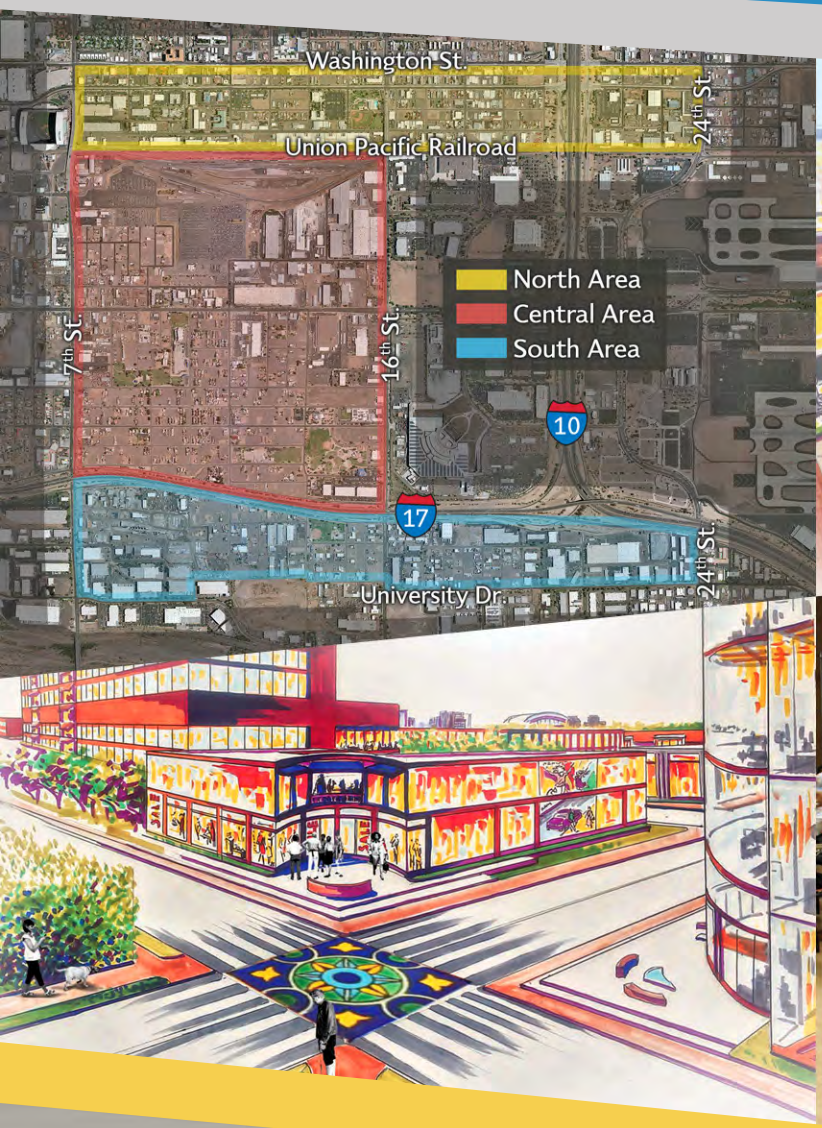
PHX Land Reuse Strategy

Final Report



March 2017

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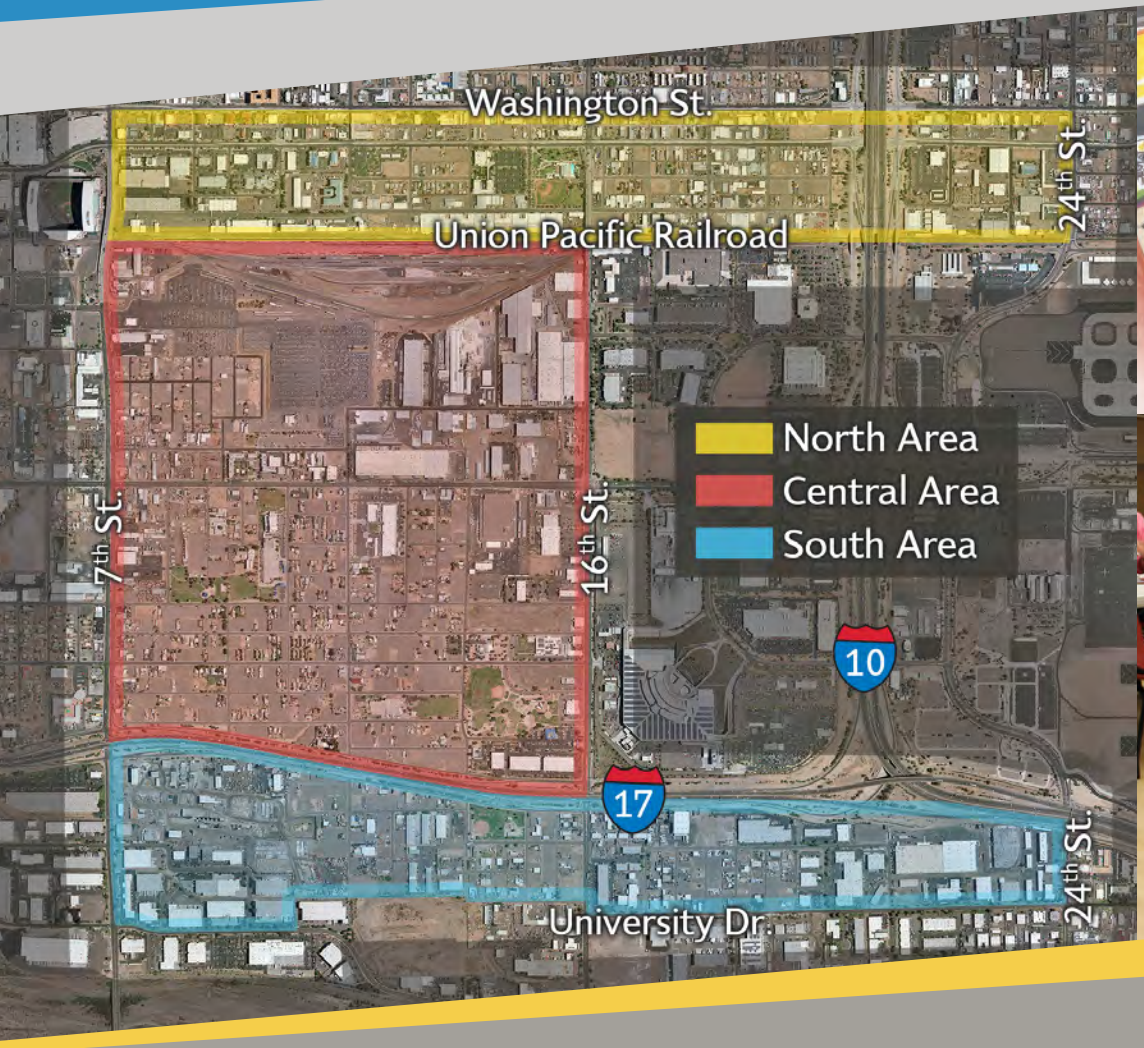


March 2017

PHX Land Reuse Strategy

Executive Summary

The PHX Land Reuse Strategy envisions new and vibrant uses for the land west of Phoenix Sky Harbor.

This collaborative strategy identifies the best way to deliver economic benefits to both the community and the Airport. The three overarching goals are:

Goal A	**Stabilize and strengthen neighborhoods**
Goal B	**Create a sense of identity and change perceptions**
Goal C	**Expand economic opportunity**

Background

In 1999, Phoenix Sky Harbor International Airport instituted a Voluntary Acquisition and Relocation Services (VARS) program to acquire properties exposed to certain levels of aircraft noise. 782 property owners out of 1,100 eligible properties chose to sell their property to the City of Phoenix Aviation Division in this voluntary program. The VARS program concluded in June 2016. The Planning Area covered for the Land Reuse Strategy comprises 743 of the 782 acquired properties west of S. 24th Street. The Land Reuse Strategy study was initiated to determine a plan of how to reuse these "noise lands," also referred to as "subject parcels."

The Federal Aviation Administration (FAA) requires airports with "noise land" to inventory them and develop a plan for their reuse. The PHX Land Reuse Strategy was an opportunity for the Aviation Department to engage the community in establishing a vision for the reuse of lands and defining a path for neighborhood improvement.

The process used to develop the final plan involved many steps, as shown below.

Community Engagement

Community participation was critical to the success of the Land Reuse Strategy. Public engagement informed stakeholders about the process, sought their vital feedback, and solicited creative and innovative ideas that were integrated into the strategies and policies selected for implementation. Throughout the project, meetings were held with groups representing the community:

- Residents and civic and other representatives
- Community, civic and business leaders
- Staff from various City departments
- All interested individuals

The community engagement process revealed the following two important themes:

Honor the cultural and historic resources in the study area

Reintroduce residential uses on noise land parcels

Land Reuse Benchmarking

A benchmarking effort compared PHX's situation to the experience of several similar sized airports with large-scale noise land programs. Key lessons learned were:

- No other airport in a dense urban setting has a noise land program similar in scale.
- The level of community outreach by the City of Phoenix is unprecedented.
- The Phoenix in-depth market analysis is an innovative approach.
- Residential uses have not been re-established on noise lands at any other airport.

Inventory

Detailed information about the noise land along with a wide range of key infrastructure, related planning studies, environmental data, and other information was gathered and analyzed by the project team. This inventory helped set the context for the long-term potential reuse of the noise land.

The inventory identified several opportunities for, and constraints to, development in the Planning Area.

Opportunities

- Access to transportation
- Planned infrastructure
- Incentive zones
- Parcel assembly

Constraints

- Zoning and deed restrictions
- Environmental overview
- Neighboring parcel use

Market Analysis

The detailed market analysis includes an assessment of various potential uses summarized in Table E-1 below.

Table E-1—Total Estimated Demand for Planning Area by Planning Period

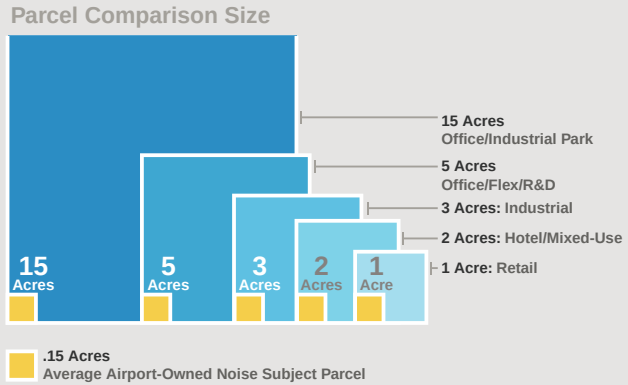
Land Use	Capture of Demand (SF or rooms)*			Average FAR^	Total Acres Required	Potential Form of Demand
	2016–2020	2021–2025	Total			
Industrial & Flex	0–165,000	325,000–425,000	325,000–585,000	0.31	24–43	Smaller-scale warehouse and flex as standalone; larger-format warehouses in planned cluster; flex/light industrial development in business park setting, potentially with office; inventory split of 70/30 general industrial/flex
Office	0–100,000	115,000–225,000	115,000–325,000	0.44	6–17	Mix of Class B standalone and Class A and B in business park format with other uses
Retail	20,000–40,000	50,000–60,000	70,000–100,000	0.23	7–10	Convenience-oriented commercial as standalone and small strip-centers, mixed-use stetting
Hotel (Rooms)	-	130	130	75 rooms/acre	1.5–2	Select-service hotel
Total**	20,000–300,000	490,000–710,000	510,000–1,010,000		38.5–72	

** range reflects low and high scenarios of estimated demand captured by use within Planning Area*

*** SF not including hotel | ^ floor-to-area ratio (FAR) | Source: C&S Companies*

Market Analysis

Industrial/flex land use is likely to be more than half of new development for the Planning Area. Because a large number of projects are in progress or recently completed in this area, demand for more development in the short-term is limited. It is more likely that the area can capture development within the mid-term (2021–2025) range. There is potential for 40 to 70 acres of market demand within the Planning Area over 10 years if right-sized development sites are available. As shown to the right, the average parcel size (0.15 acres) is smaller than what is generally desired for development.



Market Analysis Findings

Acreage of available land is greater than the acreage of projected demand

Industrial and flex development has potential to be the primary land use in the area

Need to plan for long-term land use and configuration of properties to increase chances for future development.

Land Reuse Frameworks

Using community input and an evaluation of Planning Area conditions, three land reuse frameworks were developed to illustrate long-term development scenarios. The following key issues are addressed under each scenario.

Cultural Corridor

A designated heritage pathway links multiple neighborhoods together using historic markers, interpretive signage, and community branding.

Transportation

Modifications to the street grid that will be necessary to implement the land use plan under each framework.

Development Sites/ Infrastructure

Identify ways to join separate small parcels to make larger areas of developable land, relocate utilities and/or close roads to improve flexibility in site and building layout.

The following pages show the Cultural Corridor concept and the evaluation of each framework according to criteria identified from community engagement and elements of sustainability. The three frameworks and their evaluation criteria were presented to the community and stakeholders at public meetings in December 2016. Community input regarding elements of these frameworks identified Framework B as the Community Preferred Land Reuse Framework.

Cultural Corridor Concept

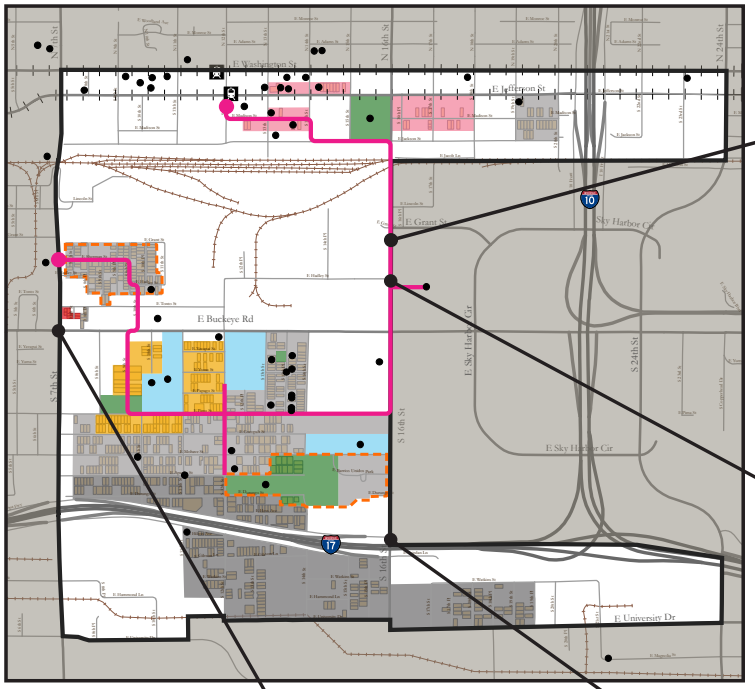
Definitions

- **Study Area Boundary**
- **Core Residential**
- **Mixed Use & Residential Support**
- **Commercial**
- **Industrial**
- **Small Business/Flex**
- **Education/Institutional**
- **Parks/Recreation**
- **Business Park**
- **Historic Resources—**Includes resources or properties listed on the National and/or Phoenix Register of Historic Places, as well as those not listed but eligible for registry
- **Cultural Corridor—**Designated heritage pathway linking multiple neighborhoods and marked by historic markers, interpretive signage and community branding

Strategy

Develop and implement branding strategy for a Cultural Corridor to showcase the area's history and contributions to the community.

- Identify and promote the area through branding that highlights the rich history and cultural heritage.
- Use various tools, including design guidelines and incentives, to support the branding and encourage development of heritage-themed public spaces, public assembly, retail, tourism and cultural uses.
- Designated "Cultural Corridor" linking historic and cultural sites. May be combined with a walking map or app.
- Provide historic markers and/or interpretive signage at significant resources
- Develop decorative gateways signifying the entrance into a cultural area
- Consider inclusion of commemorative public art and naming of public spaces
- Engage local artists in mural development and public art installations



Potential Heritage Corridor treatments (trail, seating, murals, banners): Looking south down S. 16th St., south of E. Grant St.

Potential Heritage Corridor treatments (public park, commemorative statue/signage): Looking east across S. 16th St., toward the Historic Sacred Heart Church.

Potential gateway treatments (intersection paving materials, crosswalks): Intersection of E. Buckeye Rd. and S. 7th St., looking east.

Potential gateway treatments (murals): S. 16th St., at the I-17 overpass, looking south.

Frameworks Evaluation Matrix

Criteria	Description	Frameworks		
		A	B	C
Stakeholder/Community Input	Establishes uses that are aligned with the desired uses of stakeholders including the residential community.	↓	↑	=
Local/Community Plans	Establishes uses that are compatible with existing and proposed surrounding uses and does not conflict with objectives of the community and local plans and policy including zoning and overlay districts.	↑	=	=
Historic/Cultural Considerations	Recognizes historic and cultural resources and history.	=	↑	↑
Sustainable Design	Encourages parcel assembly to accommodate developments which can financially and physically enable the incorporation of sustainable design elements.	↓	↑	↑
FAA Guidelines	Complies with Federal Aviation Administration (FAA) noise compatibiliy guidelines (residential land uses within 2015 DNL_65 noise contours).	↑	=	=
City Investment	Minimizes initial or long-term investment required by the City to execute framework (e.g., infrastructure improvements to ready the site).	=	↓	=
Flexibility	Accommodates potential for changes in future City, PHX and neighborhood priorities and needs, as well as unforeseen market shifts and changing market dynamics.	↓	↑	=
Market Demand, Timing and Characteristics	Establishes uses that (1) accomodate existing and projected market demand; (2) allow for phasing to address general market timing; and (3) meets market characteristics.	↓	=	=
Target Sectors	Maximizes potential for alignment with Phoenix's target sectors as defined by the Greater Phoenix Economic Council; Arizona Commerce Authority; Maricopa Community Colleges, Workforce Development; and Phoenix Innovation Corridor.	↓	↑	↑
Overall Ranking		**3**	**1**	**2**

Evaluation Process: For representation in matrix format, the symbols in the key were used to conduct a relative, qualitative assessment of the frameworks. This approach gives the highest ranking to the framework with the most positive characteristics.

Key

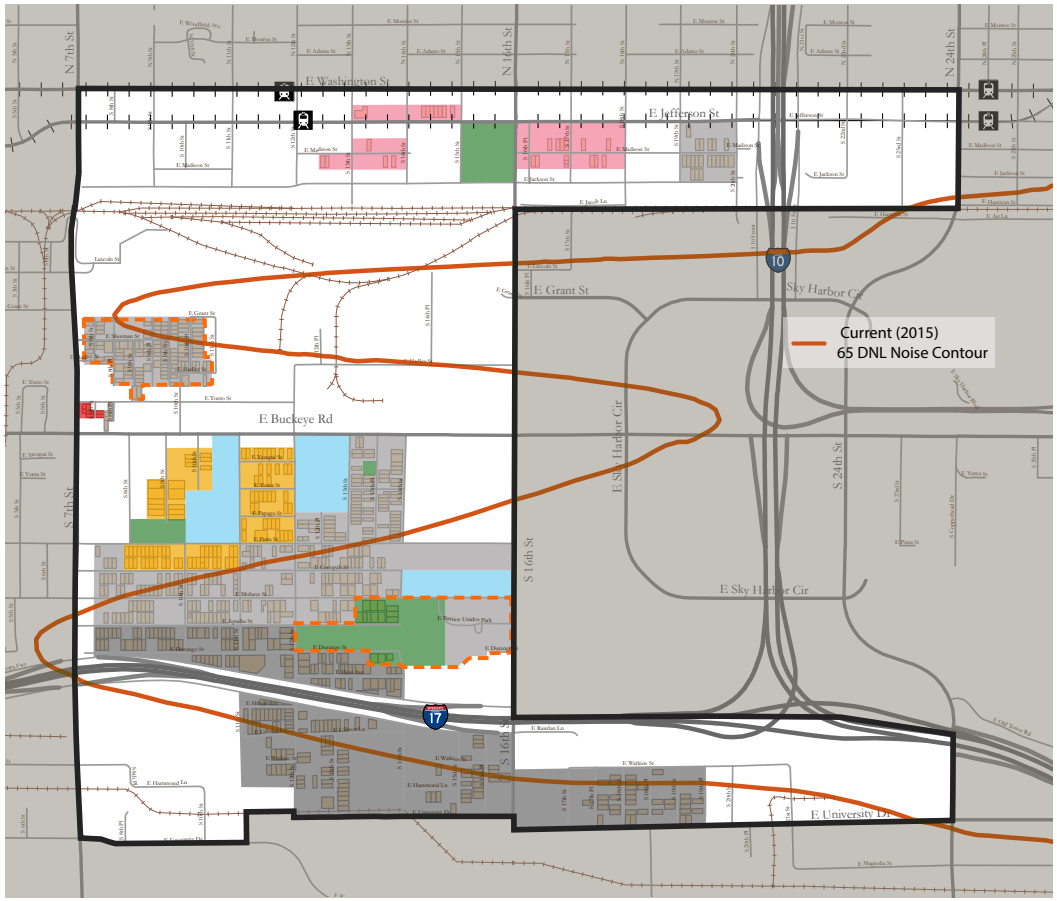
↑ Positive impact/meets or exceeds the criteria description

= Neutral impact/complies with some but not all elements of the criteria description

↓ Negative impact/does not meet the criteria description

Community Preferred Land Reuse Framework

Land Use and Noise Compatability



Definitions

Study Area Boundary

Core Village—Traditional low-scale residential area (density of 5-10 units per acre). Uses may include single or multi-family dwellings, existing and infill replacement housing, residential live-work, and complimentary community-benefit spaces (i.e. community garden, pocket park, etc.).

Mixed Use—North of Jefferson Street, this designation refers to compatible residential and non-residential uses co-located vertically within a multi-level structure. Elsewhere in the Study Area, this designation may refer to residential properties combined with workshop, studio, office, or other uses supporting home occupations. This designation also supports complementary features including parking, open space, and drainage, as well as community-benefit spaces such as community gardens, pocket parks, etc.

Commercial—Primary land uses include retail, office, service, entertainment, and apartment development in formats appropriate to the setting and transportation network.

Industrial—Consists of regional-scale land uses such as warehousing and distribution, manufacturing, food processing, utilities, and storage.

Small Business/Flex— Includes a variety of low- to moderate-intensity, non-residential uses. Uses may include office, research and development, biotech, small-scale manufacturing, retail, business incubators, showrooms, artisan production, small business and transitional uses. This designation supports opportunities for infill community-benefit spaces like urban farms and pocket parks.

Education/Institutional—Lands occupied by educational facilities including preschools, primary and secondary schools, colleges and universities, and supporting uses, or institutional facilities such as fire and police stations.

Parks/Recreation—Areas for neighborhood and community-level active recreation.

Business Park—A cohesively planned area occupied primarily by office, light industrial and industrial uses of similar character.

Land Reuse Strategies

The Land Reuse Strategy supports the Community Preferred Land Reuse Framework by guiding physical and regulatory conditions and identifying measures that will improve the market and community standing of the Planning Area. This strategy is organized around three primary goals related to land use planning.

For each goal, a set of policy statements, strategies, and action items outlines a process to achieve the goals. These policy statements and strategies were identified through the planning and public engagement processes and incorporate best practices from successful projects around the country.

The policy statements, strategies and action items form a basis to help guide implementation of the plan going forward.

The Potential Near-Term Actions (next page) illustrates ten initiatives that will get the process of redevelopment started.

Goal A
Stabilize and Strengthen Neighborhoods

The Planning Area has a rich history of residential neighborhoods that continues today. These neighborhoods have experienced profound changes over the years due to the VARS program as well as a variety of factors that result from an expanding city and growing airport. The planning and public engagement process has identified a desire to maintain residential as part of a diverse set of uses needed to create and support a vibrant live-work environment. One intent of this goal is to explore innovative ways, partnering with the FAA, to not only maintain but strengthen housing opportunities, as well as cultural amenities, in the Planning Area.

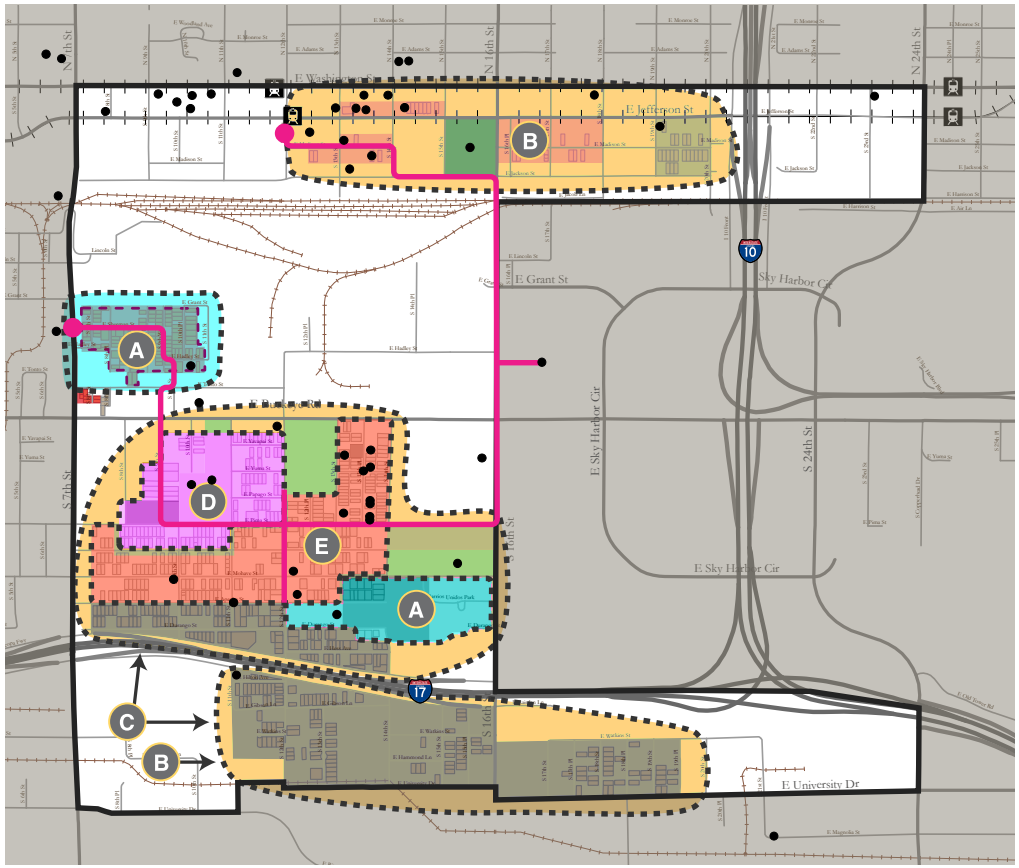
Goal B
Create a Sense of Identity and Change Perceptions

Perceptions of the Planning Area pose a challenge to its redevelopment. Physi cal conditions, including widespread vacancies and disjointed land use patterns, safety and security concerns, characterizations as a residential area, and lack of recent planning play a major role in defining perceptions of this area. To improve perceptions and attract future investment, employ placemaking strategies to en hance positive assets and nullify some negative attributes. The intent of this goal is to revitalize existing neighborhoods and prioritize the value of placemaking.

Goal C
Expand Economic Opportunity

High quality compatible redevelopment will have a significant role in strengthening the local economy, the stability of the Planning Area communities, and the support the airport as an economic asset. The Planning Area is a special and strategic location between Downtown Phoenix with its growing Biomedical campus and light rail corridor and Sky Harbor Center and the airport, which can be promoted to attract development, employment and sustainable growth in the long-term. This goal also acknowledges the value of providing employment opportunities for residents within the Planning Area and the catalytic effect of encouraging development to assist in placemaking.

Potential Near-Term Actions



1.	Develop Cultural Corridor to leverage the area's rich cultural heritage and draw positive attention to the area. Support the Cultural Corridor with a branding strategy and revitalization of public spaces including streetscapes.
2. A	Evaluate, select and prepare catalytic sites for targeted development, including limited parcel assembly as needed to create opportunities and attract market interest. Recommended sites noted on map.
3. B	Release City-owned parcels on a strategic basis in the North and South Subareas, through sale or lease of parcels in a manner that promotes mixed-use, industrial, or other supporting uses in a manner consistent with a potential framework.
4. C	Prepare small area plans for the Central Subarea south of Buckeye and the South Sub-Area. Small-area plans should address a wide-ranging set of topics specific to each project area, as recommended under Strategy B3a.
5. D	Work with the FAA to find mutually agreeable terms regarding land reuse in the Core Residential Area; conduct further research and feasibility study as appropriate; identify partner.
6. E	Determine specific locations for appropriate interim uses of subject parcels, with a particular focus on small business/flex portions of the Central Sub-Area. Develop and implement mechanisms (i.e., temporary zoning, use agreements) for short-term uses of subject parcels.
7.	Develop design guidelines to promote context-sensitive development in the Planning Area. Recommended locations include any location proximate a historic resource, North and Central Subareas.
8.	Address public service concerns raised by community members as part of this planning process, such as increased police patrols, improved amenities and programming at area parks, more street lighting, improved sidewalks, and blight enforcement.
9.	Establish community-based input and oversight groups and processes for ongoing engagement throughout implementation of the Reuse Strategy and subsequent planning efforts.
10.	Work with City and other economic development agencies to identify and employ incentive programs to attract new development to the Planning Area.

Next Steps

This Land Reuse Strategy will be reviewed by several levels of the City of Phoenix, followed by City Council action, before it is sent to the FAA, who must approve of the plan to reuse the noise land.

Submitting the Land Reuse Strategy signifies that the project has shifted to Phase 2, which focuses on implementation of the strategy using funding from an FAA grant. Phase 2 will continue a robust and high-level community involvement program focused on sustainable, community oriented solutions.

PHX Land Reuse Strategy

For more information, please visit the project website:
skyharbor.com/LandReuseStrategy

Section 1— Introduction & Process Overview

1.1 Purpose

The City of Phoenix Aviation Department (Aviation) previously acquired "noise land[1]" parcels west of the airport. The Federal Aviation Administration (FAA) requires airports to redevelop noise land with compatible uses[2]. The purpose of this Land Reuse Strategy (Reuse Strategy) is to present the Community's goals for redevelopment of the noise land parcels. FAA has numerous rules[3] governing the planning and redevelopment of noise land, and this plan conforms to those rules.

1.2 Community Noise Reduction Program Overview

Through its Community Noise Reduction Program (CNRP), Aviation sound-mitigated 1,705 single-family homes in Phoenix and Tempe from 1992 to 2009. Beginning in 2009 and concluding in 2013, PHX the CNRP transitioned to also provide sound-mitigation services to seven non-residential structures, including schools, churches, and community centers.

The 1999 Noise Compatibility Program (NCP) for the Airport recommended a "Voluntary Acquisition and Redevelopment" measure to acquire properties exposed to aircraft noise levels between DNL 65 and 75. The Aviation Department acquired 782 of 1,100 properties that were eligible for participation in the Voluntary Acquisition and Redevelopment Services (VARS) program. The program was voluntary, and not all eligible property owners chose to participate. The VARS program sunset in June 2016.

1.3 Study Area

The Study Area for the Reuse Strategy comprises the portion of the VARS Program Area west of S. 24th Street, which is divided into three subareas, in addition to a 500-foot buffer zone. The 500-foot buffer is included to provide land use, zoning, and planning information that may influence the use

[1] Noise land is real property that an airport acquires in a noise-impacted area around an airport. Locations within the DNL 65 dB contour are considered noise-impacted areas. Noise land properties are also referred to as "subject parcels" in the Reuse Strategy document. See *Noise Land Management and Requirements for Disposal of Noise Land or Development Land Funded with AIP*, Section 1.A. FAA Office of Airport Planning & Programming, June 2014.

[2] Compatible uses are defined in 14 CFR, Part 150, *Airport Noise Compatibility Planning*, Appendix A, Table 1. All uses are considered compatible outside the DNL 65 dB contour (however, there are specific uses that could include elements deemed incompatible by FAA such as glare from solar panels or structures of a height that are deemed unsafe). Within the DNL 65 dB contour, residences and other sensitive land uses such as churches or schools are generally not compatible.

[3] Such rules are based upon grant assurances relevant to noise lands that must be followed: Consistency with local plans (Grant Assurance 6); the airport must restrict the use of land adjacent to or in the immediate vicinity of the airport to activities and purposes compatible with normal airport operations (Grant Assurance 21); the airport must dispose of land purchased under a grant for noise compatibility purposes, when the land is no longer needed for such purposes, at fair market value (Grant Assurance 31a); and disposition of land is subject to the retention or reservation of any interest or right necessary to ensure that such land will only be used for purposes which are compatible with noise levels associated with airport operation (Grant Assurance 31d). See 49 USC §4710 Subpart B Airport Development and Noise, Subchapter 1, Section 4710 (c)(2)(A); FAA Order 5100.38D, *Airport Improvement Program Handbook*, paragraph 5-68. See also FAA's *Airport Sponsor Assurances*, 3/2014.

of land at the edges of the subareas. The term "Planning Area" is used to describe the three subareas as a whole, but excludes the buffer zone.

The three subareas are:

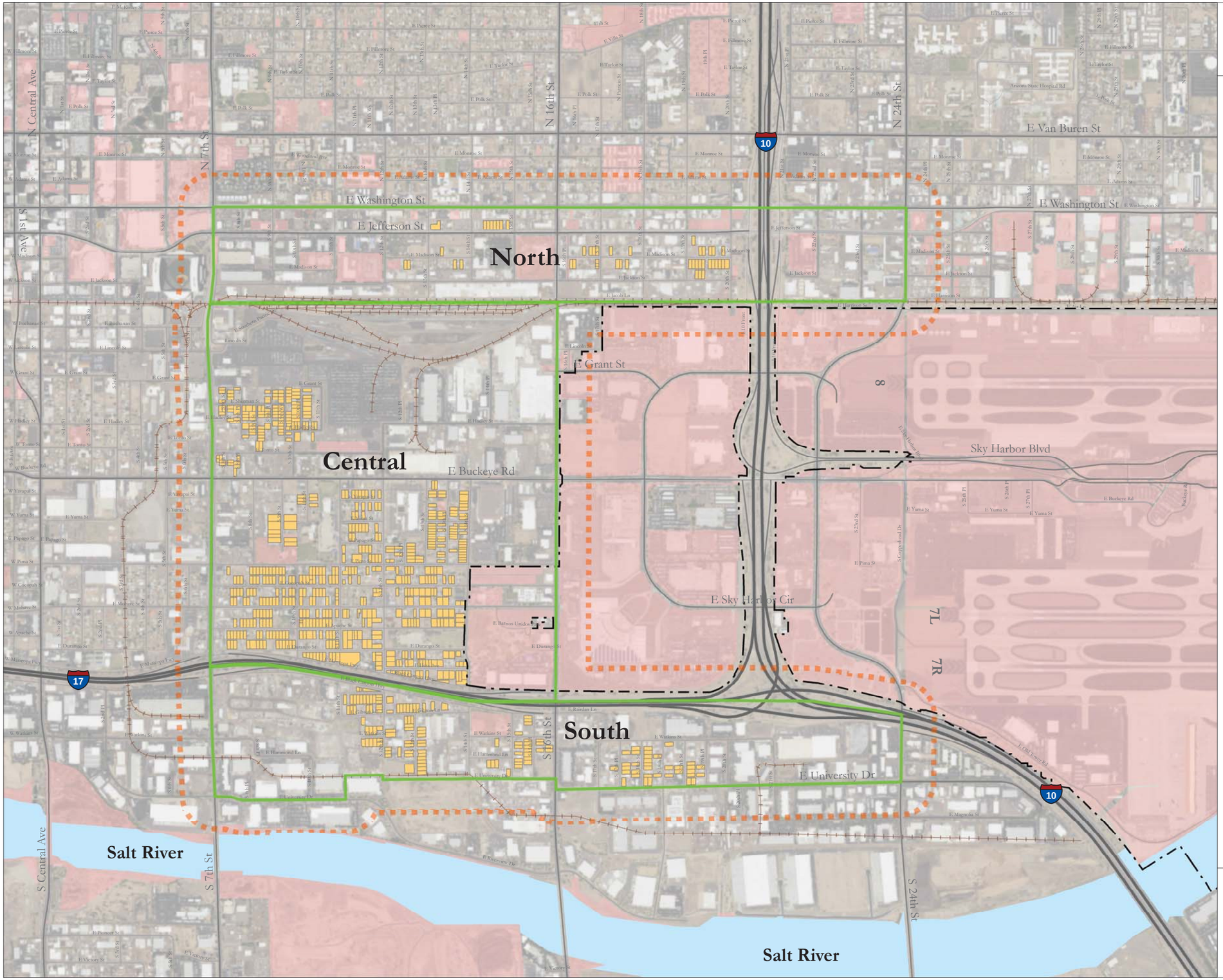
- North: bounded by S. 7th Street on the west, S. 24th Street on the east, E. Washington Street on the north, and the Union Pacific Railroad (UPRR) on the south.
- Central: bounded by 7th Street on the west, S. 16th Street on the east, the UPRR on the north, and Interstate 17 (I-17) on the south.
- South: bounded by 7th Street on the west, S. 24th Street on the east, I-17 on the north, and E. University Drive on the south.

The Planning Area includes 743 of the 782 Airport-owned noise properties acquired through the VARS program, accounting for 115 acres plus 20.5 acres of rights-of-way abutting the parcels.[4] In this report, the term "subject parcels" refers to those Airport-owned noise properties located within the Planning Area and is also used interchangeably with the term "noise lands."

Figure 1.1 illustrates the Study Area for the Reuse Strategy including the Airport-owned noise properties, the North, Central, and South Subareas, and the buffer area.

Figure 1.2 depicts the neighborhoods in the Planning Area, as defined through the VARS Program. East Lake Park is in the North Subarea; El Campito, Cuatro Milpas, and Ann Ott are in the Central Subarea; and Green Valley and San Juan Bautista are in the South Subarea.

[4] City of Phoenix, Department of Aviation, Community Noise Reduction Program, Voluntary Acquisition and Relocation Services, *Eastlake Neighborhood Acreage, Central Acreage,* and *South Neighborhood* (maps), November 2015.



LEGEND

- Airport Property
- 8, 7L, 7R — Runway Numbers
- Study Area
- Planning Area
- Airport-Owned Noise Property
- Other City-Owned Property
- Highway
- Arterial Street
- Local Street
- Railroad
- Waterways

NORTH 0 1,500 ft.

SOURCES: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community (Basemap), February 2016; City of Phoenix, Aviation Department, VARS boundary and Acquired Properties, obtained December 2015.
PREPARED BY: Ricondo & Associates, Inc., October 2016.

PHX LAND REUSE STRATEGY

Figure 1.1

Study Area
PHX Land Reuse Strategy

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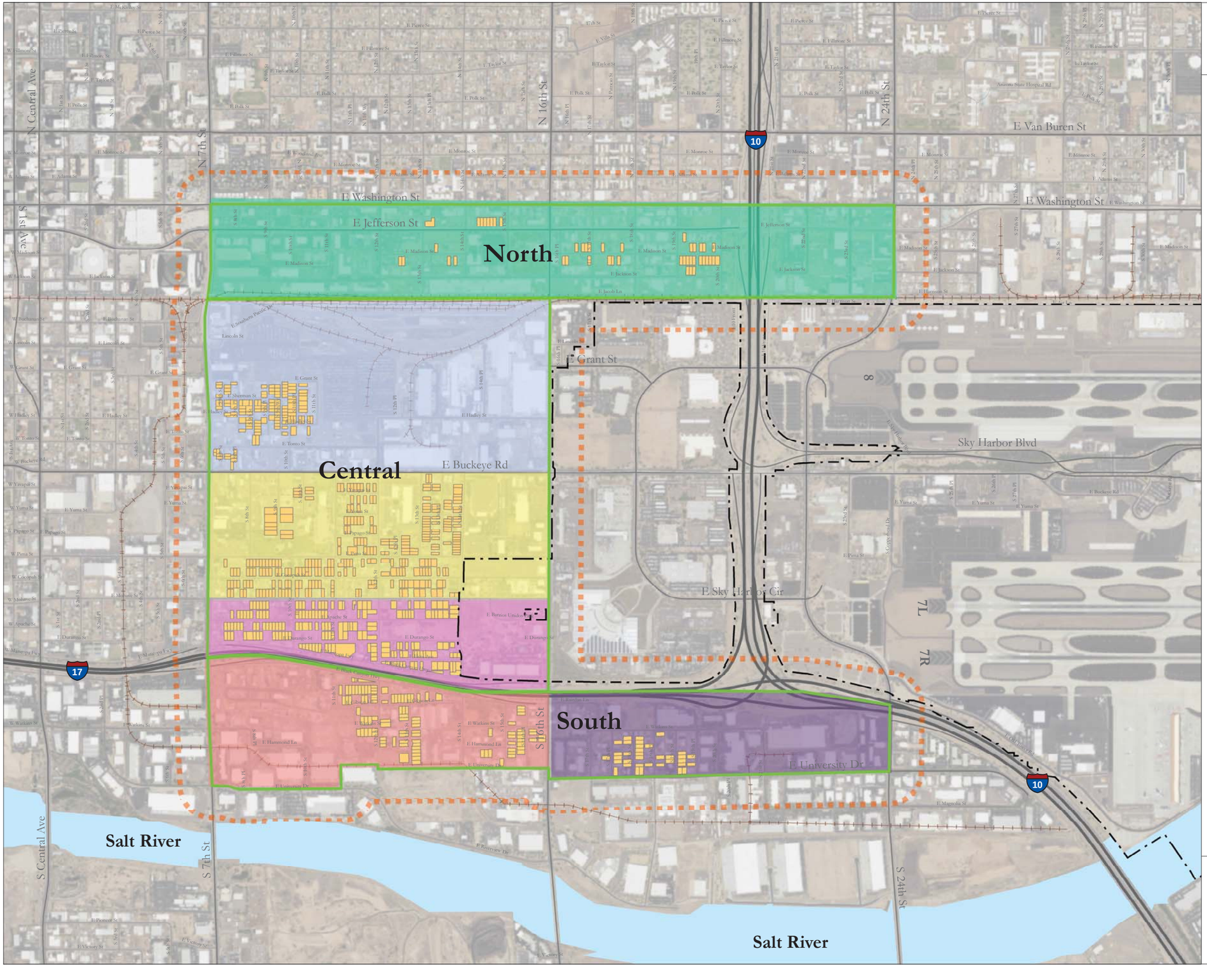

LEGEND

- Airport Property
- 8, 7L, 7R — Runway Numbers
- Study Area
- Planning Area
- Airport-Owned Noise Property
- Highway
- Arterial Street
- Local Street
- Railroad
- Waterways

Study Area Neighborhoods

- East Lake Park
- El Campito
- Cuatro Milpas
- Ann Ott
- Green Valley
- San Juan Bautista

NORTH

0 1,500 ft.

SOURCES: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community (Basemap), February 2016; City of Phoenix, Aviation Department, VARS boundary and Acquired Properties, obtained December 2015; City of Phoenix, Aviation Department, VARS Neighborhoods (map), May 12, 2014.
PREPARED BY: Ricondo & Associates, Inc., October 2016.

PHX LAND REUSE STRATEGY

Figure 1.2

Neighborhoods in Study Area

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1.4 Agency Requirements and Coordination

The Reuse Strategy must align with a number of specific requirements defined by FAA and integrate with the objectives of plans previously developed in and around the project area. Certain agency requirements also limit potential future uses of the subject parcels.

1.4.1 FAA Requirements Related to Reuse and Disposal of Noise Lands

Noise lands acquired with Airport Improvement Program (AIP) grant funds are subject to Grant Assurance 31, Written Assurances on Acquiring Land, which requires the "prompt disposal of AIP-funded land when the land is no longer needed for eligible current or planned airport purposes."[5] The federal share of the proceeds on the sale must be reinvested in eligible airport projects and programs. (Other grant assurances, discussed in Section 6.1, are also relevant to the release of noise lands.)

Of the 743 Airport-owned noise properties within the Planning Area, 99 were obtained with AIP grant funds and the rest were acquired with Passenger Facility Charge funds, all of which are subject to federal land management and disposal obligations. Airport sponsors that release land no longer needed for aeronautical purposes are required to retain land use restrictions and covenants adequate to ensure safe and efficient airport operations and noise compatibility.[6]

In 2014 the FAA published specific guidance related to the acquisition, management, disposal, and reuse of noise lands (*Noise Land Management and Requirements for Disposal of Noise Land or Development Land Funded with AIP)*.[7] The Guidance outlines the specific obligations for sponsors that have acquired noise land with AIP grant funds, acceptable methods for property disposal to prevent future incompatible land use, use of disposal proceeds, retention of noise land for airport development or noise buffer, FAA's oversight authority of noise land, and Noise Land Inventory requirements.

For subject parcels identified for disposal through this planning process, the City of Phoenix must retain enforceable rights on the land conveyed including, but not limited to, an adequate easement, deed restriction, covenant, or other property right or reservation to ensure the noise land will be put into compatible land and will not conflict with the airport's use, operation, or development. As part of the land disposal (release) process, the FAA will require the City of Phoenix to certify that adequate rights have been retained on any subject parcels sold, exchanged or leased long-term.

[5] 49 USC §4710 Subpart B Airport Development and Noise, Subchapter 1, Section 4710 (c)(2)(A) This requirement is also set forth in FAA Order 5100.38D, *Airport Improvement Program Handbook*, paragraph 5-68.

[6] Federal Aviation Administration Order 5050.4B, National *Environmental Policy Act (NEPA) Implementing Instructions For Airport Actions* paragraph 207.c.(1).

[7] Federal Aviation Administration, Office of Airport Planning and Programming, *Noise Land Management and Requirements for Disposal of Noise Land or Development Land Funded with AIP*, June 2014

1.4.2 Compliance / Coordination of Reuse Strategy with Community Plans

An objective of the Reuse Strategy identified in preliminary meetings with stakeholders and the community was to arrive at a reuse strategy that complements previously prepared community plans and avoids conflicts with the initiatives identified in those plans. As documented in Section 5, the project team reviewed a number of existing plans prepared by the City of Phoenix that have direct or indirect influence over the study area including:

- PlanPHX
- Reinvent PHX
- Eastlake Park Neighborhood Plan
- Nuestro Barrio Neighborhood Plan
- Rio Salado Redevelopment Study Area
- Booker T. Washington Redevelopment Area
- Sky Harbor Center Redevelopment Area
- HOPE VI and Choice Neighborhoods Program
- Green Valley Neighborhood
- Cuatro Milpas
- Central City South Quality of Life Plan

Participants in stakeholder and community meetings referenced these plans and also identified specific community issues that the project team has captured in meeting summaries, which are included in **Appendix C**, and integrated into the content of this report.

1.4.3 Future Residential Use of Subject Parcels

During community meetings and in written correspondence, stakeholders have expressed a strong desire to have residential uses considered on some of the subject parcels. FAA Grant Assurance #31 restricts airports that have purchased land for noise compatibility purposes, ". . . to ensure that such land will only be used for purposes which are compatible with noise levels associated with operation of the airport." The Day-Night Average (DNL) 65 decibels (dB) noise level is considered a threshold for noise compatibility for residential use. However, since the VARS program was implemented, the noise contours have contracted so that some subject parcels are now exposed to noise levels less than DNL 65 dB. This change, in part, triggered requests from stakeholders for the City to consider residential uses on the subject parcels.

The project team learned in the course of conducting the benchmarking research that FAA has never approved the return of residential uses on the subject parcels acquired by an airport with AIP or PFC dollars for noise compatibility purposes. However, the City recognized a unique opportunity and has held several conversations with FAA on this subject. As an outcome of these conversations, the FAA has expressed a willingness to consider residential, particularly as part of a mixed-use configuration on subject parcels in the western portion of the North Planning Area.

1.5 Study Process

The Reuse Strategy is a multi-phased study that serves as a precursor to an implementation stage of the City's long-term goals to comply with FAA requirements, stimulate economic development in the study area, stabilize the neighborhoods affected by the acquisition of the subject parcels, maintain consistency with related plans for the broader area.

1.5.1 Study Components

A number of discrete components make up the Reuse Strategy including:

- **Parcel inventory**—a detailed inventory of the 743 subject parcels acquired in the study area for airport noise compatibility purposes as well as a number of other important topic areas. Results of this phase are addressed in Section 2 of this report.
- **Benchmarking Report**—this review of five similar airports that have acquired large numbers of residential parcels for airport noise compatibility purposes and prepared inventory and reuse plans is intended to inform the Reuse Strategy by highlighting successful strategies and lessons learned in other locations. FAA was also consulted in this research effort to broaden the perspective of the study process. The Benchmarking Report was published to the project web page for public review and comment in July 2016, and is provided in **Appendix B**.
- **Market Analysis and Potential Strategies**—this stage of the study synthesizes a number of important elements including:
    - Detailed market analysis performed for broader Market Study Area and Market Trade Area.
    - Ideas, concepts and suggestions gathered from project stakeholders and the community in collaborative workshops held in June and July 2016.
    - Input solicited from the community through a series of questions posted each week day between August 5, 2016 and August 31, 2016 to https://phxlandreusestrategy.wordpress.com. A summary report of the feedback and commentary received through this interactive site is provided in **Appendix C**.

  Section 12 contains the summary of these elements; Section 13 introduces three Planning Area frameworks based on results of the Market Analysis, along with an evaluation of each.
- **Final Report**—this consolidated final report combines the results of all Land Reuse Strategy project phases, and presents a Community Preferred Land Reuse Framework with corresponding Implementation Strategy. This report will be presented to the Phoenix City Council for its consideration and adoption prior to submission to FAA for review and approval. These final results will be the launching point for the Land Redevelopment Program that utilizes an FAA pilot program grant to support implementation of the Land Reuse Strategy.

1.5.2 Community Engagement

The City recognizes that the outcome of the Reuse Strategy can only be successful if it is based upon a process that proactively engages interested stakeholders and the broader community. A detailed Community Engagement Plan was created at the very beginning of the study process to capture the key strategies to be employed, communication protocols and planned meetings with the stakeholders and community. The Community Engagement Plan is contained in **Appendix C** and was published to the project web page.

Interactive meetings have been conducted throughout the study process. These have been advertised through a variety of media including the project web page, direct mail pieces, posters strategically placed throughout the study area, and posting to the City's open meetings law web page. Examples of the digital and print notifications are contained in **Appendix C**. Community engagement events that have occurred are summarized in Table 1.1.

Table 1.1—Reuse Strategy Meetings

Meeting	Date
Project Management Committee (PMC) Kickoff Meeting	Sep. 2015
PMC Meeting #1	Dec. 2015
Advisory Group (AG) Meeting #1	Dec. 2015
Community Roundtables (RT) Meeting #1	Dec. 2015
Community Meetings	Feb. 2016
Central City Village Planning Committee	Feb. 2016
Technical Forum (Combined PMC/AG/RT special meeting)	Apr. 2016
PMC Meeting #2 (charrette format)	June 2016
Advisory Group Meeting #2 (charrette format)	June 2016
Community Roundtables Meeting #2 (charrette format)	June 2016
Community Meeting (charrette format)	July 2016
Central City Village Planning Committee	Oct. 2016
PMC Meeting #3	Dec. 2016
Advisory Group Meeting #3	Dec. 2016
Community Roundtables Meeting #3 / Community Meetings	Dec. 2016
Central City Village Planning Committee	Dec. 2016
Central Subarea Follow-up Meeting	Jan. 2017
Phoenix Aviation Advisory Board (PAAB) Planning & Development Subcommittee	Jan. 2017
PAAB Meeting	Jan. 2017

Central City Village Planning Committee	Feb. 2017
City Council Aviation Subcommittee Meeting	April/May. 2017*
City Council Meeting	April/May. 2017*

Notes: *—Tentatively scheduled

Additionally, Aviation provided frequent updates to community associations such as Eastlake Park Neighborhood Association (EPNA), interested agencies like Maricopa Association of Governments (MAG) and Phoenix Elementary School District #1 (PESD), and regional associations and special interest organizations such as the Valley Partnership and Women's Transportation Seminar.

A community engagement summary report is contained in **Appendix C**. Summaries and notes from the various public and committee meetings held over the course of the Land Reuse Strategy process are also contained in **Appendix C**.

Formal interviews with a number of individuals and organizations were also conducted to help inform the market analysis process. These were instrumental in helping the study team shape the community engagement process and assisted in the development of the frameworks. A summary of the takeaways from these interviews and other stakeholder feedback is contained in **Section 12.2.3** and a list of interviewees is contained in **Appendix C**.

Additional feedback and input has been directed to Aviation staff through emails and phone calls.

The status of key elements of the Land Reuse Strategy has been conveyed at each point of the community engagement process. Table 1.2 presents those key elements, their status and location within this plan.

Table 1.2—Reuse Strategy Elements and Status

 **Community Engagement**	Completed—final series of meetings concluded in December 2016
 **Inventory**	Completed—Sections 2-10 contain these results
 **Market Analysis**	Completed—Sections 12 contains these results
 **Strategy Development**	Completed—Sections 13-15 contain these results

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Section 2—Noise Land Inventory

Airport sponsors that receive federal financial assistance, such as AIP grants, to acquire lands for noise mitigation are required to submit a Noise Land Inventory (Inventory) and Reuse Plan to the FAA.[8] Based on FAA requirements, the Inventory must include the following information:

1. Parcel Number
2. AIP Grant Number under which the parcel was acquired and federal share of AIP grant
3. Map identifying all of the AIP funded noise lands
4. Reference to current accepted noise contours for the airport
5. Current reuse/disposal designation (disposal by sale or exchange, retained for development, or noise buffer)
6. For disposed parcels, the sale recording information (deed book and page, etc.) and the date of FAA approval
7. For retained land, reference the date of FAA ALP change approval

Appendix A, Table A-1, *Noise Land Inventory*, following the last section of this report, lists the details of the 743 Airport-owned noise properties. (Table A-1 begins on page A-2 of Appendix A.) In accordance with Attachment A of the FAA's Noise Land Guidance, the parcel number, AIP Grant Number (when applicable), and the federal share for the AIP grant are provided in Table A-1, as well as the parcel size, address, and funding sources other than AIP Grants.

Figures A.1 through **A.8** in Appendix A, are sector maps showing detailed views of the Airport-owned noise properties. Figure A.1 (page A-33) provides an index map of the sectors shown in Figures A.2, North Subarea (page A-35), A.3 through A.6, Central Subarea (pages A-37 through A-43) and A.7 through A.8, South Subarea (pages A-45 and A-47). Each parcel is labeled with an identification number corresponding to the identification number indicated in Table A-1. The figures also highlight the parcels that were procured with AIP funds.

[8] Federal Aviation Administration, Office of Airport Planning and Programming, *Noise Land Management and Requirements for Disposal of Noise Land or Development Land Funded with AIP*, June 2014

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Section 3— Airport Plans and Aviation-Related Constraints on Noise Lands

3.1 Airport Layout Plan

As depicted on the most recent Airport Layout Plan (ALP), dated June 26, 2006 (revalidation date of February 25, 2011), the City of Phoenix (the City) is going to consider several terminal expansion alternatives due to passenger constraints. Future terminal projects likely will require the realignment of Sky Harbor Boulevard. In addition the ALP shows future expansion of the automated PHX Sky Train that currently transports people between Valley Metro Rail at 44th Street and Washington streets to the East Economy Parking area and Terminals 3 and 4. Extension of the PHX Sky Train is planned from its current terminus at Terminal 3 to the Rental Car Center located on Sky Harbor Circle, south of Buckeye Road.[9]

The ALP also proposes the realignment of 24th Street through the northeast edge of the Study Area from Washington Street south to Sky Harbor Circle (**Figure 3.1**).

3.2 North Side Visioning Study

The 39 Airport-owned noise properties that are not in the Planning Area are located directly north of the Airport between 24th Street and 44th Street. In 2014, Aviation developed a conceptual land use plan for this area, the North Side Visioning Phase 1 Study. The Study identified recommended land uses within this area, referred to as the "North Side," including aviation-related development immediately north of the existing airfield, airport-compatible commercial uses within the northeastern section, and the reservation of land in the central section for development that is aligned with the City's Transit Oriented District goals while maintaining compatibility with adjacent aviation related uses.[10]

[9] City of Phoenix, Aviation Department, *Future Airport Layout Drawing, Sheet 4*, FAA approved June 26, 2006 and revalidated February 25, 2011.

[10] Ricondo & Associates, *North Side Visioning Study Phase 1 Report*, prepared for City of Phoenix, Aviation Department, Phoenix Sky Harbor International Airport, January 2014.

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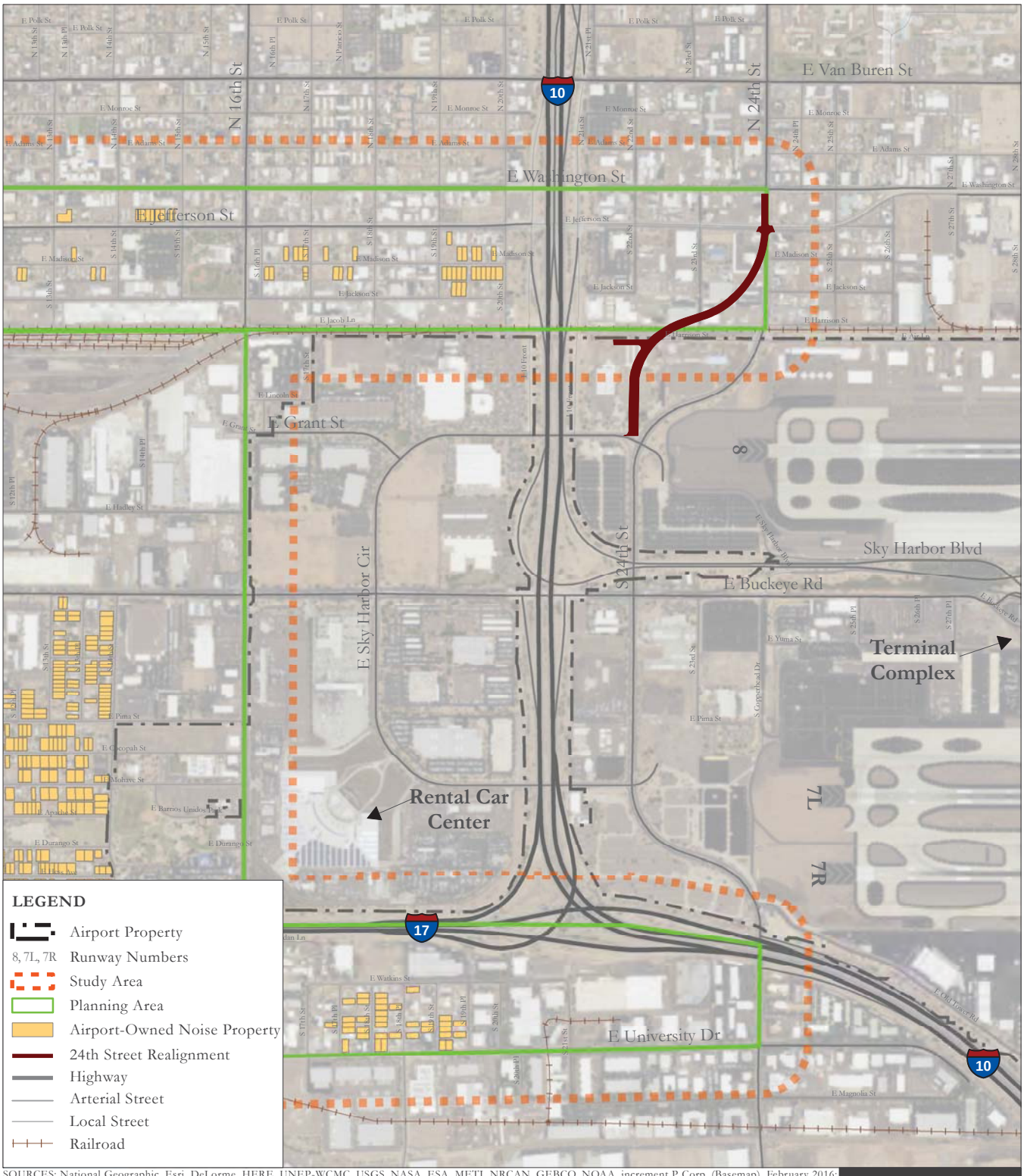

SOURCES: National Geographic, Esri, DeLorme, HERE, UNEP-WCMC, USGS, NASA, ESA, METI, NRCAN, GEBCO, NOAA, increment P Corp. (Basemap), February 2016; City of Phoenix, Aviation Department, Future Airport Layout Plan, VARS boundary and Acquired Properties, obtained December 2015.
PREPARED BY: Ricondo & Associates, Inc., October 2016.

Figure 3.1

Future 24th Street Realignment

NORTH 0 1,500 ft.

W:\Projects\PHX\ACLRP\MXD\Final\Figure 3.1 Future 24th Street Realignment - 2011 PHX ALP.mxd

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3.3 Airport Activity Forecasts

3.3.1 Enplaned Passengers

The number of enplaned passengers at the Airport increased from 19,816,493 in 2008 to 21,012,920 in 2014. Forecast passenger enplanements, using 2014 as the baseline, are projected to increase to 25,196,900 (16.6 percent) in 2024 and to 31,152,100 (32.5 percent) in 2034 with an average annual growth rate of 2.0 percent from 2013 to 2033.[11] **Table 3.1** summarizes the historic and forecast passenger enplanements for the Airport.

Table 3.1—Historical and Forecast Passenger Enplanements

Year	Enplaned Passengers 1/
Historic	
2008	19,816,493
2009	18,853,719
2010	19,224,735
2011	20,211,583
2012	20,169,926
2013	20,166,971
2014	21,012,920
Forecast	
2019	22,796,800
2024	25,196,900
2029	27,955,900
2034	31,152,100

Notes:

1/ Enplaned passengers are those boarding flights at the Airport.

Source: Landrum & Brown, Aviation Activity Demand Forecast, Phoenix Sky Harbor International Airport, March 2015, Table 3-3.

[11] Source: Landrum & Brown, Aviation Activity Demand Forecast, Phoenix Sky Harbor International Airport, March 2015, Table 3-3.

3.3.2 Aircraft Operations

Total annual operations (takeoffs and landings - including passenger and cargo carriers, air taxi, general aviation, and military) at Phoenix Sky Harbor International Airport have averaged 446,638 from 2008 through 2014 with a high in 2008 of 502,499. The average for the five-year period from 2010 through 2014 was 445,638 total operations. As indicated in **Table 3.2**, total operations have been generally declining since 2008. The forecasts show a rebound of operations to 451,060 in 2019, increasing to 592,380 in 2034.

Since 2008, passenger carrier operations have accounted for over 80 percent of all operations at the Airport. Note that while the number of passenger operations in 2014 was the lowest of any other year during the period, the number of enplaned passengers in 2014 was the highest during the period, indicating a greater number of passengers per flight than in prior years. This was attributable to the use of somewhat larger aircraft and an increase in the load factors per average departure.[12]

Table 3.2—Summary of Historical and Forecast Operations

Year	Passenger	Cargo	Military	Air-Taxi	General Aviation	Total Operations
Historic						
2008	422,662	13,198	2,759	33,012	30,868	502,499
2009	391,990	11,127	2,565	29,286	22,239	457,207
2010	386,550	10,817	2,531	27,534	21,919	449,351
2011	401,536	11,127	2,506	26,238	20,582	461,989
2012	394,014	10,929	2,738	20,786	21,737	450,204
2013	380,762	11,313	2,387	20,859	20,863	436,184
2014	377,318	11,814	2,551	18,199	20,579	430,461
Forecast						
2019	395,300	12,130	2,550	21,000	20,080	451,060
2024	434,380	12,380	2,550	24,220	19,580	493,110
2029	475,520	12,400	2,550	27,940	19,080	537,490
2034	526,560	12,420	2,550	32,230	18,620	592,380

Source: Landrum & Brown, Aviation Activity Demand Forecast, Phoenix Sky Harbor International Airport, March 2015, Tables 5-9 and 5-13.

[12] Landrum & Brown, Aviation Activity Demand Forecast, Phoenix Sky Harbor International Airport, March 2015, pages 33 and 34.

3.4 Noise Exposure Maps

Figure 3.2 illustrates the Airport's most recent FAA-approved Noise Exposure Map, representing actual conditions in 1999, in relation to the Study Area.[13] As depicted on Figure 3.2, all of the Airport-owned noise properties within the Study Area were exposed to noise above DNL 65.

Aviation has completed an updated noise modeling analysis to determine aircraft noise levels in the Planning Area based on 2015 aircraft activity and forecast 2025 activity. The intent is to provide the City and the FAA with accurate, up-to-date information about current and forecast noise levels in the area to guide decisions on noise land reuse planning.

Figure 3.3 depicts 2015 aircraft noise levels, and **Figure 3.4** depicts forecast 2025 aircraft noise levels. The noise levels are presented in a network of grid points, rather than as noise contours.

A comparison of Figure 3.3 with Figure 3.2 indicates that noise exposure in the study area is considerably less in 2015 than in 1999. Airport-owned noise properties in the North Subarea are exposed to noise of DNL 60 or less. Noise properties in the Central Subarea are exposed to noise between DNL 60 and DNL 70. Most noise properties in the South Subarea are exposed to noise of DNL 60 or less, although some near I-17 are exposed to noise between DNL 65 and DNL 70.

A comparison of Figure 3.4 with Figures 3.3 and 3.2 indicates that noise levels in 2025 are forecast to be greater than in 2015, although still lower than in 1999. Airport-owned noise properties in the North Subarea are forecast to be exposed to noise of DNL 65 or less. Noise properties in the Central and South Subareas are forecast to be exposed to noise between DNL 60 and DNL 70.

[13] City of Phoenix, *Phoenix Sky Harbor International Airport. F.A.R. Part 150 Noise Compatibility Study, Noise Exposure Maps,* March 2000. The Noise Exposure Maps were accepted by the FAA on October 10, 2000.

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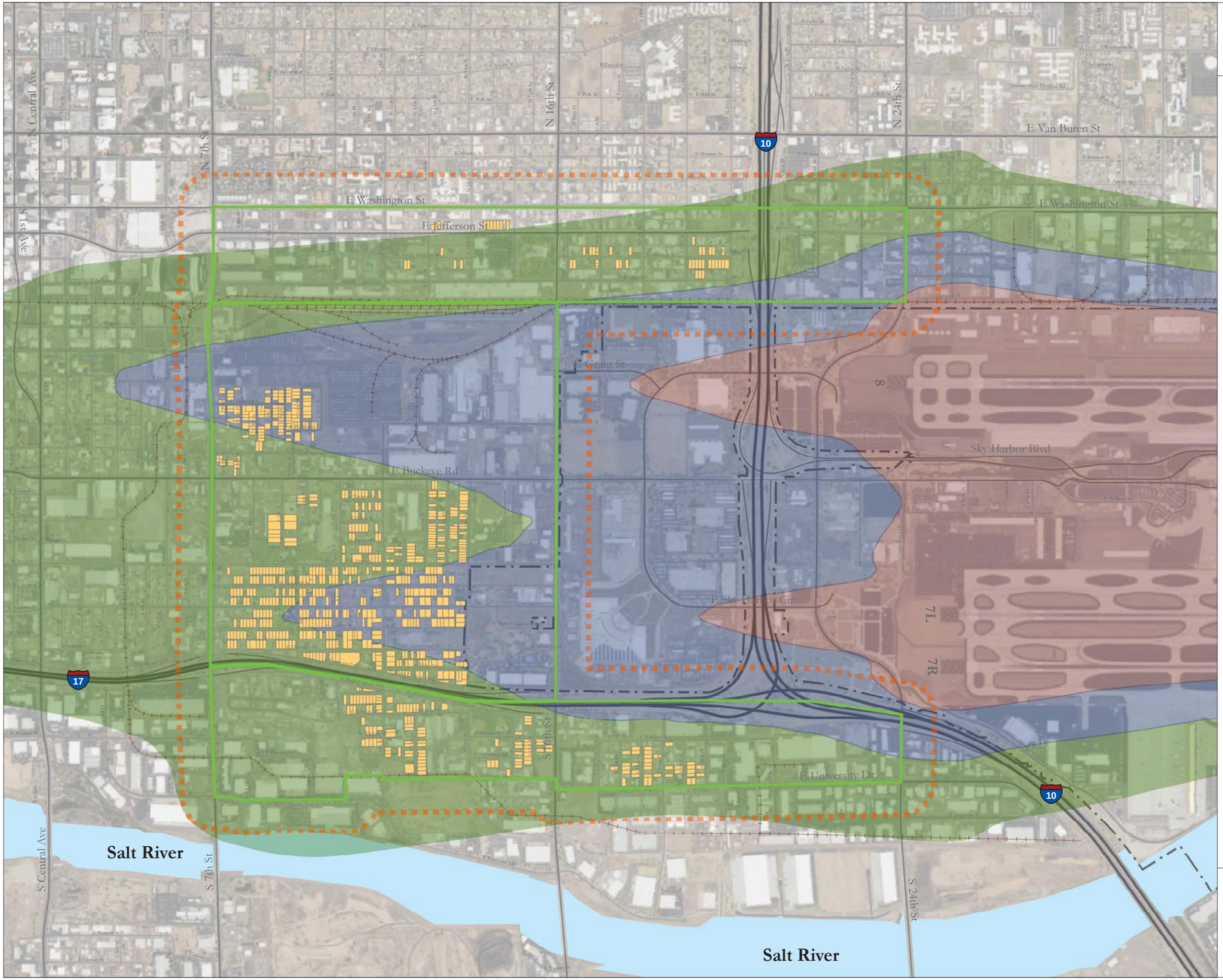

LEGEND

- Airport Property
- 8, 7L, 7R — Runway Numbers
- Study Area
- Planning Area
- Airport-Owned Noise Property
- Highway
- Arterial Street
- Local Street
- Railroad
- Waterways

1999 Noise Exposure

- DNL 65 - 70
- DNL 70 - 75
- DNL 75 +

NORTH 0 1,500 ft.

SOURCES: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community (Basemap), February 2016; City of Phoenix, Aviation Department, VARS boundary and Acquired Properties, obtained December 2015; City of Phoenix, Phoenix Sky Harbor International Airport. FAR. Part 150 Noise Compatibility Study, Noise Exposure Maps, March 2000.

PREPARED BY: Ricondo & Associates, Inc., October 2016.

PHX LAND REUSE STRATEGY

Figure 3.2

1999 Aircraft Noise Exposure

W:\Projects\PHX\ACLRP\MXD\Final\Figure 3.2 Phoenix Sky Harbor 1999 Noise Exposure Contours.mxd

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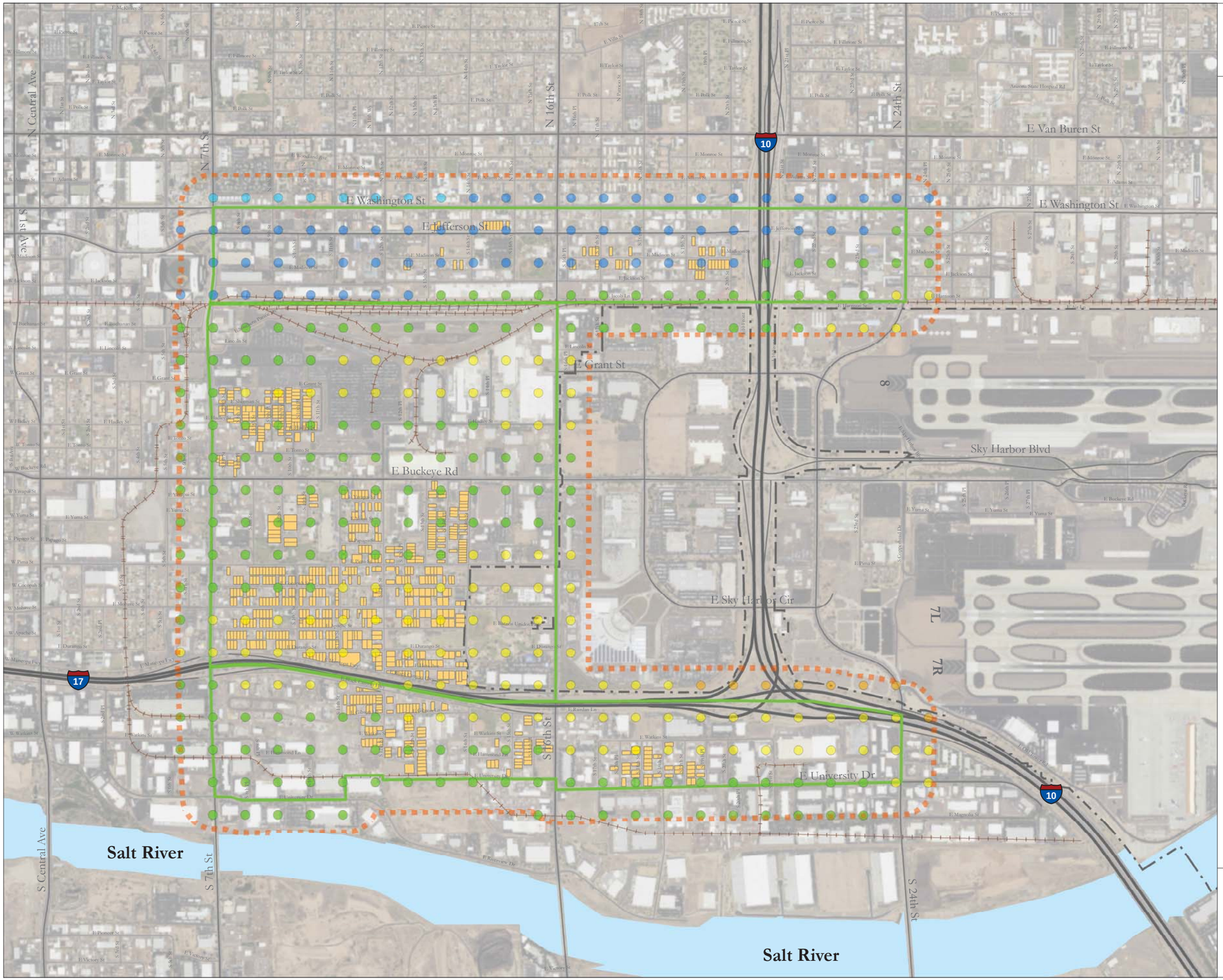

LEGEND

- Airport Property
- 8, 7L, 7R — Runway Numbers
- Study Area
- Planning Area
- Airport-Owned Noise Property
- Highway
- Arterial Street
- Local Street
- Railroad
- Waterways

2015 Aircraft Noise Exposure (In Study Area)

- Less than DNL 55
- DNL 55 - 60
- DNL 60 - 65
- DNL 65 - 70
- DNL 70 - 75

NORTH

0 1,500 ft.

SOURCES: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community (Basemap), February 2016; City of Phoenix, Aviation Department, VARS boundary and Acquired Properties, obtained December 2015; Landrum & Brown (noise grid values), May 2016.

PREPARED BY: Ricondo & Associates, Inc., October 2016.

PHX LAND REUSE STRATEGY

Figure 3.3

2015 Aircraft Noise Exposure

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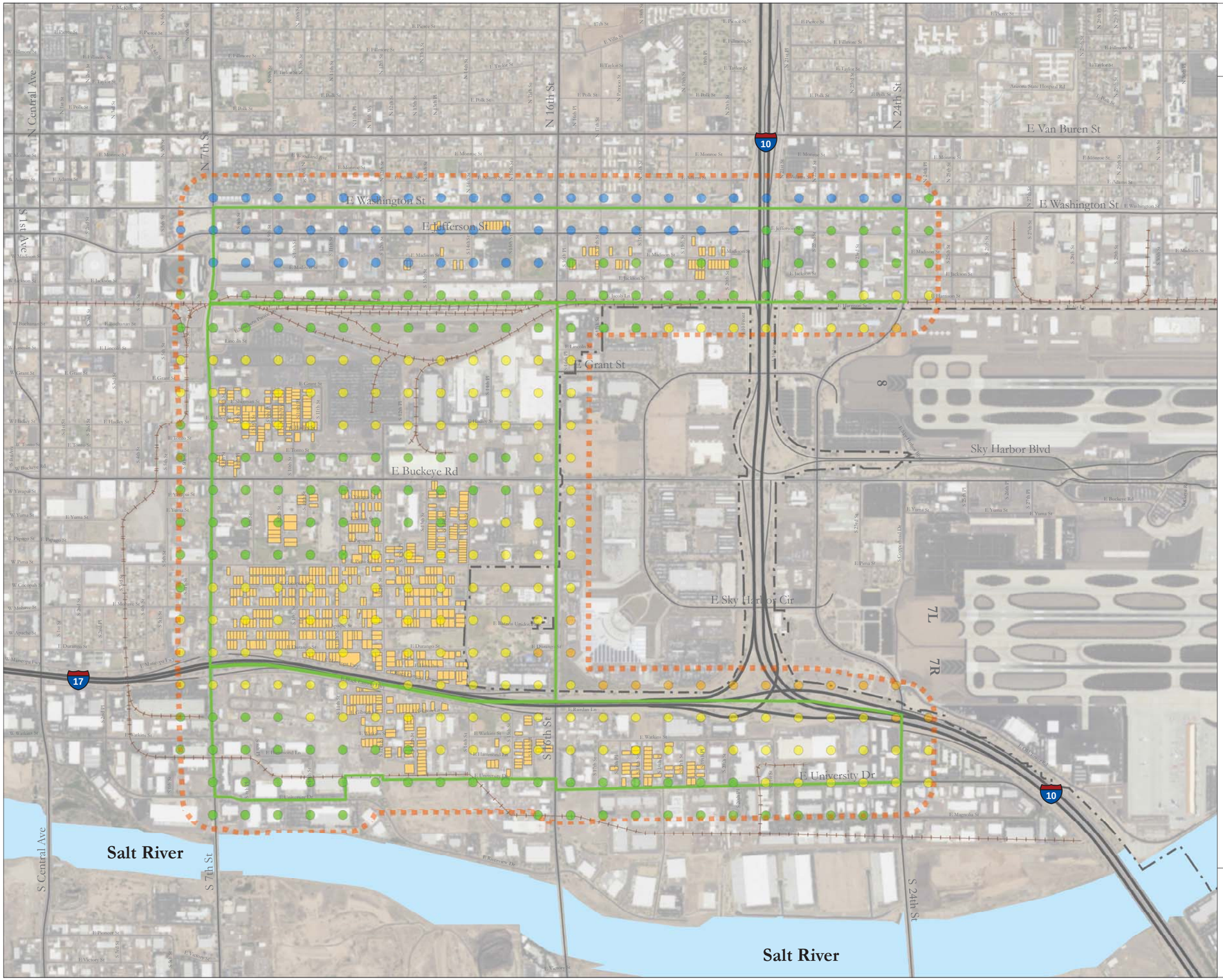

LEGEND

- Airport Property
- 8, 7L, 7R — Runway Numbers
- Study Area
- Planning Area
- Airport-Owned Noise Property
- Highway
- Arterial Street
- Local Street
- Railroad
- Waterways

2025 Aircraft Noise Exposure (In Study Area)

- DNL 55 - 60
- DNL 60 - 65
- DNL 65 - 70
- DNL 70 - 75

NORTH

0 1,500 ft.

SOURCES: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community (Basemap), February 2016; City of Phoenix, Aviation Department, VARS boundary and Acquired Properties, obtained December 2015; Landrum & Brown (noise grid values), May 2016.

PREPARED BY: Ricondo & Associates, Inc., October 2016.

PHX LAND REUSE STRATEGY

Figure 3.4

Forecast 2025 Aircraft Noise Exposure

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3.5 Airspace Constraints

The Phoenix Airport Height Zoning Article, Ordinance G-5179, regulates the maximum heights of buildings and structures within the Study Area. Ordinance G-5179 establishes six height zones (A through F) around Phoenix Sky Harbor:

- Height Zone A – Airport Property
- Height Zone B – Downtown Zone
- Height Zone C – Aircraft Approach and Departure Zone (west side of Sky Harbor)
- Height Zone D –Aircraft Approach and Departure Zone (east side of Sky Harbor)
- Height Zone E – Aircraft Maneuvering Zone
- Height Zone F – Aircraft Enroute Zone

The Study Area lies within Height Zones C and E, as depicted on **Figure 3.5** (Height Zone F is outside the map area). The airspace surfaces in Height Zones C, D, and E are sloped surfaces, which rise as distance from the runways and extended runway centerlines increases. The surface of Height Zone A is flat. The surfaces of Height Zone B are also flat, but they are divided into step-like segments that rise as distance from the runways and extended runway centerlines increases.

The approximate maximum allowable height of a building or structure would be in the range indicated within each elevation band on the map. The indicated elevations are the height above the airfield elevation of 1,135 feet above mean sea level (MSL). While the terrain in the Study Area is quite flat, it ranges from about 30 to 55 feet below the airfield elevation from east to west. Thus the maximum allowable height at any point in the Study Area may be from 30 to 55 feet higher than indicated in the figure.[14] Within the Study Area, airspace elevations in Zone C range from 40 to 140 feet above airfield elevation (AFL).[15] In Zone E, airspace elevations range from 40 to 340 feet AFL. As discussed in Section 5.4, Zoning, and Table 5.2, the maximum allowable heights established by the baseline zoning districts in the Study Area are lower than the maximum heights established through the Airport Height Zoning.[16]

As stated in the Ordinance, the Airport Height Zoning Article does not replace any formal federal or state review process and it is not the intent of the Airport Height Zoning Article to entitle heights higher than the heights within the Phoenix Zoning Ordinance or applicable Overlays.

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[14] Phoenix City Code, Chapter 4, Aviation, Article XIII, Airport Zoning, Section 4-242, current through December 2, 2015.

[15] Terrain surface elevations were derived from U.S. Geological Survey, 1:24,000 scale topographic map, Phoenix, AZ. Viewed on TopoQuest, https://www.topoquest.com/map.php?lat=33.43899&lon=-112.04825&datum=nad27&zoom=4&map=24k&coord=d&mode=zoomin&size=m (accessed March 15, 2016).

[16] Phoenix Sky Harbor International Airport, Airport Height Zoning Amendment Frequently Asked Questions, Zoning Case TA9-06 and Z-32-08.

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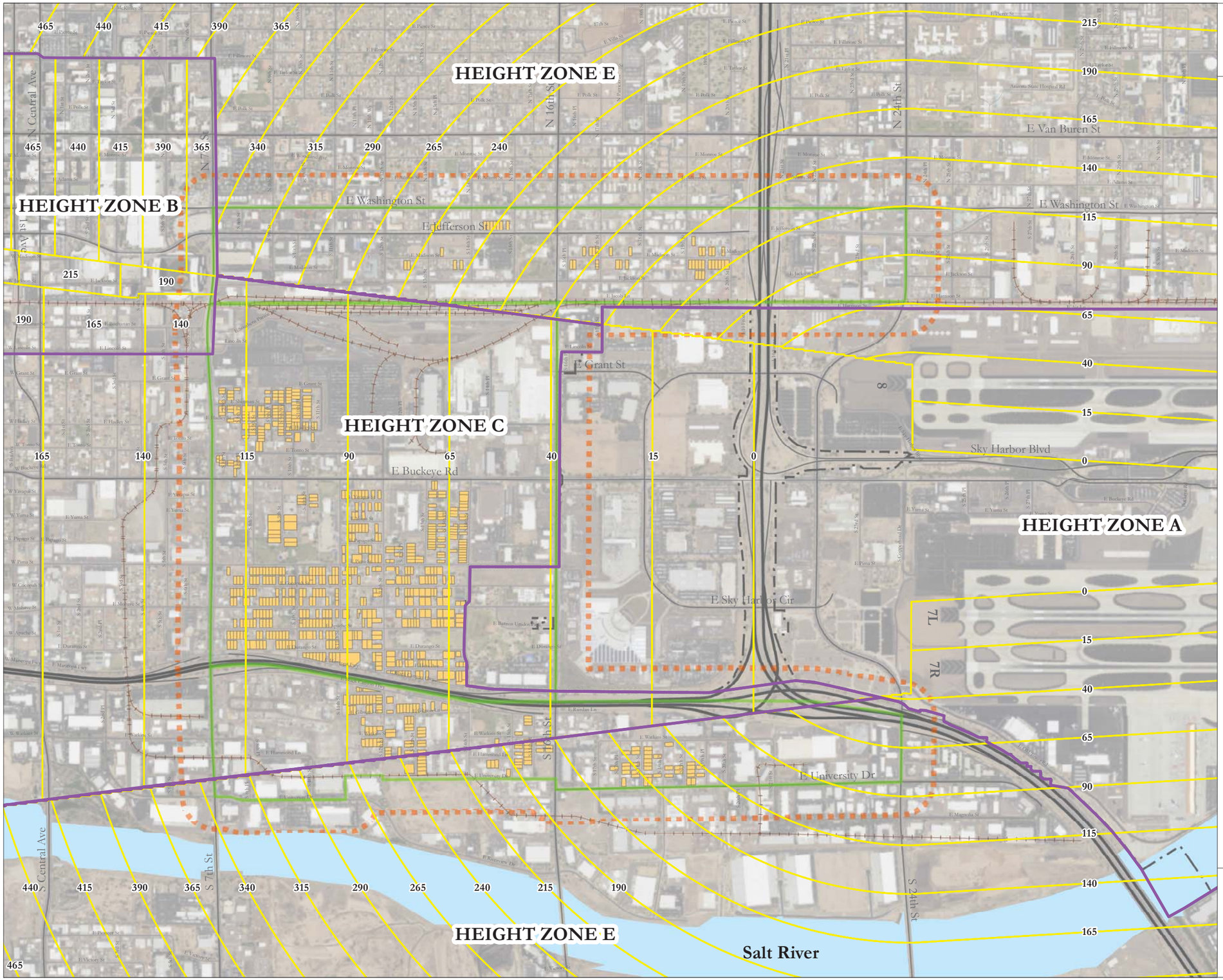

LEGEND

- Airport Property
- 8, 7L, 7R — Runway Numbers
- Study Area
- Planning Area
- Airport-Owned Noise Property
- Height Zone Boundaries
- Airport Zoning Surfaces
- Highway
- Arterial Street
- Local Street
- Railroad
- Waterways

Notes

1/ Study Area elevation ranges from approximately 1,100 feet MSL on the east to 1,080 feet MSL on the west. Thus, the height of the airspace above the ground may be as much as 55 feet higher than indicated on the map in the western parts of the Study Area.
2/ Airport Zoning Surfaces - Elevation Range in Feet above Airfield Elevation (1,135 feet above mean sea level)
3/ Height Zone A - Airport Property
4/ Height Zone B - Downtown Zone
5/ Height Zone C – Aircraft Approach and Departure Zone (west side of Airport)
6/ Height Zone E – Aircraft Maneuvering Zone

NORTH 0 1,500 ft.

SOURCES: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community (Basemap), February 2016; City of Phoenix, Aviation Department, VARS boundary and Acquired Properties, obtained December 2015; City of Phoenix, Aviation Department, Zoning Height Contours Data, obtained December 2015; Ricondo & Associates, Inc. (AFL elevations), March 2016.
PREPARED BY: Ricondo & Associates, Inc., October 2016.

PHX Land Reuse Strategy

Figure 3.5

Height Zones and
Airport Zoning Surfaces

W:\Projects\PHX\ACLRP\MXD\Final\Figure 3.5 Phoenix Sky Harbor Height Zones and Airspace Contours AFL2.mxd

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Section 4— Existing and Forecast Population and Employment

The Maricopa Association of Governments (MAG), which serves as the regional planning agency for Maricopa County, uses the latest decennial census data as the baseline in developing socioeconomic projections for the region. Among MAG's responsibilities is regional transportation planning. MAG allocates the metropolitan population and employment, derived from the U.S. Census, to Traffic Analysis Zones (TAZs) to establish a dataset for transportation modeling.

Figure 4.1 shows the TAZs within the Planning Area that were used to allocate the population and employment numbers. **Table 4.1** presents the population and employment in each TAZ for actual conditions in 2010 and forecast conditions in 2020 and 2030, based on the MAG Regional Transportation Plan for 2035.

While the population in the Planning Area is forecast to increase by approximately 2,000 and employment by approximately 3,000 through 2030, the pattern of growth is forecast to vary throughout the area. The varying growth patterns reflect the City's land use policies and zoning, which are discussed in Section 5.

Several TAZs currently have little or no population and are not forecast to significantly increase in population through 2030. These include: TAZ 910, in the north half of the Central Subarea; TAZ 912, in the west half of the South Subarea; TAZs 918 and 922, small parts of which are in the South Subarea; and TAZ 923 in the east half of the South Subarea. With the exception of TAZs 918 and 922, all those TAZs are forecast to experience substantial employment growth through 2030.

TAZs 2892 and 2895 in the North Subarea, within which transit stations are located, are forecast to significantly increase in population and to keep a generally stable level of employment. TAZ 2894 in the North Subarea and TAZ 911 in the south half of the Central Subarea are forecast to increase in both population and employment.

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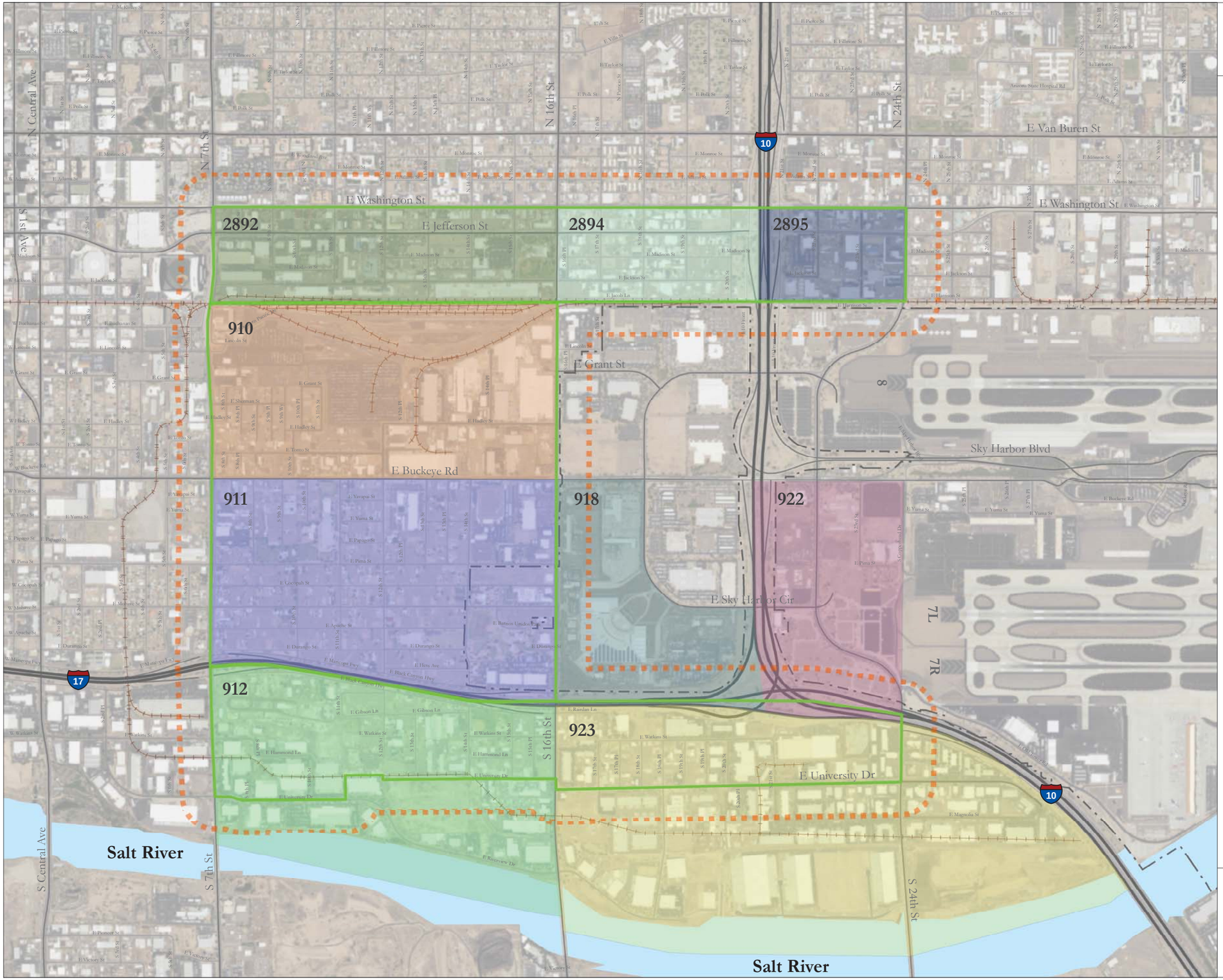

LEGEND

- Airport Property
- 8, 7L, 7R — Runway Numbers
- Study Area
- Planning Area
- Highway
- Arterial Street
- Local Street
- Railroad
- Waterways

Traffic Analysis Zones

- 910
- 911
- 912
- 918
- 922
- 923
- 2892
- 2894
- 2895

NORTH 0 1,500 ft.

SOURCES: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community (Basemap), February 2016; City of Phoenix, Aviation Department, VARS boundary and Acquired Properties, obtained December 2015; Maricopa Association of Governments, Socioeconomic Projections (Population and Employment) by Traffic Analysis Zone for the 2035 Regional Transportation Plan, obtained June 2015.
PREPARED BY: Ricondo & Associates, Inc., October 2016.

PHX LAND REUSE STRATEGY

Figure 4.1

2013 MAG Traffic Analysis Zones

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Table 4.1—Population and Employment Data per Traffic Analysis Zone

TAZ No.	Proportion[1/]	2010 Pop.	2010 Emp.	2020 Pop.	2020 Emp.	2030 Pop.	2030 Emp.
910	100%	207	1,490	197	2,030	195	2,398
911	100%	1,186	1,310	1,476	2,110	1,583	2,711
912[2/]	52%[2/]	83	2,223	125	2,615	138	2,959
918[3/]	.02%[3/]	0	757	0	754	0	758
922[3/]	.05%[3/]	0	499	0	500	0	505
923[2/]	22%[2/]	90	4,378	92	5,246	126	5,914
2892	100%	117	3,410	121	3,521	1,165	3,112
2894	100%	282	717	285	845	410	903
2895	100%	13	459	13	501	431	519
	TAZ Totals	1,978	15,243	2,309	18,122	4,048	19,779
	Estimated Totals in Planning Area	**1,868**	**9,505**	**2,177**	**11,521**	**3,883**	**12,483**

Notes:

1/ This column indicates the proportion of the land area of each TAZ within the Planning Area.

2/ Traffic Analysis Zones 912 and 923 are partially within the Planning Area. Population and employment totals in each TAZ were multiplied by the respective proportions to derive estimates of population and employment totals for the given year.

3/ The small portions of Traffic Analysis Zones 918 and 922 within the Planning-Area are entirely located within the I-10/1-17 intersection right-of-way. Thus, no employment was assumed to be within the portions of those TAZs in the Planning Area.

Source: Maricopa Association of Governments, Socioeconomic Projections (Population and Employment) by Traffic Analysis Zone for the 2035 Regional Transportation Plan, obtained June 2015. Proportions of TAZ within the Planning Area were calculated by Ricondo & Associates, Inc., February 2016.

Tables 4.2 and **4.3** summarize the Planning Area's population and employment for current (census year 2010) and forecast (2016 and 2026) conditions based on MAG's allocation of population and employment to the TAZs within the Planning Area. Totals listed in Tables 4.2 and 4.3 for forecast years 2016 and 2026 were calculated by interpolating TAZ population and employment allocations for 2010, 2020, and 2030, presented in Table 4.3.[17] The population and employment numbers for the four TAZs that are partially within the Planning Area were apportioned based on the land area of each TAZ within the Planning Area.

[17] Population and employment are calculated only for the Planning Area, excluding the 500-foot buffer that is incorporated into the overall Study Area.

Table 4.2—Current and Forecast Population – Planning Area

	Population
Existing 2010	1,868
Forecast 2016	2,240
Forecast 2026	3,248

Source: Ricondo & Associates, Inc., February 2016, based on interpolation of 2010, 2020, and 2030 forecasts prepared by Maricopa Association of Governments, Socioeconomic Projections (Population and Employment) by Traffic Analysis Zone for the 2035 Regional Transportation Plan, obtained June 2015.

Table 4.3 —Current and Forecast Employment – Planning Area

	Employment Type					
	Retail	**Office**	**Public**	**Industrial**	**Other**	**Total**
Existing 2010	431	3,406	712	4,171	786	9,505
Forecast 2016	547	3,547	807	4,729	945	10,575
Forecast 2026	769	3,793	945	5,435	1,122	12,064

Source: Ricondo & Associates, Inc., February 2016, based on interpolation of 2010, 2020, and 2030 forecasts prepared by of Maricopa Association of Governments, Socioeconomic Projections (Population and Employment) by Traffic Analysis Zone for the 2035 Regional Transportation Plan, obtained June 2015.

Section 5—Land Use Planning and Zoning

The Study Area is strategically located between Downtown Phoenix and the Airport and has convenient access to major transportation routes, including Interstates 10 and 17 and the Union Pacific Railroad. The light rail line along Washington and Jefferson Streets in the northern part of the Study Area is another key transportation route. These attributes are important advantages in considering the long-term redevelopment potential of the Study Area.

Through the years, the City of Phoenix has prepared numerous land use planning studies and has adopted policies for different parts of the Study Area. These include redevelopment plans, neighborhood land use policy plans, and overlay zoning ordinances. These plans have defined clear visions for the future of the North Subarea, designated for mixed use and transit-oriented development, and the South Subarea, largely designated for campus-type office and industrial development. The vision in the Central Subarea, which is designated broadly for industrial use and residential to industrial transition, is less clearly defined.

The Study Area is an older part of the City of Phoenix that has been experiencing a transition in development patterns. Except for the Washington-Jefferson Street transit corridor in the North Subarea and somewhat older office/industrial development in the South Subarea, negligible development has occurred in the Study Area for many years. The area now includes a varied mix of land uses, including industrial, housing, schools, parks, places of worship, community services, retail stores, and extensive vacant lands. Because of the lack of a clear redevelopment vision, minimal public improvements have been made in the area, and uncertainty exists in the private development market about the viability of various development options.

This situation is not unique to Phoenix. It is typical of other communities where airports have undertaken substantial noise mitigation programs. The extended transition period between the start of the mitigation program and the start of redevelopment activities can create anxiety and even hardship for people and businesses that continue to hold property in the mitigation program area. The priority of the airports, and the local residents benefiting from the mitigation programs, is to implement the mitigation programs aggressively from the beginning. Planning for the aftermath of the noise mitigation programs is rarely undertaken until the programs are closed out.

Before discussing existing land use, planning policy, and zoning ordinances applying in the Study Area, a summary of the City's current land use policies and development trends in each part of the Planning Area is provided.

North Subarea

The North Subarea, which extends from 24th Street west to 7th Street and from Washington Street south to the Union Pacific Railroad (UPRR), has experienced substantial development activity in recent years, especially west of 16th Street. The development has been spurred by the light rail lines along Washington and Jefferson Streets and more specifically by the location of transit stations on the westbound and eastbound lines at 12th Street. As discussed in Section 5.5.2, recent projects include mixed commercial/residential use and multi-family housing projects, consistent with the vision established in the General Plan. The transit stations near the intersections of 24th Street with Washington and Jefferson are focal points for a Transit-Oriented Overlay zoning district around which a relatively dense mix of residential and commercial uses is expected to be developed. Through the ReinventPHX planning initiative, the City has established a clear vision for the North Subarea, with an emphasis on mixed use, transit-oriented development.[18]

Central Subarea

The Central Subarea extends from 16th Street west to 7th Street and from the UPRR south to I-17. Little development has been occurring in the Central Subarea in recent years. The City's long-term vision for this subarea is less defined than for the North and South Subareas, although the General Plan proposes industrial use for most of the subarea over the long-term.[19]

The northern half of the subarea (north of Buckeye Road) is dominated by industrial development and the UPRR yards. Nearly all the northern half of the subarea is designated in the General Plan for industrial use, with an old residential neighborhood on the north side of Buckeye Road zoned for transition from residential to industrial use. A portion of the Buckeye Road frontage is designated for commercial use.

The southern half of the subarea has a varied mix of land uses and includes the largest concentration of Airport-owned noise properties. While the General Plan designates most of this part of the subarea as transitioning from residential to industrial, most of the area remains zoned for residential use. (Zoning is discussed in greater detail in Section 5.4.)[20]

South Subarea

The South Subarea extends from 24th Street west to 7th Street and from I-17 south to University Drive. Both the existing development pattern, which is dominated by industrial and business park uses, and the City's applicable land use policies, including the General Plan and zoning code, indicate that this subarea is committed to industrial or business park development over the long-term.

---

[18] ReinventPHX, http://reinventphx.org/index.html (accessed December 8, 2015).

[19] City of Phoenix, *2015 General Plan*, *planPHX*, March 4, 2015.

[20] City of Phoenix, *2015 General Plan*, *planPHX*, March 4, 2015; City of Phoenix, *Zoning Ordinance of the City of Phoenix, Chapter 6*, current through Ordinance G-6047, passed July 1, 2015.

5.1 Existing Land Use

Figure 5.1 depicts the existing general development patterns within the Study Area. North of Union Pacific Railroad in the North Subarea there is less vacant land in comparison with the areas to the south. The portion of the North Subarea east of 16th Street is predominantly developed for industrial use, with some housing and commercial uses. A mix of uses occur west of 16th Street, including industrial, educational, civic, residential, office, commercial, religious/institutional uses, with a large public park, Eastlake Park, on 16th Street. An estimated 234 dwelling units are in the North Subarea.

The north central portion of the Study Area (from Buckeye Road north to the UPRR in the Central Subarea) is dominated by the UPRR yard. Industrial and some office uses are adjacent to UPRR, with some residential uses and vacant lands southwest of the UPRR railway yard. Approximately 38 dwelling units are in this area.

In the south-central portion of the Study Area (from I-17 north to Buckeye Road in the Central Subarea), a mixture of commercial, office, industrial, educational, civic, and residential uses are along the perimeter. Residential uses and vacant lands make up the core of the area, with a scattering of three educational uses, three parks, a small amount of commercial, three areas of educational use, and several religious/institutional buildings. Approximately 266 dwelling units are in this area.

Existing land uses south of I-17 in the South Subarea are primarily industrial and vacant lands. A few residential and commercial uses are scattered throughout the South Subarea. One park, Green Valley Park, is located on the south side of I-17 between 14th and 15th Streets. Two areas of religious/institutional use are also in the South Subarea. Approximately 64 dwelling units are in this area.

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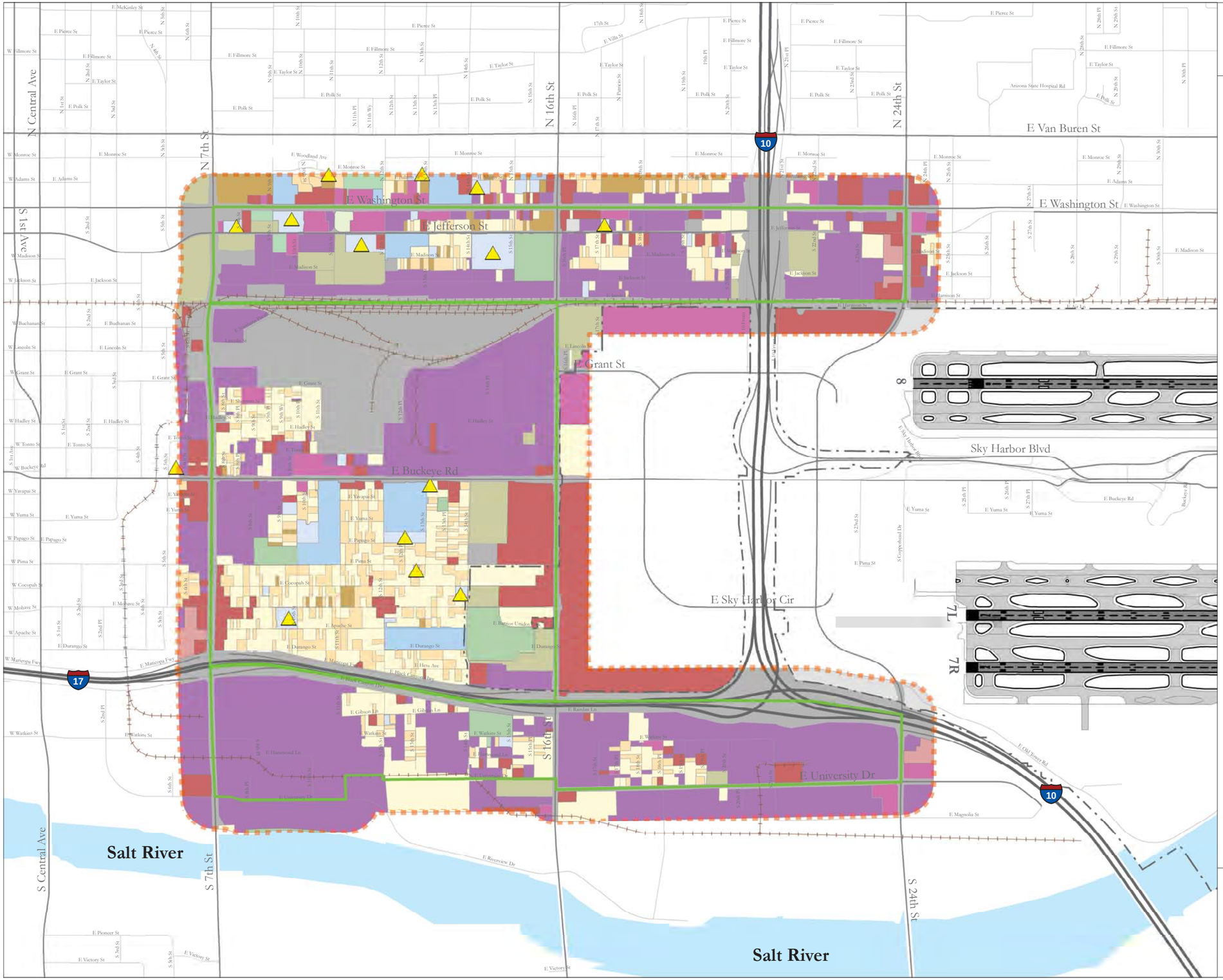

LEGEND

- Airport Property
- 8, 7L, 7R — Runway Numbers
- Study Area
- Planning Area
- Highway
- Arterial Street
- Local Street
- Railroad
- Waterways

Existing Land Use (In Study Area)

- Active Open Space
- Cemetery
- Tourist Accomodations
- Retail, Amusement, Movie Theater (Commercial Low)
- Educational
- Religious/Institutional
- Place of Worship
- Industrial
- Office
- Single Family
- Multi Family
- Medical/Nursing Home
- Public/Special Event/Military
- Transportation
- Airport
- Vacant

NORTH 0 1,500 ft.

SOURCE: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community (Basemap), February 2016; City of Phoenix, Aviation Department, VARS boundary and Acquired Properties, Obtained December 2015; Data Compile by Maricopa Association of Governments (2012 Existing Land Use) obtained in August 2014.
PREPARED BY: Ricondo & Associates, Inc., October 2016.

PHX LAND REUSE STRATEGY

Figure 5.1

Generalized Existing Land Use

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5.2 City of Phoenix General Plan

The 2015 General Plan for the City of Phoenix outlines a land use strategy within the Study Area that is primarily focused on future commercial, commercial/business park, and industrial development, with residential uses categorized as transitioning to industrial.[21] Within the South Subarea, business parks are the principal land use designation with roughly 35 percent of the lands transitioning to industrial. Designations in the Central Subarea are more focused on industrial land uses with a small amount of lands designated for public use and commercial use. Among the three subareas, the North Subarea has the largest amount of land designated for commercial uses. Industrial and commercial designations dominate in the North Subarea with a few areas of residential and public use. **Figure 5.2** depicts future General Plan land use designations for the Study Area.

One proposed General Plan amendment in the Study area is currently pending. The proposal (GPA-CC-a-16-8) would update the land use designation on the General Plan Land Use Map for the Eastlake Garfield TOD Policy District to match the proposed zoning changes associated with the Walkable Urban Code rezoning process (Z-9-16-8). (The Eastlake Garfield TOD Policy District – including Transit Overlay District 2 – is discussed in Section 5.4.1 and the Walkable Urban Code is discussed in Section 5.4.3 of this report.)

The Study Area is located within the City of Phoenix Central City Urban Village, which has Downtown Phoenix as its core, surrounded by many of the oldest neighborhoods in Phoenix. Central City Village is an important employment center that includes the State, Maricopa County, and City government offices as well as financial, business, and hospital facilities. It also serves as a major transportation hub containing Sky Harbor International Airport, regional freeway system access, a transit system, and rail lines serving industrial areas.

Each of the City's 15 Urban Villages has a Village Planning Committee (VPC) appointed by the City Council. Committee activities center on identifying parts of the General Plan that need updating or refinement related to implementation and commenting on proposals for new zoning districts or land use districts.

A Village Height and Density Policy has been developed to provide criteria for developers seeking changes in zoning to permit increases in height or density allowed under current zoning.[22] Under the Height and Density Policy, positive VPC recommendations regarding increases in height or density are to be made for proposed projects meeting the following criteria:

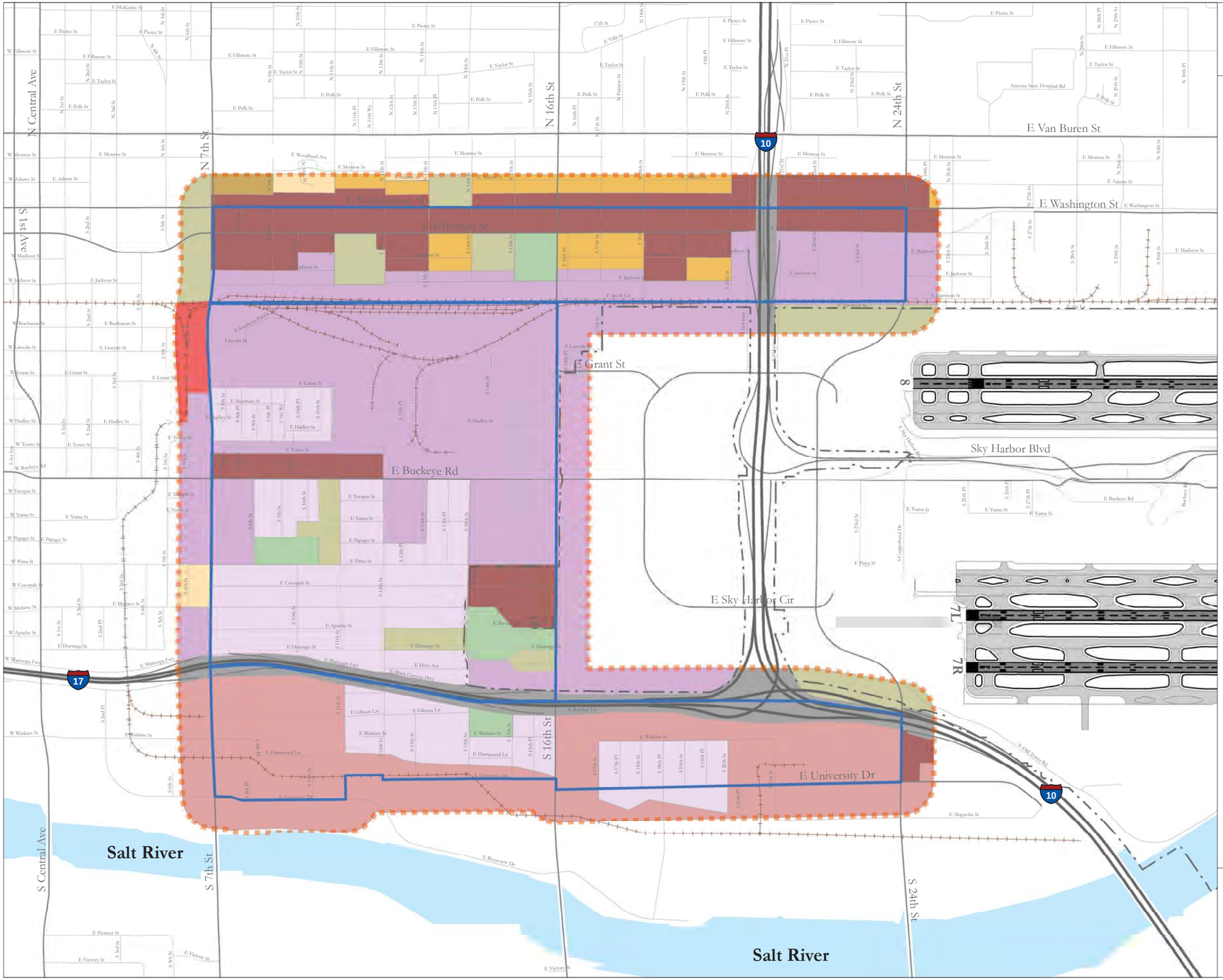
1. Developments are expected to demonstrate the inclusion of features or amenities that further the goals for the community's vision of development in the Central City Village. The scale of features and amenities expected is proportional to the additional height or density requested, based on a point system. One point is required for every 12-foot (one story) increase in height

[21] City of Phoenix, *2015 General Plan*, *planPHX*, March 4, 2015.

[22] City of Phoenix, Guideline Regarding Increases of Height or Density within the Central City Village, revised 02/02/10, https://www.phoenix.gov/pddsite/Documents/pdd_pz_pdf_00045.pdf (accessed December 10, 2015).

and for every 10% increase in the number of dwelling units. The Policy Guidelines provide a list of features and amenities that focus on affordable housing, sustainability, arts and culture, and urban amenities.

2. Due to the surplus of underutilized land already zoned for tall buildings, no development higher than nine stories will be recommended outside areas that are currently zoned for such height.
3. Developments shall maintain compatibility with existing residentially-zoned areas or struggling viable neighborhoods. Structure heights should not exceed one-foot for each two-feet of distance from a residentially zoned parcel, except as already allowed under existing zoning.
4. The Guidelines do not apply to the Eastlake Park neighborhood.



LEGEND

- Airport Property
- 8, 7L, 7R — Runway Numbers
- Study Area
- Planning Area
- Highway
- Arterial Street
- Local Street
- Railroad
- Waterways

General Plan Land Use Designations (In Study Area)

- Commercial
- Commerce, Business Park
- Mixed Use Commercial
- Industrial
- Transition 3.5-5 du/Acre to Industrial
- Residential 3.5 to 5 du/Acre
- Residential 10 to15 du/Acre
- Residential 15+ du/Acre
- Parks, Open Space-Public
- Public, Quasi-Public
- Transportation

Note

1/ du - Dwelling Units

NORTH

0 1,500 ft.

SOURCE: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community (Basemap), February 2016; City of Phoenix, Aviation Department, VARS boundary and Acquired Properties, Obtained December 2015; City of Phoenix Open Data Portal, http://maps.phoenix.opendata.arcgis.com, (General Plan land use), December 2015.
PREPARED BY: Ricondo & Associates, Inc., October 2016.

PHX LAND REUSE STRATEGY

Figure 5.2

General Plan Land Use Designations

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5.2.1 Central City Redevelopment Areas

Six Central City Village Redevelopment Areas are within the Study Area: Downtown Redevelopment Area, Eastlake Park Redevelopment Area, Booker T. Washington Redevelopment Area, Special Redevelopment Area, Sky Harbor Center Redevelopment Area, and Central City South. The Redevelopment Areas are discussed in the General Plan section on "Opportunity Sites," where priorities for redeveloping vacant and underutilized properties within the urbanized area are also discussed. The General Plan's Land Use and Design Principles relative to development within these areas are quoted below:

> Support reasonable levels of increased intensity, respectful of local conditions and surrounding neighborhoods.
>
> Encourage development of the taller and larger buildings in Areas of Change away from single-family and low-rise, multifamily housing.
>
> Promote and encourage compatible development and redevelopment with a mix of housing types in neighborhoods close to employment centers, commercial areas, and where transit or transportation alternatives exist. [23]

The Redevelopment Areas are described below with the locations illustrated on **Figure 5.3.**

Downtown Redevelopment Area

A small part of the Downtown Redevelopment Area, along 7th Street between Washington Street and Lincoln Street, lies within the northwest corner of the Study Area. *Downtown Phoenix: A Strategic Vision and Blueprint for the Future* was developed in 2004 with the *Downtown Urban Form Project* initiated in 2006 as an implementation step for the 2004 planning effort. Three common principles of Community, Connectivity, and Integration were adopted with the Strategic Vision and Blueprint document to give direction to the planning process with seven priority development themes to further define the principles:[24]

- Knowledge Anchors: Biosciences, education, and other large institutions which will serve as downtown's anchors in the knowledge-based economy
- Downtown Living: High-quality housing and community amenities required to live an everyday life oriented around downtown
- Great Neighborhoods: Great neighborhoods that can result from the city's neighborhood conservation, historic preservation, and mixed use strategies
- Arts and Entertainment Hub: Arts, culture, and entertainment scene that will attract the "creative class" and visitors to downtown

[23] City of Phoenix, *2015 General Plan*, *planPHX*, page 66, March 4, 2015.

[24] City of Phoenix, Economic Development Department, *Downtown Phoenix: A Strategic Vision and Blueprint for the Future*, December 14, 2004.

- Distinctive Shopping: A wide variety of shopping and dining opportunities that will make downtown appealing for people who live there; people who live elsewhere in the region, and visitors
- Great Places/Great Spaces: Quality and uniqueness of historic buildings and public spaces to provide identity, amenity, and opportunities for civic gatherings
- The Connected Oasis: A distinctive sense of place derived from using both pedestrian connectivity and shade as defining elements in downtown's design

The Downtown Plan was designed to establish the framework for new zoning regulations and standards and to guide future policy decisions.[25] Subsequently, the City undertook the Downtown Urban Form Project to further define policy guidelines for each of the Seven Themes. Ultimately the Downtown Phoenix Urban Form Project resulted in the creation of a Downtown Code which was adopted by the City Council in 2010 and is now Chapter 12 of the Zoning Ordinance.

Eastlake Park Redevelopment Area

Eastlake Park is a community largely located within the northern part of the Study Area, as shown on Figure 5.3. The *Eastlake Park Neighborhood Plan* was adopted on March 14, 1990, as a guide for the rehabilitation and redevelopment of the area. The plan outlines redevelopment objectives with the intent of stabilizing the neighborhood and community, preserving and enriching the cultural traditions and character of the area, and promoting development that is compatible with existing development.[26]

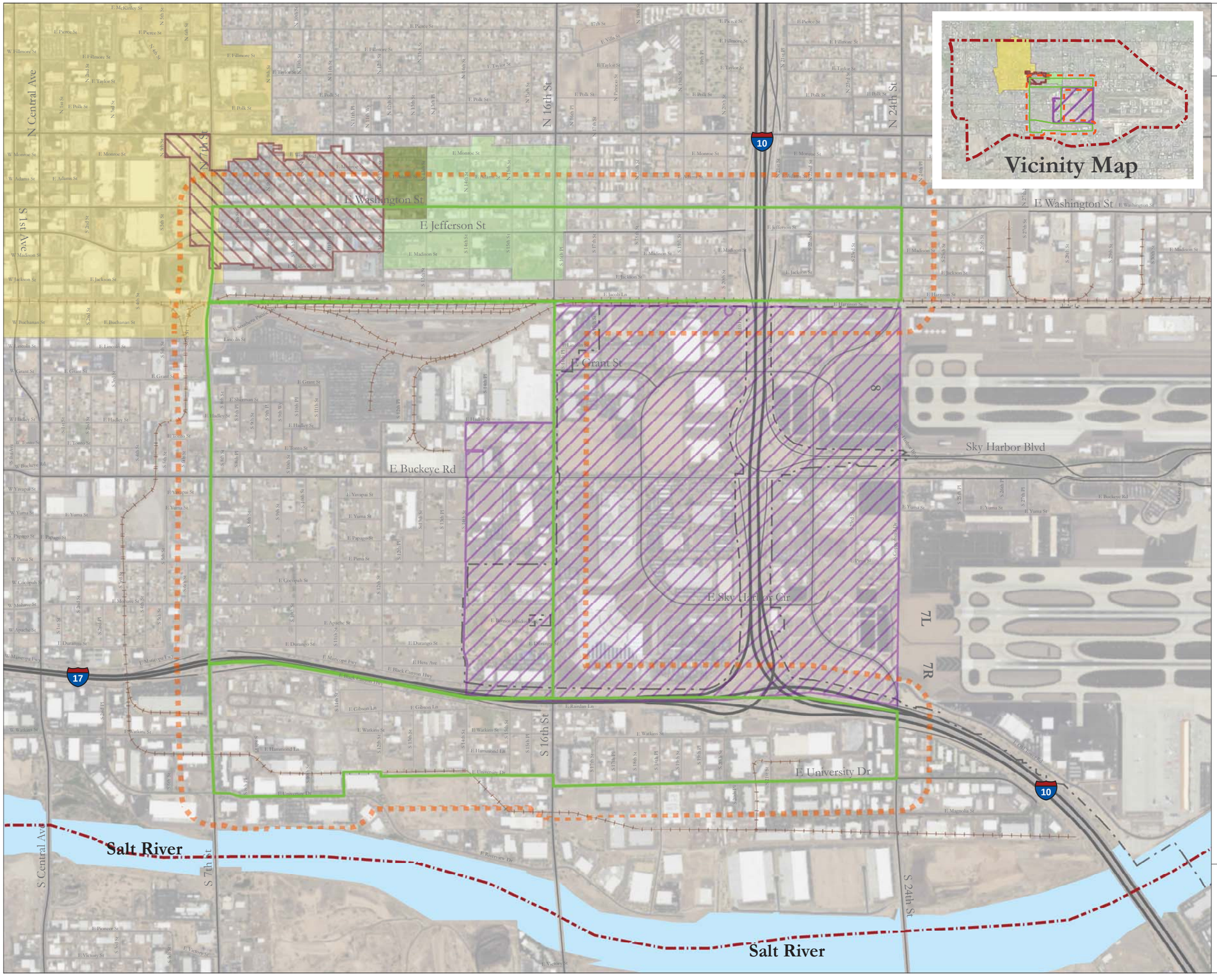
Booker T. Washington Redevelopment Area

The southern part of the Booker T. Washington Redevelopment Area is located within the northwestern portion of the Planning Area, immediately east of the Eastlake Park Redevelopment Area. The 1973 *Booker T. Washington Development Program* is a guide for the rehabilitation and redevelopment of the area. The program objectives focus on elimination of incompatible land uses, inadequate street layout, and irregular lots and the achievement of "an environment reflecting a high level of concern for architectural and urban design principles while providing a sufficient number of low and moderate income housing units for residents of the area."[27]

[25] City of Phoenix Planning and Development Department, *Downtown Phoenix Urban Form Project*, July 02, 2008.

[26] City of Phoenix Planning Department, *Eastlake Park Neighborhood Plan (A Redevelopment Plan)*, Adopted by the City Council March 14, 1990, Revised Printing 2004.

[27] City of Phoenix Redevelopment Agency, *General Urban Development Plan, Booker T. Washington Neighborhood Development Program,* January 23, 1973.



LEGEND

- Airport Property
- 8, 7L, 7R — Runway Numbers
- Study Area
- Planning Area
- Highway
- Arterial Street
- Local Street
- Railroad
- Waterways
- Central City Village Limits

Central City Village Redevelopment Areas

- B. T. Washington
- Downtown
- Eastlake Park
- Sky Harbor Center
- Special

NORTH

0 1,500 ft.

SOURCE: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community (Basemap), February 2016; City of Phoenix, Aviation Department, VARS boundary and Acquired Properties, Obtained December 2015; Central City Village and Redevelopment Areas, City of Phoenix, Aviation Department, obtained February 2016; Phoenix Revitalization Corporation; Central City South at a Glance, October 2015.

PREPARED BY: Ricondo & Associates, Inc., October 2016.

PHX LAND REUSE STRATEGY

Figure 5.3

Central City Village
Redevelopment Areas

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Special Redevelopment Area

The Special Redevelopment Area is a small zone situated between the Booker T. Washington Redevelopment Area to the west and Eastlake Park Redevelopment Area to the east. The objectives adopted within the 1981 Special Redevelopment Area Plan focus on the preservation of existing residential, where feasible, removal of land uses that are incompatible with residential, and removal of seriously deteriorated structures. [28]

Sky Harbor Center Redevelopment Area

The western part of the Sky Harbor Center Redevelopment Area is located within the east-central portion of the Study Area. The *Sky Harbor Center Redevelopment Area Plan,* adopted on April 24, 1985, is intended to guide the "unique opportunity for the City of Phoenix to develop an attractive, cohesive, and viable multi-use HighTech/Business/Industrial Center."[29] The portion of Sky Harbor Center within the Study Area is home to a variety of land uses. Civic and educational uses include the U.S. Postal Service, Police and Fire Departments, Phoenix Family Services Center, NAACP offices, and an elementary school. Retail, services, restaurants, and commercial establishments are also present as are vacant lands and residences.

5.3 Additional Planning Considerations

5.3.1 Tree and Shade Master Plan

The Tree and Shade Master Plan, adopted on January 5, 2010, was the result of a city-wide planning effort to evaluate the city's declining urban forest and ultimately achieve an average 25 percent shade canopy coverage for the City of Phoenix. The Tree and Shade Master Plan's "Guiding Principle" states that "In order to maximize the economic, environmental, and social benefits of the urban forest, it must be considered at all stages of planning and development." Policies within the Tree and Shade Master Plan relevant to future land development include recommendations to revise the City Code and Zoning Ordinance and the General Plan to support the preservation and expansion of the urban forest on both public and private property. The 2015 General Plan supports the Tree and Shade Master Plan through the incorporation of a specific goal to provide 25 percent average tree canopy by 2025 with reinforcing policies and actions.

Additionally, the Walkable Urban Code, Chapter 13 of the Zoning Ordinance implementing the Transit Oriented District Policy Plans, also supports the Tree and Shade Master Plan by requiring a minimum of 75 percent of the sidewalk or pedestrian way to be shaded and including shading along their entire right-of-way frontage. Commercial, nonresidential, and mixed-used development are also required to have a minimum of 500 square feet of accessible open space with a minimum of 50 percent shaded. Sites greater than one acre are required to have a minimum open space of 5 percent of the gross lot area (2,170 square feet per acre).

[28] City of Phoenix, *Special Redevelopment Area Plan*, October 9, 1981.

[29] City of Phoenix Urban Development & Housing Agency, *Sky Harbor Center Redevelopment Area Plan, Adopted by the City Council April 24, 1985.*

5.3.2 Phoenix Brownfields to Healthfields Project

The City of Phoenix's Office of Environmental Programs (OEP) has been awarded a $400,000 community wide assessment grant from the U.S. Environmental Protection Agency. The three-year grant began October 1, 2015. The goal of the program, known as the Phoenix Brownfields to Healthfields Project, is to remove hazardous substances and pollutants from brownfield properties and to redevelop the properties for uses that improve public health. The OEP will also be evaluating available "clean" land for proposed redevelopment for uses that include healthcare facilities, clinics, healthy food outlets, supermarkets, temporary food retailers, mobile markets, urban agriculture, food hubs, community/ school gardens, and farmer's markets".

5.3.3 Discovery Triangle Development Corporation

The Discovery Triangle Development Corporation is a public/private not-for-profit organization created to foster economic development in a 25-square mile area, which includes the urban cores of Phoenix and Tempe. Discovery Triangle provides assistance to property owners, developers, brokers, businesses, and non-profit organizations with expansion and development in the Triangle. It also consults with local governments and businesses to facilitate redevelopment. Discovery Triangle staff also aid in addressing project funding gaps using available economic development tools. The following excerpt from the Discovery Triangle website provides more information about Discovery Triangle.

> The Triangle is a regional employment center and home to nearly 7,000 businesses with more than 150,000 employees working within the region each day. Numerous top-tier educational institutions are clustered within the region providing for a talented and diverse workforce, led by Arizona State University, The University of Arizona College of Medicine Phoenix, GateWay Community College, and University of Phoenix. With the region's central location and existing infrastructure, easy access to transportation, including Sky Harbor International Airport and light rail, the Triangle has become one of the area's most dynamic economic-growth centers.[30]

5.4 Existing Zoning

Zoning districts in the Planning Area, as defined in *The Phoenix Zoning Ordinance,*[31] are listed in **Table 5.1** and represented on **Figure 5.4**. **Table 5.2** summarizes the building height limits and residential density standards for each zoning district.

As indicated in Table 5.2, residential development is permitted, subject to certain conditions, in the C-1, C-2, and C-3 Commercial zoning districts and in the A-1 Industrial zoning district.

[30] http://www.discoverytriangle.org/how-we-assist/ (accessed May 10, 2016).

[31] City of Phoenix, *Zoning Ordinance of the City of Phoenix, Chapter 6*, current through Ordinance G-6047, passed July 1, 2015.

Table 5.1 —City of Phoenix Zoning Districts - Planning Area

Zoning District	Description	Purpose	Zoning Ordinance Section
Residential			
S-1	Ranch or Farm Residence	To provide for very low density farm or residential uses to protect and preserve low density areas in their present or desired character.	Chapter 6, Section 603
R1-6	Single-Family Residence	To provide for single-family dwellings and alternative housing types at low and moderate densities.	Chapter 6, Section 613
R-3	Multifamily Residence	To provide for alternate living styles including rental, condominiums and single ownership of land with multiple units or townhomes.	Chapter 6, Section 615
R-5	Multifamily Residence		Chapter 6, Section 618
Liberty PUD		4-story mixed-use building; commercial on ground floor, rental apartments above.	Ord. G-5982
Presidential PUD		Two 4-story buildings; retail on ground floor, 90 apartment units above.	Ord. G-5988
Commercial			
C-1	Neighborhood Retail	Light, neighborhood retail and customer service uses designed to be compatible with each other and nearby residential districts.	Chapter 6, Section 622
C-2	Intermediate Commercial	Medium-intensity commercial uses designed to be compatible with each other and to provide for a wide range of commercial activity.	Chapter 6, Section 623
C-3	General Commercial	To provide for the intensive commercial uses necessary to the proper development of the community.	Chapter 6, Section 624
C-O	Commercial Office Restricted Commercial	To provide office use as a transition between intense commercial activities and nearby residential uses.	Chapter 6, Section 621
P-1	Passenger Automobile Parking. - Limited	To provide off-street parking in appropriate locations for nonresidential uses located near residential districts.	Chapter 6, Section 639
Industrial			
A-1	Light Industrial	To serve the need for industrial activity not offensive to nearby commercial and residential uses.	Chapter 6, Section 627
A-2	Industrial	To accommodate intensive use of property; open uses and/or storage; industrial processes which may involve significant amounts of heat, mechanical and chemical processing, large amounts of materials transfer, extended or multiple shift operation, large scaled structures, etc.	Chapter 6, Section 628
CP/GCP	General Commerce Park	To provide for commerce, service and employment activities which project a desirable appearance toward public streets while maintaining compatibility with adjacent land uses.	Chapter 6, Section 626

Source: City of Phoenix, *Zoning Ordinance of the City of Phoenix, Chapter 6*, Zoning Districts, current through Ordinance G-6047, passed July 1, 2015.

Table 5.2 —Building Height and Residential Density Standards by Conventional Zoning District [1/]

	Zoning District											
	S-1	**R1-6**	**R-3**	**R-5**	**P-1**	**C-O**	**C-1**	**C-2**	**C-3**	**A-1**	**A-2**	**CP/GCP**
Building Height Limits	2 Stories (30 feet)	2 Stories (30 feet)	2 Stories (30 feet)	2 Stories (30 feet)	56 feet (varies with distance from SF district)	25 feet [2/]	2 Stories (30 feet) [3/]	2 Stories (30 feet) [3/]	2 Stories (30 feet) [3/]	See Note [5/]	See Note [5/]	See Note [5/]
Residential Density -Conventional[5/] (units per gross acre)	1 plus 1 additional per 10 ac.	5	5	5	5	n.a.	See Notes [4/, 6/ and 7/]	See Notes [4/, 6/ and 7/]	See Notes [4/, 6/ and 7/]	See Note [7/]	n.a.	n.a.
Residential Density - Planned Residential Unit (units per gross acre)	n.a.	5.5; 6.5 with bonus	6.5; 12 with bonus	6.5; 12 with bonus	6.5; 12 with bonus	n.a.	See Notes [4/ and 6/]	See Notes [4/ and 6/]	See Note [6/]	See Note [7/]	n.a.	n.a.

Notes:

n.a. Not applicable.

1/ Table does not include Planned Unit Developments (PUDs).

2/ Requests to exceed the height limit may be granted up to three stories not to exceed forty-two feet by the City Council upon recommendation from the Planning Commission or zoning hearing officer upon a finding that such additional height is not detrimental to adjacent property or the public welfare .

3/ Maximum heights up to four stories (56-feet) may be approved upon recommendation from the Planning Commission or the Zoning Hearing Officer finding that such additional height is not detrimental to adjacent property or the public welfare in general.

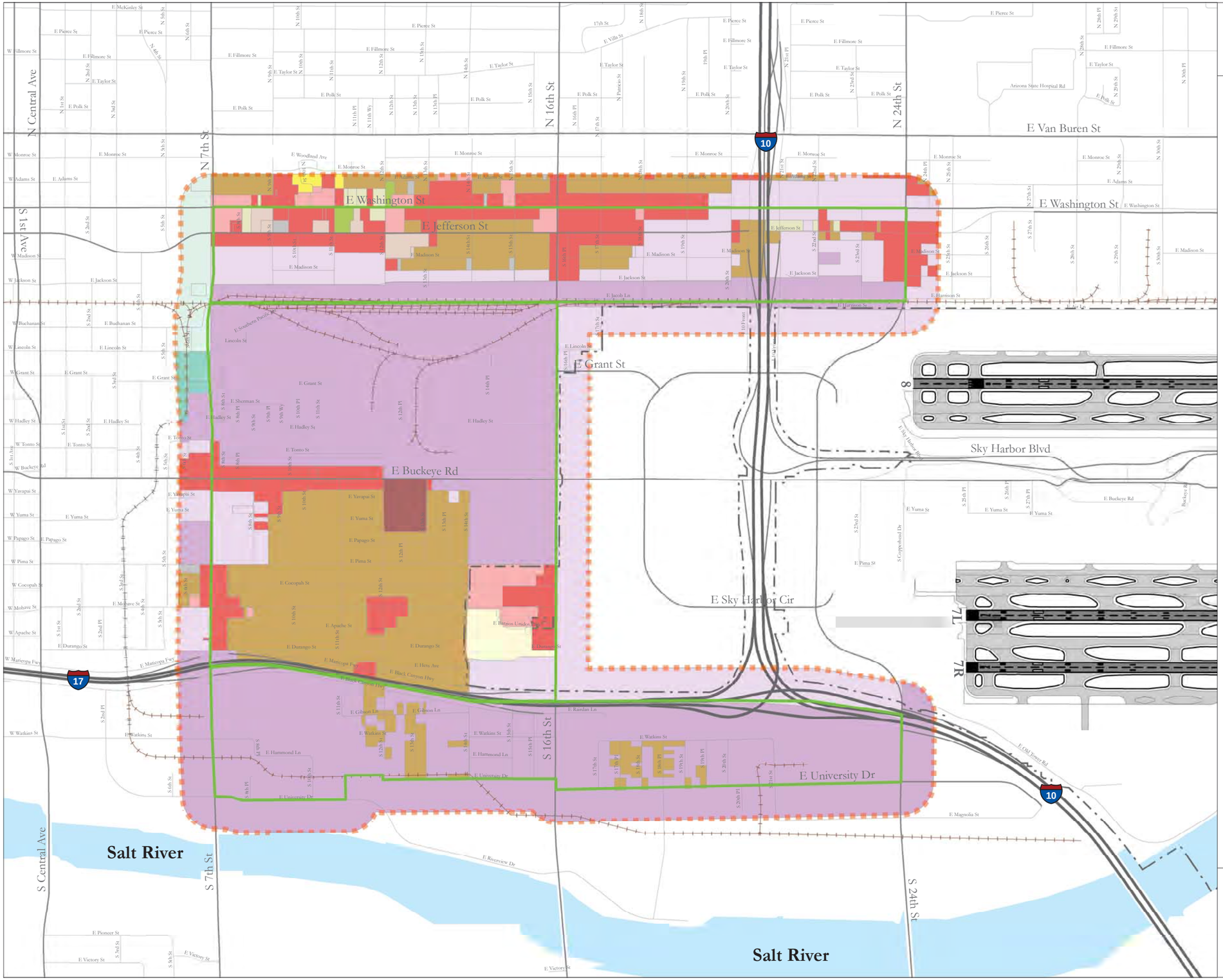
4/ Single-family unattached development is permitted only if the property is designated as residential on the General Plan Map and the equivalent residential zoning district will be determined by the Zoning Administrator. Multi-family development is subject to R-3 density and height standards. Single-family attached development is allowed within the Infill Development District or with Use Permit.

5/ 56-foot maximum height up to 80-feet allowable with a use permit. Requests to exceed this limit for a warehouse up to a maximum height of 110-feet may be granted by the City Council upon recommendation from the Planning Commission upon a finding that additional height is not detrimental to adjacent property or the public welfare in general

6/ Residential Use permitted if property was zoned commercial prior to January 5, 1994.

7/ Use permits are required for multi-family development.

Source: City of Phoenix, Zoning Ordinance of the City of Phoenix, Chapter 6, Zoning Districts, current through Ordinance G-6047, passed July 1, 2015



LEGEND

- Airport Property
- 8, 7L, 7R — Runway Numbers
- Study Area
- Planning Area
- Highway
- Arterial Street
- Local Street
- Railroad
- Waterways

Existing Zoning Districts (In Study Area)

- S-1, Ranch or Farm Residence
- R1-6, Single-Family Residence
- R-3/R-5, Multifamily Residence
- C-1, Neighborhood Retail
- C-2, Intermediate Commercial
- C-3, General Commercial
- C-O, Commercial Office Restricted
- P-1, Passenger Automobile Parking. - Limited
- A-1, Light Industrial
- A-2, Industrial
- CP/GCP, General Commerce Park
- DTC-WARE, Downtown Warehouse
- DTC-BCORE, Downtown Business Core
- PUD, Planned Unit Development

NORTH 0 1,500 ft.

SOURCE: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community (Basemap), February 2016; City of Phoenix, Aviation Department, VARS boundary and Acquired Properties, Obtained December 2015; City of Phoenix Open Data Portal, http://maps.phoenix.opendata.arcgis.com, (Zonning) December 2015.
PREPARED BY: Ricondo & Associates, Inc., October 2016.

PHX LAND REUSE STRATEGY

Figure 5.4

Existing Zoning Districts

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5.4.1 Zoning Overlay Districts

The Planning Area also includes zoning overlay districts (OD) which supplement the regulations of the underlying basic zoning districts. These ODs, illustrated on **Figure 5.5**, are listed in **Table 5.3**. The provisions of each overlay district are briefly summarized below with the exception of land use prohibitions, which are discussed in Section 6.2.

Table 5.3 —Zoning Overlay Districts

Overlay District	VARS Subarea	Purpose [1/]	Phoenix Zoning Ordinance
Interim Transit Overlay District (TOD-1)	North	To encourage appropriate mixture of activity around transit stations to increase ridership along the Light Rail Corridor	Chapter 6, Section 662
Interim Transit Overlay District (TOD-2)	North	To encourage appropriate mixture of activity around transit stations to increase ridership along the Light Rail Corridor	Chapter 6, Section 663
East Buckeye Road Overlay District	Central	To promote community identity and well managed growth of the corridor connecting Sky Harbor Center to the Downtown Area	Chapter 6, Section 666
Black Canyon/Maricopa Freeway Specific Plan	Central	Plan adopted in 1998 to mitigate the freeway impacts on adjacent residential areas and allows such projects to be funded with Freeway Mitigation bond funds.	Chapter 6, Section 668
Airport Noise Impact Overlay District	Central, South	To promote well managed growth and to protect the health, safety and welfare of persons and residential property in noise impacted areas of Phoenix Sky Harbor International Airport	Chapter 6, Section 644
Rio Salado Interim Overlay District	South	To address immediate concerns identified in the reach of the Salt River. To protect the investment in and maximize benefits of the Rio Salado Habitat Preservation Restoration Plan.	Chapter 6, Section 655

Notes:

1/ The purpose statements are summarized from the sections of the Zoning Ordinance defining each District. Source: City of Phoenix, Open Data for Mapping, GIS Dataset, http://maps.phoenix.opendata.arcgis.com/ (accessed December 22, 2015); City of Phoenix, *Zoning Ordinance*, Chapter 6 Zoning Districts, Sections 655, 662, 663, and 644; City of Phoenix Planning Department, *Black Canyon/Maricopa Freeway Specific Plan*, December 1998.

TOD-1 and TOD-2 - Interim Transit Overlay Districts (Ord. G-5449)

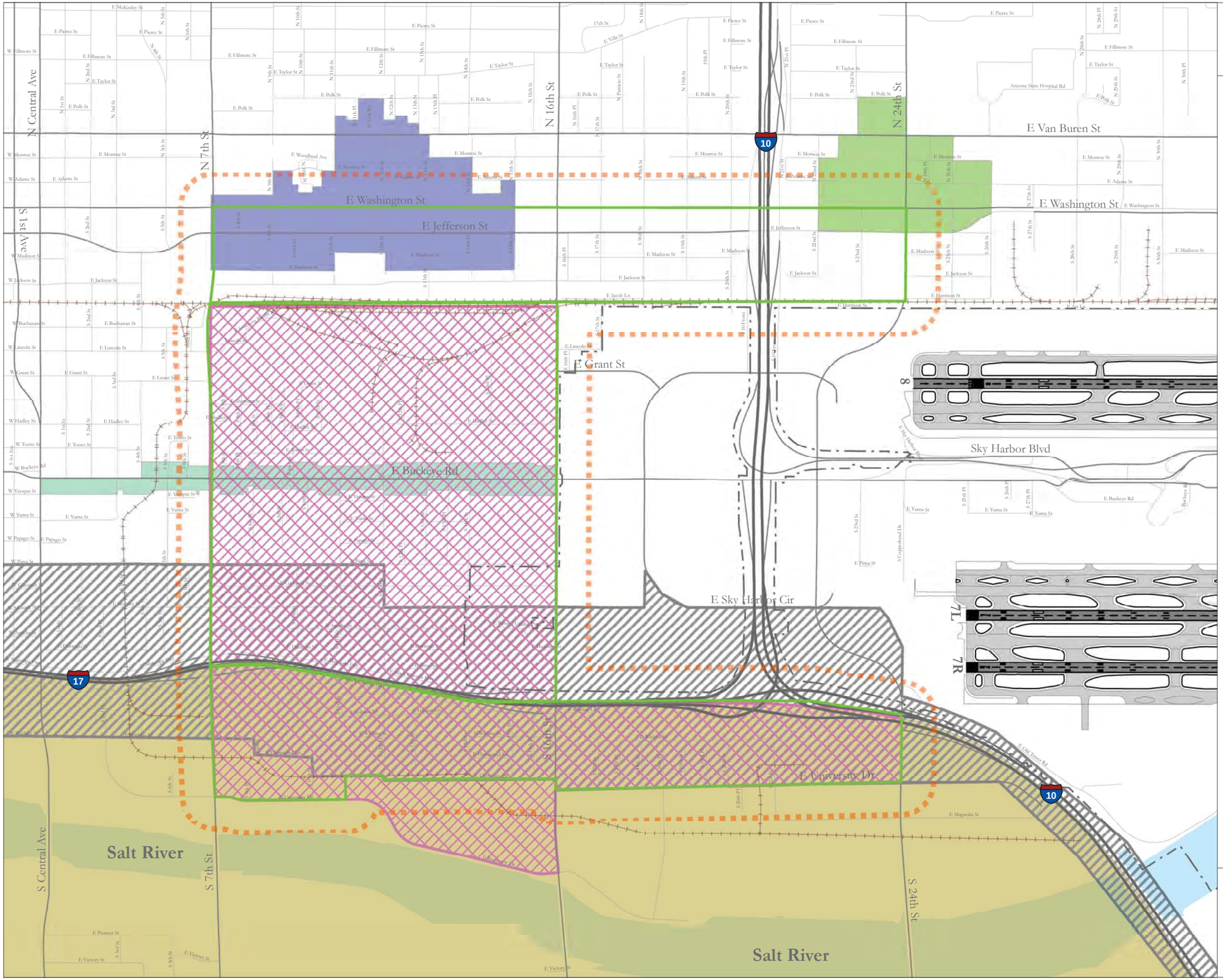
- Permitted uses include all uses in underlying zoning districts, automobile leasing on commercially zoned property, and accessory outdoor dining.
- Use Permits are required for grocery stores exceeding 50,000 square-feet, light industrial facilities, liquor, retail, and package sales, outdoor dining with alcohol consumption, outdoor recreations uses, commercial parking facilities, private post offices, sports facilities over 10,000 seats.
- Open space or private use areas for residential multi-family and commercial development shall be a minimum of 5 percent of the gross area.
- Bicycle parking is required at 1 space per 2,000 square feet of non-residential use or 0.25 spaces per residential unit with a maximum of 50 spaces.
- Off-street parking to be located to the rear or interior of a lot.
- Loading, service and refuse areas are to be screened and not located at the front of the lot.
- TOD-1 and TOD-2 do not apply to existing large scale retail/mixed use centers of 40 or more acres or within primary village cores which will not increase building footprint.
- In the event that the underlying zoning district standards, or other ordinances or regulations are inconsistent with TOD-1 and TOD-2 standards, the standards of the TOD shall apply.

AIO - Airport Noise Impact Overlay District (Ord. G-4702)

- Applies to all new residential land uses
- Prohibits manufactured housing and other dwelling unit types built off-site
- Homeless shelters require special permit approval
- Notice shall be recorded with County Recorder "that the property is within an airport noise impact area and that the property, as a result of the improvements, is not eligible for purchase through the … [CNRP]."
- All new homes are subject to design review process
- One-unit and two-unit development on single lots is also subject to design standards (relating to appearance, not noise compatibility)

EBRO - East Buckeye Road Overlay District (Ord. G-4748)

- Properties with A-1, Light Industrial, or A-2, Industrial Zoning shall provide streetscape landscaping along Buckeye Road.
- Open storage or open uses shall not exceed a height of 12 feet.
- For properties with C-3, General Commercial, A-1, Light Industrial, or A-2, Industrial Zoning Districts and with a lot depth of 150 feet or less from Buckeye Road, the building and landscape setback from Buckeye Road may be reduced to 12 feet subject to conditions.
- Special Permit required for homeless shelters, used car sales, and commercial parking lots.
- A minimum of 25 percent of the area of the front building facade shall be composed of windows, shadow boxes, artwork or comparable architectural feature.



LEGEND

- Airport Property
- 8, 7L, 7R — Runway Numbers
- Study Area
- Planning Area
- Highway
- Arterial Street
- Local Street
- Railroad
- Waterways

Existing Zoning Overlay Districts (In Study Area)

- Airport Noise Impact Zone Overlay
- Black Canyon/Maricopa Freeway Specific Plan
- East Buckeye Road Overlay District
- Rio Salado Interim Overlay District
- Transit Overlay District (TOD-1)
- Transit Overlay District (TOD-2)

NORTH

0 1,500 ft.

SOURCE: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community (Basemap), February 2016; City of Phoenix, Aviation Department, VARS boundary and Acquired Properties, Obtained December 2015; City of Phoenix Open Data Portal, http://maps.phoenix.opendata.arcgis.com, (Zonning) December 2015.
PREPARED BY: Ricondo & Associates, Inc., October 2016.

PHX LAND REUSE STRATEGY

Figure 5.5

Existing Zoning Overlay Districts

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Black Canyon/Maricopa Freeway Specific Plan

- (Non-regulatory)

RSIO - Rio Salado Interim Overlay District (Ord. G-4650)

- A geotechnical plan is required for filling and compaction of pits that exceed ten feet in depth.
- All new land uses or new development, greater than ten acres or in increments that equal ten acres or more, zoned A-1, Light Industrial and A-2, Industrial, shall be subject to the development standards of Section 626.H, the Commerce Park District Standards, as they apply to Commerce Park/General Commerce Park.
- New land uses or new development on parcels of less than ten acres are subject to administrative review by the Planning and Development Director or his/her designee.
- All new homes shall be subject to the design review process of Section 507 Tab A, Single Family Design Review.
- The following land uses require a Special Use Permit:
  a. Homeless shelters in A-2, Industrial Zoning District.
  b. Open, outdoor primary use within five hundred feet of the Rio Salado Habitat Restoration Project. Primary uses shall include, but are not limited to, dead storage, storage of vehicles, outdoor storage of equipment, or any primary use conducted outside of an enclosed structure.
  c. Commercial waste facilities used to collect, treat, store, process, transfer or dispose of solid waste.
- The following land uses require a Use Permit:
  a. Day labor and associated transportation centers in A-1, Light Industrial and A-2, Industrial Zoning Districts.
  b. Pawn shops in C-3, General Commercial, A-1, Light Industrial, and A-2, Industrial, zoning districts.
  c. Tattoo shops in A-1, Light Industrial and A-2, Industrial Zoning Districts.
  d. Development not subject to a Special Use Permit and within 500-feet of the Rio Salado Habitat Restoration Project.

5.4.2 Sound Mitigation Ordinance

Ordinance S-32398 establishes sound mitigation standards for new residential construction (one and two family, townhouse, and multifamily) within the portion of the Planning Area exposed to noise of DNL 65 or greater, based on 1999 noise exposure. (The applicable area is depicted on Figure 3.2, 1999 Noise Exposure.) Although not adopted as an overlay zoning district within the City's Zoning Ordinance, Ordinance S-32398 effectively serves as overlay zoning, establishing three noise overlay zones within the Planning Area.

- Zone 1 – Areas exposed to noise between DNL 65-70

- Zone 2 – Areas exposed to noise of DNL 70-75
- Zone 3 – Areas exposed to noise of DNL 75 or greater

The following sound mitigation standards apply in the three noise overlay zones:

- New residential construction within Zones 1, 2, or 3 shall be sound-mitigated such that indoor noise levels will not exceed a DNL of 45 decibels.
- If any portion of the parcel is in a zone, noise level reduction (NLR) applies to the entire parcel.
- If the parcel is within two zones, the NLR must be met for the higher noise contour.
- Building plans submitted shall be sealed and signed by an Arizona licensed engineer with proficiency in residential sound mitigation or noise control.
- A notice is required to be recorded with the County Recorder's Office stating that the property is within an airport's noise impacted area and that the property, as a result of the improvements, is not eligible for purchase through the Community Noise Reduction Program.
- At final inspection a certificate that is signed and sealed by the original engineer of record stating that the residence complies with the NLR performance standards.

5.4.3 ReinventPHX

The ReinventPHX Plan addresses the need to develop "walkable and opportunity-rich communities that are also connected to light rail."[32] The ReinventPHX Plan is organized into five districts along the light rail line, each of which has a specific Transit Oriented Development (TOD) Plan. Parts of the Eastlake-Garfield TOD District (TOD 2) and the Gateway TOD District (TOD 1) lie within the North Subarea. The TOD Plans identify policies for land use, housing, economic development, health, mobility, and green systems. The Interim TOD Overlay Districts discussed in Section 5.4.1, support the TOD plan in preventing auto-dominated development and encouraging transit-oriented development.

Walkable Urban Code

The Walkable Urban (WU) Code, adopted by the City Council on July 1, 2015 is now incorporated within Chapter 13 of the City's Zoning Ordinance. The code regulates development in proximity to light rail stations, having replaced the prior zoning for properties within the Interim Transit Oriented Zoning Overlay Districts (TOD-1 and 2, Sections 662 & 663 of the Zoning Ordinance). The properties in the Eastlake-Garfield TOD are yet to be rezoned to establish the WU Code on specific

[32] ReinventPHX, http://reinventphx.org/index.html (accessed December 8, 2015).

properties. The zoning maps within ReinventPHX are the conceptual framework for the new zoning districts, called Transects.[33]

5.4.4 Infill Development Districts

Three infill development districts established by the City extend into parts of the Study Area, as depicted on **Figure 5.6**.

Phoenix Infill Development District

In November 2013, the City Council approved actions to remove barriers to infill development and incorporate flexibility in standard development requirements.[34] The Land Use Element of the City's General Plan was amended on January 18, 2014 to formally establish the Infill Development District.

As depicted on Figure 5.6, the Phoenix Infill Development District covers all of the North Subarea and the eastern edges of the Central and South Subareas within the Planning Area. Standards for infill development, which are designed to facilitate dense urban development along the light rail line and in the city's core, include allowing alley access, promoting pedestrian and bicycle connectivity, and flexibility in site clearing and redevelopment.

High-Rise Incentive Infill District

The 500-foot buffer portion of the Study Area is within the High-Rise Incentive Infill District, which lies in the center of the Phoenix Infill Development District, bounded by 7th Avenue on the west, Thomas Road on the north, 7th Street on the east, and Harrison Street on the south. In the High-Rise Incentive District, higher residential building heights and greater densities are allowed than are permitted under standard zoning. High-rise buildings are permitted with only site plan approval and no other administrative actions. For mixed- use commercial/residential development, the maximum 50 percent floor area devoted to commercial usage may be increased up to 75 percent.[35]

Single-Family Attached Development Option Infill District

The Single-Family Attached (SFA) Development Option Infill District extends into the 500-foot buffer area portion of the Study Area. The SFA Development Option, approved December 18, 2013 through Ordinance G5874, amended several sections of the zoning ordinance to provide options for single-family housing development within multifamily, commercial, and downtown zoning districts.[36] SFA development is allowed in areas identified in the General Plan, or, with a use permit, in Multifamily Residence Zoning Districts, R-2, R-3, R-3A, R-4, R-4A, R-5, and Commercial Zoning Districts C-1, C-2, and C-3. Figure 5.6 reflects the current boundary within the Study Area.

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[33] ReinventPHX website, http://reinventphx.org/, accessed December 09, 2015; City of Phoenix website, https://www.phoenix.gov/pdd/pz/walkable-urban-code, https://www.phoenix.gov/pdd/topics/reinvent-phx (accessed December 9, 2015).

[34] City of Phoenix, Planning & Development Department, *Infill Policies Summary*, https://www.phoenix.gov/pddsite/Documents/dsd_trt_pdf_00863.pdf, January 1, 2014.

[35] City of Phoenix, *Zoning Ordinance of the City of Phoenix, Chapter 6, Section 633*, current through Ordinance G-6047, passed July 1, 2015.

[36] The original SFA development option boundary was expanded March 28, 2014 through Ordinance G-5897.

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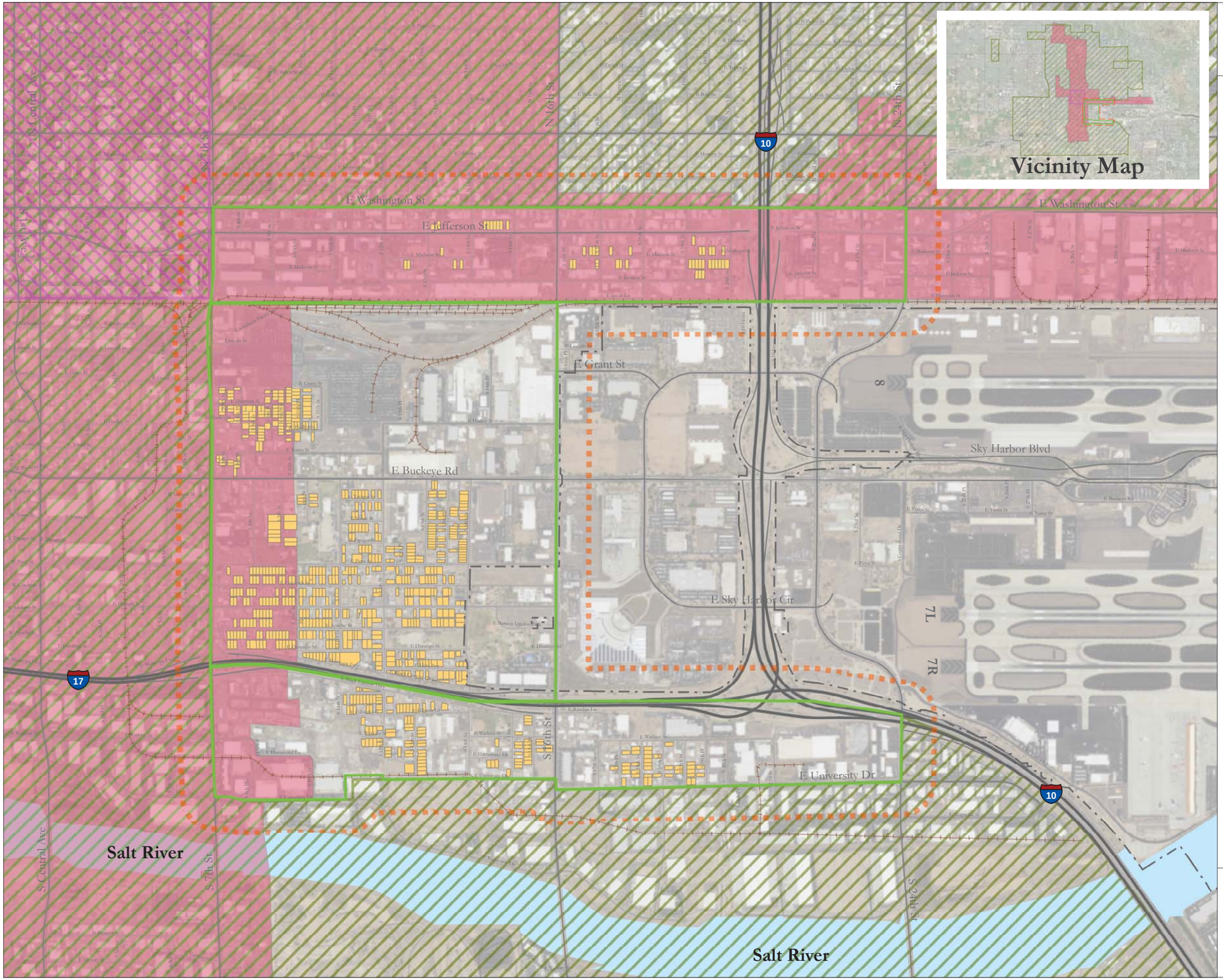

LEGEND

- Airport Property
- 8, 7L, 7R — Runway Numbers
- Study Area
- Planning Area
- Airport-Owned Noise Property
- Highway
- Arterial Street
- Local Street
- Railroad
- Waterways

Infill Development Districts (In Study Area)

- Infill Development District
- Applicable Area for the Single-Family Attached Development Option
- High-Rise Incentive Infill District

NORTH 0 1,500 ft.

SOURCES: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community (Basemap), February 2016; City of Phoenix, Aviation Department, VARS boundary and Acquired Properties, Obtained December 2015; City of Phoenix Open Data Portal, Zoning Land Use Data http://maps.phoenix.opendata.aregis.com, accessed December 2015.
PREPARED BY: Ricondo & Associates, Inc., October 2016.

PHX LAND REUSE STRATEGY

Figure 5.6

Infill Development Districts

W:\Projects\PHX\ACLRP\MXD\Final\Figure 5.6 City of Phoenix Infill Development Districts.mxd

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5.5 Pending and Recent Development Activity

5.5.1 Active Rezoning Applications

As of June 2016, there was one active application to rezone land within the Study Area. The 1.17-acre parcel is located on the southwest corner of Washington and South 12th Street, as depicted on **Figure 5.7**. A rezoning from commercial use (C-1, C-3) to Planned Unit Development (PUD) is proposed. The PUD, application Case Number Z-11-15, is called "The Washington Enclave" and will provide the appropriate zoning for the development of a mid-rise multi-family residential complex. The project site is adjacent to the light rail transit system and within the Eastlake-Garfield Transit Oriented Development District. Ninety condominiums are proposed with a density of approximately 82 dwelling units per acre.[37]

5.5.2 Recently Approved Rezoning Applications

Records from 2005 through 2015 were reviewed to document approved rezoning applications within the Study Area.[38] Two applications were found. Case Number Z-27-14, named "The Liberty", located on the northeast corner of 12th Street and Washington Street, was approved by the City on January 21, 2015. As with the currently active rezone application, discussed in Section 5.5.1, this project is a PUD located within the Eastlake-Garfield Transit Oriented Development District that involves construction of a 4-story mixed-use building with commercial uses on the ground floor and executive rental apartments on floors 2 through 4.[39] The project site area is approximately 1.10 acres. Case Number Z-32-14, named "The Presidential," located on the southeast corner of 11th Street and Washington Street, was approved by the City on February 4, 2015. This project, also a PUD located within the Eastlake-Garfield Transit Oriented Development District, will provide 90 apartment units within two four-story buildings and ground floor retail. The project site area is approximately 1.52 acres.[40] Both project sites are mapped on Figure 5.7.

5.5.3 Other Development

Other development projects in the North Subarea of the Planning Area are either in the planning stage or have recently been constructed, as depicted on Figure 5.7.[41] All are along the Washington and Jefferson Street light rail lines. The Capital Place Apartments were recently constructed, offering 292 residential rental units on two separate properties: 12 Capital Place is located on the southeast

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[37] Royal Green Development, *The Washington Enclave, Planned Unit Development Land Use and Development Codes*, Hearing Draft July 24, 2015.

[38] City of Phoenix, Planning and Development Department, Planned Unit Development Current Cases, https://www.phoenix.gov/pdd/pz/pzservices/pud-cases (accessed January 5, 2016); City of Phoenix Planning and Development Department, General Plan Amendment, Rezoning & Text Amendment Staff Reports, https://www.phoenix.gov/pdd/pz/pzservices/pzstaff-reports (accessed January 6, 2016).

[39] Lafferty Development, *The Liberty, Planned Unit Development Land Use and Development Standards*, Applicant's Narrative, October 30, 2014.

[40] Lafferty Development, *The Presidential, Planned Unit Development Land Use and Development Codes*, Hearing Draft December 1, 2014.

[41] Trina Harrison, City of Phoenix, Aviation Department, "North Area already proposed residential", email to Laura Brunn, Senior Consultant, Ricondo & Associates, Inc., February 24, 2016.

corner of 12th Street and Washington Street, in the Planning Area; and 11 Capital Place is located on the northwest corner of 11th Street and Washington Street, north of the Planning Area. A 250-unit multi-family mixed use project called "The Monument" and a 120 room hotel, "The White House" are proposed developments located on the south side of Washington Street, between 11th and 12th Streets.

One other planned project merits discussion. A Fry's Food and Drug Store is planned at the corner of East Washington and 1st Streets, just over four blocks west of the Study Area. This store will provide an essential service to neighborhoods in the northern part of the Study Area, which, based on comments from local residents, have been underserved by super markets in recent years.

LEGEND

- Airport Property
- Study Area
- Planning Area
- Airport-Owned Noise Property
- Highway
- Arterial Street
- Local Street
- Railroad

Pending Rezoning Applications

1 The Washington Enclave: Residential Condominiums and Commercial Use

Recently Approved Rezoning Applications

2 The Liberty: Residential Apartments and Commercial Use

3 The Presidential: Residential Apartments and Commercial Use

Recently Constructed Projects

4 11 Capital Place: Residential Apartments

5 12 Capital Place: Residential Apartments

Projects in Planning Phase

6 The Monument: Mixed Use Residential

7 The White House: Hotel

8 Fry's Food and Drug Store

NORTH 0 800 ft.

SOURCES: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community (Basemap), February 2016; City of Phoenix, Aviation Department, VARS boundary and Acquired Properties, obtained December 2015; Maricopa Assessor's Office GIS Parcel data, received December 2015; City of Phoenix, Planning and Development Department, Planned Unit Development Current Cases, https://www.phoenix.gov/pdd/pz/pzservices/pud-cases, (accessed January 5, 2016); City of Phoenix Planning and Development Department, General Plan Amendment, Rezoning & Text Amendment Staff Reports, https://www.phoenix.gov/pdd/pz/pzservices/pzstaff-reports, (accessed January 6, 2016); Trina Harrison, City of Phoenix, Aviation Department, "North Area already proposed residential", email to Laura Brunn, February 24, 2016.
PREPARED BY: Ricondo & Associates, Inc., October 2016.

PHX LAND REUSE STRATEGY

Figure 5.7

Recent and Pending Development Projects

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Section 6—Prohibited Land Uses

The potential reuse of noise lands is subject to several constraints. These include limitations imposed by FAA grant assurances and existing overlay zoning provisions.

6.1 Federal Grant Assurances – Land Use Conditions

As a condition of accepting grants for the Airport from the federal Airport Improvement Program (AIP), the City of Phoenix is obligated to comply with numerous conditions, known as grant assurances, relating to the safe, efficient, and equitable management of the Airport. Five grant assurances are relevant to the potential reuse of noise lands.[42]

Grant Assurance 6, Consistency with Local Plans, requires that any AIP-funded projects must be reasonably consistent with local plans for development of the area surrounding the airport.

Grant Assurance 7, Consideration of Local Interest, requires that the airport sponsor give fair consideration to the interest of communities in or near where the AIP-funded project is located.

Grant Assurance 20, Hazard Removal and Mitigation, applies to airport sponsors accepting AIP grants for any purpose. It requires the Airport Sponsor to take appropriate action to assure that airport vicinity airspace will be adequately protected by removing existing airport hazards and by preventing the creation of new airport hazards.

Grant Assurance 21, Compatible Land Use, also applies to airport sponsors accepting AIP grants for any purpose. It requires the airport sponsor to take action to restrict the use of land adjacent to or in the immediate vicinity of the airport to purposes compatible with normal airport operations. If the project funding is for noise compatibility program implementation, the airport sponsor must not cause or permit any change in land use that will cause a reduction in compatibility with the noise compatibility program measures for which federal funds have been used.

Grant Assurance 31, Disposal of Land, applies specifically to airport sponsors who have acquired land for noise mitigation with AIP funds. Airport sponsors are required to dispose of the land if it is unneeded for noise compatibility or airport development purposes at the earliest practicable time. The airport sponsor must reserve adequate property rights to ensure that future land uses maintain compatibility with airport operations. The retained property rights must be enforceable and recorded in the local public land records. Airspace and land use restrictions retained on properties sold or exchanged are to be incorporated on the Airport Noise Land Inventory Exhibit or Exhibit "A" of the ALP.[43]

The FAA provides sample deed restriction language to ensure property rights are retained and that the land will not be put into an incompatible use. Several restrictions, summarized below, include land

[42] Federal Aviation Administration, *AIP Grant Assurances Program Guidance*, Airport Sponsor, March 2014.

[43] Federal Aviation Administration, Office of Airport Planning and Programming, *Noise Land Management and Requirements for Disposal of Noise Land or Development Land Funded with AIP*, June 2014.

use restrictions relating to airport noise incompatibilities, airspace encroachment, and hazards to flight:[44]

- Prohibit uses that are not compatible with noise levels of airport operations. The property must not be used for residential purposes, for educational facilities (as described in state law); or other noise sensitive land use not compatible with airport noise as described in 14 Code of Federal Regulations Part 150, as amended.
- Restrict the height of structures, objects of natural growth, and other obstructions on the property to a height which does not exceed the height requirements set forth in Title 14 of the Code of Federal Regulations (14 CFR) Part 77, Safe, Efficient Use and Preservation of the Navigable Airspace., as amended, or any similar regulations which may hereinafter be enacted relating to the Airport.
- Prohibit uses that would create electrical interference with radio communication between the airport and aircraft or make it difficult for fliers to distinguish between airport lights and others, or impair visibility in the vicinity of the airport, or otherwise endanger the landing, taking off, or maneuvering of aircraft.
- Prohibit uses that would create a potential for attracting birds and other wildlife which may pose a hazard to aircraft.

6.1.1 Noise-Sensitive Land Uses

The FAA has produced guidelines for determining the compatibility of different land uses with aircraft noise levels. The FAA land use compatibility guidance, provided in Title 14 of the Code of Federal Regulations (14 CFR) Part 150, Airport Noise Compatibility Planning, is presented in **Table 6.1**. The table indicates the compatibility of generalized land uses by ranges of noise exposure.[45] (Figures 3.3 and 3.4 in Section 3.4 illustrate noise exposure for 2015 and forecast 2025 conditions, respectively.) As shown in Table 6.1, residential uses and amphitheaters are not compatible in areas exposed to noise of DNL 65 and higher. Public use facilities such as schools, hospitals, nursing homes, and religious assembly are conditionally compatible, with the appropriate noise level reduction measures (NLR), up to DNL 75. Commercial, manufacturing, and production are generally compatible with noise of less than DNL 75, although selected uses should incorporate NLR measures if exposed to noise above DNL 70.

[44] Federal Aviation Administration, Office of Airport Planning and Programming, *Noise Land Management and Requirements for Disposal of Noise Land or Development Land Funded with AIP*, page 33-34, Attachment D, June 2014.

[45] Title 14 CFR Part 150, Airport Noise Compatibility Planning, Appendix A, Table 1.

Table 6.1 (1 of 2) —Land Use Compatibility Guidelines* – 14 CFR Part 150

	Day-Night Average Sound Level (DNL) In Decibels					
	Below					Over
LAND USE	**65**	**65-70**	**70-75**	**75-80**	**80-85**	**85**
RESIDENTIAL						
Residential, other than mobile homes and transient lodgings	Y	N[1/]	N[1/]	N	N	N
Mobile home parks	Y	N	N	N	N	N
Transient lodgings	Y	N[1/]	N[1/]	N[1/]	N	N
PUBLIC USE						
Schools, hospitals, nursing homes	Y	25	30	N	N	N
Churches, auditoriums, and concert halls	Y	25	30	N	N	N
Governmental services	Y	Y	25	30	N	N
Transportation	Y	Y	Y[2/]	Y[3/]	Y[4/]	N[4/]
Parking	Y	Y	Y[2/]	Y[3/]	Y[4/]	N
COMMERCIAL USE						
Offices, business and professional	Y	Y	25	30	N	N
Wholesale and retail -- building materials, hardware, and farm equipment	Y	Y	Y[2/]	Y[3/]	Y[4/]	N
Retail trade, general	Y	Y	25	30	N	N
Utilities	Y	Y	Y[2/]	Y[3/]	Y[4/]	N
Communication	Y	Y	25	30	N	N
MANUFACTURING AND PRODUCTION						
Manufacturing, general	Y	Y	Y[2/]	Y[3/]	Y[4/]	N
Photographic and optical	Y	Y	25	30	N	N
Agriculture (except livestock) and forestry	Y	Y[6/]	Y[7/]	Y[8/]	Y[8/]	Y[8/]
Livestock farming and breeding	Y	Y[6/]	Y[7/]	N	N	N
Mining and fishing, resource production and extraction	Y	Y	Y	Y	Y	Y
RECREATIONAL						
Outdoor sports arenas and spectator sports	Y	Y	Y[5/]	N[5/]	N	N
Outdoor music shells, amphitheaters	Y	N	N	N	N	N
Nature exhibits and zoos	Y	Y	N	N	N	N
Amusements, parks, resorts and camps	Y	Y	Y	N	N	N
Golf courses, riding stables, and water recreation	Y	Y	25	30	N	N

Table 6.1 (2 of 2) —Land Use Compatibility Guidelines* – 14 CFR Part 150

Numbers in superscript refer to notes.

*The designations contained in this table 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. FAA determinations under part 150 are not intended to substitute federally determined land uses for those determined to be appropriate by local authorities in response to locally determined needs and values in achieving noise compatible land uses.

Key to Table:

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

N (No) Land use and related structures are not compatible and should 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, 30, 35 Land use and related structures generally compatible; measures to achieve a NLR of 25, 30, or 35 dB must be incorporated into design and construction of structure.

Notes:

1/ Where 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. Normal residential construction can be expected to provide a NLR of 20 dB, thus, the reduction requirements are often stated as 5, 10, or 15 dB over standard construction and normally assume mechanical ventilation and closed windows year round. However, the use of NLR criteria will not eliminate outdoor noise problems.

2/ Measures to achieve NLR of 25 dB 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 dB 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.

4/ Measures to achieve NLR of 35 dB 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.

5/ Land use compatible provided special sound reinforcement systems are installed.

6/ Residential buildings require a NLR of 25 dB.

7/ Residential buildings require a NLR of 30 dB.

8/ Residential buildings not permitted.

Source: Title 14 CFR Part 150, Airport Noise Compatibility Planning, Appendix A, Table 1.

In summary, the following land uses are noise-sensitive and are generally considered incompatible uses for noise lands:

- Residential[46]
- Schools, hospitals, and nursing homes
- Places of worship, auditoriums, and concert halls
- Outdoor music shells and amphitheaters

[46] The City of Phoenix is consulting with the FAA to determine if mixed-use projects involving residential uses can be considered acceptable on noise lands in the North Subarea based on the unique characteristics of that area.

6.1.2 Airspace Protection

Airspace protection is accomplished by limiting the heights of new structures and objects to ensure they do not become hazards to air navigation. As discussed in Section 3.5, the City of Phoenix has established Airport Zoning, with the objective of protecting the airspace around the Airport. In addition, federal regulations also apply to construction near airports. 14 CFR Part 77, Safe, Efficient Use and Preservation of the Navigable Airspace, establishes requirements for notifying the FAA of proposed construction (Subpart B), defines obstruction criteria (Subpart C), and describes FAA's process to determine the effect of proposed construction on navigable airspace (Subpart D).

Federal law requires developers of structures or objects (including buildings, antennas, trees, and mobile and temporary objects, such as construction cranes) that exceed 14 CFR Part 77 height criteria to submit to the FAA a Notice of Proposed Construction or Alteration (Form 7460-1).[47] Additionally, the FAA may also require notification for structures or objects that may cause signal reception interference with navigational aids (NAVAIDs).

After receiving a completed Form 7460-1, the FAA studies the effect of the proposed construction on the navigable airspace, as described in Part 77, Subpart D. The FAA then issues either a Determination of No Hazard (DNH) to air navigation or, if any obstruction standards are exceeded, a Notice of Presumed Hazard (NPH).[48]

If the FAA issues an NPH, the developer may either lower the height of the proposed structure as advised by the FAA or request the FAA to perform further aeronautical study of the proposed project. After further aeronautical study, the FAA issues either a DNH, perhaps including recommendation for marking and lighting of the object, or a Determination of Hazard (DOH), indicating that the structure should not be built as proposed. The FAA, however, has no power to enforce a DOH; that power rests with local land use regulatory authorities.

To comply with Grant Assurances 20 and 31, airport sponsors who release noise lands should retain easements or deed restrictions ensuring that future development must be in compliance with 14 CFR Part 77 standards and that any proposed development determined by the FAA to be a hazard is prohibited.

6.1.3 Hazards to Flight

Proposed land uses or development features that may create visual, thermal, electronic, or wildlife hazards, particularly bird strike hazards, to aircraft taking off or landing at the Airport or in flight are considered hazards to flight and are incompatible with airport operations. Specific land use or building characteristics that may create hazards to aircraft in flight include:

[47] Title 14, Code of Federal Regulations, Part 77, *Safe, Efficient Use, and Preservation of the Navigable Airspace,* Subpart B, *Notice Requirements.*

[48] Federal Aviation Administration, Order JO 7400.2J, *Procedures for Handling Airspace Matters*, Paragraph 7-1-3.

a. Sources of glare, such as highly reflective buildings or building features, or bright lights, including search lights or laser displays, which would interfere with the vision of pilots or air traffic controllers.[49]
b. Distracting lights that that could be mistaken by pilots on approach to the Airport for airport identification lighting, runway edge lighting, runway end identification lighting, or runway approach lighting.
c. Sources of dust, smoke, or water vapor dense enough to impair the vision of air traffic controllers or pilots making approaches to the Airport.
d. Land uses that, as a regular byproduct of their operations, produce thermal plumes with the potential to rise high enough and at sufficient velocities to interfere with the safe control of aircraft.[50]
e. Sources of electrical interference with aircraft or air traffic control communications or navigation equipment, including radar.
f. Any use that creates an increased attraction for wildlife, particularly birds. FAA Advisory Circular 150/5200-33B, *Hazardous Wildlife Attractants On or near Airports*, provides guidance on land uses that have the potential to attract hazardous wildlife at or near public-use airports.

The above-listed land use and building characteristics should be prohibited on noise lands released by the Airport for development.

6.2 Phoenix Overlay Zoning Districts – Prohibited Land Uses

In addition to land uses that are considered incompatible with Airport operations and noise levels, the City of Phoenix has identified other land uses that are prohibited in overlay zoning districts within the Planning Area. Each of those overlay zoning districts has been established to promote specific land development or environmental protection objectives.

Table 6.2 lists the land uses that are prohibited within four of the Study Area's Overlay Zoning Districts.

[49] The FAA, in cooperation with the U.S. Department of Energy, has made available a Solar Glare Analysis Tool, available to the public at: https://share.sandia.gov/phlux.

[50] FAA's has developed an Exhaust-Plume-Analyzer, available to the public at: http://www.mitre.org/research/technologytransfer/technology-licensing/exhaust-plume-analyzer.

Table 6.2 —Summary of Prohibited Uses within Overlay Districts

Interim TOD-1	Interim TOD-2	Rio Salado Interim Overlay District	Airport Noise Impact Overlay District
Automobile service, gas stations and accessory uses			
Boat dealers, repair			
Bulk retail and wholesale			
Car washes	Car washes		
Cemeteries, funeral homes, and mortuaries	Cemeteries, funeral homes, and mortuaries		
Cold storage plants			
		Commercial animal slaughtering	
Commercial and construction equipment (sales, service, and rental)			
Drive-in businesses	Drive-in businesses		
	Exterior display of goods		
Exterior storage, junk and vehicle wrecking yards		Junk yards, wrecking and salvage yards	
Golf courses	Golf courses including miniature golf courses		
Kennels, excluding those accessory to veterinary clinics			
Manufactured home sales			
Nurseries or greenhouses			
			Off-site constructed dwelling units (i.e., manufactured housing)
		Outdoor advertising structures	
RV or mobile home parks, campgrounds	RV or mobile home parks, campgrounds		
Telecom hotels			
Towing services, Truck stops and uses related to trucking			

Source: City of Phoenix, *Zoning Ordinance of the City of Phoenix, Chapter 6*, Zoning Districts, current through Ordinance G-6047, passed July 1, 2015.

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Section 7— Ground Transportation and Circulation Planning

The City of Phoenix and the Maricopa Association of Governments (MAG) are the agencies chiefly responsible for transportation and circulation planning in Phoenix. Multiple planning and programming documents, including the Regional Transportation Plan, the Transportation Improvement Program, and the Phoenix Capital Improvement Program, were reviewed to create an inventory of capital improvement projects for roadways and transit within the Study Area.

7.1 Roadways

The existing roadway network and proposed capital improvement projects are depicted on **Figure 7.1**.

7.1.1 Regional Transportation Plan

The Regional Transportation Plan (RTP) is a long-range transportation planning document prepared by MAG, serving as the Metropolitan Planning Organization (MPO) for Maricopa County. The current RTP, covering the period through Fiscal Years (FY) 2014-2035, is a comprehensive, performance-based, multimodal regional plan that identifies future transportation facilities.

The *2035 RTP* groups the projects into three intervals. For highway projects, these groups are used to indicate the period in which funds are programmed for construction work. For arterial projects, these groups are used to indicate the period in which a project is anticipated to be completed.

- Group 1 (FY 2014 - FY 2018): Corresponds to the period covered by the MAG FY 2014- 2018 Transportation Improvement Program (TIP).
- Group 2 (FY 2019 - FY 2026): Corresponds to the period beyond the TIP but within the Life Cycle Programs (LCPs), which extend through FY 2026.
- Group 3 (FY 2027 - FY 2035): Corresponds to the period beyond the LCPs but within the RTP planning period, which extends through FY 2035.

Roadway capital improvement projects programmed within the RTP through FY 2026 (Groups 1 and 2) were inventoried for the Study Area. Programmed RTP projects located within the Study Area are listed in **Table 7.1**.

Table 7.1 —Roadway Capital Improvement Projects in Study Area 2014-2026

Project Name	RTP, TIP, CIP	Project ID	Project Description	CIP Year Funded, TIP Year Apportioned, RTP Group
Buckeye Road: Central Avenue to 16th Street;	CIP; TIP	ST85100342 PHX 14-406/15-403/14-404	Originally involved design, right-of-way acquisition, construction of one mile of street. Project cut to include only sidewalk on south side of street from Central to 14th Street.	CIP 2015-16; TIP 2014-2017
I-17 Black Canyon Corridor: I-10/I-17 Split;	TIP RTP	DOT 16-433	Design and construction of HOV and general purpose lanes	TIP 2016; RTP Group 2

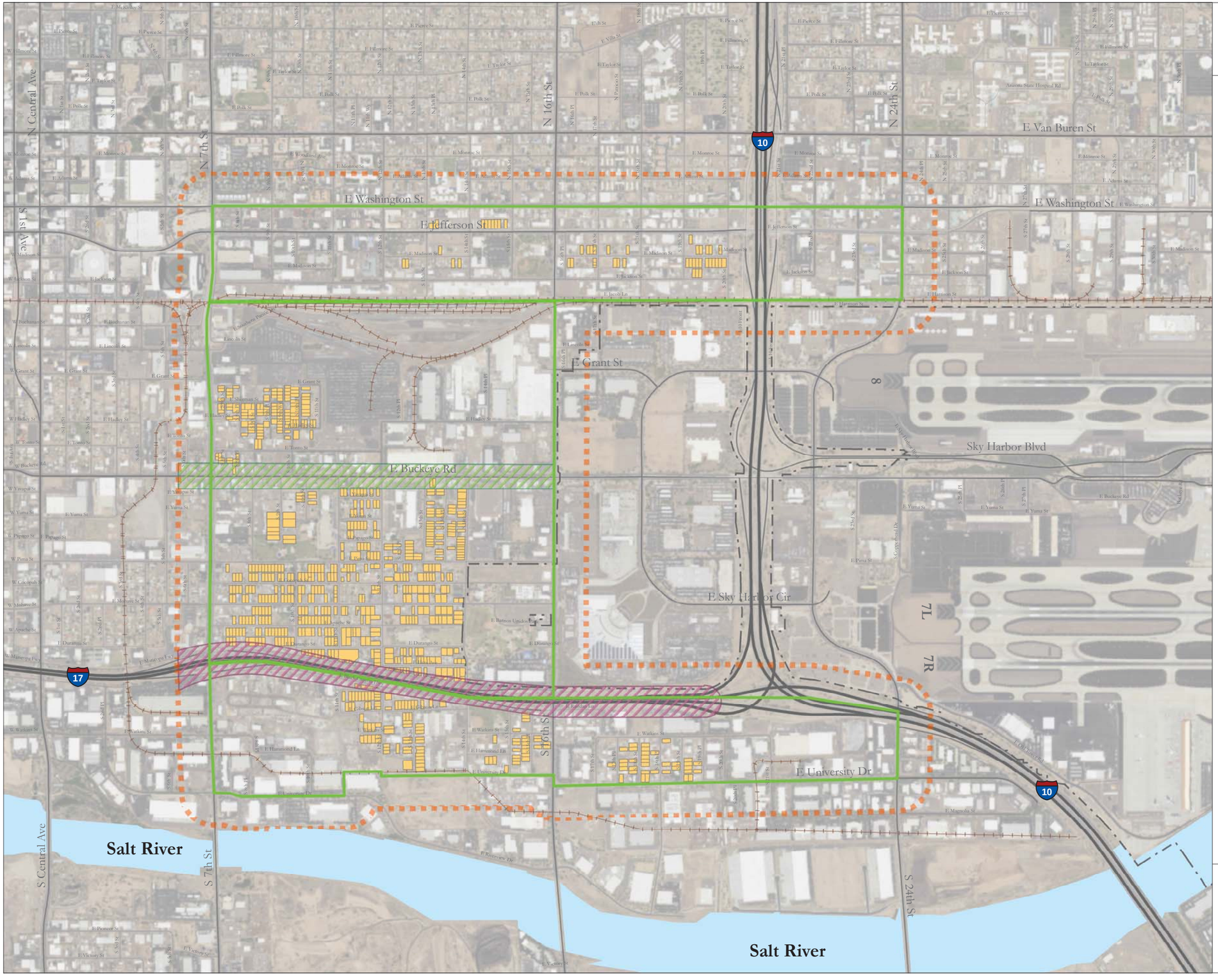
Source: City of Phoenix, *Phoenix Capital Improvement Program 2015-2020*, June 03, 2015; Maricopa Association of Governments, *2014-2018 Transportation Improvement Program*, January 29, 2014; Maricopa Association of Governments, *2035 Regional Transportation Plan*, January 2014; .Rick Evans, Project Manager, Phoenix Street Transportation Department, "RE: Buckeye Road Project Questions - 7th St to 16th St," email to Molly A. Monserud, Phoenix Aviation Department, June 1, 2016.

7.1.2 Transportation Improvement Program

The Transportation Improvement Program (TIP) is a prioritized listing of transportation projects covering a period of five years that is also developed and adopted by MAG as part of the metropolitan transportation planning process, consistent with the RTP, and required for projects to be eligible for federal funding. The current TIP covers federal fiscal years 2014-2018. Proposed projects in the Study Area are listed in Table 7.1.

7.1.3 City of Phoenix Capital Improvement Program

The 2015-2020 Capital Improvement Program, adopted by the City of Phoenix City Council June 17, 2015, contains the City's planned construction projects for individual department programming. Projects from the Street Transportation and Transit Program sections of the City's 2015-2020 CIP are listed in Table 7.1.



LEGEND

- Airport Property
- 8, 7L, 7R — Runway Numbers
- Study Area
- Planning Area
- Airport-Owned Noise Property
- Highway
- Arterial Street
- Local Street
- Railroad
- Waterways

Near-term Roadway Improvements (In Study Area)

- Buckeye Road Improvements
- Interstate 17 (I-17) Improvements

Notes

1/ Buckeye Road - design, right-of-way, construction

2/ I-17 - construction of HOV and general lanes

NORTH

0 1,500 ft.

SOURCES: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community (Basemap), February 2016; City of Phoenix, Aviation Department, VARS boundary and Acquired Properties, Obtained December 2015; City of Phoenix, Phoenix Capital Improvement Program 2015-2020, June 2015; Maricopa Association of Governments, 2014-2018 Transportation Improvement Program, January 2014; Maricopa Association of Governments, 2035 Regional Transportation Plan, January 2014; Maricopa Association of Governments, The Spine Study Fact Sheet, March 2015.

PREPARED BY: Ricondo & Associates, Inc., October 2016.

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Figure 7.1

Existing Roadway Network and Planned Capital Improvements

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7.1.4 The Spine Study: Interstate-10 and Interstate-17 Corridor Master Plan

MAG, in partnership with the Federal Highway Administration (FHWA) and the Arizona Department of Transportation (AZDOT), is currently preparing a Corridor Master Plan for the Interstate 17 and Interstate 10 corridor, also known as *The Spine Study*. The Study's goals are to identify transportation needs within the corridor and to develop a plan to accommodate these needs. The Study is expected to be completed in early 2017 with project recommendations to be implemented from 2020 to 2040.[51] Within the 35-mile Spine Corridor, the I-10/1-17 split interchange is within the Study Area.

7.2 Public Transit

7.2.1 Regional Transit

The Regional Public Transportation Authority, known as Valley Metro, provides the region's transit service. Existing and planned transit facilities serving the Study Area are described below and are depicted on **Figure 7.2**.

Park and Ride Facilities: There are no existing or planned Park and Ride Facilities within the Study Area.

Transit Centers: There are no existing or planned Transit Centers within the Study Area.

Local Bus Transit: North-South bus routes, as shown on Figure 7.2, that serve the area include Route 7 (7th Street), Route 70 (24th Street), Route 16 (16th Street), and Route 12 (12th Street). East-West bus routes include Route SR51 (Washington and Jefferson), Route 13 (Buckeye Road), and Route 1 (Washington and Jefferson). The planning and programming documents reviewed for the inventory do not include the addition of bus service routes within the Study Area.

Arterial Bus Rapid Transit (BRT): BRT is a service that operates at higher speeds than local bus service and operates in a dedicated right-of-way for public transit during peak periods. There is one BRT route located within the Study Area **-** Route SR-51.

Rapid/Express Transit: Express bus provides enhanced-speed, moderate-volume commuter or regional access in the MAG region and is designed to operate primarily on the region's freeway system, including High Occupancy Vehicle (HOV) lanes. Express bus service typically operates from park-and-ride locations to employment centers throughout the region. There is one Express Route located within the Study Area – Route 541 (Chandler Express).

[51] Maricopa Association of Governments, *The Spine Study Fact Sheet*, March 09, 2015, https://www.azmag.gov/SPINE_2015-03-09_The-Spine-Study-Fact-Sheet_English.pdf (accessed December 16, 2015).

Light Rail Transit (LRT): Throughout the Study Area, the Light Rail Transit fixed guideway corridor traverses east along East Jefferson Street and west along East Washington Street. Four rail stations serve the LRT within the Study Area, two located on East Washington near 12th and 24th Streets for the west route and two on East Jefferson near 12th and 24th Streets for the east route.

Valley Metro is planning two LRT extensions projects, both of which are outside the Study Area but within close proximity:

Section 1—Capitol/I-10 West. The Capitol/I-10 West extension will provide enhanced transit service to the growing West Valley connecting to major employment centers such as the State Capitol. The 11-mile Capitol/I-10 West project will extend light rail west from the project area through the State Capitol area to 79th Ave/I-10. The extension is scheduled to open in 2023. [52]

Section 2—South Central. The South Central Light Rail Extension will provide enhanced transit services to a community with high transit ridership and will support neighborhood revitalization and connectivity between downtown Phoenix and south Phoenix. The 5-mile project will extend the current light rail system along Central Avenue and will run south to Baseline Road in Phoenix. The extension is scheduled to open in 2034. [53]

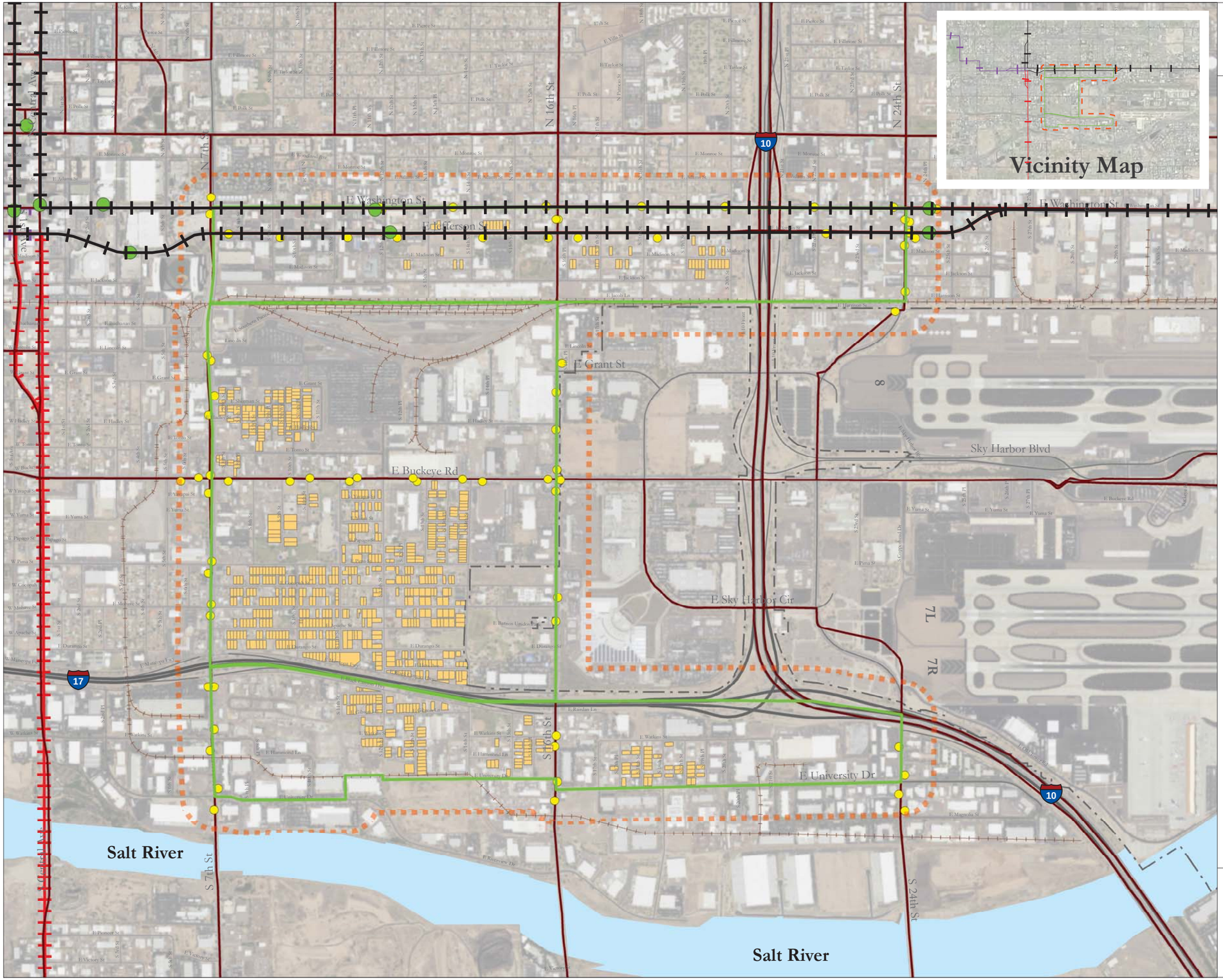
In January 2016, the Phoenix City Council authorized an agreement with Valley Metro to study the feasibility of building an additional light rail transit station near 16th and Washington/Jefferson Streets. It is too early to know whether the new station will be built or, if authorized, when it would be built.[54]

Table 7.2 lists the Transit projects programmed for the Study Area in the RTP and the TIP. The Valley Metro Short Range Transit Plan and the City of Phoenix CIP were also reviewed for inclusion in this Transit inventory.

[52] Valley Metro, *Capitol/I-10 W Light Rail Extension Project Report Card*, September 2015, http://www.valleymetro.org/images/uploads/prop_reports/1215_CAPITOL_I-1O_W.pdf (accessed December 11, 2015).

[53] Valley Metro, *South Central Light Rail Extension Project Report Card*, September 2015, http://www.valleymetro.org/images/uploads/prop_reports/1215_SOUTH_CENTRAL.pdf (accessed December 11, 2015).

[54] Trina Harrison, Phoenix Aviation Department Project Manager, "16th St Light Rail Station,:" email to Mark R. Johnson, Director, Ricondo & Associates, Inc., May 6, 2016.



LEGEND

- Airport Property
- 8, 7L, 7R — Runway Numbers
- Study Area
- Planning Area
- Airport-Owned Noise Property
- Highway
- Arterial Street
- Local Street
- Railroad
- Waterways
- Existing Light Rail Stops
- Existing Light Rail Alignment
- Bus Routes as of July 2013
- Existing Bus Stops (In Study Area)

Future Light Rail Extension Capital Improvement Projects

- South Central Light Rail Extension
- Capitol/I-10 West Light Rail Extension

NORTH

0 1,500 ft.

SOURCES: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community (Basemap), February 2016; City of Phoenix, Aviation Department, VARS boundary and Acquired Properties, Obtained December 2015; Valley Metro, Capitol/I-10 W Light Rail Extension Project Report Card, September 2015; Valley Metro, South Central Light Rail Extension Project Report Card, September 2015; City of Phoenix, Phoenix Capital Improvement Program 2015-2020, June 2015; Maricopa Association of Governments, 2014-2018 Transportation Improvement Program, January 2014; Maricopa Association of Governments, 2035 Regional Transportation Plan, January 2014; MAG Regional Council, Minutes of the Maricopa Association of Governments Regional Council Meeting, December 2014. PREPARED BY: Ricondo & Associates, Inc., October 2016.

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Figure 7.2

Existing Transit Network and Planned Capital Improvements

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Table 7.2 —Transit Capital Improvement Projects 2014-2035

RTP, TIP	Project ID	Project Description	TIP Year Apportioned, RTP Group
TIP	VMR14-414T VMR14-105T VMR16-418T VMR16-415T	Capital I-10/ West Fixed Guideway Corridor; Preliminary Engineering/FEIS	2014 - 2016
TIP	VMR14-106T VMR15-105T VMR15-106T VMR18-423T VMR18-424T VMR18-425T VMR18-429T	Capital I-10/ West Fixed Guideway Corridor; /Final Design	2014-2018
TIP	VMR15-107T VMR16-416T VMR17-417T VMR18-419T VMR18-420T VMR18-421T VMR18-422T VMR18-426T VMR18-428T VMR18-427T VMR18-430T	Capital I-10/ West Fixed Guideway Corridor; Right Of Way Acquisition/Utility Relocation/Construct Transit Way	2016-2018
RTP	-	Capital/I-10 West Light Rail Transit; LRT Extension	Groups 1, 2
RTP [1/]	-	South Central Light Rail Transit; LRT Extension	Group 3

Notes:

1/ MAG Regional Council approved a major amendment to the RTP on December 3, 2014 to add the South Central LRT Extension project.

Source: City of Phoenix, *Phoenix Capital Improvement Program 2015-2020*, June 03, 2015; Maricopa Association of Governments, *2014-2018 Transportation Improvement Program*, January 29, 2014; Maricopa Association of Governments, *2035 Regional Transportation Plan*, January 2014; MAG Regional Council, *Minutes of the Maricopa Association of Governments Regional Council Meeting,* December 3, 2014.

7.2.2 Passenger Rail

The Arizona Department of Transportation, in partnership with the Federal Railroad Administration, is currently preparing a Passenger Rail Study for service between Tucson and Phoenix. A Draft Tier 1 Environmental Impact Statement (DEIS) was released for review in September 2015.[55] The Final EIS and Record of Decision are expected in 2016. The preferred corridor alternative, designated the Yellow Alternative, would extend from downtown Phoenix through Tempe and Queen Creek and then head south to Eloy along the existing Union Pacific Railroad corridor, where appropriate. From Eloy, the Yellow Alternative would primarily follow Interstate 10 to Tucson. Subsequent environmental studies will look at specific rail alignments, station locations and connections. There is currently no construction schedule and no funding identified for the project.[56]

[55] Arizona Department of Transportation, *Arizona Passenger Rail Corridor Study, Tucson to Phoenix, Draft Tier 1 Environmental Impact Statement*, September 2015.

[56] Arizona Department of Transportation Website, Current Studies, https://www.azdot.gov/planning/CurrentStudies/PassengerRail/overview (accessed December 17, 2015).

Section 8—Utilities

8.1 Water

The City of Phoenix Water Services Department is the water supply distributor within the Study Area. Phoenix's water needs are met through four major sources:

- Surface and groundwater supplies delivered through the Salt River Project (SRP);
- Colorado River water delivered through the Central Arizona Project (CAP);
- Groundwater pumped from City wells; and
- Reclaimed water

In a normal supply year, most (more than 90 percent) of the City's demand is met with surface water provided by the SRP and CAP. In years where SRP reservoirs are low, a portion of the supply may consist of groundwater.[57]

Water mains throughout the Study Area vary in size from 2-inches to 12-inches with 6-8-inch mains being the great majority. The 2015-2020 Phoenix Capital Improvement Program identifies several water system improvement projects within the Study Area. These projects are listed in **Table 8.1**. The areas within which the improvements are to be made are depicted on **Figure 8.1**.

All water lines serving the individual Airport-owned noise properties were disconnected at the water main. New service laterals must be installed to provide water service to new development on the noise lands.[58]

8.2 Sanitary Sewer

The City of Phoenix Water Services Department manages the city's sewer system and handles wastewater treatment for the Study Area. Sewer mains throughout the area vary in size from 8-inches to 15-inches with 6-inch service laterals to individual parcels. Service lines to individual Airport-owned noise properties were disconnected at the property line as part of building demolition.[59]

The 2015-2020 Phoenix Capital Improvement Program does not identify any specific improvements to the sanitary sewer system within the Study Area.

[57] City of Phoenix Water Services Department, *2011 Water Resource Plan.*

[58] Andrea Sandoval, Program Manager, City of Phoenix Aviation Department, telephone interview with Mark Johnson, Director, Ricondo & Associates, Inc., August 23, 2016.

[59] Andrea Sandoval, Program Manager, City of Phoenix Aviation Department, telephone interview with Mark Johnson, Director, Ricondo & Associates, Inc., August 23, 2016.

Table 8.1 —Water Supply Infrastructure Capital Improvement Projects 2015-2020

Project ID	Project Description	CIP Fiscal Year Funded
WS85500383	WATER MAIN: Area Bounded by Durango Street to Buckeye Road and 7th Street to 12th Street Construct 15,750 linear feet of new mains, install 17 fire hydrants and relocate 132 water meters	2015-2016
WS85500384	WATER MAIN: Area Bounded by Durango Street to Buckeye Road and 12th Street to 16th Street. Construct 3,270 linear feet of new mains, install 12 fire hydrants and relocate 34 water meters	2015-2016
WS85500426	WAREHOUSE DISTRICT IMPROVEMENT: Add and replace small diameter water mains to support revitalization of the Warehouse District.	2015-2016
WS85509012	WATER MAIN: Area Bounded by Harrison Street to Van Buren Street and 12th Street to 16th Street. Install 14,930 linear feet of water mains and 16 fire hydrants.	2015-2016
WS85509026	WATER MAIN: Area Bounded by Harrison Street to Van Buren Street and 24th Street to 28th Street. Replace or rehabilitate water mains in the area	2015-2016

Source: City of Phoenix, Phoenix Capital Improvement Program 2015-2020.

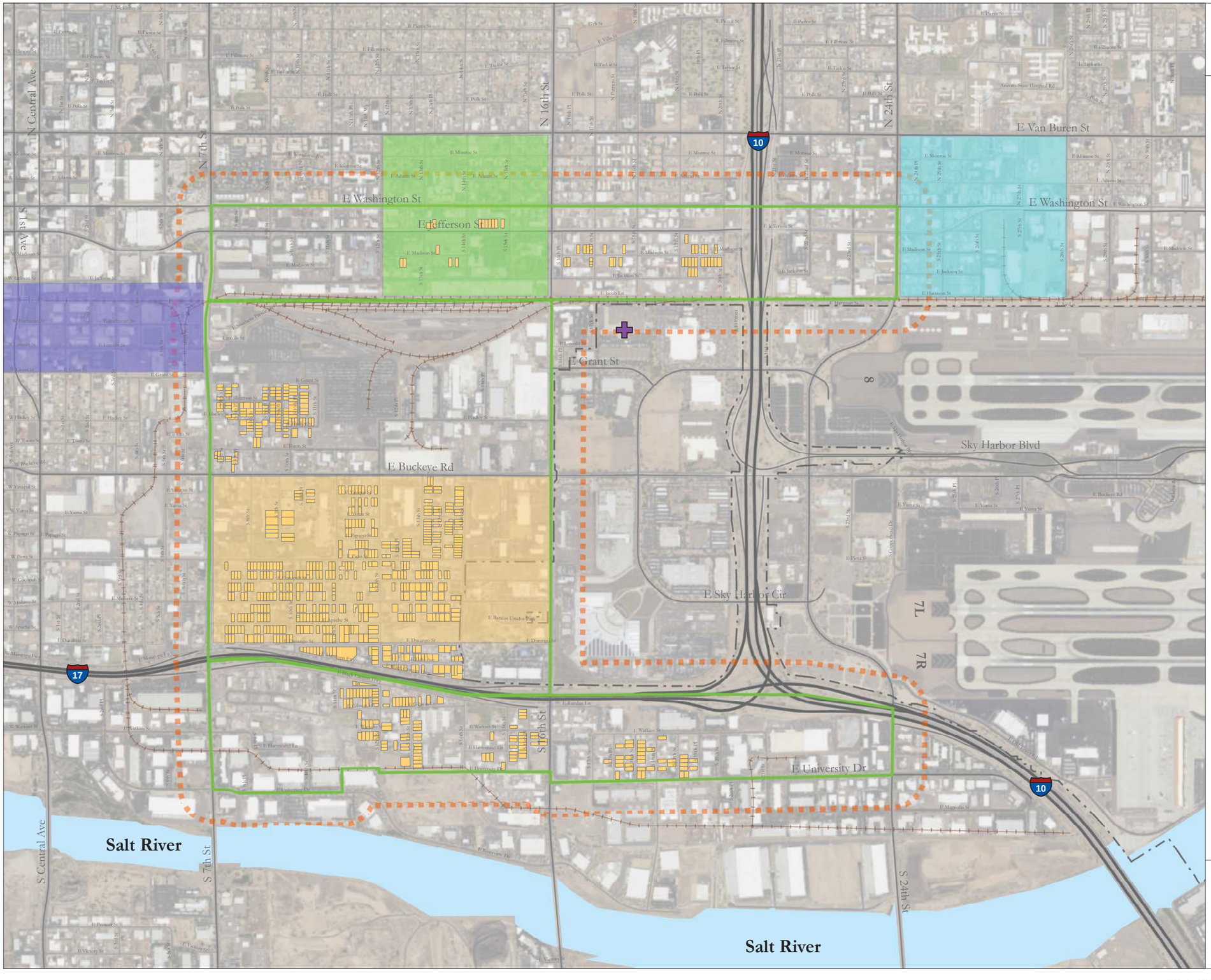
8.3 Stormwater Sewer

The City's stormwater sewer system carries rainwater and runoff to rivers, washes, and retention areas. The City has an Arizona Pollution Discharge Elimination System (AZPDES) stormwater permit (AZS000003) issued by the Arizona Department of Environmental Quality (ADEQ). Under this permit, the City implements a Stormwater Management Plan (SWMP) to reduce stormwater pollution. Program activities are summarized in the City of Phoenix's Municipal Separate Storm Sewer System (MS4) Annual Report.

The Street Transportation Department is responsible for maintenance of storm drains washes, and catch basins. The Planning and Development Department monitors construction sites for stormwater compliance.

The 2015-2020 Phoenix Capital Improvement Program identifies one capital improvement project within the Study Area to the stormwater system:

CIP Project ST83140060 - Construct storm drain improvements at 1745 East Jackson Street, FY 2015-16. See Figure 8.1 for the location of this project.



LEGEND

- Airport Property
- 8, 7L, 7R — Runway Numbers
- Study Area
- Planning Area
- Airport-Owned Noise Property
- Highway
- Arterial Street
- Local Street
- Railroad
- Waterways

Water Supply Capital Improvement Projects

- Install 19,020 linear feet of mains, install 29 fire hydrants and relocate 166 water meters
- Warehouse Improvement District: Add and replace small diameter water mains to support District revitalization
- Install 14,930 linear feet of mains, and 16 fire hydrants
- Replace or rehabilitate water mains

Stormwater Sewer Capital Improvement Project

- 1745 East Jackson Street: Construct storm drain improvements

NORTH

0 — 1,500 ft.

SOURCES: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community (Basemap), February 2016; City of Phoenix, Aviation Department, VARS boundary and Acquired Properties, Obtained December 2015; City of Phoenix, Phoenix Capital Improvement Program 2015-2020.
PREPARED BY: Ricondo & Associates, Inc., October 2016.

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Figure 8.1

Planned Water Supply and Stormwater Capital Improvements

W:\Projects\PHX\ACLRP\MXD\Final\Figure 8.1 Near-Term Water and Sewer Capital Improvement Projects_1 is 1500.mxd

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8.4 Electricity

Electricity to the Study Area is provided by Arizona Public Services Company (APS). The area has a mix of old aboveground lines and newer underground lines. There are currently four electrical substations within the Study Area with approximately 63 Megawatts (MW) of capacity per substation. APS states that normal capacity for a given area is approximately 12 MW per acre. A new substation is planned to support extensions to the Light Rail Transit system through the area.

Whether the existing system has adequate capacity to serve future development in the Study Area depends on the nature of the planned development in the area. As a Public Service Company, APS is obligated to meet the demands of the Study Area regardless of the proposed uses. If additional substations are required for future development, the process for implementation would take about 2 years. [60]

Policies regarding the extension of electrical distribution lines and services, and payment of associated costs, are defined within the APS Service Schedule 3, *Conditions Governing Extensions of Electric Distribution Lines and Services*. [61] Policies for selected kinds of development are summarized below.

Single-Family Homes: Extension facilities for permanent residential lines are free provided that either the total footage does not exceed 750-feet per applicant or the total cost, determined by APS, does not exceed $10,000. The applicant is responsible for any costs in excess of $10,000. Applicants who combine to form a group may also combine their allowances.

Residential Multi-Family Developments: Extension facilities are installed to residential multi-family projects in advance of application for service by the permanent customers, with costs being the responsibility of the developer, minus a refundable allowance of $1,000 per unit. In lieu of a cash payment for the refundable advance amount, the APS may accept an alternative financial instrument, such as a Letter of Credit or Surety Bond.

Master Planned Community Developments, High Rise or Mixed-Use Developments, Corporate Business & Industrial Park Developments: Extension facilities are installed in advance of application for service by the project owners, with costs being the responsibility of the applicant.

Underground Construction: APS installs underground facilities for new extensions or upgrades for existing customers provided the applicant provides all earthwork, installation of equipment pads, pull-boxes, manholes, conduits, and other necessary appurtenances. The applicant may pay APS to provide these services.

[60] David McCasland, APS Senior Engineer, Interviewed by Laura Brunn, Senior Consultant, Ricondo & Associates, Inc., November 18, 2015.

[61] Arizona Public Service Company. Service Schedule C Conditions Governing Extensions of Electric Distribution Lines and Services, A.C.C. No. 5801, July 1, 2012.

8.5 Natural Gas

Natural gas service to the Study Area is provided by Southwest Gas Corporation (SWG). Whether the local supply network has adequate capacity to serve future development in the Study Area depends on the nature of future development. As with APS, SWG is a public utility regulated by the Arizona Corporation Commission and is obligated to serve customers in its certificated area. The cost of providing any increase in load, depending on the facilities currently available, may be charged to the customer.[62]

In the process of disconnecting gas service to the Airport-owned noise properties, SWG discovered numerous party lines – gas lines shared among multiple properties. These were separated, and the lines serving the noise lands were removed. It is possible that party lines serving private properties in the Study Area remain.[63]

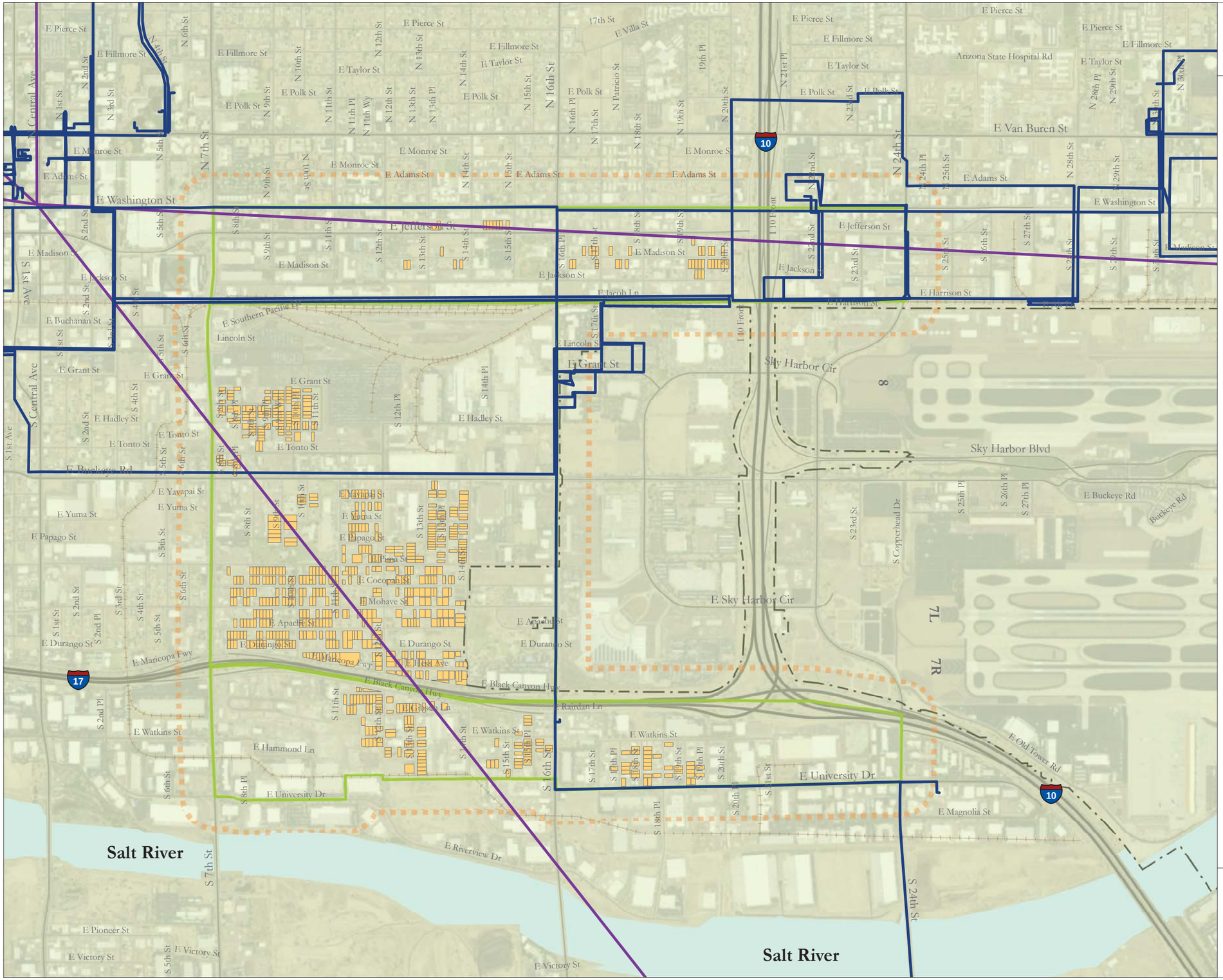
8.6 Telecommunications

Metropolitan Phoenix is served by many telecommunications providers, including locally based and national companies.[64] The Study Area is served by a network of copper, fiberoptic, and Internet Protocol/Multiprotocol Label Switching (IP/MPLS) lines, providing a range of options in price, speed, and capacity. **Figure 8.2** illustrates the infrastructure network of one service provider as an example of the extent of telecommunications infrastructure coverage in the Study Area. (Not all providers make system maps available to the public.) Figure 8.2 indicates that the Study Area benefits from its location near downtown, Sky Harbor Center, and the Airport, which are centers of telecommunications infrastructure.

[62] John Fusiara, SWG Industrial Gas Engineer, email to Laura Brunn, Senior Consultant, Ricondo & Associates, Inc. , December 2, 2015.

[63] Andrea Sandoval, Program Manager, City of Phoenix Aviation Department, telephone interview with Mark Johnson, Director, Ricondo & Associates, Inc., August 23, 2016.

[64] http://www.primebuyersreport.org/az/maricopa-county-az-telecommunication.html (accessed May 12, 2016); http://businessdirectory.bizjournals.com/phoenix/telecommunications/page/3 (accessed May 12, 2016); http://www.yellowpages.com/phoenix-az/cable-companies (accessed May 12, 2016).



LEGEND

- Airport Property
- 8, 7L, 7R — Runway Numbers
- Study Area
- Planning Area
- Airport-Owned Noise Property
- Ethernet Over Copper
- Fiber
- Internet Protocol/Multiprotocol Label Switching (IP/MPLS)
- Highway
- Arterial Street
- Local Street
- Railroad
- Waterways

NORTH 0 1,500 ft.

SOURCES: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community (Basemap), February 2016; City of Phoenix, Aviation Department, VARS boundary and Acquired Properties, obtained December 2015; Maricopa Assessor's Office GIS Parcel data, received December 2015; http://www.integratelecom.com/about/pages/office-locations/phoenix-mesa-scottsdale-arizona.aspx accessed May 12, 2016, (Selected Telecommunication Infrastructure).

PREPARED BY: Ricondo & Associates, Inc., October 2016.

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Figure 8.2

Selected Telecommunications Infrastructure

W:\Projects\PHX\ALRP\MXD\Final\Figure 8.2 Selected Telecommunication Infrastructure.mxd

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Section 9—Environmental Constraints

9.1 Floodplains

Floodplains are defined by the Federal Emergency Management Agency as lowland and flat areas adjoining waters that are subject to a 1 percent or greater chance of flooding in any given year, i.e., a 100-year flood event. These areas are identified on Flood Insurance Rate Maps (FIRM) as "Special Flood Hazard Zones." FEMA FIRM panels 2210L, 2220L, 2215L, and 2205L show that no Special Flood Hazard Zones (100-year floodplains) extend into the Study Area.

9.2 Historical, Archeological, Cultural Resources

The National Historic Preservation Act requires sponsors of federally funded projects to take into account the effects of their activities on historic properties, which are properties that are either on the National Register of Historic Places (NRHP) or that meet the criteria for inclusion on the NRHP.

In 2005, Aviation conducted a historical resource survey of residential properties in seven neighborhoods west of Sky Harbor (Ann Ott, El Campito, Cuatro Milpas, Green Valley, Rio Salado San Juan Batista, Eastlake Park and 32nd Street) as part of the CNRP. Two technical reports were prepared presenting the results of work completed through June 2012: *Archaeological Field and Analytical Studies for the Community Noise Reduction Program* provides details and results of the historical, archeological, and analytical work;[65] and *Settling the Salt River Floodplain: Perspectives from the Community Noise Reduction Program, Phoenix, Arizona*, which focuses on the archeological work undertaken for compliance with Section 106 of the Historic Preservation Act.[66] In addition, an interpretive synthesis report, *Seeds of Growth: Neighborhoods on the Salt River Floodplain*, which includes a narrative history of the key people and places associated with its development, was prepared in 2014.[67] The Seeds of Growth report identifies several buildings and former building sites that, while they do not meet the criteria for inclusion on the NRHP, are important local cultural resources.

9.2.1 National Register of Historic Places and Phoenix Historic Property Register

None of the Airport-owned noise properties within the Planning Area are on the National Register of Historic Places (NRHP) or meet the criteria for inclusion on the NRHP. Four properties acquired through the VARS program were determined to be potentially eligible for NHRP listing.[68] However,

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[65] Desert Archaeology, Inc., *Archaeological Field and Analytical Studies for the Community Noise Reduction Program, Phoenix, Arizona,* Technical Report No. 2011-03, December 2013.

[66] Desert Archaeology, Inc., *Settling the Salt River Floodplain: Perspectives from the Community Noise Reduction Program, Phoenix, Arizona*, Technical Report No. 2012-18, December 2013.

[67] City of Phoenix, Noise Reduction Program, Voluntary Acquisition and Relocation Services, *Seeds of Growth: Neighborhoods on the Salt River Floodplain*, 2013.

[68] Ryden Architects, Inc., *Historical Survey and Determination of National Register Eligibility, Part Two: Program Properties Evaluation of Seven Phoenix Airport Area Neighborhoods*, Final Report, Page 71, April 5, 2005.

subsequent adaptive reuse analyses concluded these properties could either not be cost-effectively rehabilitated or were no longer eligible for listing.[69] There are, however, NRHP sites and sites that meeting the criteria for inclusion on the NRHP in the Study Area that are not located on Airport-owned noise properties.[70] They are depicted on **Figure 9.1** and listed in **Table 9.1**.

9.2.2 Historic Archaeological Resources

In January 2010, Desert Archaeology determined, through the review and evaluation of work accomplished since 2007, that sufficient archaeological data had been retrieved to address research issues related to historic household activity within the Planning Area, and that data recovery investigations of historically occupied residential parcels could be discontinued. This determination included a recommendation that archaeological monitoring of demolitions for prehistoric resources and historic canals continue throughout the duration of the VARS program. Phased data recovery efforts were discontinued effective July 2010 with full implementation of the Completion Plan in October 2011.[71]

Additional site analysis and demolition monitoring has continued and will be documented as an addendum to the *Archaeological Field and Analytical Studies for the Community Noise Reduction Program*. The Addendum, prepared by Desert Archaeology, Inc., is expected to be available in 2017.[72]

9.2.3 Prehistoric Archeological Resources

During the archaeological work undertaken through June 30, 2012, prehistoric features were identified within the Planning Area. Expanded Phase 1 archaeology efforts were sufficient to sample the identified prehistoric components on some of the parcels, but in other cases, the City Archaeologist determined that Phase 2 data recovery would take greater effort and would not be pursued until the parcels are developed. **Table 9.2** lists the 10 parcels identified for future Phase 2 prehistoric resources data recovery.[73]

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[69] Kevin Weight, Planner III, City of Phoenix Historic Preservation Office. Telephone conversation with Mark R. Johnson, Director, Ricondo & Associates, Inc., July 7, 2016.

[70] National Parks Service Spatial Data, http://www.nps.gov/nr/research/data_downloads.htm (accessed January 28, 2016); City of Phoenix Planning and Development, *Map of Residential Historic Districts*, June 2007. Register; City of Phoenix Planning and Zoning, http://phoenix.maps.arcgis.com (accessed January 28, 2016). City of Phoenix Department of Aviation, VARS Historic Tracking – Acquired (Excel spreadsheet), provided June 13, 2016.

[71] Andrea Sandoval, CNRP VARS Supervisor, "Parcel Funding and Grant Spreadsheet," email to Laura Brunn, Senior Consultant, Ricondo & Associates, Inc., January 12, 2016.

[72] Desert Archaeology, Inc., Technical Report No. 2011-03, *Archaeological Field and Analytical Studies for the Community Noise Reduction Program, Phoenix Arizona*, December 2013.

[73] Desert Archaeology, Inc., *Archeological Field and Analytical Studies for the Community Noise Reduction Program, Phoenix, Arizona,* Technical Report No. 2011-13, February 2016, Table 1.10, p. 19.

Table 9.1 (1 of 4) —Historic Resources in Study Area

Map ID[1/]	Name	Address	Assessor Parcel Number	Listing Status	Source of Documentation
1	Modern Food Market	1737 E. Washington St.	11505003	Not Listed - Eligible	Asian American Historic Property Survey (2007)
2	Food City	1648 S. 16th St.	11539151	Not Listed - Eligible	Hispanic Historic Property Survey (2006)
3	Adobe House	1127 S. 13th St.	11542012	Not Listed - Eligible	Seven Phoenix Airport Area Neighborhoods (2005)
4	Ong's (Jim) Market	1110 E. Washington Street	11643066	Phoenix and National Registers	Asian American Historic Property Survey (2007)
5	Adobe House	1439 S. 13th St.	11542028	Not Listed - Eligible	Seven Phoenix Airport Area Neighborhoods (2005)
6	Adobe House	1109 S. 13th Pl.	11542063	Not Listed - Eligible	Seven Phoenix Airport Area Neighborhoods (2005)
7	Adobe House	1131 S. 13th Pl.	11542067	Not Listed - Eligible	Seven Phoenix Airport Area Neighborhoods (2005)
8	Adobe House	1427 S. 13th Pl.	11542077	Not Listed - Eligible	Seven Phoenix Airport Area Neighborhoods (2005)
9	de Gutierrez (Phillip and Rosa) House	1429 S. 13th Pl.	11542078	Not Listed - Eligible	Seven Phoenix Airport Area Neighborhoods (2005)
10	Wah (W.H.) and Company Grocery	1443 S. 13th Pl.	11542082	Not Listed - Eligible	Additional Historic Property Survey Work for CNRP (2006)
11	Austin's Cash Market	1445 S. 13th Pl.	11542083	Not Listed - Eligible	Additional Historic Property Survey Work for CNRP (2006)
12	Tang (K.L.) Grocery and Residence	1141 E. Buckeye Rd.	11543001	Not Listed - Eligible	Asian American Historic Property Survey (2007)

Table 9.1 (2 of 4) —Historic Resources in Study Area

Map ID[1/]	Name	Address	Assessor Parcel Number	Listing Status	Source of Documentation
13	Gospel Center Church and Dormitory	919 E. Mohave St.	11545001	Not Listed - Eligible	Aviation Non-RSMS Survey (2006)
14	Jones-Montoya House	1008 E. Buckeye Rd.	11638111	Phoenix Register	Hispanic Historic Property Survey (2006)
15	Santa Rita Center	1017 E. Hadley St.	11639114	Phoenix Register	Hispanic Historic Property Survey (2006)
16	Swindall Tourist Inn	1021 E. Washington St.	11641010	Phoenix and National Registers	African American Historic Property Survey (2004)
17	Immaculate Heart of Mary Church	909 E. Washington St.	11641087	Phoenix and National Registers	Hispanic Historic Property Survey (2006)
18	Immaculate Heart of Mary Auditorium	909 E. Washington St.	11641087	Not Listed - Eligible	Hispanic Historic Property Survey (2006)
19	Higher Ground Church of God in Christ	1302 E. Madison St.	11647056	Not Listed - Eligible	Aviation Non-RSMS Survey (2006)
20	Washington (Booker T.) School	1201 E. Jefferson St.	11647083	Phoenix Register	African American Historic Property Survey (2004)
21	Eastlake Park	15th to 16th Sts. / Jefferson to Jackson Sts.	11650014	Phoenix Register	Hispanic Historic Property Survey (2006)
22	Greater Friendship Missionary Baptist Church	1901 E. Jefferson St.	11506070A	Not Listed - Eligible	Aviation Non-RSMS Survey (2006)
23	Paolino Candy Company	2301 E. Washington St.	11508036A	Not Listed - Eligible	CP-EV Light Rail Survey (2002)
24	Neighborhood Grocery	1615 S. 12th St.	11540073A	Not Listed - Eligible	Additional Historic Property Survey Work for CNRP (2006)
25	Southside Assembly of God	1717 S. 12th St.	11540103A	Not Listed - Eligible	Aviation Non-RSMS Survey (2006)

Table 9.1 (3 of 4) —Historic Resources in Study Area

Map ID[1/]	Name	Address	Assessor Parcel Number	Listing Status	Source of Documentation
26	Tanner Chapel African Methodist Episcopal Church	20 S. 8th St.	11635009A	Phoenix Register	African American Historic Property Survey (2004)
27	Phoenix Christian Center	1001-1005 E. Washington St.	11641006A	Not Listed - Eligible	Public & Institutional Architecture (1991)
28	First Mexican Baptist Church	1002 E. Jefferson St.	11641006B	Not Listed - Eligible	Hispanic Historic Property Survey (2006)
29	Toy-Ong Building	1246 E. Jefferson St.	11647020B	Not Listed - Eligible	Additional Historic Property Survey Work for CNRP (2006)
30	Abraham Bungalows	1345-1347 E. Washington St.	11647021A	Not Listed - Eligible	Additional Historic Property Survey Work for CNRP (2006)
31	Hammond (Wade H.) House	1321 E. Washington St.	11647027A	Not Listed - Eligible	Additional Historic Property Survey Work for CNRP (2006)
32	Robinson (W.A.) House	1314 E. Jefferson St.	11647037A	Not Listed - Eligible	Seven Phoenix Airport Area Neighborhoods (2005)
33	Aldridge (Aubrey and Winstona) House	1326 E. Jefferson St.	11647040A	Phoenix Register	Seven Phoenix Airport Area Neighborhoods (2005)
34	Hayes (Zoe) House	1412 E. Jefferson St.	11648015A	Not Listed - Eligible	Seven Phoenix Airport Area Neighborhoods (2005)
35	Arizona Compress and Warehouse Co. Warehouse	215 S. 13th St.	11649031A	National Register	Commercial Properties Survey (1984)
36	Old Sacred Heart Church	801 S. 16th St.	11514185B	National Register	Hispanic Historic Property Survey (2006)
37	Southwest Cotton Company	605 E. Grant Street	11232069A	Phoenix Register	Additional Historic Property Survey Work for CNRP (2006)-

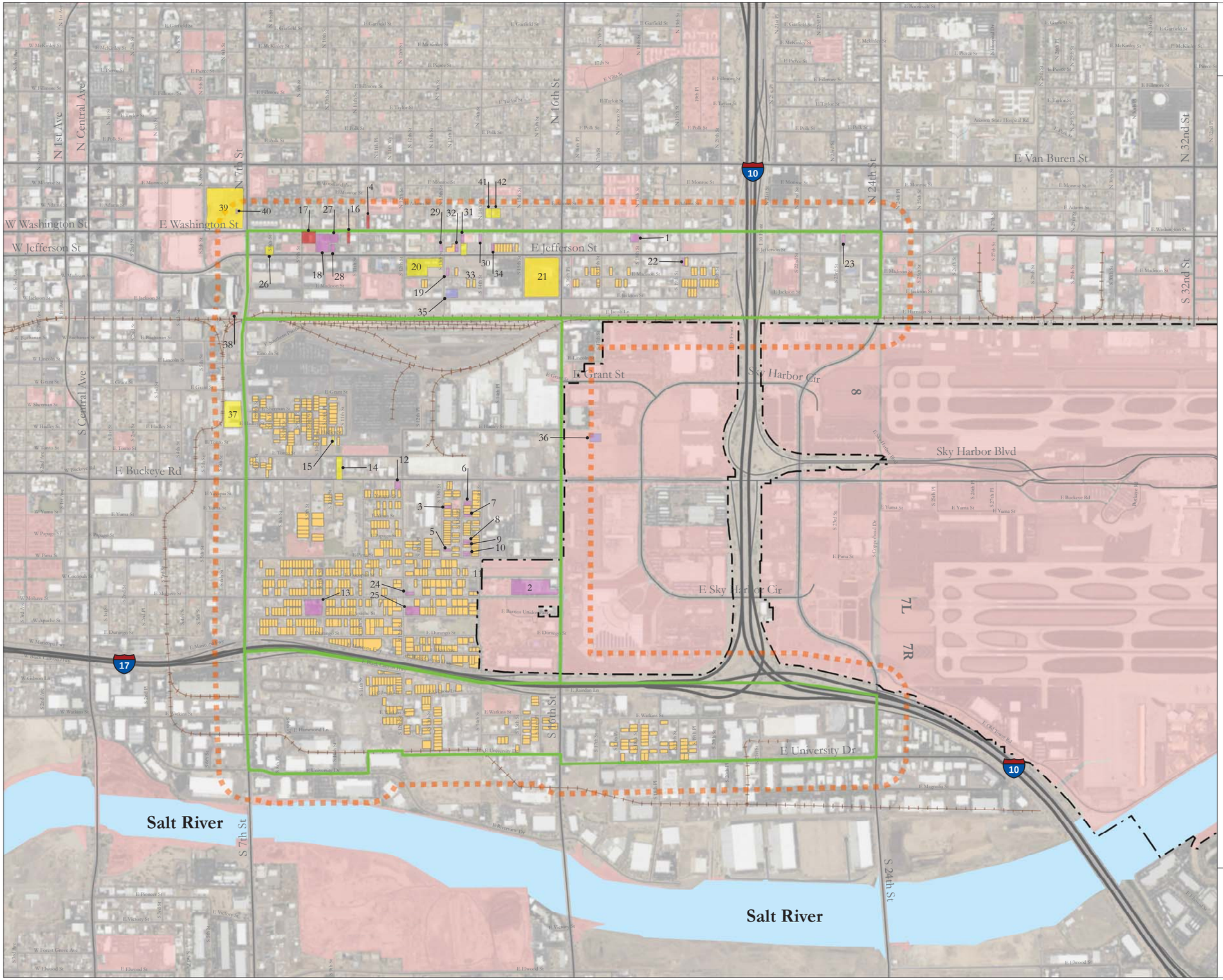
Table 9.1 (4 of 4) —Historic Resources in Study Area

Map ID[1/]	Name	Address	Assessor Parcel Number	Listing Status	Source of Documentation
38	Arizona Citrus Growers Association Warehouse	601 E Jackson Str.	11230128A	Phoenix Register	Commercial Properties Survey (1984); Vivian Strang, National Register Coordinator, State Historic Preservation Office, Arizona State Parks (2015)
39	Heritage Square	6th St./7th St./Adams/Monroe	11229090	Phoenix Register	City-Owned Historic Property Survey (1986)
40	Baird (F.S.) Machine Shop	623 Adams St.	11229090	National Register	City-Owned Historic Property Survey (1986)
41	Phillips Memorial C.M.E. Church	1401 E Adams Street	11646133	Phoenix Register	African American Historic Property Survey (2004)
42	Phillips Memorial C.M.E. Church	1401 E Adams Street	11646130A	Phoenix Register	African American Historic Property Survey (2004)

Notes:

1/See Figure 9.1. Historic Resources.

Source: City of Phoenix Aviation Department, GIS Data of PHX LRS Area Historical Structures, obtained by Ricondo & Associates, May 4, 2016; City of Phoenix Data Portal, Historic Properties Database, accessed May 30, 2016.



LEGEND

- Airport Property
- 8, 7L, 7R — Runway Numbers
- Study Area
- Planning Area
- Airport-Owned Noise Property
- Other City-Owned Property
- 35 — National Register of Historic Places*
- 21 — Phoenix Historic Property Register*
- 17 — National and Phoenix Registers*
- 28 — Not Listed – Eligible for Listing on National or Phoenix Register*
- Highway
- Arterial Street
- Local Street
- Railroad
- Waterways

Notes

* See Table 9.1 for a list of the historic resources.

NORTH

0 1,500 ft.

SOURCES: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community (Basemap), February 2016; City of Phoenix, Aviation Department, VARS boundary and Acquired Properties, obtained December 2015; City of Phoenix Aviation Department, GIS Data of PHX LRS Area Historical Structures, obtained by Ricondo & Associates, May 04, 2016; City of Phoenix, Noise Reduction Program, Voluntary Acquisition and Relocation Services, Seeds of Change. Neighborhoods on the Salt River Floodplain, 2013.

PREPARED BY: Ricondo & Associates, Inc., October 2016.

PHX LAND REUSE STRATEGY

Figure 9.1

Historic Resources

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Table 9.2 —Study Area Parcels Flagged for Future Phase 2 Data Recovery – Prehistoric Resources

Parcel Number	AVN ID	Parcel Size (square feet)	Archaeology Classification (per Desert Archaeology)	Archaeology Activity Results
116-38-018	AV01030155	8,963	Prehistoric site, prehistoric canal	Unstudied prehistoric features present
115-45-099	AV01040423	6,830	Prehistoric canal	Unstudied prehistoric canal present
115-45-007	AV01050016	6,174	Prehistoric site	Prehistoric features possibly present
115-40-082A	AV01050097	10,069	Historic Pool, prehistoric canal	Unstudied prehistoric features present
115-47-065	AV01060041	7,384	Prehistoric site, prehistoric canal	Unstudied prehistoric canal present
115-47-067	AV01060043	7,248	Prehistoric site, prehistoric canal	Unstudied prehistoric canal present
115-47-068	AV01060044	7,180	Prehistoric site, prehistoric canal	Unstudied prehistoric canal present
115-47-083E	AV01060059	6,920	Prehistoric site, prehistoric canal	Unstudied prehistoric canal present
115-37-018	AV01060102	7,185	Prehistoric site, prehistoric canal	Unstudied prehistoric canal present
115-37-017	AV01060103	7,185	Prehistoric site, prehistoric canal	Unstudied prehistoric canal present

Source: Desert Archaeology, Inc., *Archeological Field and Analytical Studies for the Community Noise Reduction Program, Phoenix, Arizona,* Technical Report No. 2011-13, February 2016, Table 1.10, p. 19.

9.3 Sensitive Species and Critical Habitat

The U.S. Fish and Wildlife Service (U.S. FWS) Environmental Conservation Online System (ECOS) [74] and the Arizona Game and Fish Department (AGFD)Environmental Review Tool (ERT)[75] were utilized to identify Federally Protected Species, Species of Special Concern, Critical Habitats, species covered under a Federal Conservation Agreement, and species not federally listed but listed as "vulnerable" within the AZGFD State Wildlife Action Plan (SWAP)[76] and that are likely to be found in the vicinity of the Study Area.

To ensure the accurate identification of these resources, AZGFD staff was contacted for consultation. AZGFD staff prepared a resource report for the Study Area and a three-mile influence area surrounding the Study Area.[77] The report lists sensitive species, critical habitats, and species identified in the SWAP as "Species of Greatest Conservation Need." **Table 9.3** summarizes the species that are federally listed as endangered, threatened, of special concern, or covered under a Federal Conservation Agreement.

Table 9.3 (1 of 2) —Federally Threatened and Endangered Species

Scientific name	Common Name	FWS
Reptiles:		
Chionactis occipitalis klauberi	Tucson Shovel-nosed Snake	SC
Gopherus morafkai	Sonoran Desert Tortoise	CCA
Amphibians:		
Lithobates yavapaiensis	Lowland Leopard Frog	SC
Fish:		
Poeciliopsis occidentalis	Gila Topminnow	E
Ptychocheilus lucius	Colorado Pikeminnow	E
Xyrauchen texanus	Razorback Sucker	E
Agosia chrysogaster	Longfin Dace	SC
Catostomus clarkii	Desert Sucker	SC
Catostomus insignis	Sonora Sucker	SC

[74] U.S. FWS, Environmental Conservation Online System, *https://ecos.fws.gov/* (accessed December 22, 2015).

[75] AGFD, Online Environmental Review Mapping Tool - HabiMap, *http://habimap.org/* (accessed December 22, 2015).

[76] AGFD, *Arizona's State Wildlife Action Plan 2012-2022*, May 16, 2012.

[77] AGFD, *Arizona Environmental Online Review Tool Report*, developed by AZGFD staff, Audrey Owens, December 23, 2015.

Table 9.3 (2 of 2) —Federally Threatened and Endangered Species

Scientific name	Common Name	FWS
Catostomus sp. 3	Little Colorado Sucker	SC
Cyprinodon macularius	Desert Pupfish	E
Gila elegans	Bonytail	E
Gila robusta	Roundtail Chub	PT
Catostomus latipinnis	Flannelmouth Sucker	CCA
Birds:		
Rallus longirostris yumanensis	Yuma Clapper Rail	E
Anthus spragueii	Sprague's Pipit	C
Aquila chrysaetos	Golden Eagle	BGA
Athene cunicularia hypugaea	Western Burrowing Owl	SC
Buteo regalis	Ferruginous Hawk	SC
Coccyzus americanus	Yellow-billed Cuckoo (Western DPS)	T
Falco peregrinus anatum	American Peregrine Falcon	SC
Haliaeetus leucocephalus	Bald Eagle	SC
Sterna antillarum browni	California Least Tern	E
Mammals:		
Leptonycteris curasoae yerbabuenae	Lesser Long-nosed Bat	E
Macrotus californicus	California Leaf-nosed Bat	SC
Myotis velifer	Cave Myotis	SC
Panthera onca	Jaguar	E
Corynorhinus townsendii pallescens	Pale Townsend's Big-eared Bat	SC
Euderma maculatum	Spotted Bat	SC
Eumops perotis californicus	Greater Western Bonneted Bat	SC
Antilocapra americana sonoriensis	Sonoran Pronghorn	E

Notes:

FWS- Federal Fish and Wildlife Service Status: SC- Species of Special Concern; E– Endangered; C- Candidate Species; BGA- Protected under the Bald and Golden Eagle Protection Act:; T- Threatened; PT- Proposed Threatened; CCA- Species covered under a Candidate Conservation Agreement.

Sources: U.S. FWS, Environmental Conservation Online System, AGFD, Online Environmental Review Mapping Tool - HabiMap City of Phoenix, AGFD, Arizona's State Wildlife Action Plan 2012-2022.

Table 9.4 summarizes the species that may be present within the Study Area and that, although not federally listed or under a Conservation Agreement, are included within the Arizona SWAP's "Species of Greatest Conservation Need" listing. No Critical Habitats or plants protected under the Arizona Native Plant Law were identified.

Table 9.4 (1 of 2) —State Wildlife Action Plan Species of Greatest Conservation Needs

Scientific name	Common Name	SGCN Tier
Reptiles:		
Kinosternon sonoriense sonoriense	Desert Mud Turtle	1B
Micruroides euryxanthus	Sonoran Coralsnake	1B
Phrynosoma solare	Regal Horned Lizard	1B
Phyllorhynchus browni	Saddled Leaf-nosed Snake	1B
Chilomeniscus stramineus	Variable Sandsnake	1B
Coluber bilineatus	Sonoran Whipsnake	1B
Crotalus tigris	Tiger Rattlesnake	1B
Heloderma suspectum	Gila Monster	1A
Amphibians:		
Incilius alvarius	Sonoran Desert Toad	1B
Birds:		
Melanerpes uropygialis	Gila Woodpecker	1B
Melospiza lincolnii	Lincoln's Sparrow	1B
Melozone aberti	Abert's Towhee	1B
Passerculus sandwichensis	Savannah Sparrow	1B
Setophaga petechia	Yellow Warbler	1B
Toxostoma lecontei	Le Conte's Thrasher	1B
Troglodytes pacificus	Pacific Wren	1B
Vireo bellii arizonae	Arizona Bell's Vireo	1B
Aix sponsa	Wood Duck	1B
Botaurus lentiginosus	American Bittern	1B
Castor canadensis	American Beaver	1B
Colaptes chrysoides	Gilded Flicker	1B

Table 9.4 (2 of 2) —State Wildlife Action Plan Species of Greatest Conservation Needs

Scientific name	Common Name	SGCN Tier
Mammals:		
Lasiurus blossevillii	Western Red Bat	1B
Lasiurus xanthinus	Western Yellow Bat	1B
Nyctinomops femorosaccus	Pocketed Free-tailed Bat	1B
Perognathus amplus	Arizona Pocket Mouse	1B
Tadarida brasiliensis	Brazilian Free-tailed Bat	1B
Vulpes macrotis	Kit Fox	1B
Ammospermophilus harrisii	Harris' Antelope Squirrel	1B

Notes:

SGCN- Species of Greatest Conservation Need; Tier 1A- Species scoring "1" for Vulnerability within the AZGFD State Wildlife Action Plan and is federally listed as Endangered, Threatened, Candidate, or is covered under a Conservation Agreement (CCA); Tier 1B- Species scoring "1" for Vulnerability within the AZGFD State Wildlife Action Plan but matching none of the other criteria for Tier 1A. The Gila Monster is an exception with being categorized as Tier 1A SGCN but not federally listed or covered under a CCA.

Sources: AGFD, Online Environmental Review Mapping Tool - HabiMap City of Phoenix; AGFD, Arizona's State Wildlife Action Plan 2012-2022. Appendix E: Species of Greatest Conservation Need.

For future redevelopment proposals that may impact wildlife, the AGFD will review and provide recommendations as structured under the AGFD Project Evaluation Program, Habitat Branch. The U.S. FWS has regulatory authority over all federally listed species and will determine the need for official project concurrence/review based upon the project-specific species list, which will be developed during project-scoping for individual development projects.

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Section 10—Hazards

10.1 Federal Superfund Site

The Motorola, Inc. 52nd Street Plant Federal Superfund Site (Site), EPA # AZD009004177, includes a subsurface pollution plume that extends into the northern portion of the Study Area, as indicated on **Figure 10.1**. The Site was placed on the National Priorities list in 1989 to investigate the presence of groundwater contaminated by volatile organic compounds (VOCs) such as chlorinated solvents (trichloroethene – TCE and tetrachloroethene – PCE). The responsible parties have operated various soil gas and interim groundwater treatment systems since the early 1990s that have reduced contamination, and vapor intrusion mitigation has been installed at 15 homes. The United States Environmental Protection Agency (EPA) and Arizona Department of Environmental Quality (ADEQ) are working to develop final cleanup actions over the next few years. [78]

The Site is divided into three areas called Operable Units (OUs). As depicted on Figure 10.1, OU2 extends into the northeast corner of the Study Area to 20th Street. OU 3 extends to the west through the northern edge of the Study Area. OU1 is located outside the Study Area to the east.

10.1.1 Operable Unit 2

Arizona Department of Environmental Quality (ADEQ) discovered groundwater contamination in OU2 in 1983, but, at the time thought it was a separate contaminant plume. Area-wide groundwater investigations in the early 1990s to define the extent of the Motorola plume prompted state and federal agencies to include this area, which became categorized as OU2.

Remedial actions within OU2 began in 2001 with the construction of a groundwater containment and treatment system that discharges treated water into the Salt River Project Grand Canal to use for irrigation. Multiple groundwater monitoring wells are present throughout the Site, as indicated on Figure 10.1, and remediating activities are continuing. As stated on the EPA webpage for the Site, the treatment plant has been effective in containing the plume and reducing concentrations of contaminants in most areas, but several issues still need to be addressed. One issue involves ongoing contamination from dense non-aqueous phase liquid (DNAPL) that has seeped into fissures. A Bedrock Pilot Study was initiated in 2009 for OU1 to evaluate the effectiveness of extracting DNAPL using wells.

The data from this study is still under review by the EPA. The second issue is to complete the evaluation of the vapor intrusion.[79] Vapor intrusion investigations in OU2 were carried out in 2014 with

[78] United States Environmental Protection Agency, Pacific Southwest, Region 9: Superfund, Motorola Inc. (52nd Street Plant), http://yosemite.epa.gov/r9/sfund/r9sfdocw.nsf/ViewByEPAID/AZD009004177#progress (accessed January 22, 2016).

[79] United States Environmental Protection Agency, Pacific Southwest, Region 9: Superfund, Motorola Inc. (52nd Street Plant), http://yosemite.epa.gov/r9/sfund/r9sfdocw.nsf/ViewByEPAID/AZD009004177#progress (accessed January 22, 2016).

3 of the 33 soil gas sampling sites producing levels that required the next phase of indoor air testing in three homes. The results detected either no indoor pollution or only trace amounts of pollution.[80]

10.1.2 Operable Unit 3

The OU3 Study Area, which is hydraulically downgradient of OU2, was established in 1997 to further determine the nature and extent of groundwater contamination between 20th Street and 7th Avenue. In 2012, Soil Vapor Monitoring Well (SVMW-1), located outside of the Study Area near the intersection of 6th Avenue and West Van Buren Street, showed soil gas levels above the Soil Gas Human Health Screening levels at the 18 to 20-foot zone, requiring further investigation. The soil gas source is confined to a parking lot near the SVMW-1.[81] The area around SVMW-1 is the only OU3 soil gas issue discovered, and most work in OU3 focuses on the state of VOCs in the groundwater.[82]

In February 2014 the EPA performed additional soil gas sampling to complete the groundwater investigation and focused remedial investigation/feasibility study (RI/FS). The target completion date for the RI/FS was summer 2015 but final reports have not yet been made available to the public.[83]

10.1.3 Public Health Impact

The ADEQ states that "Currently, there are no drinking water supply wells impacted by the site. Drinking water is supplied by the City of Phoenix distribution system from surface water located outside of the site. The drinking water supplied to homes in the site area is regularly tested by the City of Phoenix." No public health information from soil vapor contamination is documented on the ADEQ Motorola 52nd Street website.[84] In its Draft Environmental Closeout Report for the Community Noise Reduction Program, Terracon Consultants, Inc. (Terracon) recommended that the potential for vapor intrusion be evaluated prior to redevelopment of Airport-owned noise properties in the affected area (see Section 10.2.1).[85]

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[80] U.S. Environmental Protection Agency, EPA CIG Meeting Presentation, *Motorola 52nd Street Superfund Site – Update*, April 2014.

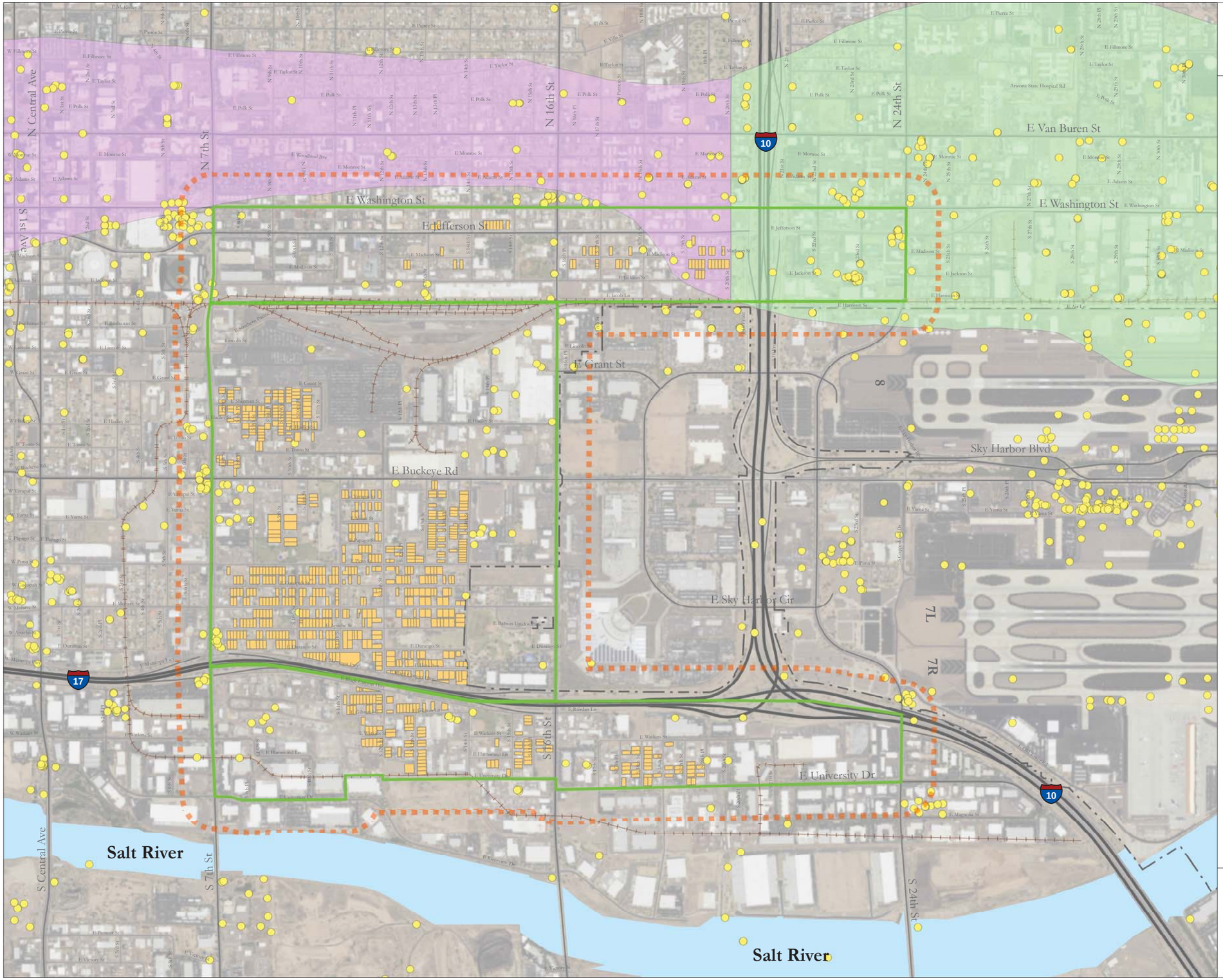
[81] U.S. Environmental Protection Agency, EPA CIG Meeting Presentation, *M52 – CIG Update*, October 2014.

[82] U.S. Environmental Protection Agency, EPA CIG Meeting Presentation, *Motorola 52nd Street Superfund Site – Update*, April 2014.

[83] United States Environmental Protection Agency, Pacific Southwest, Region 9: Superfund, Motorola Inc. (52nd Street Plant), http://yosemite.epa.gov/r9/sfund/r9sfdocw.nsf/ViewByEPAID/AZD009004177#progress (accessed January 22, 2016).

[84] Arizona Department of Environmental Quality, Motorola 52nd Street, EPA National Priorities List NPL Site, http://www.azdeq.gov/environ/waste/sps/Motorola_52nd_Street.html#ir (accessed January 22, 2016).

[85] Terracon Consultants, Inc., *Draft Environmental Closeout Report Community Noise Reduction Program*, Terracon Project No. 65157536, February 4, 2016.



LEGEND

- Airport Property
- 8, 7L, 7R — Runway Numbers
- Study Area
- Planning Area
- Airport-Owned Noise Property
- Highway
- Arterial Street
- Local Street
- Railroad
- Waterways

Motorola Superfund Site (In Study Area)

- Arizona Dept. Environmental Quality Well Sites
- Operable Unit 2
- Operable Unit 3

NORTH

0 1,500 ft.

SOURCES: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community (Basemap), February 2016; City of Phoenix, Aviation Department, VARS boundary and Acquired Properties, Obtained December 2015; Arizona Department Environmental Quality, Motorola 52nd Street Superfund Site and Monitoring Well Locations; GIS files obtained February 2016.
PREPARED BY: Ricondo & Associates, Inc., October 2016.

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Figure 10.1

Motorola Superfund Site

W:\Projects\PHX\ALRP\MXD\Final\Figure 10.1 Motorola 52nd Street Superfund Site.mxd

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10.2 Environmental Site Assessments

As part of the due diligence prior to acquiring VARS-eligible parcels, Aviation conducted Environmental Site Assessments (ESA) to document, investigate, and, if the property was purchased, remediate to the extent possible any recognized environmental conditions (RECs).

ESAs may involve up to three phases. Phase I ESAs are the first step in the environmental due diligence process and include the examination of the site and immediate vicinity through a visual inspection, file searches to determine history of the site, and personal interviews. Phase I ESAs were conducted for all VARS-eligible parcels. If the Phase I ESA determines a likelihood of site contamination, a Phase II ESA is the next step, involving the collection of soil, groundwater, and/or building material for testing. Phase II ESAs were conducted for some of the VARS-eligible parcels. Based on results of the Phase II analysis, a Phase III ESA may be necessary to further delineate the extent of contamination, undertake more detailed testing, and design a plan for remediation. Phase III ESAs were conducted for five VARS-eligible parcels.

To summarize the history of environmental assessments and remediation that have been completed for the VARS program since the early 2000s, Terracon prepared a Draft Environmental Closeout Report.[86] In addition to documenting environmental efforts undertaken in the past, Terracon provided recommendations for specific parcels. **Table 10.1** itemizes the acquired parcels within the Planning Area in which Phase II/III ESAs were conducted (with notes on two Phase I parcels), the concluding ESA recommendations, and Terracon's supplementary recommendations. **Figure 10.2** depicts the location of 13 parcels that Terracon flagged for follow-up investigation before or during redevelopment. Nine parcels are in the Central Subarea and four are in the South Subarea. None are in the North Subarea.

None of the environmental conditions are grave enough to prevent future redevelopment, but some conditions will need to be monitored or mitigated on a site-specific basis prior to development. Terracon's comments regarding the general area are summarized below.

10.2.1 Vapor Intrusion Conditions

The Motorola 52nd Street Superfund site located within the northern portion of the Study Area (discussed in Section 10.1) is recognized as affecting groundwater quality and, therefore, represents a recognized environmental condition. The current contaminants of concern in groundwater include chlorinated solvents and other VOCs. Based on the physical setting of the Planning Area and the findings of the ESAs, Terracon recommended that vapor intrusion conditions[87] from on- and off-site sources should be evaluated prior to redevelopment of Airport-owned noise properties in the Planning Area.

[86] Terracon Consultants, Inc., *Draft Environmental Closeout Report Community Noise Reduction Program*, Terracon Project No. 65157536, February 4, 2016.

[87] Vapor intrusion can occur when VOC's migrate into the soil or into an overlying building.

10.2.2 Trash and Borrow Pits

Several parcels were found through Phase II ESAs and during site demolition activities to have buried trash and debris. However, not all parcels had subsurface assessments conducted during Phase II ESAs. Terracon recommended that prior to redevelopment, an environmental professional be on site if trash or buried debris is encountered during redevelopment to assess the materials.

10.2.3 Septic Systems and Cesspools

Many of the parcels had houses that may have utilized septic systems or cesspools prior to connection to City sewer. Terracon recommended that if septic systems or cesspools are encountered during redevelopment, they should be properly assessed and abandoned according to Maricopa County requirements.

10.2.4 Water Wells

Groundwater wells may have been utilized in the neighborhoods prior to connection to City water service. Terracon recommended that, if a well is discovered during redevelopment, it should be registered and properly abandoned according to Arizona Department of Water Resources (ADWR) requirements.

LEGEND

- Airport Property
- 8, 7L, 7R — Runway Numbers
- Study Area
- Planning Area
- Airport-Owned Noise Property
- Noise Properties Flagged for Follow-up Env. Investigation
- Highway
- Arterial Street
- Local Street
- Railroad
- Waterways

NORTH

0 1,500 ft.

SOURCES: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community (Basemap), February 2016; City of Phoenix, Aviation Department, VARS boundary and Acquired Properties, obtained December 2015; Maricopa Assessor's Office GIS Parcel data, received December 2015.

PREPARED BY: Ricondo & Associates, Inc., October 2016.

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Figure 10.2

Noise Properties Flagged for Follow-up Environmental Investigation Before or During Redevelopment

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Table 10.1 (1 of 3) —Summary of Environmental Site Assessments and Recommendations [1/]

APN	Site Address (Per VARS)	Concluding ESA Phase	Notable Site Conditions/Assessment Recommendations	Environmental Closeout Report Supplemental Recommendations	Flagged for Follow-up
115-29-023	1726 E. University Drive	Phase II	Soil testing did not detect levels of analytes above regulatory limits. Additional assessment was not recommended.		
115-29-038	2409 S. 17th Place	Phase II	Exploratory trenching and soil sampling reported elevated concentrations of hydrocarbon and decayed organic matter. Buried 55-gallon drum and impacted soils excavated. No additional recommendation.		
115-30-005	2438 S. 18th Place	Phase III	Soil testing showed elevated TPH concentrations. Arsenic levels were also elevated but were within the typical background range for Arizona. City recommended that sandblasting grit from adjacent sandblasting facility be excavated. Current visual reconnaissance notes the continuation of fluid runoff onto the parcel from the sandblasting facility.	Recommend City formally request that the stone cutter cease disposal of fluids and waste onto the site and that additional assessment of the waste material be conducted, including sampling of soil to determine background concentrations on the site for arsenic.	Y
115-30-050	2430 S. 19th Place	Phase II	Soil testing showed elevated concentrations of TPH. Additional investigation was not recommended, but removal of stained soil was recommended during demolition. Preliminary information provided to Terracon does not show that the excavation and removal of impacted soil was conducted.	Recommend City review records to determine if remediation activities were conducted. If not, the City should assess the need to sample and/or remove impacted soil.	Y
115-35-002	2300 S. 15th Place	Phase II	Recommendation to excavate 8 cubic-feet of PAH-impacted soil. Reports were not provided for the Closeout Report to document that remediation was completed.	Recommend City confirms remedial work was completed and documented in project file.	Y
115-35-033A	2307 S. 15th Place	Phase II	10 tons of petroleum-impacted soil excavated. Additional assessment and remediation were not recommended.		
115-36-014B	2508 S. 13th Street	Phase II	Soil testing did not detect levels of analytes above regulatory limits.	Potential for buried debris/landfill; additional assessment may be required. If landfill materials are discovered during site redevelopment, they should be properly characterized and disposed.	
115-36-016B	2519 S. 13th Street	Phase II	Soil testing did not detect levels of analytes above regulatory limits. Additional assessment was not recommended.	Recommend that if landfill materials are discovered during site redevelopment, they be properly characterized and disposed.	
115-36-024	2323 S. 13th Street	Phase II	Soil stockpile tested and removed. No additional investigation or remediation conducted.		
115-37-018	1224A E Gibson Lane	Phase II	Soil testing showed concentrations of TPH exceeding regulatory limits. Recommended that the area of stained soil be excavated. Consultant report for the excavation and removal of material was not provided for the Closeout Report.	Recommend City review files to confirm remedial work was performed. If the work was not performed, the site should be inspected and possibly sampled to confirm contaminants are not present at the site.	Y
115-37-050A	1210 E. Hess Avenue	Phase II	Soil sampling of oil-stained soils conducted. No analytes exceeded regulatory limits. No additional investigation or remediation was recommended.		
115-38-018	2118 S. 15th Place	Phase II	Soil testing did not detect levels of analytes above regulatory limits. Additional investigation was not recommended.		
115-40-026A	1215 E Pima Street	Phase II	Reported dumping of paint and acetone on southern half of parcel. Excavation and field screening at 31 locations did not detect any VOCs; No samples were submitted for laboratory analysis. No recommendations were made for further investigation or remediation.		
115-40-032A	1212 E. Cocopah Street	Phase III	Historical RECs from adjacent Auto Repair Shop. Soil vapor and soil sampling detected hydrocarbons and PAHs in the west central portion of the site.	Phase III ESA review to confirm completion of remedial efforts. Waste debris may be encountered in subsurface during redevelopment.	Y

Table 10.1 (2 of 3) —Summary of Environmental Site Assessments and Recommendations

APN	Site Address (Per VARS)	Concluding ESA Phase	Notable Site Conditions/Assessment Recommendations	Environmental Closeout Report Supplemental Recommendations	Flagged for Follow-up
115-40-068D	1205 E. Cocopah Street	Phase II	Septic system and/or cesspool, domestic groundwater well onsite. Assessment indicated chemicals of concern were below regulatory limits. No additional assessment was recommended.		
115-40-099A	1207 E Mohave Street	Phase II	VOC's and PAHs were not detected above regulatory limits. PAHs detected at 7-feet below ground surface may be from former gasoline station west of the site or from former septic system. Additional investigation was recommended, however the City did not concur or recommend addition investigation.		
115-42-013	1131 S 13th Street	Phase II	Potential contamination associated with agricultural activities; Soil testing contained detectable concentrations of pesticides below applicable regulatory limits. Additional investigation was not recommended.		
115-42-093	1420 S 14th Street	Phase II	Soil testing did not detect any analytes above regulatory limits. Additional investigation was not recommended.		
115-42-113	1413 S. 12th Place	Phase II	Soil testing did not detect analytes above regulatory limits. Additional investigation was not recommended.		
115-43-012	1234 S 12th Street	Phase II	Possible historic use as a gravel or borrow pit. Exploratory test pits were dug onsite and on adjacent parcel to assess subsurface conditions. Solid waste was identified on adjacent parcel and likely extends onto the VARS parcel. Investigation limited due to site structures. Solid waste may be discovered during redevelopment.	Site and site area identified with subsurface solid waste debris. If solid waste is encountered during redevelopment, it should be removed, profiled and properly disposed.	Y
115-43-025	1146 E Papago Street	Phase II	Large amount of trash encountered during demolition of adjacent property; Soil testing levels below regulatory limits. Recommend buried debris be removed before site development.	Buried debris beneath the site should be removed, profiled and properly disposed	Y
115-44-078	1243 S. 9th Street	Phase II	Soil testing determined analytes were below regulatory limits. No additional investigation recommended. Burn pit was identified during demolition activities.		
115-45-020A	810 E Apache Street	Phase II	Soil testing did not detect levels of analytes above regulatory limits. Additional investigation was not recommended.		
115-45-077	727 E. Apache Street	Phase II	Soil testing did not detect levels of analytes above regulatory limits. Additional investigation was not recommended.		
115-45-097	835 E. Pima Street	Phase II	Used oil disposed along property/alley fence; Phase II ESA not provided for the Closeout report. Recommendation of review of report to confirm proper assessment and removal of contaminated soil.	Phase II ESA review to confirm that used oil and stained soil was properly assessed and removed from the site for proper disposal.	Y
115-45-161	826 E. Mohave Street	Phase II	Soil testing did not detect levels of analytes above regulatory limits. Additional investigation was not recommended.	Locate and review documentation for disposal of used oil drums and buckets to ensure work was completed.	Y
115-45-172	737 E. Cocopah Street	Phase II	Soil testing did not detect levels of analytes above regulatory limits. Additional investigation was not recommended.		
115-46-019A	1008 E. Apache Street	Phase II	Soil testing did not detect levels of analytes above regulatory limits. Additional investigation was not recommended.		
115-46-048A	1003 E. Apache Street	Phase II	Soil samples exceeded regulatory limits. 11 tons of contaminated soil excavated. Additional investigation not recommended.		
115-46-057	1121 E. Pima Street	Phase II	Soil testing did not detect levels of analytes above regulatory limits. Additional recommendations were not provided.		

Table 10.1 (3 of 3) —Summary of Environmental Site Assessments and Recommendations

APN	Site Address (Per VARS)	Concluding ESA Phase	Notable Site Conditions/Assessment Recommendations	Environmental Closeout Report Supplemental Recommendations	Flagged for Follow-up
115-46-068	1106 E. Cocopah Street	Phase II	Stained soil excavated and analyzed. PAHs were not fully tested and site may require further characterization.	PAHs were analyzed and detected for the waste profile, but PAHs were not analyzed for the confirmation sample. Site may require additional investigation.	Y
115-46-077	1606 S. 12th Street	Phase III	Hydrocarbon-impacted soil was excavated and trash debris removed. No additional remediation or investigation was recommended.		
115-46-100	1009 E. Pima Street	Phase II	Approx. 2.5 cubic yards of stained soil removed. Subsequent testing recommended removal of additional soil. Final excavation report was not provided for the Closeout Report.	Locate and review documentation to confirm remedial activities were completed.	Y
115-46-101	1007 E. Pima Street				
115-46-153	1808 S. 12th Street	Phase II	Soil testing did not detect levels of analytes above regulatory limits. Additional investigation was not recommended.		
115-47-036A	1135 E Watkins Street	Phase II	Test pits were excavated to assess extent of buried trash. No buried drums or stained soil reported. No recommendations for additional environmental investigation.		
115-47-091	1102 E. Hilton Avenue	Phase II	Soil testing did not detect levels of analytes above regulatory limits. Additional investigation was not recommended.		
116-37-007	708 E Sherman Street	Phase II	Approximately one ton of impacted soil removed due to the presence of metals and PAHs. No additional investigation or remediation recommended.		
116-37-065B	709 E Sherman Street	Phase II	Former UST located adjacent to the parcel; Soil sampling found no VOCs detected above applicable standards. No additional investigation recommended.		
116-37-067	810 S 8th Street	Phase II	Soil borings drilled to determine impact from neighboring property. No concentrations of VOC's, TPH, and PAHs detected above regulatory limits. No additional investigation recommended.		
116-37-094	817 S 8th Place	Phase III	Soil impacted with hydrocarbons was excavated and area backfilled. No additional investigation or remediation was recommended.		
116-37-115	827 S. 9th Street	Phase III	Soil testing did not detect levels of analytes above regulatory limits. Additional investigation was not recommended.		
116-37-151	900 E Hadley Street	Phase I	Septic system may be present; abandoned well on site		
116-38-035	1029 S 8th Street	Phase I	Recommended Tier 1 Vapor Intrusion Assessment prior to site development		Y
116-38-041	1032 S 8th Place	Unknown	Leaking 55-gallon drum and stained soil removed. Terracon was not provided a copy of Phase II or III reports from the City to identify additional recommendation.		Y
116-38-063	738 E. Buckeye Rd				
116-39-081A	801 S. 10th Place	Phase II	Automotive repair pit on site approximately 5 feet deep; Soil testing did not detect levels of analytes above regulatory limits. Additional investigation was not recommended.		
116-47-084	1310 E Jefferson Street	Phase II	Soil testing did not detect levels of analytes above regulatory limits. Additional investigation was not recommended.		

Notes:
1/ See notes for explanation of abbreviations.
REC: Recognized environmental conditions.
TPH: Total petroleum hydrocarbons. Term used for hydrocarbons that are found in petroleum products.
PAH: Polycyclic aromatic hydrocarbon. PAHs are organic contaminants that form from an incomplete combustion of hydrocarbons, such as coal and gasoline.
UST: Underground storage tank.
VOC: Volatile Organic Compound
Source: Terracon Consultants, Inc., *Draft Environmental Closeout Report Community Noise Reduction Program*, Terracon Project No. 65157536, February 4, 2016.

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