP. This is a new measure that was not included in the 1989 NCP.

Implementation Actions. This requires adoption of an ordinance by each jurisdiction amending its subdivision regulations.

Cost and Funding. This will involve administrative expenses that will have to be covered through the operating budget of each jurisdiction.

Timing. For planning purposes, implementation is projected for 2001.

10. Building Code Amendment: Enact construction standards within the NCPB.

The Airport Overlay zoning ordinance establishes a standard for the outdoor-to-indoor noise level reduction for selected land uses within various noise overlay zones. In order to assist with the implementation of these requirements, Phoenix, Tempe, the Salt River Pima-Maricopa Indian Community, and Maricopa County should amend their local building codes to establish specific construction standards for sound insulation. This would provide builders and inspectors with specific guidance on the materials and construction techniques to ensure adequate sound insulation.

The Maricopa Association of Governments recently published a model set of sound insulation standards in support of a land use study in the Luke Air Force Base environs. This would be an appropriate model for the local jurisdiction to use. A copy of these standards is in **Appendix D**, Implementation Materials.

Relationship to 1989 NCP. This is a new measure that was not included in the 1989 NCP.

Implementation Actions. This requires adoption of an ordinance by each jurisdiction amending its building code.

Cost and Funding. This will involve administrative expenses that will have to be covered through the operating budget of each jurisdiction.

Timing. For planning purposes, implementation is projected for 2001.

PROGRAM MANAGEMENT ELEMENT

The success of the Noise Compatibility Program requires a continuing effort to monitor compliance and identify new or unanticipated problems and changing conditions. Four program management measures are recommended at Phoenix Sky Harbor International Airport. The City of Phoenix is responsible for implementing these measures. They are discussed below and summarized in **Table 6F**.

1. Continue noise abatement information program.

Description. The City of Phoenix uses the noise monitoring and flight track system to investigate aircraft noise complaints and provide general information to the public and airport users upon request. The City of Phoenix has also established a noise complaint phone hotline to log aircraft noise complaints and better respond to area residents.

Relationship to 1989 NCP. This program management element was included in the 1989 NCP.

Implementation Actions. As an existing program, no additional implementation actions are necessary.

Cost and Funding. Since this is an existing policy, no new costs would be incurred by the City of Phoenix.

Timing. This is an existing measure which is recommended to be continued through the future.

2. Monitor implementation of the updated F.A.R. Part 150 Noise Compatibility Program.

Description. The City of Phoenix must monitor compliance with the Noise Abatement Element. This will involve checking periodically with the air traffic control manager regarding compliance with the procedures (Noise Abatement Measures 1, 4, 5, 7, 8, 9, and 10). Where appropriate, the City of Phoenix also should check occasionally with airport users. This is especially appropriate in checking on compliance with the NBAA standard or manufacturer noise abatement departure procedures (Noise Abatement Measure 3).

The City of Phoenix should develop informational and promotional materials explaining the noise abatement program to pilots. These materials should include a pilot guide, a detailed description of the NBAA standard or manufacturer noise abatement departure procedures. These materials should be prepared in a format allowing for insertion into a standard Jeppesen manual. The airport management also should print a series of eye-catching posters for display in pilot lounges and at the FBOs explaining different aspects of the noise abatement program.

It may be necessary from time to time to arrange for noise modeling or flight track analysis to study issues that may arise in the future.

The City of Phoenix also should maintain communications with Phoenix, Tempe, Scottsdale, the Salt River Pima-Maricopa Indian Community, and Maricopa County planning officials to follow their progress in implementing the relevant measures of the Land Use Management Element.

Relationship to 1989 NCP. This was included in the 1989 NCP.

Implementation Actions. The administrative actions discussed above in the "Description" will be necessary.

Costs and Funding. This measure will require considerable administrative time and staff support. Expenditures for posters, promotional materials, and special noise monitoring or modeling studies could be necessary from time to time. For budgeting purposes, this cost is estimated at $30,000 every three years. This would be covered through the airport operating budget.

Timing. This is an ongoing activity that should begin as soon as the *Noise Compatibility Program* is approved by the City of Phoenix.

3. Update *Noise Exposure Maps* and *Noise Compatibility Program.*

Description. The airport management should review the *Noise Compatibility Program* (NCP) and consider revisions and refinements as necessary. A complete plan update will be needed periodically to respond to changing conditions in the local area and in the aviation industry. This can be anticipated every seven to ten years.

An update may be needed sooner, however, if major changes occur. An update may not be needed until later if conditions at the airport and in the surrounding area remain stable.

Proposed changes to the NCP should be reviewed by the FAA and all affected aircraft operators and local agencies. Proposed changes should be submitted to the FAA for approval after local consultation and a public hearing to comply with F.A.R. Part 150.

Even if the NCP does not need to be updated, it may become necessary to update the *Noise Exposure Maps* (NEMs). F.A.R. Part 150 requires the NEMs to be updated if any change in the operation of the airport would create a substantial, new non-compatible use. The FAA interprets this to mean an increase in noise levels of 1.5 DNL or more, above 65 DNL, over non-compatible areas that had formerly been compatible.

Relationship to 1989 NCP. This recommendation was included in the 1989 NCP.

Implementation Actions. No specific implementation actions, other than those discussed above, are required.

Cost and Funding. Costs of a complete update of the Noise Compatibility Program are estimated at $450,000. This would be eligible for up to 80 percent funding from the FAA. The City of Phoenix would be responsible for the remaining 20

percent. This would come from the airport operating budget.

Timing. This should be done as necessary. Updates are typically needed every seven to ten years, depending on how much change occurs at the airport and in the local area. For planning purposes, one update can be expected over the next 10 years.

4. Expand flight track monitoring coverage.

Description. The City of Phoenix should expand the flight track monitoring coverage for 15 miles to 30 miles. This will provide additional coverage that will allow airport staff to better respond to aircraft noise complaints, monitor potential route changes, and provide information for requests in outlying areas.

Relationship to 1989 NCP. This is a new measure not included in the 1989 NCP.

Implementation Actions: The City of Phoenix Aviation Department will have to amend their current agreement with the FAA to obtain the additional flight track coverage. Software adjustments to display screens and information storage requirements will be needed to accommodate the expanded flight track coverage area.

Cost and Funding. The cost of the software adjustment is estimated at $10,000. This would be eligible for Federal funding through the noise set-aside of the Airport Improvement Program. This would cover up to 80 percent of the costs. The balance would be covered through the City of Phoenix's capital budget.

Timing. For planning purposes, this is projected for the year 2001.

RESIDUAL NOISE IMPACTS

The recommended noise abatement and land use management programs will reduce the cumulative aircraft noise exposure impact now and in the future. A review of the residential impacts from the Noise Compatibility Plan is presented below.

NOISE-SENSITIVE LAND USE

Table 6D shows the number of dwelling units exposed to noise for baseline conditions and after implementation of the Noise Compatibility Plan. For 1999 baseline conditions, 5,231 dwelling units are impacted by noise above 65 DNL. The number impacted by noise above 70 DNL is 322. No dwellings are impacted above 75 DNL.

In the year 2004, the total number of homes exposed to noise above 65 DNL without the Plan would be 3,114. If the recommended plan is fully implemented, the number of dwellings impacted by noise in the year 2004 would decrease to 3,110.

Approximately 3,816 dwellings are impacted in the year 2015 without the Plan. If the recommended plan is implemented, the number of dwellings impacted by aircraft noise would decrease to 3,815 homes in the year 2015.

TABLE 6D
Dwelling Units Exposed to Noise
With Noise Compatibility Plan Versus Baseline Conditions

	Baseline Noise (Without Plan)			With Noise Compatibility Plan	
	1999	2004	2015	2004	2015
65-70 DNL	4,909	3,114	3,813	3,110	3,812
70-75 DNL	322	0	3	0	3
75+ DNL	0	0	0	0	0
Total Above 65	5,231	3,114	3,816	3,110	3,815

[1] Totals include homes acoustically treated.
Source: Coffman Associates analysis.

Table 6E shows the population exposed to noise with implementation of the Noise Compatibility Plan in comparison with baseline conditions. For 1999 baseline conditions, 13,117 people are impacted by noise above 65 DNL. For the 2004 Noise Compatibility Plan, the population impacted by noise above 65 DNL is 7,777 compared with 7,784 by 2004 without the Plan. The level-weighted population (LWP) with the Plan is 2,924 compared with 2,927 for the baseline conditions. (Level-weighted population is an estimate of the number of people actually annoyed by aircraft noise. The footnote in **Table 6E** explains how it is computed.)

The population impacted by noise above 65 DNL is 9,571 with the 2015 Noise Compatibility Plan compared with 9,574 by 2015 without the Plan.

TABLE 6E
Population Exposed to Noise
With Noise Compatibility Plan Versus Baseline Conditions

	Baseline Noise (Without Plan)			With Noise Compatibility Plan	
	1999	2004	2015	2004	2015
65-70 DNL	12,312	7,784	9,566	7,777	9,563
70-75 DNL	805	0	8	0	8
75+ DNL	0	0	0	0	0
Total Above 65	13,117	7,784	9,574	7,777	9,571
LWP[1] Above 65	5,147	2,927	3,601	2,924	3,601

[1] LWP - level-weighted population is an estimated of the number of people actually annoyed by noise. The actual population within each 5-DNL range is multiplied by the appropriate response factor to compute LWP. The factors are: 65-70 DNL - .376; 70-75 DNL - .644; 75+ DNL - 1.00. See the Technical Information Paper, **Measuring the Impact of Noise on People.**

Source: Coffman Associates analysis.

SUMMARY

The Noise Compatibility Program for Phoenix Sky Harbor International Airport is summarized in **Table 6F**. The total cost of the program is estimated at $219,345,500. Most of the costs are due to the voluntary acquisition and exchange of dwellings. This includes $106,555,950 for the acquisition of dwellings and $11,839,550 for a dwelling exchange program. Other significant costs include sound insulation of single family homes ($72,600,000), sound insulation for schools ($18,000,000), acoustical treatment for community centers and places of worship ($7,800,000), monitor implementation of the updated Noise Compatibility Plan ($90,000), update of the Plan ($450,000) and expansion of the noise monitoring system ($10,000).

Most of the cost ($149,876,535) would be eligible for FAA funding through the noise set-aside of the Federal Airport Improvement Program. Thirty-two percent of the cost ($69,448,965) would be covered through the City of Phoenix's airport operating budget.

TABLE 6F
Summary of Noise Compatibility Program, 1999-2015
Phoenix Sky Harbor International Airport

Measure	Cost to Airport or Government	Direct Cost to Users[1]	Timing	Lead Responsible Agency[2]	Potential Funding Sources
NOISE ABATEMENT ELEMENT					
1. Continue the runway use program calling for the equalization of departure operations to the east and west for both daytime and nighttime.	None	None	Ongoing	City of Phoenix	N.A.
2. Continue promoting use of AC 91-53A Noise Abatement Departure Procedures by air carrier jets.	Administrative[3]	None	Ongoing	City of Phoenix	N.A.
3. Continue promoting use of NBAA noise abatement procedures, or equivalent manufacturer procedures, by general aviation jets.	Administrative[3]	None	Ongoing	City of Phoenix	N.A.
4. Continue SID procedure from Runway 26L requiring a turn to a 240-degree heading.	Administrative[3]	None	Ongoing	City of Phoenix, (FAA Airport Traffic Control)	N.A.
5. Continue the 4 DME departure route procedure which overflies the Salt River by all jets and large propeller aircraft departing Runways 8R/L.	Administrative[3]	None	Ongoing	City of Phoenix	N.A.
6. Continue compliance with the Airport's Engine Test Run-up Policy.	Administrative[3]	Negligible	Ongoing	City of Phoenix,	N.A.

TABLE 6F (Continued)
Summary of Noise Compatibility Program, 1999-2015
Phoenix Sky Harbor International Airport

Measure	Cost to Airport or Government	Direct Cost to Users[1]	Timing	Lead Responsible Agency[2]	Potential Funding Sources
NOISE ABATEMENT ELEMENT (Continued)					
7. Implement the 4 DME departure route procedure which overflies the Salt River by all jets and large propeller aircraft departing Runway 7.	Administrative[3]	Negligible	2000	FAA Airport Flight Standards Division	N.A.
8. Direct small piston aircraft departing Runway 7 to turn to a 120-degree heading upon reaching the end of the runway.	Administrative[3]	Negligible	2000	FAA Airport Flight Standards Division	N.A.
9. Direct aircraft departing Runway 25 to turn to a 240-degree heading upon reaching the end of the runway.	Administrative[3]	Negligible	2000	FAA Airport Flight Standards Division	N.A.
10. Establish a "side-step" approach to Runway 25.	Administrative[3]	Negligible	2000	FAA Airport Flight Standards Division	N.A.
11. Encourage the use of DGPS, RNAV, FMS equipment to enhanced noise abatement navigation.	Administrative[3]	Negligible	2000	City of Phoenix, FAA Airport Traffic Control Tower	N.A.
12. Build engine maintenance run-up enclosure.	$2,000,000	None	Dependent upon funding	City of Phoenix	FAA (80%) Airport capital budget (20%)
13. Support 161st air refueling wing of the Arizona Air National Guard's efforts to re-engine KC-135 aircraft.	Administrative[3]	Negligible	2000	City of Phoenix	N.A.

TABLE 6F (Continued)
Summary of Noise Compatibility Program, 1999-2015
Phoenix Sky Harbor International Airport

Measure	Cost to Airport or Government	Direct Cost to Users[1]	Timing	Lead Responsible Agency[2]	Potential Funding Sources
NOISE MITIGATION ELEMENT					
1. Sound Insulate single family homes within the 1992 65 DNL contour and single family homes outside the 1992 65 DNL contour but inside the 1999 65 DNL contour.	$72,600,000	None	Ongoing	City of Phoenix	FAA (80%)[4] Airport capital budget (20%)
2. Sound Insulate approximately ten schools within the 1999 65 DNL contour.[5]	$30,000,000	None	Dependent upon funding	City of Phoenix	FAA (80%) Airport capital budget (20%)
3. Acoustical Treatment of community centers and Church class/meeting rooms within the 1999 65 DNL contour.	$7,500,000	None	Dependent upon funding	City of Phoenix	FAA (80%) Airport capital budget (20%)
4. Voluntary Acquisition and Redevelopment: Acquire dwellings north and west (to 7th Street) of the airport within the 1999 70 DNL contour.	$106,555,950	None	Dependent upon funding	City of Phoenix	FAA (80%) Airport capital budget (20%)
5. Exchange dwellings impacted within the 70 DNL noise contour with a dwelling outside the 65 DNL noise contour.	$11,839,550	None	Dependent upon funding	City of Phoenix	FAA (50%) Airport capital budget (50%)

TABLE 6F (Continued)
Summary of Noise Compatibility Program, 1999-2015
Phoenix Sky Harbor International Airport

Measure	Cost to Airport or Government	Direct Cost to Users[1]	Timing	Lead Responsible Agency[2]	Potential Funding Sources
LAND USE PLANNING ELEMENT					
1. Update General Plans to reflect the 1999 65 DNL noise contour planning boundary (NCPB) from Part 150 Study as basis for noise compatibility planning.	Administrative[3]	None	2001	Phoenix, Tempe, and Salt River Pima-Maricopa Indian Community	N.A.
2. Amend General Plan designations to reflect existing compatible and existing lower density land uses with the NCPB.	Administrative[3]	None	2001	Phoenix and Tempe	N.A.
3. General Plan Amendment: Amend Mixed Use designations within the 1999 65 DNL contour to exclude residential.	Administrative[3]	None	2001	Tempe	N.A.
4. Enact guidelines specifying noise compatibility criteria for the review of development projects within the NCPB	Administrative[3]	None	2001	Phoenix, Tempe, and Salt River Pima-Maricopa Indian Community	N.A.
5. Retain compatible land use zoning within the NCPB.	Administrative[3]	None	2001	Phoenix, Tempe, and Salt River Pima-Maricopa Indian Community	N.A.

TABLE 6F (Continued)
Summary of Noise Compatibility Program, 1999-2015
Phoenix Sky Harbor International Airport

Measure	Cost to Airport or Government	Direct Cost to Users[1]	Timing	Lead Responsible Agency[2]	Potential Funding Sources
LAND USE PLANNING ELEMENT (Continued)					
6. Amend Zoning Map to reflect General Plan and existing compatible land uses within the NCPB.	Administrative[3]	None	2001	Phoenix and Tempe	N.A.
7. Encourage rezoning several large tracts of land currently developed with low density residential but zoned for higher density non-compatible land uses within the 1999 65 DNL noise exposure contour.	Administrative[3]	None	2000 - 2001	City of Phoenix	N.A.
8. Airport Noise Overlay Zoning: Enact overlay zoning to provide noise compatibility land use standards near Airport.	Administrative[3]	None	2000 - 2001	Phoenix, Tempe, Scottsdale, and Salt River Pima-Maricopa Indian Community	N.A.
9. Subdivision Regulations Amendment: Require recording of fair disclosure agreements and covenants and overflight easements within the NCPB.	Administrative[3]	None	2000 - 2001	Phoenix, Tempe, and Salt River Pima-Maricopa Indian Community	N.A.
10. Building Code Amendment: Enact construction standards within the NCPB.	Administrative[3]	None	2000 - 2001	Phoenix, Tempe, and Salt River Pima-Maricopa Indian Community	N.A.

TABLE 6F (Continued)
Summary of Noise Compatibility Program, 1999-2015
Phoenix Sky Harbor International Airport

Measure	Cost to Airport or Government	Direct Cost to Users[1]	Timing	Lead Responsible Agency[2]	Potential Funding Sources
PROGRAM MANAGEMENT ELEMENT					
1. Continue noise abatement information program.	Administrative[3]	None	Ongoing	City of Phoenix	N.A.
2. Monitor implementation of updated *Noise Compatibility Program.*	$90,000 ($30,000 every 3 years)	None	Ongoing	City of Phoenix	Airport operating budget
3. Update *Noise Exposure Maps* and *Noise Compatibility Program.*	$450,000 every 7 to 10 years as needed	None	Every 7 to 10 years as needed.	City of Phoenix	FAA (80%) Airport budget (20%)
4. Expand flight track monitoring coverage.	$10,000	None	2001	City of Phoenix	FAA (80%) Airport operating budget (20%)
		Funding Source		**Amount**	**Percent**
Total Costs and Funding		FAA		$159,172,535	68.89%
		Airport capital budget		$71,780,965	31.07%
		Airport operating budget		$92,000	0.04%
		Total		$231,045,500	

NOTES:

N.A. -- Not applicable.

1 Airport users will be indirectly responsible for at least part of the City of Phoenix's share of funding through lease payments and user fees.

2 Where the City of Phoenix does not have direct responsibility for implementing a given measure, it will encourage the listed jurisdictions to implement measures as described.

3 Administrative costs are assumed to be covered through the normal operating budgets of the implementing agency. No additional staff or expenditures are expected.

4 Homes within the 1999 65 DNL contour are eligible for up to 80 percent funding from the noise set-aside of the Airport Improvement Program. Homes outside the 1999 65 DNL contour but inside the 1992 65 DNL noise contour must be funded by the Airport.

5 Entry includes the addition of three charter schools and one pre-school. Due to comments received following the submission of the Noise Exposure Maps document, three charter schools and one pre-school have been added to the Noise Compatibility Program.

Exhibit 7

REQUEST FOR PROPOSAL

RFP# 22-030

PURCHASE AND/OR LEASE AND DEVELOPMENT OF CITY-OWNED LAND CONSISTING OF APPROXIMATELY 46 ACRES LOCATED AT THE NORTHEAST CORNER OF RIO SALADO PARKWAY AND PRIEST DRIVE, TEMPE, ARIZONA

RFP ISSUE DATE:
JULY 22, 2021

DEADLINE FOR INQUIRIES/QUESTIONS:
THURSDAY, August 5, 2021, 5:00 P.M. LOCAL ARIZONA TIME

RFP DUE DATE AND TIME:
THURSDAY, AUGUST 19, 2021, 3:00 P.M. LOCAL ARIZONA TIME

ALL INQUIRIES MUST BE DIRECTED TO:
LISA GOODMAN, NIGP-CPP, CPPO, CPPB
EMAIL: lisa_goodman@tempe.gov
PHONE: 480-350-8533

SUBMITTAL LOCATION: Due to the COVID Virus, Tempe will only accept an e-copy of the completed and signed proposal via e-mail to the following address: Bids@tempe.gov

No hard copy proposals will be accepted at this time.

Table of Contents

Offer Form

"Return this Section with your Response"

It is **MANDATORY** that Offeror **COMPLETE, SIGN** and **SUBMIT** the original of this form to the City of Tempe Procurement Office with the (your) offer. An unsigned "Offer Form" and/or late RFP response will be considered non-responsive and rejected.

This Offer is offered by: _____

Company/Organization Name

To the City of Tempe:

By signing this Offer, Offeror acknowledges acceptance of all conditions contained herein. Offeror certifies that the Offer was independently developed without consultation with any other offerors or potential offerors.

For clarification of this Offer, contact:

_____ _____ _____

Respondent Contact Name | Title | Phone

_____

Name of Company

_____

Company Address (or PO Box) | City | State | Zip

This Offer is offered by:

_____ _____ _____

Authorized Respondent Name | Title | Phone

_____ _____

Signature of Authorized Respondent Required | **Date of Offer**

REQUEST FOR PROPOSAL – Purchase and/or lease and development of City-owned land consisting of approximately 46 acres located at the northeast corner of Rio Salado Parkway and of Priest Drive, Tempe, AZ.

Section I - Introduction

Tempe is located in the geographic core of the Phoenix metropolitan area. The City Property (defined below) is located in one of the largest concentrations of major employment centers in the Phoenix metro area. The City of Tempe has a population of approximately 192,000. The City Property is located close to the surrounding communities of Phoenix, Mesa and Scottsdale, within five miles of a population of 250,000 persons and some 80,000 households, and within two miles of all general residential services. The City is seeking creative, feasible proposals for transforming this City property into a 24 / 7 / 365 destination location as described further herein.

Section II – Description of Site

The City-owned land (the "Property") is located on Rio Salado Parkway immediately west of the IDEA Campus and east of Priest Drive. A map of the location is attached (Appendix A) and consists of approximately 46 acres. It is the responsibility of the respondent to verify the exact square footage. The area is a known brownfield site. Appendices B through G provide soil investigation reports and currently known remediation details as well as approved documents for the City's vision of the area.

The parcels that are under consideration are identified by the following Maricopa County Assessor Parcel Numbers:

- 124-27-013
- 124-27-014

There is currently a City municipal operations yard on the northeast corner of Priest Drive and Rio Salado Parkway (APN 124-27-013). All proposals must allow for the City to relocate those operations to another location, no sooner than June 30, 2024.

The Property lies within a noise mitigation area identified by the City of Phoenix in connection with the operation of Phoenix Sky Harbor International Airport, and it is incumbent upon the developer to obtain the most current noise contour maps from the City of Phoenix. City recommends that the developer adhere to the most recently updated FAA Noise Mitigation measures identified in Phoenix Sky Harbor International Airport F.A.R. Part 150 Noise Compatibility Study for all new construction in the area within which the Property is located. Developer will assume full responsibility for obtaining any necessary approvals from the FAA and any other federal agency whose approval is required in connection with the development of the Property.

Finally, it will be respondent's financial responsibility to remediate the land in accordance with a mutually agreeable schedule incorporated into a Development and Disposition Agreement and commence construction immediately after remediation is completed. The exact terms of any financial incentives provided by the City will be considered during the negotiation of the Development and Disposition Agreement after the respondent has identified public benefits for City consideration.

Section III – Description of Zoning and Projected Land Use

- General Plan Designation: Commercial/Public Open Space/Industrial
- General Plan Amendment (GPA) Required: Yes
- Zoning Map Designation: R1-6, GID
- Zoning Map Amendment Required: Yes
- Character Area: Rio Salado/Downtown/ASU (Approved June 7, 2018)
- Other: Rio Salado Overlay District

Please note that allowable FAA Height is approximately 100+ feet. In addition, respondent must submit GPA and Rezoning applications and complete the process in accordance with normal City procedures.

Section IV – Description of Possible Development

The City of Tempe herein invites all qualified and interested parties to submit offers for the development of City-owned land located at the northeast corner of Rio Salado Parkway and Priest Drive in Tempe, Arizona. The approximately 46-acre parcel is offered for the development of a mixed-use project with the following minimum components (provide all components in a unit and square foot breakdown as well as conceptual site plan):

- Development of a mixed-use Sports and Entertainment District that is home to a professional sports franchise
- 1,000 residential units
- 200,000 SF retail
- Sports stadium/arena and practice facility
- Large plaza area with numerous amenities and shaded, which will be made available for public gatherings and events
- Thirty percent (30%) of tenanting with LOIs/MOUs
- Strategy and uses to activate the district allowing for large public gatherings and a proposed schedule of activities.
- Name recognition for Tempe and an opportunity for Tempe public service announcements
- Open space and walkability connecting to Innovation Discovery Education Arts (IDEA) Tempe, the Tempe Center for the Arts and Tempe Town Lake trail system
- Appropriate parking and transit options for multi-modal transportation
- Conceptual designs to meet urban trends
- Local retail tenants
- Preference for green sustainable building practices. Developer agrees to use its commercially reasonable efforts to register and utilize apprenticeship and highly skilled worker programs.

All proposals must include all of the following items in the proposal to be considered complete:

1. **Site Plan with proposed elevations and renderings**

    - Details of the mix/intensity of uses including proposed heights, density, square footage and number of units/keys
    - Open space and proposed public amenities
    - Creative ideas for parking and transit options for multi-modal transportation
    - LOIs and list of potential tenants

2. **Economic Impact Summary** that illustrates the following:

    - Anticipated economic benefit to Tempe, which impact must justify moving the City's Priest Yard facilities
    - The types of jobs that will be offered and estimates of the number of new jobs
    - The average salaries associated with those jobs
    - Market cannibalization analysis, particularly with respect to the impact to Mill Avenue and other business in the downtown.

3. **Public Benefit Summary** that demonstrates and calculates how the project complies with Arizona's "Gift Clause," contained in article 9 of its Constitution:

    - Direct public benefits the development will contribute to the City of Tempe as documented in a development agreement such as the following:
        - Sustainability Measures
        - Traffic Reduction/20 Minute City
            - Streetcar/Orbit contributions
            - Park and Ride Options

        - Cross-parking agreements
        - Multi-modal incentives
    - Workforce Development Programs
    - Culture and Literacy
        - Arts programming
        - Tempe Pre-K/Career Ready Tempe
        - Open Space and Parks
        - Event planning for City of Tempe events
    - Housing Affordability
        - Tempe Coalition for Affordable Housing, Inc.
        - Restrictive Covenant for Workforce Housing if any Multifamily Housing is proposed as part of the project
    - Guaranteed Job Creation
    - Guaranteed Tax Revenue
    - Public Amenities
        - Plaza and event areas
        - Amenitized public spaces with resort-inspired landscaping
    - Public service announcements and guaranteed public use
- Calculations for proposed incentive request(s)
- Please identify any public vs. private infrastructure requirements in terms of incentives and direct public benefits.

4. **Demonstrated financial ability.** Detail the amount of liquid assets currently available to the Developer to commit to the Project and the amount of capital the Developer is willing to invest in the development of the City-owned land. The respondent should demonstrate its ability to develop all of the City-owned land and the financial capacity to complete a large development project upon approval of a Development and Disposition Agreement and commence construction immediately after remediation is completed.

    - **Please submit financial statements and project pro forma including details on sources and uses of funds under a separate confidential cover when proposal is submitted.**

5. **Proven experience developing brownfield properties** and large master-planned mixed-use projects within the last seven (7) years. Please list all development partners and investors and provide a development resume for each, indicating their past experience on a comparable project.

6. **Traffic Study** detailing the impact of the project on traffic in the area and identifying mitigation opportunities.

7. **Public Safety Study** detailing the impact of the project on public safety in the area and identifying mitigation opportunities.

8. **As stated above, the City-owned land consists of two parcels with the City's Priest Yard on Maricopa County Assessor Parcel No. 124-27-013. This parcel is subject to certain rights pursuant to that certain Development and Disposition Agreement (Multiple Parcels Near the Corner of Rio Salado Parkway and Priest Drive) dated February 14, 2013 and recorded on March 18, 2013 as Maricopa County Official Recorder's No. 20130246646. The aforementioned rights are currently held by Verde Investments, Inc., an Arizona corporation, pursuant to that certain Assignment and Assumption of Interest in Development and Disposition Agreement dated August 2, 2019 and recorded on August 2, 2019 as Maricopa County Official Recorder's No. 20190592025. The proposal must include respondent's plan for acquisition of this parcel, proposed financing for doing so and acquiescence from Verde Investments, Inc., or current entity that holds the aforementioned rights.**

9. **Project timeline and plan** for these items:

    - Conveyance plan for the property identified in #8 above
    - Relocation of the Priest Yard
    - Remediation of the site
    - Development of the site

Section V – Method of Developer Selection

The interest of the City of Tempe is to select a mixed-use developer who demonstrates the best advantage to produce a successful development of this size and has experience in developing sports and entertainment mixed-use projects. After review of the offers received by the City, the City Council may select a developer for the right to negotiate for the development of the project.

Each developer responding to this Request for Proposal must describe and demonstrate their organizational capacity to initiate the project within 24 months, as evidenced by commencement of remediation efforts.

Developers who have, within the past five (5) years, filed for bankruptcy, defaulted on a loan, or have failed to perform under any agreement with the City of Tempe will be excluded from the selection process.

The City reserves the right to reject all submittals and to award portions of the Property to different developers. Each respondent will be notified whether its submittal is to be considered for final selection. Submission of offers by the deadline provided below will be used as a method of selection. No late submissions will be accepted. The City may require top-rated candidates to participate in an interview process.

Section VI – Submittal Requirement and Evaluation Criteria

Submit a single e-copy of the signed and completed RFP response. The City's e-mail is capable of accepting up to a 10MB attachment. Please try and keep the submittal under this size limit. However, if you need to exceed 10MB, please break the submittal response up into two sections and e-mail in two separate messages clearly indicating the solicitation numberon the subject line and denoting Part 1 and Part 2 response.

The respondent shall respond particularly to the following items, which represent criteria in the developer selection process.

The following criteria are stated as indicators to interested respondents, to give general guidance for the Offers, but are not exclusive of other considerations that may be deemed by the City as appropriate, given the content of Offers:

A. Experience (20%)

Provide a description of the respondent's experience in the past seven years demonstrating up to three projects developing a large mixed-use, sports and entertainment project. For all projects identify the degree to which the responding organization was involved in the acquisition/purchase of the property, the entitlement process, and the completion of construction.

For each project referenced, please state the amount of land developed, the building area constructed, and the amount of time taken to complete the project. Detail the role senior/principal members of the responding organization played in each project referenced in the response.

Include contact information for at least three (3) of the projects referenced so that the City has the ability to confirm the performance of the project team.

B. Financial Strength (20%)

Demonstrated financial ability. Detail the amount of liquid assets currently available to the Developer and the amount of capital the Developer is willing to invest in the purchase and development of the City-owned land. The respondent should demonstrate its ability to develop all of the City-owned land and the financial capacity to complete a large development project upon approval of a Development and Disposition Agreement and commence within 24 months. Please submit financial statements and project pro forma including details on sources and uses of funds under a separate cover.

C. Organizational Capacity (20%)

Include a detailed description of the Proposals of the principals as well as architects, engineers, contractors and other professionals who will comprise the development team. In addition, please state the role each of these individuals/professionals will play in the development of the City-owned land. The response should list other projects/properties currently under development, and the amount of time the developer is willing to contribute to the development of the proposed project. In addition, the developer should detail their ability to identify and engage stakeholders in public process.

D. Project Design (20%)

See above for details. The proposed site plan will be subject to the City's Preliminary Site Plan Review process.

E. Project Feasibility (20%)

The developer must describe the feasibility of this project in the following terms:

- From a financial perspective:
  - Please include details on all proposed financing mechanisms for land acquisition, remediation and infrastructure, and project construction as well as any other financial obligations the site imposes.
  - Also, detail the financial commitments that comprise the proposal to give assurances of project feasibility to complete the development as proposed in the timeframe proposed.
- From a public benefit perspective: How will the project provide direct public benefits to the City of Tempe in order to offset any requested incentives?
- From a local (not regional) economic impact perspective: What is the long-term economic impact to the entire City of Tempe after any proposed City monies are repaid and factoring out market cannibalization that might occur? Specifically, how will the project impact downtown Tempe?

F. Interview (if conducted) (200 points)

The overall quality and content of the interview will be evaluated to determine the cohesiveness and effectivenessof the project team as well as the feasibility of the project proposed.

Section VII – City Council Action

An evaluation committee comprised of City staff and others will review the responses and make a recommendation to the City Council. Acceptance of any response may be made at any regular meeting of the City Council within 120 days after receipt of said proposals or within such longer period of time as may be deemed reasonable by the City.

The City reserves the right to reject all submittals at any time for any reason.

After City Council approves the recommendation of a qualified developer, the City and the selected developer will attempt to negotiate the terms of a Development and Disposition Agreement; if the negotiations are successful, the parties would then execute the Development and Disposition Agreement subject to Council approval.

Section VIII – Method of Conveyance, Price and Conditions

The conveyance of the Property will be by Development and Disposition Agreement between the City and the selected developer. The property may be conveyed in phases and the Development and Disposition Agreement will contain performance requirements that must be satisfied.

Section IX – Proposal Submission

Tempe will only accept an electronic copy of the completed and signed offer via email to Bids@tempe.gov. Offer shall be submitted before Thursday, August 19, 2021, 3:00 P.M. (Local Arizona Time). Offers submitted after that date and time will not be considered. No hard copy of offers will be accepted at this time. Please do not wait to the last minute to submit your e-proposal in order to allow sufficient electronic transmittal time.

Section X – General Information

Instructions. The City shall not be held responsible for any oral instructions. Any changes to this RFP will be in the formof a written addendum which will be communicated to all vendors registered for applicable commodity codes and who downloaded the solicitation from the Procurement Division's web page.

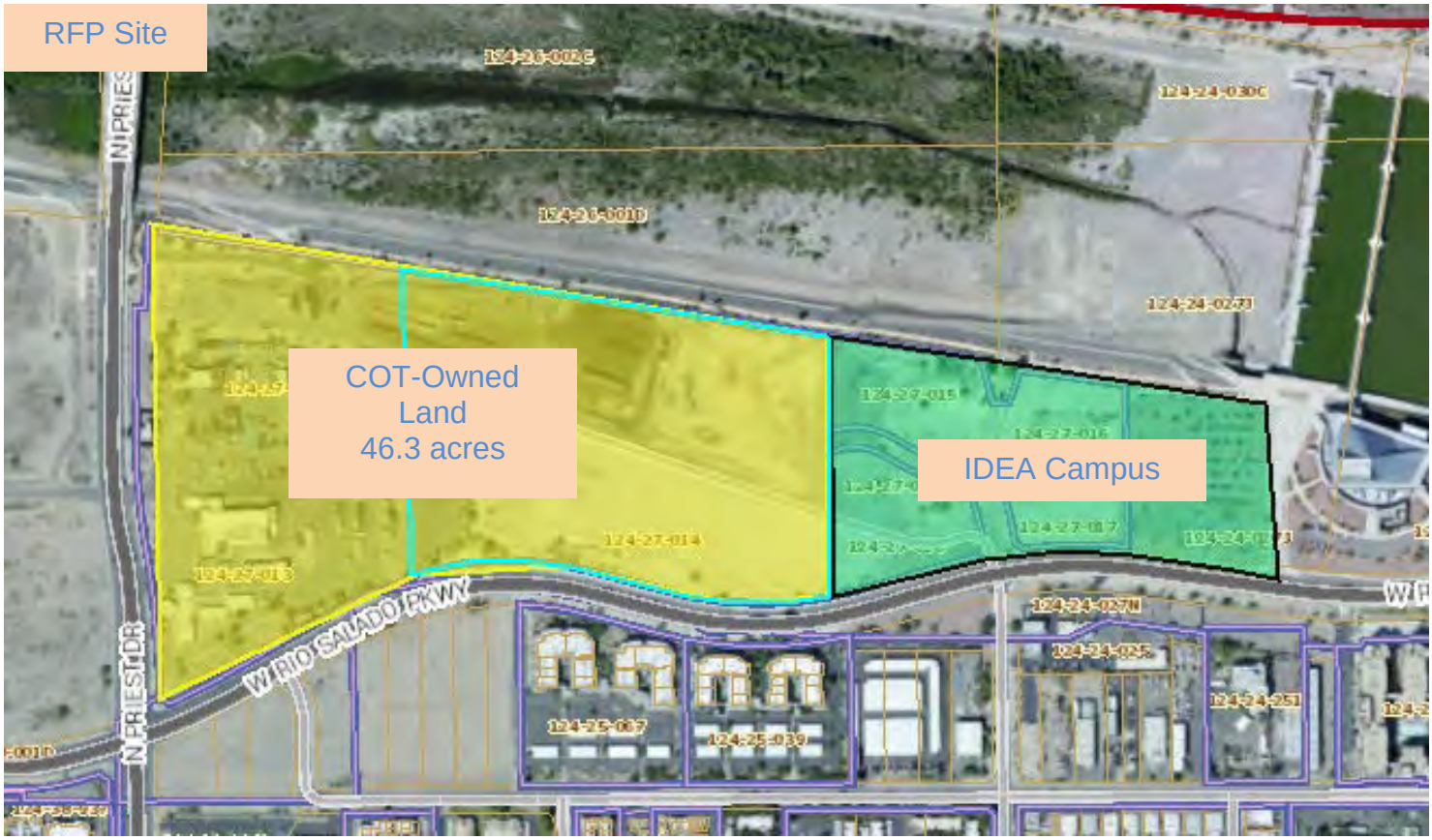
City Rights.
The City reserves the right to accept or reject any or all responses, to waive any informality or irregularity in any response received, and to be the sole judge of the merits of the respective responses received.

Contact with City Employees.
All firms interested in this project (including the firm's employees, representatives, agents, lobbyists, attorneys, and sub-consultants) will refrain, under penalty of disqualification, from direct or indirect contact for the purpose of influencing the selection or creating bias in the selection process with any person who may play a part in the selection process, including, but not limited to, the evaluation panel, City Council, the City Manager, Deputy City Manager, Department Heads and other City staff.

This policy is intended to create an objective review process for all potential firms, assure that contract decisions are made in public and to protect the integrity of the selection process. All contact on this selection process must only be addressed to the authorized representative identified below.

Questions.
Questions pertaining to the selection process or questions related to the property should be directed to Lisa Goodman, Procurement Officer at (480) 350-8533 or emailed to: lisa_goodman@tempe.gov.

Appendix A – Map of Area



Appendices B - G – Downloadable Documents

The following documents are available on the City of Tempe Procurement Division Website (www.tempe.gov/procurement) using the link provided after registration.

1. Appendix B – Geotechnical Report
2. Appendix C – ESA Phase I
3. Appendix D – Rio Salado and Beach Park Masterplan Vision

Exhibit 8

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

Western-Pacific Region
Office of the Regional Administrator

777 S. Aviation Blvd., Ste.150
El Segundo, CA 90245

April 1, 2022

Ms. Lisa Goodman
City of Tempe Procurement Officer
31 East Fifth Street
Tempe, AZ 85281

RE: Tempe Entertainment District (TED) Proposal

Dear Ms. Goodman:

The purpose of this letter is to inform the City of Tempe that the Federal Aviation Administration (FAA) is concerned about potential impacts to Phoenix Sky Harbor International Airport (PHX), land use changes, and the introduction of airport incompatible land use relating to the proposed Tempe Entertainment District (TED). As currently planned, this new development would introduce land use compatibility issues and increase noise incompatibility due to arrival and departure operations from PHX. The FAA's mission is to provide the safest and most efficient aerospace system in the world. Within the context of our mission, the FAA continues to seek ways to mitigate the effects of aviation-related noise by providing financial and technical assistance to airport sponsors on airport compatible land use, noise reduction planning and abatement activities.

The FAA is concerned about potential changes in airport land use compatibility and the introduction of high-density residences within an area known to experience considerable aircraft noise. The proposed TED development raises a number of concerns which include but are not limited to 1) Mixed use development in proximity to runway thresholds at PHX; 2) Development of housing, office space, hotel & arena with height exceeding eighty feet; 3) Airport air navigation; 4) Aircraft emergency flight profile, specifically One Engine Inoperable (OEI) departure & arrival profiles; 5) Construction equipment impacting PHX arrivals and departures, specifically construction cranes; 6) Aircraft performance limitations based on weather conditions, TED construction (interim) and developed (permanent) hazards to air navigation; and 7) Lasers, Fireworks, Promotional Spotlights, Drone Flight Operations and area lighting that will negatively impact aircraft performance and visibility associated with PHX. The FAA is aware that the City of Phoenix and air carriers which serve PHX have expressed related concerns with the TED and potential residential development.

The proposed development would be located within two miles of PHX within the Day-Night Average Sound Level (DNL) 65 decibel (dB) contour and is heavily affected by aircraft arrivals/departures (see enclosure 1)[1]. FAA policy states that residential development within

[1] Enclosure 1 (illustration of proposed TED site PHX)

an airport 65 DNL noise contour is incompatible land use. The City of Phoenix, as the owner/operator of PHX, is obligated to challenge all incompatible land uses, including residential development for the safety and health of prospective residents, homeowners, businesses, communities and the general public. In accordance with FAA *Final Policy on Part 150 Approval of Noise Mitigation Measures: Effect on the Use of Federal Grants for Noise Mitigation Projects* (63 FR 16409) structures and new non-compatible development built after October 1,1998 are not eligible for approval of remedial noise mitigation measures under Part 150 or for AIP funding.

According to the TED proposal presentation[2], the development proposes to add over 1,600 residential units. This plan would expose thousands of new residents to significant noise (65 dB DNL and higher), on the order of 4000 persons, using the average number of 2.62 persons per household according to the United States Census Bureau. Given that there are currently on the order of 440,000 persons nationwide exposed to significant noise, this development alone would increase the number of people exposed to significant noise by 0.9 percent.

PHX primary departure operations utilize Runways 7L/25R. The proposed development would be approximately 9,800 feet east of the south Runway complex. When operations utilize east flow, using Runway 7L as primary departure, aircraft departing straight out on Runway 7L will overfly the TED site. Runway 7L departures make up about 40% of annual operations. December 2019 was the peak month for departures on Runway 7L, with a monthly total of 11402 and an average of 368 departures per day. December 2021 had the highest number of heavy jet departures for Runway 7L, with a monthly total of 405 and an average of 13 heavy jet departures per day**.** Of the December 2021 total heavy jet departures on 7L, about 28% were during the nighttime hours of 2200-0700. During a one-week sample of heavy jet departures on 7L in December 2021, the average altitude of heavy jets over the proposed site was 1883 feet above ground level (AGL) and the lowest altitude of heavy jets was 1350 feet AGL.

During west flow operations, aircraft arrivals would fly over the TED site, arriving on Runway 25R. Runway 25R arrivals make up about 20% of annual operations. July 2019 was the peak month for arrivals on Runway 25R, with a monthly total of 1251 and an average of 31 arrivals per day. Proposed TED residential units would be exposed to the type and frequency of aviation activity described above.

FAA is also concerned about the proposed development introduction of multistory residential, hotel and office buildings ranging in height from 80 feet to 140 feet above ground level located within the PHX Part 77 approach surface to Runway 25L. The TED development project is located within the footprint of the Approach/Departure Obstruction Clearance Surface (OCS)[3] for existing Runway 08/26 and Runway 7L/25R. Maintaining clearance and protection of the OCS is among critical safety factors for protection of the Nation's airspace and aviation operations to and from PHX. For safety reasons, the height

[2] PAAB Meeting (110921) (skyharbor.com)
[3] Defined in FAA Advisory Circular (AC) 150/5300-13, Airport Design, and Engineering Brief 99A.

of proposed structures must be below the OCS. Additionally, the FAA is concerned about impacts to air navigation due to the presence of large scale (height) construction cranes.

The City of Tempe is responsible for ensuring proper planning and environmental studies are initiated in partnership with federal agencies, state, local, and private entities, in addition to notifying real estate investors, homeowners, and business owners of their exposure to direct overflight and airport noise in excess to 65 DNL contours.

Noise and land use compatibility planning are complex issues which need active engagement by the City of Tempe together in partnership with the City of Phoenix and Maricopa County, PHX, Sky Harbor Airport Commission, aeronautical users~~;~~, airport business stakeholders, the business community, Phoenix/Tempe communities, citizens and the general~~;~~ public to establish a cohesive strategy for the health and well-being of the entire community. Please review the FAA Airport Noise Compatibility Planning Toolkit (Land Use Compatibility and Airports, A Guide for Effective Land Use Planning [PDF]).

Should the City of Tempe proceed with the TED project exposing on the order of 4000 residents to significant noise, residential sound insulation for these properties would not be eligible for federal funding assistance (Airport Improvement Program) from the FAA. As noted previously, residential housing placed within the 65 DNL is incompatible airport land use. Future TED residents' concerns about PHX aircraft operations sent to the FAA would be respectfully referred back to the City of Tempe. Therefore, we strongly encourage the City of Tempe to consider the FAA's concerns and look to develop and maintain compatible land uses around PHX.

The TED development Project is within Title 14 CFR Part 77 Notice Criteria where filing is required to ensure the safe, efficient use, and preservation of navigable airspace. The Notice Criteria Tool is available on-line at https://oeaaa.faa.gov/oeaaa/external/gisTools/gisAction.jsp?action=showNoNoticeRequiredToolForm. Filing Notice can be accomplished on-line at https://oeaaa.faa.gov/oeaaa. There are no filing fees associated with the filing Notice. Instructions are available at the website.

Sincerely,

Raquel Girvin
Regional Administrator

Enclosure

cc:
Andrew Ching, Tempe City Manager
Chad Makovsky, C.M, Director of Aviation Services, City of Phoenix

Enclosure 1

The purple shaded areas are the 14 CFR part 77 Approach Surfaces for three runways. The red stick pin is the approximate location of the proposed Tempe Development structure

Exhibit 9

ORDINANCE NO. O2022.56

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF TEMPE, ARIZONA, AMENDING THE CITY OF TEMPE ZONING MAP, PURSUANT TO THE PROVISIONS OF ZONING AND DEVELOPMENT CODE PART 2, CHAPTER 1, SECTION 2-106 AND 2-107, RELATING TO THE LOCATION AND BOUNDARIES OF DISTRICTS.

****

BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF TEMPE, ARIZONA, as follows:

Section 1. That the City of Tempe Zoning Map is hereby amended, pursuant to the provisions of Zoning and Development Code, Part 2, Chapter 1, Sections 2-106 and 2-107, by removing the below described property from the GID GIOD, General Industrial District and General Industrial Overlay District, and the R1-6 GIOD, Single-Family Residential and General Industrial Overlay District and designating it as MU-4 RSOD, Mixed Use District and adding a Planned Area Development Overlay (PAD) on 46.27 acres.

LEGAL DESCRIPTION

Lot 1 and 2 of Elements at Tempe Center for the Arts in Book 1021 of Maps, Page 49.
TOTAL AREA IS +/-46.26 GROSS ACRES.

See Attachment A, Legal Exhibit

Section 2. Further, those conditions of approval imposed by the City Council as part of **PL220278** are hereby expressly incorporated into and adopted as part of this ordinance as follows:

1. A building permit application shall be made within two years of the date of City Council approval or the zoning of the property may revert to that in place at the time of application. Any reversion is subject to a public hearing process as a zoning map amendment.

2. The property owner(s) shall sign a waiver of rights and remedies form. By signing the form, the Owner(s) voluntarily waive(s) any right to claim compensation for diminution of Property value under A.R.S. §12-1134 that may now or in the future exist, as a result of the City's approval of this Application, including any conditions, stipulations and/or modifications imposed as a condition of approval. The signed form shall be submitted to the Community Development Department no later than 30 days from the date of City Council approval, or the *Zoning Map Amendment and Planned Area Development* approval shall be null and void.

3. The Planned Area Development Overlay for TEMPE ENTERTAINMENT DISTRICT shall be put into proper engineered format with appropriate signature blanks and kept on file with the City of Tempe's Community Development Department within sixty (60) days of the date of City Council approval and prior to issuance of building permits.

4. The developer shall not exceed 1,995 dwelling units and a maximum building height of 129 feet, including all mechanical and architectural features.

5. Site 1, Multi-Purpose Entertainment Facility, shall not provide any residential dwellings within this area, without a Major Amendment to the Planned Area Development. Such change may also be subject to a General Plan Map Amendment to the land use and density charts, if not consistent.

6. The on-site parking reductions and modified parking ratios are approved as presented in the Planned Area Development. The developer shall provide a Shared Parking Study with a Parking Management Plan, prior to the approval of each phase or individual building's development plan review. The study shall address the use of, and the management of, supplemental parking for the multi-purpose entertainment facility, theater and event use, with the combination of either dedicated parking spaces, shared spaces, off-site shared spaces from existing sites, or temporary surface spaces.

7. The developer shall provide a vehicular cross access connection from this development to the IDEA Campus to the east, in order to improve efficient circulation of vehicles and pedestrians throughout the site. Location of this connection shall be (i) on-site and (ii) the exact location determined during the processing of the Development Plan Review for Site 1 and 2 as depicted in site plan.

8. The developer must receive approval of a Final Traffic Impact Study, including a Trip Reduction Plan, with the processing of a Development Plan Review application and prior to decision by the Development Review Commission and City Council, or as otherwise determined by the Engineering and Transportation Department, Traffic Engineer or designee.

9. Developer shall dedicate of a 14' transit easement along Rio Salado Parkway for future potential use of streetcar.

10. Developer shall provide a publicly accessible bike and pedestrian route along Beck Avenue directly connecting from Rio Salado Parkway, north, to the Rio Salado South Bank Path. This publicly accessible route shall include dedicated 6' minimum wide bike lanes and 8' minimum wide sidewalks northbound and southbound along Beck Avenue from Rio Salado Parkway to the Rio Salado South Bank Path.

11. The locations of dedicated bus bay and bus shelter shall be provided with the future Development Plan Review applications.

12. The developer shall grant and record an avigation easement to the City of Phoenix Aviation Department for the site, per the content and form prescribed by the City Attorney, prior to final building permit issuance.

13. If required by the Federal Aviation Administration (FAA), the developer shall provide documentation to the City prior to building permit issuance, that Form 7460-1 has been filed for the development and that the development received a "No Hazard Determination" from the FAA. If temporary equipment used during construction exceeds the height of the permanent structure, a separate Form 7460-1 shall be submitted to the FAA and a "No Hazard Determination" obtained before the construction start date.

14. The developer shall record a Notice to Prospective Purchasers of Proximity to Airport in order to disclose the existence and operational characteristics of Phoenix Sky Harbor International Airport to future owners or tenants of the property.

15. The developer shall ensure that a representation is included in the Residential Lease Owner's Property Disclosure Statement, or if no Disclosure Statement is provided to the tenant, that prospective tenant is notified in writing of the proximity of the development to the airport, per the content and form approved by

the City Attorney, in order to disclose the existence and operational characteristics of Phoenix Sky Harbor International Airport.

16. Through consultation with the State Historic Preservation Office, it was determined that there are two (2) World War II Prisoner of War (POW) barracks from the Camp Papago Park Prisoner of War facility, which were relocated to the Tempe maintenance yard and are still present. The buildings have not been evaluated for eligibility for listing in the local, state, or the National Register of Historic Places. Best efforts shall be made, in coordination with SHPO or the City's Historic Preservation Officer, to relocate the POW barracks at the expense of the developer, without demolition, to a future to-be-determined off-site location that can ensure future preservation of the structures. Building stabilization would be encouraged but not required.

17. Developer shall provide an easement for the existing sewer line and sewer metering station along Priest Drive that is currently in conflict with Building K to protect sewer metering station in place, subject to the Water Utilities Department review and acceptance.

18. Developer shall work with Flood Control District of Maricopa County to relocate/abandon the existing access road and easement and provide/dedicate a new access easement for Flood Control access leading up to the adjacent levee.

Section 3. Pursuant to A.R.S. § 9-462.01(J), the City Council has considered the probable impact of this zoning ordinance on the cost to construct housing for sale or rent.

Section 4. Pursuant to City Charter, Section 2.12, ordinances are effective thirty (30) days after adoption.

PASSED AND ADOPTED BY THE CITY COUNCIL OF THE CITY OF TEMPE, ARIZONA, this 29th day of November, 2022.

Corey D. Woods, Mayor

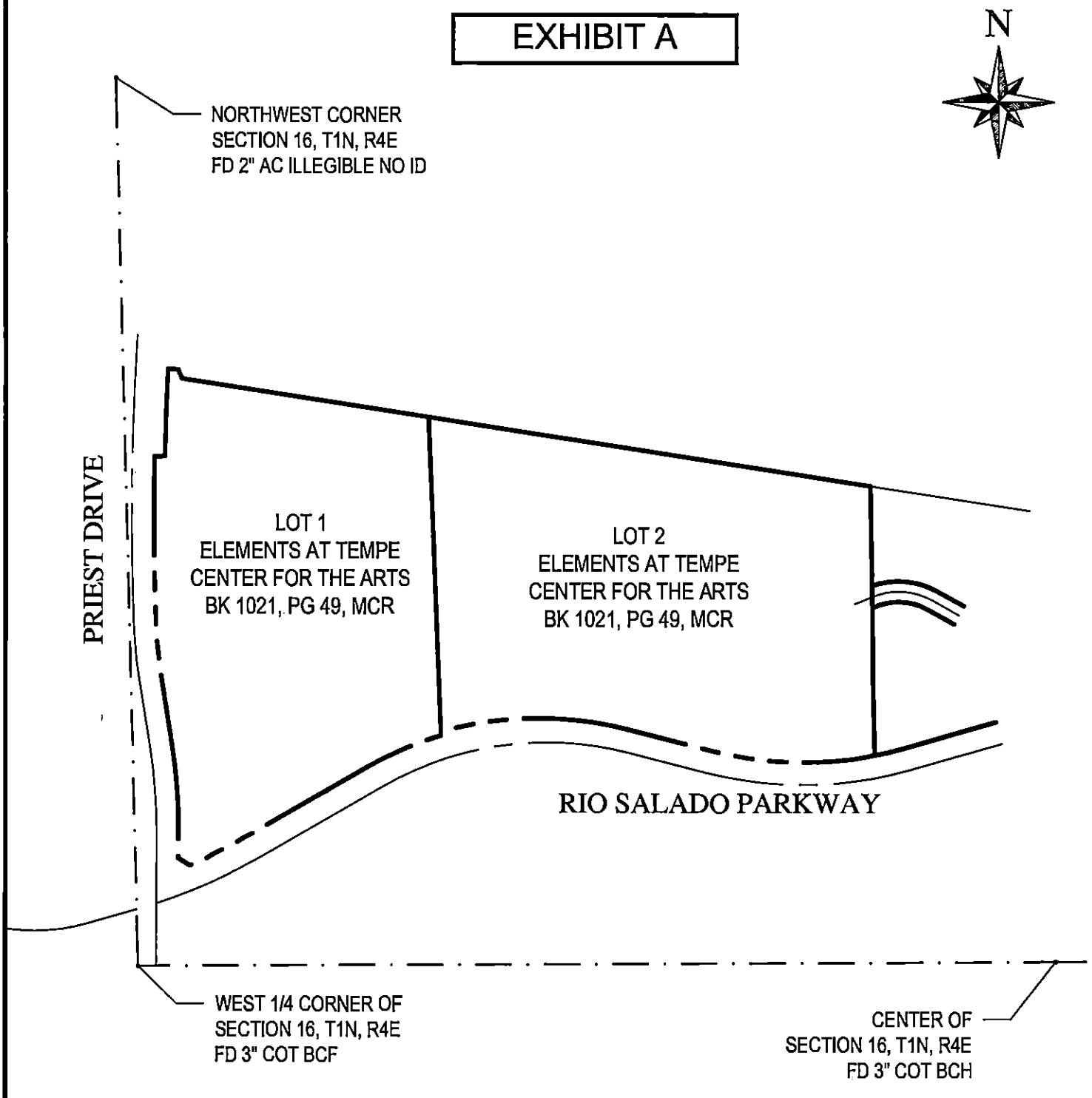
ATTEST:

Carla R. Reece, City Clerk

APPROVED AS TO FORM:

Sonia M. Blain, City Attorney

EXHIBIT A



WOOD PATEL

TEMPE ENTERTAINMENT DISTRICT

LEGAL DESCRIPTION
REZONING APPLICATION
FOR LOT 1 AND LOT 2

DATE	10/27/2022	SCALE	NTS	SHEET	1 of 1
JOB NO	184876	DESIGN	DMS	CHECK	NB

Z:\2018\184876\Dwg\Exhibits\4876-REZONE-LEGAL-DESCRIPTION.dwg

ORDINANCE NO. O2022.57

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF TEMPE, ARIZONA, AUTHORIZING THE MAYOR TO EXECUTE A DEVELOPMENT AND DISPOSITION AGREEMENT WITH BLUEBIRD DEVELOPMENT LLC, FOR THE PROJECT KNOWN AS THE TEMPE ENTERTAINMENT DISTRICT LOCATED AT THE NORTHEAST CORNER OF PRIEST DRIVE AND RIO SALADO PARKWAY IN TEMPE, AZ THAT ALSO ESTABLISHES POLICY REGARDING REFERENDA INVOLVING PROFESSIONAL SPORTS FRANCHISES.

A. Bluebird Development LLC ("Developer"), a Delaware limited liability company, desires to develop the approximately forty-six acres, which comprise City parcels APN 124-27-013 and 124-27-014 ("City Property") built in four phases in a period of approximately ten (10) years; and

B. Developer has proposed a $2.1 billion mixed-use "Entertainment District" project with a professional sports arena, music venue, plaza amenity, retail and restaurant experience, with office and high-density residential ("Project") to include a minimum of 320,000 square feet of Class A office, approximately 1,675 residential units, at least 315,000 square feet of retail, and two hotels with a total of 500 keys, in addition to the arena, music venue, and plaza amenities; and

C. Developer intends to purchase the City Property in a phased manner and will pay the City the amount of Twenty-Five Dollars per square foot ($25/SF) of the Gross Site Area for a total of Fifty Million Three Hundred Seventy Seven Thousand One Hundred Forty Dollars ($50,377,140); and

D. Developer will remediate the eastern half of the Property in the first phase of land development, which phase includes the arena and adjacent parking structure, along with team facilities, entertainment and music venue, hotel site, and sites designated for office and residential, providing the City time to relocate any existing facilities from the project area; and

E. Developer must process all required applications and seek all required approvals, if any, from the Federal Aviation Administration; and

F. Developer has requested a 30-year Government Property Lease Excise Tax (GPLET) on the arena, music venue, practice facility, and team headquarters and an 8-year GPLET on all other uses (residential, retail, and office); and

G. Developer will provide the following Public Benefits to the City: Naming Rights valued at $97.6 million; Contribution to School Foundations totaling $100,000;

Contribution in Support of Public Transit Improvements totaling $1.5 million; On-site Public Safety Facility valued at $3 million; Contribution toward public safety expenditures equivalent to $1.1 million a year with annual inflationary increases (NPV of $33 million); Contribution in Support of Affordable Housing Initiatives totaling $2 million; Contribution to the City's General Fund over 8 years equal to $1.5 million; Marketing suite available to the City free of charge form marketing, promotion and similar uses; City use of the Music Venue up to five days per year; the Arena up to three days per year; the outdoor covered venue up to ten days per year; and the Plaza up to five days per year (valued at $64.9 million); Annual contribution of $414,000 to Valley Metro to help defray costs during high capacity events (NPV of $12.4 million); Free office space for the City totaling 3,000 square feet (valued at $5.7 million); Enhanced Art in Private Development contribution that is $4.5 million more than the requirement; Annual contribution of $200,000 for traffic control improvements (NPV of $6 million); Contribution of $20,000 to relocate the Historic POW Barracks buildings that are on the Yard site; $8 million additional resources for purchase of the Property, which the City has allocated to its costs to relocate the Priest Yard; and

H. City will form a Community Facilities District (CFD) to issue approximately Two Hundred Twenty Million Dollars ($220 million) in bonds to pay for the remediation and infrastructure. The proposed repayment of the CFD bonds consists of 75% of unrestricted City transaction privilege taxes and the transient lodging tax, 61.8% of the City's portion of unrestricted primary property taxes, and a surcharge imposed by Developer on all sales to support repayment of the CFD bonds. During the period of repayment of the CFD bonds issued for remediation and infrastructure, the City would retain 100% of the restricted and 25% of the unrestricted transaction privilege and transient lodging taxes and 38.2% of the unrestricted primary property taxes; and

I. Council will consider adopting policy regarding its position if a referendum is filed regarding the Entertainment District project because the nature of a project that involves the relocation of a professional sports franchise to the City presents unique and significant issues that may warrant adopting a policy whereby Council will not oppose any referenda that may be filed regarding development of this Property as outlined in the Development and Disposition Agreement.

NOW, THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF TEMPE, ARIZONA, as follows:

Section 1: That the sale by City to Developer of the City Property is hereby approved at the agreed upon value of Twenty-Five Dollars per square foot (the "Purchase Price") pursuant to the terms of the Agreement as defined in Section 2 below.

Section 2: That the Mayor (or his designee) is authorized to execute a Development and Disposition Agreement (the "Agreement") in substantially the form on file with the City Clerk's Office, and to execute all other documents reasonably necessary or appropriate to effectuate the intent of the Agreement and this Ordinance, and the other transactions contemplated in the Agreement or this Ordinance, including without limitation the leases and other documents referenced in or attached as exhibits to the Agreement.

Section 3: Pursuant to City Charter, Section 2.12, this Ordinance will be effective thirty (30) days after adoption.

PASSED AND ADOPTED BY THE CITY COUNCIL OF THE CITY OF TEMPE, ARIZONA, this 29th day of November, 2022.

Corey D. Woods, Mayor

ATTEST:

Carla R. Reece, City Clerk

APPROVED AS TO FORM:

Sonia M. Blain, City Attorney

RESOLUTION NO. R2022.170

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF TEMPE, ARIZONA, AMENDING THE GENERAL PLAN 2040 FOR APPROXIMATELY 34.43 ACRES LOCATED AT 53 SOUTH PRIEST DRIVE AND OWNED BY THE CITY OF TEMPE.

BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF TEMPE, that the General Plan 2040 Projected Land Use Map is hereby amended from "Commercial" to "Mixed Use" for approximately 34.43 acres; and the General Plan 2040 Projected Residential Density Map is hereby amended adding "High Density – Urban Core (more than 65 du/ac)" for 34.43 acres, all located at 53 South Priest Drive.

See Attachment A, Legal Description

PASSED AND ADOPTED BY THE CITY COUNCIL OF THE CITY OF TEMPE, ARIZONA, this 29th day of November, 2022.

Corey D. Woods, Mayor

ATTEST:

Carla R. Reece, City Clerk

APPROVED AS TO FORM:

Sonia M. Blain, City Attorney

ATTACHMENT A

Wood, Patel & Associates, Inc.
602.335.8500
www.woodpatel.com

LEGAL DESCRIPTION
Tempe Entertainment District
Mixed Use

Lot 1 and a portion of Lot 2, Elements at Tempe Center for the Arts, recorded in Book 1021, page 49, Maricopa County Records (MCR), lying within the northwest quarter of Section 16, Township 1 North, Range 4 East, of the Gila and Salt River Meridian, Maricopa County, Arizona, more particularly described as follows:

COMMENCING at the northwest corner of said Section 16, a 2-inch aluminum cap illegible with no identification, from which the west quarter corner of said section, a 3-inch City of Tempe brass cap flush, bears South 01°28'16" East (basis of bearing), a distance of 2589.46 feet;
THENCE along the west line of said section, South 01°28'16" East, a distance of 851.72 feet;
THENCE leaving said west line, North 88°31'44" East, a distance of 131.84 feet, to the northwest corner of said Lot 1 and the **POINT OF BEGINNING**;
THENCE along the northerly line of said Lot 1, South 86°56'10" East, a distance of 30.00 feet;
THENCE South 23°02'46" East, a distance of 28.56 feet;
THENCE continuing along said northerly line and the northerly line of said Lot 2, South 81°12'26" East, a distance of 1056.91 feet;
THENCE leaving said northerly lines, South 00°55'04" East, a distance of 446.64 feet, to a point of intersection with a non-tangent curve;
THENCE easterly along said non-tangent curve to the left, having a radius of 787.00 feet, concave northerly, whose radius bears North 41°29'16" East, through a central angle of 42°24'20", a distance of 582.47 feet, to the curves end;
THENCE North 89°04'56" East, a distance of 433.08 feet, to the east line of said Lot 2;
THENCE along said east line, South 00°48'29" East, a distance of 298.20 feet, to the southeast corner of said Lot 2 and a point of intersection with a non-tangent curve;
THENCE along the southerly line of said Lot 2, westerly along said non-tangent curve to the right, having a radius of 1080.92 feet, concave northerly, whose radius bears North 11°09'20" West, through a central angle of 25°29'52", a distance of 481.03 feet, to a point of intersection with a non-tangent line;
THENCE North 75°42'52" West, a distance of 257.03 feet, to a point of intersection with a non-tangent curve;
THENCE westerly along said non-tangent curve to the left, having a radius of 1019.93 feet, concave southerly, whose radius bears South 14°17'50" West, through a central angle of 30°42'06", a distance of 546.53 feet, to the southwest corner of said Lot 2, the east line of said Lot 1 and a point of intersection with a non-tangent line;
THENCE leaving said southerly line, along said east line, South 02°11'22" East, a distance of 10.34 feet, to the southeast corner of said Lot 1 and a point of intersection with a non-tangent curve;

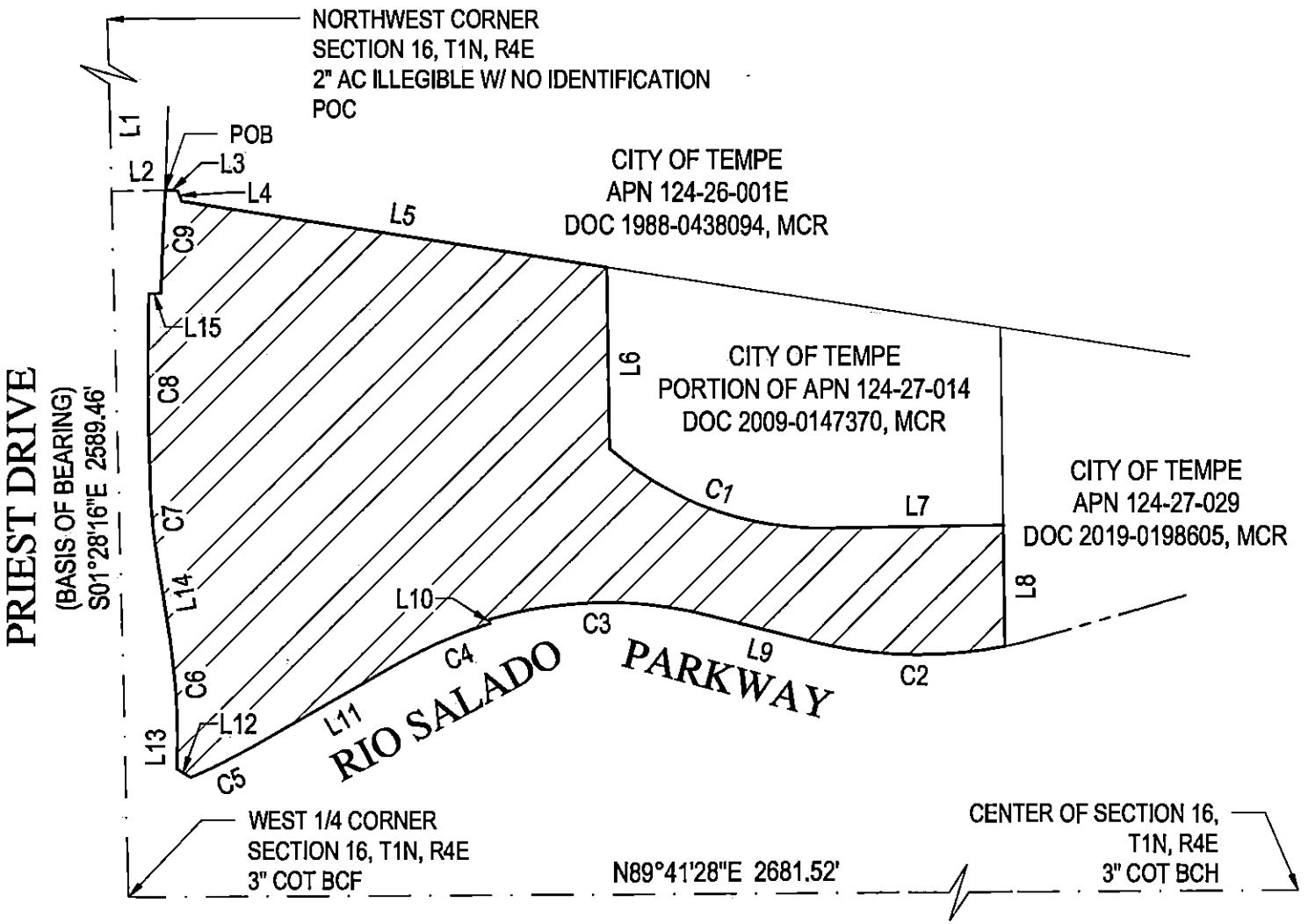
THENCE leaving said east line, along the southerly line of said Lot 1, southwesterly along said non-tangent curve to the left, having a radius of 1009.93 feet, concave southeasterly, whose radius bears South 16°32'25" East, through a central angle of 13°14'25", a distance of 233.38 feet, to a point of intersection with a non-tangent line;
THENCE South 60°11'49" West, a distance of 422.17 feet, to a point of intersection with a non-tangent curve;
THENCE southwesterly along said non-tangent curve to the right, having a radius of 1582.00 feet, concave northwesterly, whose radius bears North 29°48'54" West, through a central angle of 06°11'50", a distance of 171.11 feet, to a point of intersection with a non-tangent line;
THENCE North 58°21'26" West, a distance of 40.20 feet, to the southwest corner of said Lot 1;
THENCE leaving said southerly line, along the westerly line of said Lot 1, North 00°08'35" East, a distance of 81.92 feet, to the beginning of a curve;
THENCE northerly along said curve to the left, having a radius of 1497.39 feet, concave westerly, through a central angle of 09°02'04", a distance of 236.11 feet, to the curves end;
THENCE North 08°53'29" West, a distance of 218.34 feet, to the beginning of a curve;
THENCE northerly along said curve to the right, having a radius of 1367.39 feet, concave easterly, through a central angle of 06°42'16", a distance of 160.00 feet, to the beginning of a compound curve;
THENCE northerly along said compound curve to the right, having a radius of 8034.23 feet, concave easterly, through a central angle of 03°24'38", a distance of 478.24 feet, to a point of intersection with a non-tangent line;
THENCE North 88°23'29" East, a distance of 30.37 feet, to a point of intersection with a non-tangent curve;
THENCE northerly along said non-tangent curve to the right, having a radius of 8004.23 feet, concave easterly, whose radius bears South 88°45'24" East, through a central angle of 01°49'21", a distance of 254.61 feet, to the **POINT OF BEGINNING**.

Containing 1,499,897 square feet or 34.4329 acres, more or less.

Subject to existing right-of-ways and easements.

This parcel description is based on Final Plat for Elements at Tempe Center for the Arts, recorded in Book 1021, page 49, MCR, client provided information and is located within an area surveyed by Wood, Patel & Associates, Inc. during the month of January, 2019. Any monumentation noted in this parcel description is within acceptable tolerance (as defined in Arizona Boundary Survey Minimum Standards dated 02/14/2002) of said positions based on said survey.

EXPIRES 12-31-23



WOOD PATEL

REGISTERED LAND SURVEYOR
CERTIFICATE NO.
48932
GABRIEL S.
RIOS
Date Signed 10-26-22
ARIZONA, U.S.A.

EXPIRES 12-31-23

N

EXHIBIT "A"

TEMPE ENTERTAINMENT DISTRICT
MIXED USE
10/26/2022
WP# 184876
PAGE 3 OF 4
NOT TO SCALE
Z:\2018\184876\Survey\Legal\4876-L01.dwg

LINE TABLE		
LINE	BEARING	DISTANCE
L1	S01°28'16"E	851.72'
L2	N88°31'44"E	131.84'
L3	S86°56'10"E	30.00'
L4	S23°02'46"E	28.56'
L5	S81°12'26"E	1056.91'
L6	S00°55'04"E	446.64'
L7	N89°04'56"E	433.08'
L8	S00°48'29"E	298.20'

LINE TABLE		
LINE	BEARING	DISTANCE
L9	N75°42'52"W	257.03'
L10	S02°11'22"E	10.34'
L11	S60°11'49"W	422.17'
L12	N58°21'26"W	40.20'
L13	N00°08'35"E	81.92'
L14	N08°53'29"W	218.34'
L15	N88°23'29"E	30.37'

CURVE TABLE			
CURVE	DELTA	RADIUS	ARC
C1	42°24'20"	787.00'	582.47'
C2	25°29'52"	1080.92'	481.03'
C3	30°42'06"	1019.93'	546.53'
C4	13°14'25"	1009.93'	233.38'
C5	6°11'50"	1582.00'	171.11'
C6	9°02'04"	1497.39'	236.11'
C7	6°42'16"	1367.39'	160.00'
C8	3°24'38"	8034.23'	478.24'
C9	1°49'21"	8004.23'	254.61'

WOOD PATEL

REGISTERED LAND SURVEYOR
CERTIFICATE NO.
48932
GABRIEL S.
RIOS
Date Signed 10-26-22
ARIZONA, U.S.A.

EXPIRES 12-31-23

EXHIBIT "A"

TEMPE ENTERTAINMENT DISTRICT
MIXED USE
10/26/2022
WP# 184876

NOT TO SCALE
Z:\2018\184876\Survey\Legal\4876-L01.dwg

Exhibit 10

PREMIER TITLE AGENCY

16
Yo

WHEN RECORDED, RETURN TO:

City of Tempe
21 East Fifth Street
Tempe, Arizona 85281
Attention: City Clerk
A-13 1367

EXEMPT from the
requirement for an
Affidavit per
11-1134A3

SPECIAL WARRANTY DEED

For the consideration of Ten and no/100 Dollars ($10.00) and other valuable considerations, The City of Tempe, a municipal corporation ("Grantor"), hereby conveys to Hardy Rio Development Company, a Delaware limited liability company, ("Grantee") having an address of 13430 N. Scottsdale Road, Suite 103, Scottsdale, Arizona 85251, the following real property situated in Maricopa County, Arizona, together with all buildings, structures and improvement located thereon, if any, and all rights and privileges appurtenant thereto, including, without limitation, all air rights and water rights relating to such land; all minerals, oil, gas and other hydrocarbon substances on, in or under the land; and all easements, covenants, rights, privileges, appurtenances, hereditaments, reversions and remainders relating to or used in connection with the land:

See Exhibit A attached hereto and incorporated
herein by this reference (the "Property").

SUBJECT TO current real property taxes and other assessments; patent reservations; and all easements, rights of way, covenants, conditions, restrictions and other matters as may appear of record or which an accurate survey or inspection would reveal.

AND Grantor hereby binds itself and its successors to warrant and defend the title to the Property against all of the acts of Grantor and no other, subject to the matters above set forth.

[signature page to follow]

IN WITNESS WHEREOF, Grantor has caused this Special Warranty Deed to be executed on this 11th day of July, 2022

CITY OF TEMPE,
an Arizona municipal corporation

By _____
Corey D. Woods, Mayor

-SEAL

ATTEST:

Kara DeArrastia for
Carla Reece, City Clerk

APPROVED AS TO FORM:

Elizabeth Hicks for
Sonia Blain, City Attorney

STATE OF ARIZONA)
)ss
COUNTY OF MARICOPA)

On this 11th day of July, 2022 before me, the undersigned officer, personally appeared Corey D. Woods, who acknowledged himself to be Mayor of THE CITY OF TEMPE, an Arizona municipal corporation, whom I know personally and he, in such capacity, being authorized to do so, executed the foregoing instrument for the purposes therein contained on behalf of that entity.

IN WITNESS WHEREOF, I hereunto set my hand and official seal.

Kara Anne DeArrastia
Notary Public

KARA ANNE DEARRASTIA
Notary Public - Arizona
Maricopa County
Commission # 608620
My Comm. Expires Jul 6, 2025

Order No.: A-131367
Amend (Version 2)

Exhibit "A"
Legal Description

Parcel 1

Lot 20-E, of STATE PLAT NO. 12 AMENDED, according to the plat of record in the office of the County Recorder of Maricopa County, Arizona in Book 69 of Maps, Page 38 located in Section 16, Township 1 North, Range 4 East of the Gila and Salt River Meridian, Maricopa County, Arizona.

Except 1/16th of all gas, oil, metals and mineral rights as reserved by the State of Arizona in the Patent to said land.

Parcel 2

Lot 39, of STATE PLAT NO. 12 AMENDED, according to the plat of record in the office of the County Recorder of Maricopa County, Arizona in Book 69 of Maps, Page 38 located in Section 16, Township 1 North, Range 4 East of the Gila and Salt River Meridian, Maricopa County, Arizona and all that portion of abandoned street right of way of Second Avenue as abandoned by the City of Tempe in Ordinance No. 1107 recorded in Document No. 1984-477486.lying North of and adjacent to the North line of said Lot 39, and between the Northerly prolongation of the East and West lines of said Lot 39

Except 1/16th of all gas, oil, metals and mineral rights reserved by the State of Arizona in the Patent to said land.

Parcel 3

That portion of the South half of the Northeast quarter of Section 16, Township 1 North, Range 4 East of the Gila and Salt River Meridian, Maricopa County, Arizona lying Southerly of the Southerly right of way line of West Rio Salado Parkway, North of the North right of way line of abandoned Second Avenue as abandoned by the City of Tempe in Ordinance No. 1107 recorded in Document No. 1984-477486, East of the North prolongation of the West line of Lot 39 of State Plat No. 12 Amended recorded in Book 69 of Maps, Page 38 and West of the West boundary line of Crescent Rio a subdivision recorded in Book 1337 of Maps, Page 11 and its Northerly prolongation to the South line of the Rio Salado Parkway.

Exhibit 11

ORDINANCE NO. O2022.51

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF TEMPE, ARIZONA, AMENDING THE CITY OF TEMPE ZONING MAP, PURSUANT TO THE PROVISIONS OF ZONING AND DEVELOPMENT CODE PART 2, CHAPTER 1, SECTION 2-106 AND 2-107, RELATING TO THE LOCATION AND BOUNDARIES OF DISTRICTS.

****

BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF TEMPE, ARIZONA, as follows:

Section 1. That the City of Tempe Zoning Map is hereby amended, pursuant to the provisions of Zoning and Development Code, Part 2, Chapter 1, Sections 2-106 and 2-107, by removing the below described property from the GID RSOD, General Industrial District and Rio Salado Overlay District and designating it as MU-4 RSOD, Mixed Use District and adding a Planned Area Development Overlay (PAD) on 5.04 acres.

LEGAL DESCRIPTION

See Attachment A, Legal Description

TOTAL AREA IS 5.04 GROSS ACRES.

Section 2. Further, those conditions of approval imposed by the City Council as part of **Case # PL220082** are hereby expressly incorporated into and adopted as part of this ordinance as follows:

1. A building permit application shall be made within two years of the date of City Council approval or the zoning of the property may revert to that in place at the time of application. Any reversion is subject to a public hearing process as a zoning map amendment.

2. The property owner(s) shall sign a waiver of rights and remedies form. By signing the form, the Owner(s) voluntarily waive(s) any right to claim compensation for diminution of Property value under A.R.S. §12-1134 that may now or in the future exist, as a result of the City's approval of this Application, including any conditions, stipulations and/or modifications imposed as a condition of approval. The signed form shall be submitted to the Community Development Department no later than 30 days from the date of City Council approval, or the *General Plan Amendments, Zoning Map Amendment, and Planned Area Development* approvals shall be null and void.

3. The Planned Area Development Overlay for MODERA RIO SALADO shall be put into proper

engineered format with appropriate signature blanks and kept on file with the City of Tempe's Community Development Department within sixty (60) days of the date of City Council approval and prior to issuance of building permits.

4. The developer shall grant and record an avigation easement to the City of Phoenix Aviation Department for the site, per the content and form prescribed by the City Attorney, prior to final building permit issuance.

5. If required by the Federal Aviation Administration (FAA), the developer shall provide documentation to the City prior to building permit issuance, that Form 7460-1 has been filed for the development and that the development received a "No Hazard Determination" from the FAA. If temporary equipment used during construction exceeds the height of the permanent structure, a separate Form 7460-1 shall be submitted to the FAA and a "No Hazard Determination" obtained before the construction start date.

6. The developer shall record a Notice to Prospective Purchasers of Proximity to Airport in order to disclose the existence and operational characteristics of Phoenix Sky Harbor International Airport to future owners or tenants of the property.

7. The developer shall ensure that a representation is included in the Residential Lease Owner's Property Disclosure Statement, or if no Disclosure Statement is provided to the tenant, that prospective tenant is notified in writing of the proximity of the development to the airport, per the content and form approved by the City Attorney, in order to disclose the existence and operational characteristics of Phoenix Sky Harbor International Airport.

Section 3. Pursuant to A.R.S. § 9-462.01(J), the City Council has considered the probable impact of this zoning ordinance on the cost to construct housing for sale or rent.

Section 4. Pursuant to City Charter, Section 2.12, ordinances are effective thirty (30) days after adoption.

PASSED AND ADOPTED BY THE CITY COUNCIL OF THE CITY OF TEMPE, ARIZONA, this 1st day of December, 2022.

_____
Corey D. Woods, Mayor

ATTEST:

_____
Carla R. Reece, City Clerk

APPROVED AS TO FORM:

_____
Sonia M. Blain, City Attorney

ATTACHMENT A

MODERA RIO SALADO
LEGAL DESCRIPTION

THE LAND REFERRED TO HEREIN BELOW IS SITUATED IN THE COUNTY OF MARICOPA, STATE OF ARIZONA, AND IS DESCRIBED AS FOLLOWS:

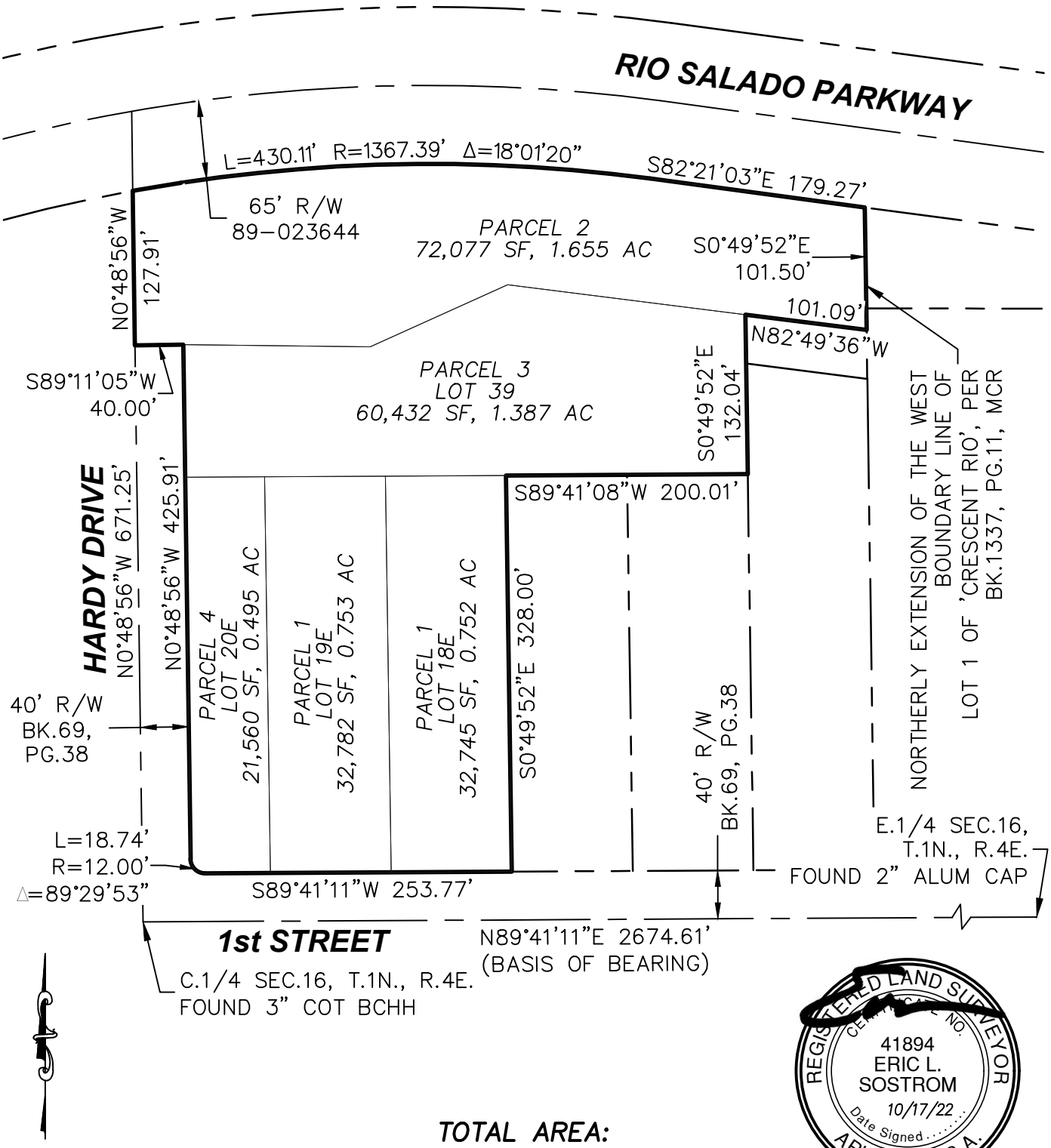
PARCEL NO. 1: (TAX PARCEL NO. 124-24-022 AND TAX PARCEL NO. 124-24-023)
LOTS 18E AND 19E, OF STATE PLAT NO. 12 AMENDED, ACCORDING TO THE PLAT OF RECORD IN THE OFFICE OF THE COUNTY RECORDER OF MARICOPA COUNTY, ARIZONA, RECORDED IN BOOK 69 OF MAPS, PAGE 38;
EXCEPT 1/16TH OF ALL GAS, OIL, METAL AND MINERAL RIGHTS AS RESERVED TO THE STATE OF ARIZONA IN THE PATENT RECORDED JULY 8, 1965 IN DOCKET 5625, PAGE 408 (FOR LOT 18E) AND RECORDED MAY 25, 1964 IN DOCKET 5063, PAGE 189 (FOR LOT 19E), RECORDS OF MARICOPA COUNTY, ARIZONA.

PARCEL NO. 2: (TAX PARCEL NO. 124-24-027N)
LOT 39, OF STATE PLAT NO. 12 AMENDED, ACCORDING TO THE PLAT OF RECORD IN THE OFFICE OF THE COUNTY RECORDER OF MARICOPA COUNTY, ARIZONA IN BOOK 69 OF MAPS, PAGE 38 LOCATED IN SECTION 16, TOWNSHIP 1 NORTH, RANGE 4 EAST OF THE GILA AND SALT RIVER MERIDIAN, MARICOPA COUNTY, ARIZONA AND ALL THAT PORTION OF ABANDONED STREET RIGHT OF WAY OF SECOND AVENUE AS ABANDONED BY THE CITY OF TEMPE IN ORDINANCE NO. 1107 RECORDED IN DOCUMENT NO. 1984-477486, LYING NORTH OF AND ADJACENT TO THE NORTH LINE OF SAID LOT 39, AND BETWEEN THE NORTHERLY PROLONGATION OF THE EAST AND WEST LINES OF SAID LOT 39.
EXCEPT 1/16 OF ALL GAS, OIL, METALS AND MINERAL RIGHTS PRESERVED BY THE STATE OF ARIZONA IN THE PATENT TO SAID LAND.

PARCEL NO. 3: (TAX PARCEL NO. 124-24-025)
THAT PORTION OF THE SOUTH HALF OF THE NORTHEAST QUARTER OF SECTION 16, TOWNSHIP 1 NORTH, RANGE 4 EAST OF THE GILA AND SALT RIVER MERIDIAN, MARICOPA COUNTY, ARIZONA, LYING SOUTHERLY OF THE SOUTHERLY RIGHT OF WAY LINE OF WEST RIO SALADO PARKWAY, NORTH OF THE NORTH RIGHT OF WAY LINE OF ABANDONED SECOND AVENUE AS ABANDONED BY THE CITY OF TEMPE IN ORDINANCE NO. 1107 RECORDED IN DOCUMENT NO. 1984-477486, EAST OF THE NORTH PROLONGATION OF THE WEST LINE OF LOT 39 OF STATE PLAT NO. 12 AMENDED RECORDED IN BOOK 69 OF MAPS, PAGE 38 AND WEST OF THE WEST BOUNDARY LINE OF CRESCENT RIO A SUBDIVISION RECORDED IN BOOK 1337 OF MAPS, PAGE 11 AND ITS NORTHERLY PROLONGATION TO THE SOUTH LINE OF THE RIO SALADO PARKWAY.

PARCEL NO. 4: (TAX PARCEL NO. 124-24-024)
LOT 20E, OF STATE PLAT NO. 12 AMENDED, ACCORDING TO THE PLAT OF RECORD IN THE OFFICE OF THE COUNTY RECORDER OF MARICOPA COUNTY, ARIZONA IN BOOK 69 OF MAPS, PAGE 38, LOCATED IN SECTION 16, TOWNSHIP 1 NORTH, RANGE 4 EAST OF THE GILA AND SALT RIVER MERIDIAN, MARICOPA COUNTY, ARIZONA.
EXCEPT 1/16TH OF ALL GAS, OIL, METAL AND MINERAL RIGHTS AS RESERVED TO THE STATE OF ARIZONA IN THE PATENT TO SAID LAND.

APN: 124-24-022, 124-24-027N, 124-24-023, 124-24-025 AND 124-24-024



REGISTERED LAND SURVEYOR
CERTIFICATE NO.
41894
ERIC L.
SOSTROM
10/17/22
Date Signed
ARIZONA U.S.A.

TOTAL AREA:
±219,596 SF, 5.041 AC

SIG
A RICK ENGINEERING COMPANY

SURVEY INNOVATION GROUP, INC.
Land Survey Services
22425 N 16TH STREET SUITE #1
PHOENIX, AZ 85024

ZONING LEGAL DESCRIPTION
MODERA RIO SALADO
TEMPE, ARIZONA

DRAWING: 6073_Legal Exbt		
JOB# 6073	SCALE: N.T.S.	SHT: 1 OF 1
DRAFTER: RMH	CHK: JAS	DATE: 10/17/22

RESOLUTION NO. R2022.168

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF TEMPE, ARIZONA, AMENDING THE GENERAL PLAN 2040 FOR APPROXIMATELY 1.66 AND 3.39 ACRES LOCATED AT 835 WEST RIO SALADO PARKWAY AND OWNED BY HARDY RIO DEVELOPMENT COMPANY.

BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF TEMPE, that the General Plan 2040 Projected Land Use Map is hereby amended for approximately 1.66 acres from "Public Open Space" to "Mixed Use" and the Projected Residential Density Map is hereby amended for approximately 1.66 acres from No Density (0 du/ac) to "High Density" (up to 65 du/ac) and for approximately 3.39 acres from "Medium to High Density" (up to 25 du/ac) to "High Density (up to 65 du/ac), located at 835 West Rio Salado Parkway.

PASSED AND ADOPTED BY THE CITY COUNCIL OF THE CITY OF TEMPE, ARIZONA, this 1st day of December, 2022.

_____
Corey D. Woods, Mayor

ATTEST:

_____
Carla R. Reece, City Clerk

APPROVED AS TO FORM:

_____
Sonia M. Blain, City Attorney