AN ADVISORY SERVICES PANEL REPORT

Williams Gateway Area
Mesa, Arizona

Urban Land Institute

Williams Gateway Area
Mesa, Arizona

Strategies for an Urban Gateway

September 17–22, 2006
An Advisory Services Panel Report

ULI–the Urban Land Institute
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About ULI–the Urban Land Institute

The mission of the Urban Land Institute is to provide leadership in the responsible use of land and in creating and sustaining thriving communities worldwide. ULI is committed to:

- Bringing together leaders from across the fields of real estate and land use policy to exchange best practices and serve community needs;
- Fostering collaboration within and beyond ULI's membership through mentoring, dialogue, and problem solving;
- Exploring issues of urbanization, conservation, regeneration, land use, capital formation, and sustainable development;
- Advancing land use policies and design practices that respect the uniqueness of both built and natural environments;
- Sharing knowledge through education, applied research, publishing, and electronic media; and
- Sustaining a diverse global network of local practice and advisory efforts that address current and future challenges.

Established in 1936, the Institute today has more than 35,000 members from 90 countries, representing the entire spectrum of the land use and development disciplines. Professionals represented include developers, builders, property owners, investors, architects, public officials, planners, real estate brokers, appraisers, attorneys, engineers, financiers, academics, students, and librarians. ULI relies heavily on the experience of its members. It is through member involvement and information resources that ULI has been able to set standards of excellence in development practice. The Institute has long been recognized as one of the world's most respected and widely quoted sources of objective information on urban planning, growth, and development.

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About ULI Advisory Services

The goal of ULI's Advisory Services Program is to bring the finest expertise in the real estate field to bear on complex land use planning and development projects, programs, and policies. Since 1947, this program has assembled well over 400 ULI-member teams to help sponsors find creative, practical solutions for issues such as downtown redevelopment, land management strategies, evaluation of development potential, growth management, community revitalization, brownfields redevelopment, military base reuse, provision of low-cost and affordable housing, and asset management strategies, among other matters. A wide variety of public, private, and nonprofit organizations have contracted for ULI's Advisory Services.

Each panel team is composed of highly qualified professionals who volunteer their time to ULI. They are chosen for their knowledge of the panel topic and screened to ensure their objectivity. ULI's interdisciplinary panel teams provide a holistic look at development problems. A respected ULI member who has previous panel experience chairs each panel.

The agenda for a five-day panel assignment is intensive. It includes an in-depth briefing day composed of a tour of the site and meetings with sponsor representatives; a day of hour-long interviews of typically 50 to 75 key community representatives; and two days of formulating recommendations. Many long nights of discussion precede the panel's conclusions. On the final day on site, the panel makes an oral presentation of its findings and conclusions to the sponsor. A written report is prepared and published.

Because the sponsoring entities are responsible for significant preparation before the panel's visit, including sending extensive briefing materials to each member and arranging for the panel to meet with key local community members and stakeholders in the project under consideration, participants in ULI's five-day panel assignments are able to make accurate assessments of a sponsor's issues and to provide recommendations in a compressed amount of time.

A major strength of the program is ULI's unique ability to draw on the knowledge and expertise of its members, including land developers and owners, public officials, academicians, representatives of financial institutions, and others. In fulfillment of the mission of the Urban Land Institute, this Advisory Services panel report is intended to provide objective advice that will promote the responsible use of land to enhance the environment.

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The educational component of the Williams Gateway Area is incredibly vibrant and exciting for the panel to see. In this regard, the panel extends its thanks to President Michael Crow and Vice Provost Terry Isaacson of Arizona State University (ASU) and President Maria Hesse and Provost John Schroeder of Chandler-Gilbert Community College (CGCC).

The panel would especially like to thank the East Valley Partnership: Roc Arnett, Jennifer Whalley, Aaron Huber, and Denny Barney. Special thanks also go to Wayne Balmer of the city of Mesa for his contribution. His dedication to the success of Williams Gateway Airport and his insights during the briefing and tour were invaluable. Finally, the panel wishes to thank the more than 90 individuals whom it heard from during the stakeholder interviews, and whose perceptions of and hopes for the study area were so important to the panel's work.

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Background

The Williams Gateway Airport, located in Mesa, Arizona, was created as the result of the closure of Williams Air Force Base in 1993. It consists of approximately 3,000 acres. The base closure process included transfers of property to the Williams Gateway Airport Authority, Arizona State University (ASU), Chandler-Gilbert Community College (CGCC), and the Gila River Indian Community, as well as other entities. Williams Gateway Airport has operated as a general aviation and instructional facility and is intended by the community to develop as a reliever airport to Phoenix Sky Harbor International Airport.

The Setting

The Williams Gateway Area consists of approximately 52 square miles surrounding the Williams Gateway Airport southeast of Phoenix in the city of Mesa and the towns of Gilbert and Queen Creek in Maricopa County. The study area is characterized by flat topography; it includes such features as the new Santan Freeway, the General Motors (GM) Proving Grounds, some heavier industrial uses to the east, and some rather extensive dairy farms in Mesa to the north, and it is bordered by heavily developed commercial and retail areas in Gilbert to the west and, to a lesser extent, Queen Creek to the south. The study area is part of what is generally referred to as the East Valley. The East Valley has seen some of the most intense residential and retail growth in the Phoenix metropolitan area in the past decade.

Although the airport currently operates at less than its operational capacity, the city of Mesa, the surrounding communities, and the Williams Gateway Airport Authority are concerned about the impact of urban development on the long-term sustainability of airport operations. The key issue is the future potential conflict with proposed residential development in the area as both the airport and the residential areas continue to grow. The municipalities represented by the Authority are also concerned about the return on the investment they have made over the past decade and how the development potential for the entire 52 square miles can be improved without sacrificing the long-term success of the airport.

Location map.

The Panel's Assignment

At the request of the East Valley Partnership and a host of other sponsors, the Urban Land Institute's Advisory Services Department organized a five-day Advisory Services panel. The panel was held September 17–22, 2006. Working from briefing materials prepared by the sponsors, an extensive on-site briefing, a tour of the study area, and more than 90 stakeholder interviews, the panel evaluated the economic development potential for the Williams Gateway Area. In preparing the

Study area looking west.

recommendations, the panel was asked to consider the following questions from the sponsors:

- What type of long-term development vision is needed to guide future growth, development, and private investment?
- How can we promote and accelerate development of the study area as a major employment center within the Phoenix metropolitan area?
- What strategies would best help us reach our goals of 100,000 jobs and 35,000 students by 2030?
- How can we best promote the development of Williams Gateway Airport as a commercial reliever airport?
- What additional uses, tenants, or services are needed to grow the area to its full potential?
- How should we evaluate the relative merits of immediate rezoning requests for residential development in the area as they relate to our long-term interest in reserving adequate areas for future employment uses?
- Should we consider a capital improvement district or a community facilities district for capital funding in the area?
- How can we best coordinate capital improvement programs and transportation planning, as well as general planning and zoning activities, to promote coordinated development in the area?
- Is the development of a regional multimodal transportation plan, including commuter rail from Florence to downtown Phoenix and a high-speed commuter rail shuttle from Williams Gateway Airport to Phoenix Sky Harbor Airport, a viable solution—and if so, how do we proceed?
- How do we best use the Southern Pacific Railroad freight line running through the study area?
- How can we best take advantage of the increased access and visibility of the area following the opening of the Santan Freeway?
- How can we maximize opportunities to further promote new development in the area with the opening of the Williams Gateway Freeway in 2020?

The Panel Approach

This report is divided into four sections. The Market Potential section attempts to identify and quantify land use demands and the universe of land use alternatives. The Development Strategies section describes the variety of uses and considerations for locating such uses within the study area. The Planning and Design section translates the development vision and strategies into recognizable images and forms, with specific consideration of future transportation needs and the relationship between the airport flight paths and compatible land uses. The Implementation section identifies the steps, tools, and action items necessary to make it all happen.

Much information about the future, particularly when measured over the next 20 to 30 years, is speculative at best. Looking back at the past ten years, however, the one thing that appears to be a near certainty is that the dramatic population and employment growth is likely to continue in the Phoenix metropolitan area in general and in the East Valley in particular. Combining the de-

mographics, the physical pattern of growth, and the land available to accommodate such growth paints a very clear picture of opportunity, highlighting the need to plan comprehensively and diligently to capitalize on that opportunity.

The panel's focus, the Williams Gateway Area, sits squarely within that picture of opportunity. For the purposes of our analysis, this area has been defined as the 52 square miles bounded by the 230-kilovolt power lines north of Elliott Road on the north, by Meridian Road on the east, by Queen Creek Road on the south, and by Higley Road on the west. Throughout this report we refer to this as the study area.

The panel finds that community attention to the study area in recent years has been very encouraging. Mesa, Gilbert, Queen Creek, and the Gila River Indian Community formed the Airport Authority to take over operation of the airport and surrounding property from the U.S. Air Force, making significant investments that have now made the airport a tremendous regional asset. The educational community has also embraced the study area and established deep and meaningful roots. As a result of these efforts, a good start on comprehensive planning has been made by all the stakeholding jurisdictions.

The panel believes that such attention and effort at the front end of an expected growth curve is critical to ensuring that population growth and job growth take place in a manner that is responsive to unpredictable and uncontrollable market conditions. Such attention is also critical to ensuring that growth is consistent with resources, particularly capital, natural resources, and infrastructure, whether or not those resources are currently available. Such upfront attention also helps ensure that growth will take place with appropriate integration of neighboring communities and uses, and with a view that goes beyond and outside the study area. Only with such comprehensive and advance attention will the surrounding communities be able to look back in 20 to 30 years and say "we did this right."

The study area is huge—the size of communities such as Reston, Virginia, and Irvine, California, which have developed over 20- and 40-year periods, respectively.

Planning and development is a long-term process, with many incremental steps and milestones. Absent a major unexpected change in the global, national, and regional economies, population and job growth will continue to occur and will come to this area. Careful planning with a simultaneous eye to the near term and the long term is essential.

Successful communities consist of a broad spectrum of uses and activities—commercial, retail, industrial, institutional, infrastructure, recreational, and open-space—but communities are all driven by the presence of people—people who need places to live. Successful and desirable communities are the ones that balance these uses most appropriately. Infrastructural components such as transportation networks, water and wastewater services, power resources, airports, colleges and universities, and health care facilities are all essential in creating those successful and desirable communities.

Planning for and managing this diverse set of variables—demographics, capital, jobs, economic development, and physical assets (both available and needed)—is an increasingly complex task facing communities. Having the right planning and governance models and expertise in place is crucial, particularly when applied to an area the size of the study area that is guaranteed to evolve over the next 20 to 30 years. It is essential to exercise concurrent attitudes of (a) discipline in being mindful of the plan, process, and objectives and (b) flexibility in being responsive to unexpected changing conditions. Adopting a model and an approach that recognize that the study area is not an island unto itself is critical to creating a successful and desirable community.

The good news is that the Williams Gateway Area is not in uncharted waters. The city of Mesa can refer to lessons learned from the Phoenix region's growth over the past 20 years and also from countless other areas throughout the country that share similar physical and economic characteristics. Many communities have gone before Mesa and the East Valley, and many are meeting very similar challenges today.

Market Potential

Understanding the socioeconomic trends that are affecting the study area can help planners identify the potential and pressure for future land uses. ULI believes that successful urban planning and land use policy can best be described as public action that generates a desirable, widespread, and sustained private market reaction. Therefore, Advisory Panel reports typically have their foundation in market possibilities.

Background

The region surrounding the Williams Gateway Area is experiencing some of the most substantial growth in the United States, and this expansion is likely to continue through future decades. The Williams Gateway primary trade area (PTA), the area within a ten-mile radius of the airport, is a significant part of the dynamic Phoenix metroplex, which includes Maricopa and Pinal counties. As recently as 1980, the Williams Gateway PTA held just 76,255 people—just 6.7 percent of the population of metropolitan Phoenix. As of 2006, the PTA has 497,944 people—12.7 percent of the Phoenix regional population of 3.9 million. The Williams Gateway PTA now captures 18 percent of the Phoenix region's household growth and 13 percent of the growth in seasonal and second homes. The PTA is projected to accelerate its growth as the greater Phoenix area continues to evolve as one of America's most dynamic metropolitan regions.

General Demographics

The Phoenix metropolitan area is projected to enjoy an average increase of 58,180 new jobs per year over the next decade, which will cause the population to grow by more than 109,800 people

Figure 1
General Demographics

Phoenix Metro Area: Maricopa and Pinal Counties

	1980	Average Annual Change 1980–2006	2006	Average Annual Change 2006–2017	2017
Population	1,146,097	107,074	3,930,025	100,895	5,039,870
Employment	822,451	54,175	2,230,968	51,290	2,795,167
Households	573,170	32,730	1,424,151	35,728	1,817,160
Second Homes	35,473	4,738	158,664	10,899	278,554

Phoenix Metro Area: Williams Gateway Airport Primary Trade Area

Population	76,255	497,944	765,638
Households	20,705	181,161	278,554
Second Homes	2,908	18,974	30,172

Source: THK Associates.

per year, in 38,740 households, with second homes growing by 4,570 units per year. The Williams Gateway PTA will grow annually by 26,800 people in 9,740 households, with second homes growing by 1,110 units per year. By 2017, a total of 765,638 people will live in the PTA. In its analysis, the panel averaged and then projected the markets available in the metro area and PTA and allocated an appropriate share of these markets to the study area.

Economic Trends by Land Use

The following sections identify and analyze the major market trends by various land use demands. As noted in the introduction, Phoenix in general and the East Valley in particular have a very positive growth pattern compared with the rest of the state and the country.

Retail, Office, and Industrial Trends

Today metropolitan Phoenix has almost 246 million square feet of industrial space, of which 47 percent is warehouse and distribution space, 8 percent is research and development and flex space, and 45 percent is manufacturing and general industrial space. Of this total, 18 percent is in the Sky Harbor environs, 17 percent is in Mesa and Gilbert, and 16 percent is in Chandler. Since 2002, construction of industrial space in metro Phoenix has averaged 4 million square feet a year; through the next decade, it is projected to average 4.2 million square feet a year, with more than 60 percent being warehouse and distribution space. If the study area is successful in becoming self sustaining, it could anticipate annual industrial construction levels similar to the current ratio in Phoenix of 60 square feet per capita.

The study area should capture 8 percent of the projected market demand for industrial space in metro Phoenix, because of its central location in the region and its potential as an intermodal transportation hub. As a result it should enjoy a market for the construction of up to 640,000 square feet of industrial space per year, on average. The central location of the study area is especially apparent when the potential development of the Arizona State Land Department properties referred to as Superstition Vistas is considered. These properties cover approximately 275 square miles and could accommodate in excess of 350,000 housing units and 1 million people. This area will have a variety of its own supporting commercial uses and other related land uses.

In the Sky Harbor environs, construction of industrial space has averaged between 1.0 and 1.2 million square feet a year. The study area is projected to perform at approximately 65 percent of this level, if it is successful in establishing itself as the regional hub serving the East Valley. The study area could expect to add up to 1,175 employees per year in industrial square footage, with as many as 63 acres per year needed to accommodate this demand (after adjusting for speculative purchases). During the panel's projection horizon of 25 years, as many as 1,575 acres will be urbanized for warehouse and distribution, flex, research, development, and manufacturing space.

The metropolitan Phoenix office market currently has 62.9 million square feet of space, with 23 percent located in the central business district, 21 percent in Scottsdale, and 12 percent in the East Valley. Net office absorption exceeded 3 million square feet per year in 2005 and 2006 and is projected to average 3.2 million square feet annually through the next decade. As a regional hub, the study area should capture approximately 4 percent of the projected metro Phoenix demand, with the construction of 120,000 square feet of office space per year on average. Office employment annually should grow by 520 employees on average; 16 acres per year would be needed to accommodate the office demand, with 400 acres needed over 25 years.

The retail market in metro Phoenix currently has some 124 million square feet, or 32 square feet per capita, with 31.4 million square feet, or 25.4 percent, located in the area of Mesa, Chandler, and Gilbert. Construction of retail space amounted to 3.4 million square feet in 2005 and 8.6 million square feet in 2006. Construction in the retail market in metro Phoenix is projected to average 3.1 million square feet on average during the next decade. The study area should capture 6 percent of this projected market demand per year and benefit from a market for 188,500 square feet of retail commercial space that will employ 540

Figure 2
Industrial Development

Industrial Space by Size and Employment

	Square Feet Mid-2006	Percent of Total	Estimated Employment
Phoenix Metro Area	245,924,379	100	452,654
Mesa/Gilbert	41,807,150	17	76,700
Chandler	39,347,900	16	72,200
Tempe	14,755,500	6	27,100
Sky Harbor	44,266,400	18	88,200

Industrial Space by Category

Total	246,000,000	100.0
Warehouse and Distribution	115,000,000	46.7
Flex	21,000,000	8.5
General Industrial	110,000,000	44.8

Source: THK Associates.

people and require 20 acres of land. Over 25 years, 500 acres of retail land will be needed in the study area.

Annually the study area should expect a market for up to 948,500 square feet of industrial, office, and retail space on 129 acres. Up to 2,235 jobs per year will be created in this space; over 25 years, as many as 56,000 jobs will be created and 2,475 acres of land will be absorbed. These jobs will account for approximately 60 percent of all jobs created in the study area. Additional jobs from public, institutional, recreational, educational, and other commercial facilities over 25 years will equal nearly 94,000 jobs.

Residential Development Trends

Metro Phoenix, as a result of substantial job growth, is projected during the next decade to have an annual market for 45,700 housing units, including seasonal and second homes. The study area should capture 5 percent of this projected demand and annually enjoy a market for 1,450 detached single-family units, 450 townhomes and condominiums, and 450 rental apartments. Total annual land absorption for residential uses will be 435 acres. Over 25 years as many as 60,000 units on 11,000 acres could be urbanized within the study area, bringing as many as 165,000 people to Mesa, Gilbert, and Queen Creek.

Hotel and Recreational Potential

A very important economic catalyst for the metro Phoenix economy is the hotel, convention, and tourist market. Metro Phoenix today has 61,300 rooms in 450 hotel and motel facilities. During the past 10 years, metro Phoenix hotel units have increased at a rate of 2,210 rooms per year. The Phoenix hotel market is projected to grow at an annual pace of 2,140 rooms, of which 50 percent will be limited service, 30 percent full service, and 20 percent resort hotel rooms. By 2017, a total of 86,050 hotel rooms will serve the metro Phoenix market. It is estimated that 210 of these rooms will be added each year to the study area. Projecting over a 25-year period shows that the study area will need 5,250 hotel rooms in 34 hotels (26 limited service hotels, 6 full service hotels, and 2 resort hotels).

Related to the hotel market is the need for recreational land uses, especially golf courses. A synergistic relationship can be created between an airport, a convention or conference center, and a golf course. Today metro Phoenix has a need for approximately 195 golf courses, of which 72 percent should be public. During the next decade a need will be created for an additional 57 golf courses. Of this total, one course needs to be added within the study area every 3.5 years. Projecting over a

Figure 3
Retail and Commercial Development

	Retail/Commercial Space (Square Feet)	Percent Vacant
Phoenix Metro Area	124,058,527	6.0
Scottsdale	18,030,056	14.5
Tempe	16,206,928	13.1
Mesa/Chandler/Gilbert	31,433,248	25.4

Source: THK Associates.

Figure 4
Residential Development

Housing Type	Phoenix Metro Area	Williams Gateway Airport PTA	Williams Gateway Area	Acres
Detached Single-Family Homes	28,210	7,250	1,450	365
Townhouses and Condominiums	8,810	2,270	450	45
Rental Apartments	8,680	2,230	450	25
Total	45,700	11,750	2,350	435

Note: Residential markets include seasonal units.
Source: THK Associates.

25-year period shows that the study area will need seven additional golf courses.

The clear zone for the airport could be a strategic location for future golf courses. The panel is aware that a renovation and master plan for the Toka Sticks course is under review. This plan reportedly includes a new resort conference hotel, a new clubhouse, upgrades to the golf course, and a small retail business district. A golf course was also built near Falcon Field airport as a focal amenity for business parks, offering an exceptional environment for businesses sensitive to quality of life. Golf courses in the study area, especially near the airport, represent a special opportunity to put vacant real estate into production. Seven golf courses could require as much as 1,400 acres of real estate.

Higher Education and Health Care Potential

Higher-education facilities play a significant role in the study area, and growth in this sector will continue to increase in importance. ASU opened the Polytechnic campus in 1996 with approximately 1,000 students. It has been growing by 500 students per year. Today it has approximately 6,500 students in 39 undergraduate and graduate degree programs. Currently, it projects that it will serve 15,000 students by 2015.

Complementing ASU's Polytechnic campus is CGCC at the Williams campus, which currently serves approximately 3,000 credit students annually. This campus anticipates rapid but manageable growth, to serve approximately 6,000 students by 2014 and 10,000 by 2024.

Between the two campuses 1,450 new students are projected to be added annually over the next decade, for an anticipated enrollment of 23,000 in 10 years. Today the state of Arizona has 76 degree-granting colleges with a total enrollment of just under 546,000 students, of which 88 percent are undergraduates. Total enrollment in the state is projected to grow to 882,500 students by 2030—an annual growth rate of 14,500 students. Since 1996, the two campuses have captured approximately 15 percent of the growth in students in the metro Phoenix area, and the university and college project that this capture rate will grow to 10 percent over the next 25 years. This capture

Cooley Station is a new planned community located in the town of Gilbert.

rate may be low, since almost 16.5 percent of the growth in the state is projected to occur within the Williams Gateway Airport PTA. To keep pace with the projected growth of the region, ASU and CGCC should anticipate an average increase of as many as 2,400 students per year; over 25 years this could generate demand of approximately 68,500 students. This is substantially greater than the 35,000 students currently planned for at total buildout of these campuses. This projection has substantial implications for facility planning and the ultimate size of the two campuses.

In addition to higher education, health care is a growing market in the study area. Given the growing population and the demographic makeup of those migrating to metro Phoenix, providing adequate health care facilities will be important in the future. The study area can play a major role in filling that need. Over the next decade, the population of residents over age 65 in metro Phoenix is expected to grow by more than 16,300 people per year. The need for hospital beds is expected to grow by 290 beds per year over the current count of 10,500 beds in the metroplex. In addition, metro Phoenix is projected to see demand for an additional 650 nursing beds, 465 assisted living units, and 25 hospice beds annually. The study area is projected to capture 5 percent of this activity; over a 25-year projection period, 350 hospital beds at two hospital sites will be needed along with 800 nursing beds, 575 assisted living units, and 50 hospice beds. Special attention should be given to planning for health care facilities in the study area.

Summary of Market Potential

The study area has very significant potential to accommodate a variety of higher-intensity and higher-value real estate development. Over a 25-year planning horizon there will be a need for 1,575 acres of industrial land, 400 acres of office space, and 500 acres of retail space. In addition, the plans should include 5,250 hotel rooms at 34 sites on 105 acres and seven golf courses on 1,400 acres. Demand for higher-education facilities is twice what is planned now for the existing 320 acres. Two hospital sites with 175 beds each will be needed, along with other medical facilities. Also, if adequate and appropriate lands are available, 60,000 residential units could be built on 11,000 acres in the study area—including a variety of single-family, townhome, condominium, rental apartment, and mixed-use projects. If all these prospects are accommodated, the study area would have 165,000 residents, nearly 68,000 students at institutions of higher education, and jobs for 94,000 people.

Development Strategies

The success of the development of the Williams Gateway Area will require vision, bold moves, and dedicated leadership. Development strategies need to balance the desire for short-term economic growth with the long-term role that Williams plays in the East Valley and the larger Phoenix metro area.

Development Vision

The study area is one of the most promising expanses of underdeveloped land in the Phoenix metropolitan area and in the western United States. This is truly a project of extraordinary proportion and potential regional and super regional impact. The panel recommends master planning the area for high-density, mixed-use development with business, research, education, hospitality, retail, and residential uses. This development should be of high quality with excellent urban design and sustainability components. The area also should have a multimodal transportation hub, with passenger air, train, and bus service and air cargo and train and truck freight service. The potential buildout includes as much as 100 million square feet of space, 96,000 jobs, and up to 68,500 college students. The study area will likely garner a higher than normal percentage of growth in the Phoenix metropolitan area for the foreseeable future and could have regional and super regional impacts on other midwestern and western metropolitan areas.

There are models of edge cities that contain mixed-use elements (Reston Town Center in Reston, Virginia; Los Colinas in Irving, Texas; and Crystal City in Arlington, Virginia) and of airports that contain corporate and cargo air services (Alliance Airport in Fort Worth, Texas). There are models of university centers that are integrated into research and employment centers (the University of California at Irvine). However, the study area has the potential of being home to the first center of its kind that combines so many different elements in a cohesive, urban, mixed-use development. To accomplish such an ambitious plan, the financial and governance structures must be innovative and comprehensive, as the plan itself must be innovative and comprehensive in its scope. The panel believes that the success of the study area depends on more private sector participation in the execution and capitalization of the study area than has taken place to date. (This will be covered in more detail in the Implementation section.)

Passenger Terminal and Related Services

On the north side of the current runways at the airport, the panel recommends reserving ground for a passenger terminal that could eventually accommodate up to 10 million passengers annually; this is included in the airport's current master plan. The panel believes that this capacity will be required at some point to fulfill the demand in the greater Phoenix metropolitan area for passenger air service. When capacity is reached at Sky Harbor, the future passenger terminal at Williams Gateway will be needed. This terminal should be connected by walkways and pocket parks to hotels, retail, office, and residential spaces, which should be vertically and horizontally integrated. These buildings could form linear connections adjacent to the runway area, ranging in height from four to eight stories. The combination of residential, hotel, office, and retail uses could ensure a lively environment during work hours and into evening hours. The panel envisions larger office users locating in distinctive buildings on this side of the airport. In accordance with ULI sustainability principles, these buildings should be of sufficient density to support pedestrian foot traffic and multiple uses of facilities.

Cargo Facility

On the south side of the current runways, the panel recommends reserving ground for scheduled cargo facilities adjacent to the runways. These

The Williams Gateway Airport can act as a full-service facility.

facilities will be accessible directly from the runways, which would be similar to facilities at Alliance Airport in Fort Worth, Texas; Falcon Field in Mesa; and Scottsdale Airport's Airpark. The panel envisions these facilities as serving a new business sector that would provide an alternative for Sky Harbor and Los Angeles International airports. The current Foreign Trade Zone in the study area offers the potential for assembly of imported goods in the cargo center. The success of these facilities would be enhanced by a rail spur and access road from the Williams and Santan freeways. The panel has not studied the capacity of the existing Union Pacific rail line, and proposed plans and schedules for the construction of the Williams Gateway Freeway will have to be modified to meet the surface transportation demands of this area. Development of this area will require strong private sector participation through appropriate ground leasing and infrastructure improvements.

Education Facilities

ASU enjoys 615 acres of land at the Polytechnic campus. ASU and CGCC expect to have a student body of 68,000 at full buildout. This is consistent with the panel's projections. The panel believes special attention should be given to developing a master plan for this campus that adheres to ULI principles of sustainability. These principles include higher-density development, axial visual connections with other parts of the study area, and special attention to urban pocket parks and areas for collegial collaboration and contemplation.

Health care services in the East Valley are in high demand. The current and planned programs at ASU Polytechnic support this professional sector growth. The ASU master plan should consider leveraging and collaborating with the medical schools and hospitals in the PTA. Doing so would serve a number of purposes, including support of ASU programs and provision of medical services for the study area and surrounding community.

There is unmet demand for K–12 and technical educational facilities similar to East Valley Institute of Technology in the surrounding community, and additional demand will be generated throughout the study area in the future. The panel recommends that appropriate land be reserved for these facilities on the west side of the ASU property, adjacent to Power Road. The co-location of these facilities will permit more efficient use of land and facilities and collaboration with ASU programs. The facilities will act as a bridge between the study area and the greater community and help promote an attractive mixed-use environment.

Mixed Use and Research and Development

The panel understands that ASU is considering entering into public/private partnerships with real estate developers to transform the southern 200 acres of its campus into a mixed-use development of as much as 10 million square feet. This development should be integrated into the academic campus in terms of its programs and land use. Office and research and development tenants could have professional connections with ASU programs.

The Gilbert Community College and Arizona State University Polytechnic campuses have created an excellent incubator for businesses, as well as a social life for the study area.

Given the professional and technical orientation of the ASU Polytechnic programs, there could be a strong relationship between ASU and this mixed-use development. Special attention should be given to appropriate axial vistas and pedestrian connections. The area could also be home to medium-density residences and retail that would serve both ASU and the study area. Based on limited information, the panel supports the general concept of converting this area into a high-density, mixed-use development.

Golf Course and Resort

The panel was informed that the Gila River Indian Community is contemplating major improvements to its golf course, including the possibility of developing a resort and conference hotel. These improvements should be done in a way to integrate these amenities into the surrounding study area. There should be axial and pedestrian connections. The chain-link fence currently separating ASU and the golf course is an unattractive barrier that does not promote efficient use of open space. The panel encourages the Gila River Indian Community to collaborate and cooperate with ASU and other potential users and residents of the study area in developing its resort and conference hotel facilities. The panel's analysis shows that there will be demand for additional golf and resort facilities elsewhere in the Williams Gateway Area.

Industrial Facilities

The panel recommends that land on the north side of the airport be reserved for industrial facilities. The land will be accessible from the Santan Freeway and will help meet the growing demand for such development in the Phoenix metropolitan area. This type of development also will serve as a buffer, supporting successful development of airport and other services contemplated in the study area.

Connectivity

The panel endorses planning that better coordinates land use and transportation; accommodates pedestrian and bike safety and mobility; provides and enhances public transportation service; improves the connectivity of road networks; and takes a multimodal approach to transportation, with supportive land use development patterns to create a variety of transportation options.

Industrial Rail Connection

The panel recommends that consideration be given to making a rail connection from the Union Pacific rail line to serve the cargo facility. This rail connection would provide a strong link to air and truck transportation. Rail is an important means for moving imported goods throughout the United States. This level of service, available in such facilities as Fort Worth's Alliance Airport, would help the Williams cargo facility compete with similar facilities in the western and midwestern United States. In addition, in its High-Capacity Transit Study, the Maricopa Association of Governments identifies demand for increased rail cargo capacity.

The Union Pacific Railroad traverses the southern portion of the study area, offering both passenger and freight opporunities.

Passenger Rail Connection

Fixed-rail passenger transit is an important element of mixed-use, high-density development. Based on potential buildout and extraordinary residential growth around the study area, the panel believes that fixed-rail passenger transit will be an essential link between this area and the greater Phoenix metropolitan area. The panel understands that the Maricopa Association of Governments and the Central Arizona Association of Governments are considering a commuter rail that would provide high-speed connection to the ASU campus and also provide service needed for Pinal County residents commuting for work and study. Students are a strong customer base for mass transit. In addition, this type of service would help promote the study area as an urban mixed-use center and transportation hub. On an interim basis, reliable, regularly scheduled bus service should be provided.

Williams Freeway Spur

To serve the cargo facility on the south side of the airport, the panel recommends construction of a limited-access road. This will enable trucks to move directly to the Santan Freeway and the interstate highway system. This spur could also serve the Queen Creek area, which will become a growing source of employees and customers within the study area. On an interim basis, the panel recommends improving surface roads to the west of the airport, to provide access to I-10. As a comparison, this level of service is available at Alliance Airport.

Shuttle Service

Given the number of integrated, high-density uses envisioned in the study area, the panel recommends investigation of linking the proposed fixed-rail station with a fixed-rail shuttle throughout the study area. Efficient, seamless transportation service is essential for promoting mixed-use development. Airports such as Newark International and Baltimore-Washington International have similar shuttles. On an interim basis, bus shuttle service could be provided.

Fiberoptic Service

All users within the study area will demand high-speed communication service. To be competitive with other centers, the study area must have such cutting-edge service. The panel recommends providing fiberoptic service and wireless coverage connections throughout the center simultaneously with construction of other infrastructure improvements.

Land Use

Land use considerations start with long-term planning and include zoning, employment, and quality-of-life issues.

Planning

Strategic, long-term master planning is essential for creating a high-quality environment in the study area. This planning will require greater cooperation between Queen Creek, Mesa, Gilbert, the Gila River Indian Community, and Maricopa

County than has taken place to date. An unknown factor is how the state land in northern Pinal County will be developed. Special consideration should be given to working with the state government in planning this entire area. Master plans that span more than one jurisdiction will be required to adequately address the needs of the study area. The panel recommends working with the Arizona State Land Department to form an appropriate entity for addressing substantial regional planning issues in and around the study area and preparing a comprehensive master plan.

The panel was provided with an overview of the report by the Morrison Institute entitled "The Treasure of the Superstitions." This document begins to address the long-term impacts of growth in the region. The Williams Gateway study area is a part of that larger vision. The Superstitions report has sustainability as its primary focus, and this panel believes that success for the Williams Gateway Area and the metro Phoenix region is inextricably connected to sustainable development. The Superstitions report begins to open the discussion of appropriate patterns of growth and locations for future employment and residential uses, as well as ways to provide infrastructure in a manner that will guide growth in a constructive way.

Zoning

Appropriate zoning, based on a comprehensive, strategic master plan for the study area, is required to support the many uses envisioned in the area. Currently, Queen Creek, Mesa, Gilbert, and Maricopa County are struggling to find the right combination of land uses to support the study area. This imperfect process may yield unintended, undesirable results. In other areas across the nation where comprehensive development is planned, overlay zones are often used. Overlay zones set general planning parameters, specific land use criteria, and even thematic urban design standards. The panel recommends that all jurisdictions in the study area strongly consider working together to place overlay zones on all property within the study area. This coordination will be an important element in promoting the development of the study area as a world-class center.

Employment

In every political jurisdiction, it is not merely the quantity of jobs created that is of interest—the quality of the jobs created is critical. The new residential development outside the noise contours around Williams Gateway Airport—both current and projected—is "move up" development, with lesser amounts of workforce and starter housing. A sustainable community, however, needs to provide suitable housing for a cross-section of income levels. The types of jobs that will be attractive to these relatively new residents of the East Valley are generally high-value occupations—medical and professional, executive and managerial, academic and research, and aviation and high-tech manufacturing—with lesser but still important concentrations of service and unskilled jobs.

The desire to create high-paying jobs must be balanced by the need to protect the overflight zones through compatible industrial uses, such as air cargo operations, intermodal rail container and shipping facilities, and ground logistics, all of which are ideal candidates for using the large vacant acreage that lies south and southeast, and, to a lesser degree, northwest of the runway system.

The large undeveloped areas northeast of the flight operations area and southwest of the campus area are strong candidates for mid-rise development with a denser, more mixed-use character, including multifamily for-sale and rental uses. These areas should become nodes of high-paying office and research and development employment, as well as incorporate within their cores additional service, flex, retail, hospitality, medical, and denser residential components to complement the business uses.

As to business sectors, care must be taken to avoid overreliance on high-tech manufacturing, which may be subject to offshore competition. Research in biotech, in concert with programs at ASU Polytechnic, could replace such manufacturing and even enhance the technology reputation of the East Valley, but it must be noted that downtown Phoenix has an advantage in this respect because of its Translational Genomics Center. A secondary caution is that virtually every city in the country is attempting to climb onto the same bandwagon. The Valley of the Sun's reputation as

a location for retirees, however, is an obvious advantage when it comes to the creation of medical jobs to serve both the part-time and the full-time populations of seniors.

The Phoenix metropolitan region has a higher-than-normal percentage of jobs in construction and services; it is also apparently a rich environment for startup companies and entrepreneurialism. Economic development efforts affecting the study area need to continue to focus on aerospace industries, flight services, and corporations that can take advantage of the Foreign Trade Zone exemption in manufacturing and assembly processes, especially if their supply or distribution chains can use the access to air freight that Williams Gateway Airport provides.

Residential-Jobs Balance

The briefing materials that the panel received noted that there is already an imbalance between employment opportunities and residential growth in the East Valley, and this disparity is continuing to grow. The panel's observation of virtually unbridled residential construction surrounding the study area (though slowed recently because of the national and regional recession in housing starts and pricing) suggests that the study sponsors' concern with preserving large swaths of the study area, especially within the flight overlay zones and those areas with potential for airport-related development, is well founded.

The panel certainly concurs with plans for the long-term preservation of appropriate acreage for future industrial, flex, research and development, and office uses, as part of well-planned, mixed-use environments but suggests taking the concern a step further: Each municipality should plan for its own centers of commerce, not merely retail or office projects, but corridors and nodes appropriate for development of employment of all types.

To fill these business areas with an appropriate range of jobs, economic development efforts need to be focused, well funded, and, most important, coordinated between the municipalities. Regional economic development entities can take lead roles, but the individual municipalities must avoid competing against each other for facilities. Creating a new brand for the study area, with particular emphasis on the Williams Gateway Airport, will be part of a new marketing program, discussed in the Implementation section.

Like much of the region, the study area is characterized by unremarkable architecture, landscapes, and streetscapes. As part of an overall marketing strategy, the panel recommends encouraging good design for all new development that will allow the area to be better defined, identified, and ultimately branded.

It is a primary tenet of sustainable development to provide all types of facilities needed for daily living within close proximity—within walking distance, when possible. Because the study area is so large and the surrounding undeveloped regions to the south and east even more vast, there is a great opportunity for smart planning

Newer buildings at the airport have begun to exhibit an aviation design theme, which will better "brand" the area and build recognition within the Phoenix region.

to achieve a balance of jobs and housing that improves the economic status and quality of life of all citizens. Insufficient or fearful planning and zoning will make the communities of the East Valley unsustainable.

Quality of Life

Corporate location and expansion decisions today often hinge on the availability of skilled or qualified labor, and it appears that the Phoenix area and the study area in particular are blessed with an ever-enlarging, well-trained labor pool. The growth of ASU, the East Valley Institute of Technology high school district, and CGCC should continue to fuel the training of qualified workers for target industries. However, quality-of-life issues could work against attracting the right workers to the area.

Although the Valley of the Sun is touted for its Sunbelt climate, access to mountains, and great physical beauty, life in the East Valley has significant potential for improvement. The panel noted the flat character of the area, the sameness of the architecture, the paucity of attractive and usable parks and open space, and the lack, in general, of what is called "place making" in the region.

Mass transportation issues, burgeoning commute times, uncoordinated arterial construction, lagging freeway construction, escalating fuel costs, and ever more congestion are likely to deter the continued attraction of "creative class" workers. These are the young professionals who can choose to live anywhere, the workers most sought after by progressive employers considering putting down roots in the East Valley. Even if a prized employee chooses to live in or near the study area and suffer a long commute, the potential deterioration of his or her quality of life has serious consequences in terms of worker productivity and family health.

GM Proving Ground

Even in a land-rich environment such as the study area, a large, contiguous parcel under single ownership is a rare commodity. Therefore, GM's sales of about 5,000 acres on the Proving Grounds have attracted a number of legitimate bids from major property developers. Presuming that GM continues down the road of divesture, the eventual buyers of such large and significant tracts are likely to spend considerable time, effort, and money in master planning the properties for their potential highest and best uses. Such large, contiguous development sites provide the opportunity for more coherent, mixed-use, and mixed-density projects—projects that can provide a good example of progressive development and livability. These investments in significant development sites are being made today, so there is no time to waste in taking the implementation steps recommended by the panel, particularly those related to master planning and infrastructure planning.

Although it would be presumptuous for the panel to attempt at this point to approve the Williams Gateway Center plan for the southern 1,800 acres of the Proving Grounds, the panel is indepen-

dently recommending uses and approaches that are quite compatible with the admittedly preliminary development ideas for this site included in the briefing materials. Those materials suggest that the Williams Gateway Center and the GM Proving Grounds will provide a mixture of business park, office, and commercial uses south and west of the Williams Gateway Freeway, near the airport property. North and east of the freeway, in areas that are substantially outside the noise overlay zones, would be primarily regional commercial and medium-density and multifamily residential uses. Any approval of projects or General Plan amendments encompassing residential components should proceed cautiously until the completion and adoption of the new noise study.

Market Forces

As the recent national and regional deterioration of housing values has clearly shown, there is no guarantee that land or real estate prices of any type will continue to rise. In fact, the real estate business is cyclical. The prices being paid for land in this region appear to the panel to be artificially high. While the appetite for residentially zoned land has slowed somewhat, owing to the price drops and the slowdown in housing starts, there still appears to be a large—if not immense—supply of land that is already zoned and appropriate for housing. Excess supply should keep prices down, theoretically speaking, especially when the State Land Trust begins flexing its selling muscles with the release of its immense local holdings.

Much of the growth in the Phoenix Valley is due to migration from California of both jobs and people, owing to the high costs of housing and of doing business in the neighboring state. Thus, the more affordable price of land in Arizona is a prime factor fueling the state's growth. If land prices continue to escalate, this competitive advantage will lessen, fewer jobs and people will migrate to the region, and the large land supply will be met with lesser demand for growth. This process should tend to be self-regulating, however, forcing land prices lower to maintain a balance in the future. Because Arizona is a strong property-rights state, there is no legislative avenue for controlling speculation; it is to be hoped that a free market will prevail.

In a free-market environment where speculation has been active what tends to happen is a checkerboard development pattern: developers buy the cheapest parcel, not the one that should logically be developed next. This can exacerbate commute times, municipal expense to provide and maintain infrastructure, and quality of life, all hallmarks of unbridled sprawl. Unfortunately, this seems to be the direction the East Valley is headed, unless significant new planning and zoning controls are put in place. Adherence to the panels recommendations could help control this to a certain extent.

Airport Governance

Further suggestions about the operation and governance of the Williams Gateway Airport will be made in the Implementation section, but it is important to note here that the airport has not yet lived up to its potential as a money maker, as Sky Harbor has done for Phoenix. In fact, the panel members believe that the airport may not reach a break-even level, much less profitability, within the time horizon predicted in its business plan, if business as usual is allowed to continue. The panel firmly believes that its recommendation will move the airport's break-even and profitability points to a closer and more predictable time. However, the panel must re-emphasize the importance of evaluating the long-term viability of the airport and its benefit to its constituent owners and the study area, not just applying a short-term quick fix.

The airport is likely to require considerable additional capital expenditures that will not be covered by the Federal Aviation Administration or supplemental funding from Sky Harbor, suggesting the need for the Airport Authority to seek outside help in raising its operations and development capability to achieve profitability. The panel recognizes that the value of Williams Gateway Airport to the region and its owners goes far beyond its dollars-and-cents profitability, particularly if the panel's recommendations are seriously considered.

Planning and Design

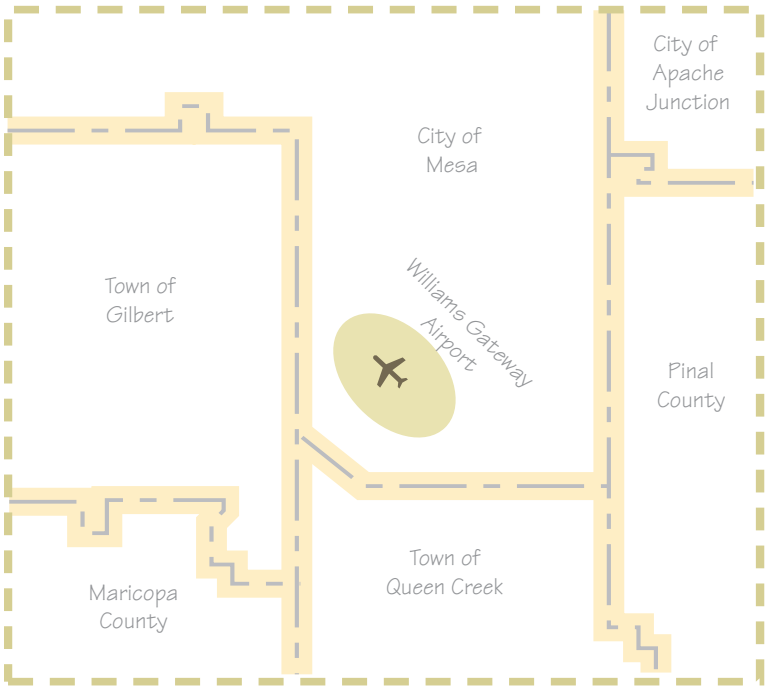
The opportunity to develop a region-serving central focus and to develop the surrounding lands to their highest potential is now of critical importance. The East Valley is facing unrelenting growth pressures with no coordinated land use planning controls or—more important—a clear and common vision. The panel heard many times in interviews that since the study area is physically located at the corner of every surrounding jurisdiction's map, the area has no voice and no champion. Now is the time to place the airport area and its adjoining lands in the center of the map.

The panel heard comments on numerous issues related to land use, open space, and circulation. Three land use concerns were most significant:

- The amount of industrial land (9,000 acres) designated on the cities' cumulative General Plans is a concern.
- Several pending amendments to the general plans in Mesa and Queen Creek may not protect the airport's future viability, because they introduce residential uses in areas where significant aircraft noise is projected to be an issue.
- There is no official vision for the development of the State Land Trust property when it is released for expansion. As noted earlier, the Superstitions report begins to address the long-term impacts for growth in the region. The panel believes the Williams Gateway study area should be a part of that larger vision for the entire PTA. In this report the panel has focused primarily on sustainability, which is also a general tenet of the Urban Land Institute.

The panel made four observations:

- There is no clear pattern for districts and neighborhoods or how they are linked in the comprehensive plans of Mesa and the adjacent jurisdictions.
- The amount of land designated for residential uses, not only on the GM property but in other locations, may set a precedent for additional residential use requests.
- There is confusion about the implications of the airport noise contours and their potential impact on attracting a high-volume aviation user.

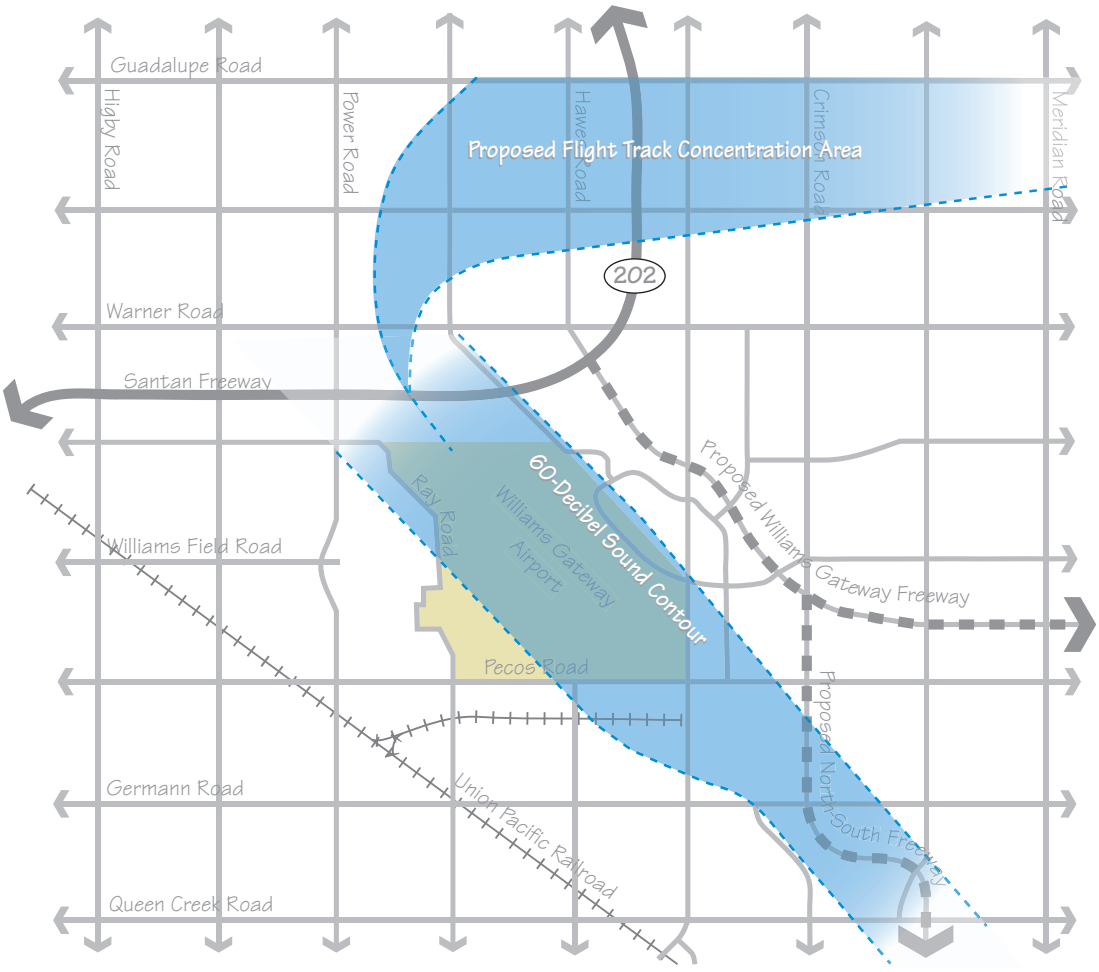


Surrounding jurisdictions.

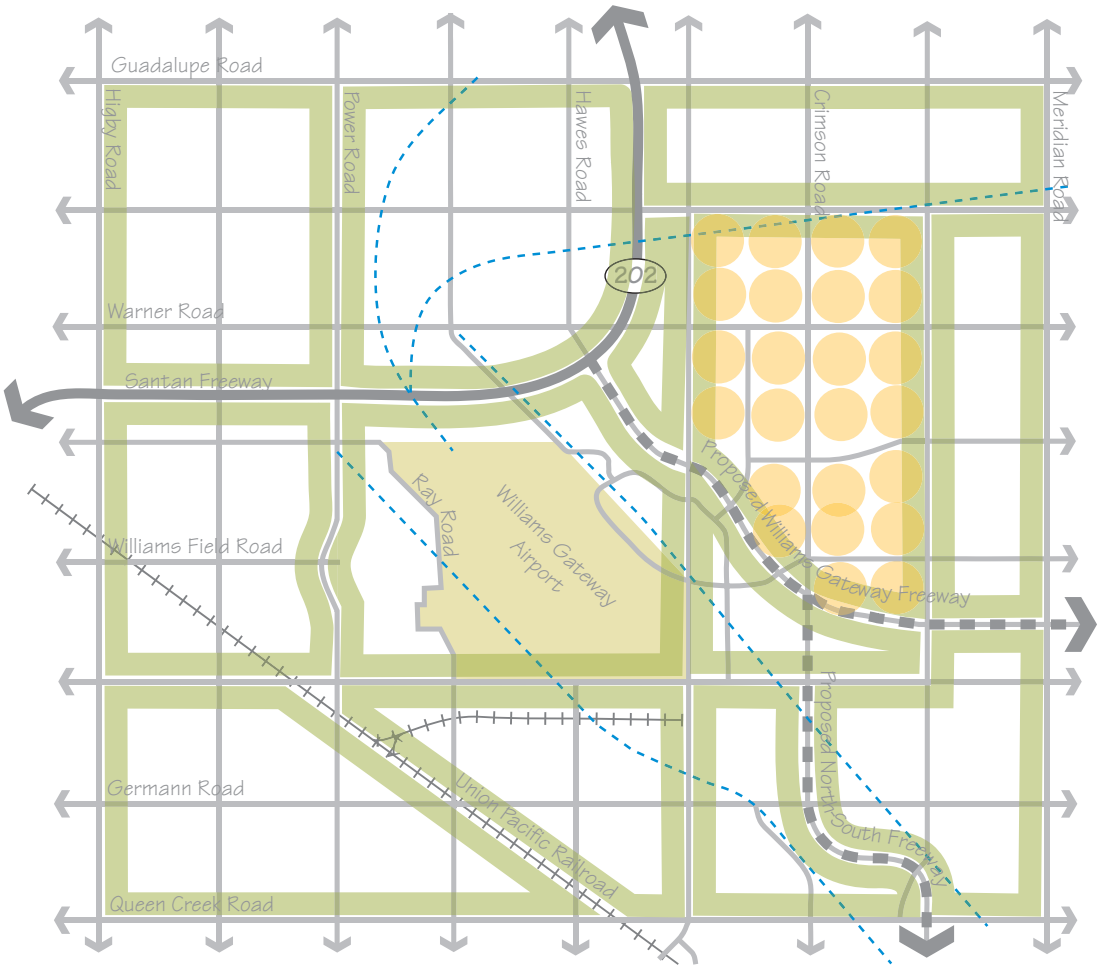
- Too many county enclaves are within the incorporated cities, making land use and infrastructure planning difficult.

The General Plans and Land Use

The large amount of industrial land depicted in purple on the General Plan maps shows that an effort has been made to reserve industrial lands from residential encroachment, pending final resolution of the airport noise contours and the type of aircraft that will use the airport as it evolves. The Airport Authority is now beginning a planning project to update the airport's master plan, which will help identify the future noise contours. This project will be completed within the next 12 to 18 months. The panel believes, however, that limiting development within the study area has contributed to (but is not necessarily the cause of) low-density sprawl occurring both in Queen Creek and farther to the southeast. A large amount of land is designated for employment only, outside the current known 60-decibel line, the Airport Overflight Area II (which requires aviation easements and requires interior noise levels within residential units to be below 45 decibels), and the area of projected flight track concentration. This means that a greater degree of development can occur within the study area in many locations, while the airport's master plan proceeds apace. The panel recommends that over the next 18 months the towns of Queen Creek and Gilbert and the city of Mesa proceed carefully and conservatively with the approval of new development proposals that respect the current 60-decibel contour and leave sufficient room for greater restrictions. The area of greatest change will be northeast of the airfield; that is discussed later.



Sound contours and proposed flight-track concentration areas for the Williams Gateway Airport.



Neighborhoods and districts.

Another area of concern to the panel is the lack of districts and neighborhood identification, as would typically be found in an area of this size. In a more conventional setting, a study area of this size could have 10 to 15 districts in areas separated by freeways, open space, significant uses, noise constraints, etc. The graphic suggests how these districts could be defined.

Neighborhoods and Districts

The districts could also incorporate distinct neighborhoods centered on schools and parks in residential areas within a quarter-mile walking radius, as well as public streets, plazas, and open space in business or commercial areas. The panel recommends that the various jurisdictions begin to look at the study area in a comprehensive manner rather than from the viewpoint of individual projects.

A primary focus of activity within the study area will be the lands around the new passenger terminal. Although the new terminal and its associated parking and other services may not be developed for some time, allowing related development in the vicinity to move ahead may be appropriate.

The proposed terminal area would be located just west of an area that can support mid-rise concentrations of office and other supporting commercial uses, adjacent to the proposed Williams Gateway Freeway on the southern portion of the GM property.

East Terminal/GM Area

This area has the potential to resemble Reston Town Center, near Dulles Airport in Virginia, with vertical mixed-use buildings of ground-floor retail uses and upper-floor office uses. As one moves away from the terminal area to the northeast, greater concentrations of residential uses are appropriate on the northern portions of the GM site. The panel recommends examining minimum floor/area ratio (which essentially means establishing higher levels of building intensity) in this location, as well as developing urban design guidelines to establish a notable urban-centered neighborhood. Viewed holistically, the GM property offers the greatest chance to provide a new master planned community that respects best practices of development. Minimum residential densities should be established to take advantage of the

East Terminal and General Motors' proving grounds.

direct proximity to employment opportunities. It will be essential that the owners of the southern portion and northern portion, when selected, knit the two projects together seamlessly.

Lands to the west of the airfield are occupied primarily by ASU, the Toka Sticks golf course, and CGCC. Although most of the area from the former military base is being reused, vacant lands are still available for infill development as are larger parcels directly south of the airport. The panel recommends that ASU and CGCC be permitted to maximize their useable real estate and take maximum advantage of uses that may need airport or flight line access. New uses not affiliated with either school should be aviation related. In addition, land should be set aside in Queen Creek for a new facility to be associated with the community college, allowing for an educational area to serve residents in the southern end of its jurisdiction.

Lands south of the study area to Germann Road provide the best location for long-term industrial and airport-related use. As discussed earlier, a rail spur could be extended into this area to provide opportunities for businesses to capitalize on freight-to-rail connections. Although cargo shipping is anticipated to occur within the study area, this area could also accommodate users, similar to those at the Scottsdale Airpark, that need proximity to the airfield but may not need direct access to the flight line.

Flexibility will be important in deciding the mix of tenants and the establishment of floor/area ratio targets in this zone. Land south of Germann Road to Queen Creek Road in the town of Queen Creek should also begin to transition to mixed uses, with concentrations of industrial, office, retail, and higher-density residential uses in the future. This will allow the town to benefit from the redevelopment occurring at and around the airport.

A few additional recommendations are important. Because of the airport's traffic patterns and associated constraints, the land north of the runways in the vicinity of Warner Road could contain a large regional park of more than 100 acres. This active park could be associated with the large wash that trends north-south or with open space

Urban plazas that encourage street life should be considered in any mixed-use development.

just east of Power Road. Rittenhouse Basin, at the southeast corner of Power Road and Williams Field Road, is a proposed 147-acre open-space park planned by the town of Gilbert. Another significant park should be located within the former GM lands on the east side of the study area, perhaps in areas that would also provide a clear zone south of the runways.

Land between Power and Ellsworth roads and generally north of Warner Road will be subject to the most revisions to the airport noise contours. Land uses in this area may need to be generally nonresidential. Until the noise contours issues are resolved, the city of Mesa should weigh new developments there carefully.

The graphic illustration of the study area expresses the panel's general thinking on locations where residential uses may occur and where they should be restricted. The panel did not attempt to recommend land use changes for all 52 square miles of the study area; instead, it offers the following general approach. The brown color represents areas appropriate for industrial and commercial uses in relation to the flight line, the airport proper, and noise overflight constraints. The orange color indicates areas where a mix of higher-intensity employment and residential uses could be developed, subject to further analysis and local approval. The yellow color illustrates areas where single-family residential uses would dominate, farther away from the cores. The white areas either are mostly built out (for example, the town of Gilbert) or need additional clarification regarding the airport's noise constraints. Areas near the higher-education campuses and the area closest to the new proposed terminal are expected to be developed as activity centers.

It is also important to plan for urban mixed-use centers and concentrations of higher densities along key arteries in the study area. The advantages of doing so are (1) avoiding the use of sound walls, (2) placing more affordable units closer to transit and retail services, and (3) adding more options for greater housing choice throughout the area.

State Lands

The panel would also like to address the issue of land use and connectivity as it may relate to the future sale of the Arizona State Land Department acreage. This 275-square-mile area is designated for development over many years, assuming water supplies can be provided and notwithstanding other constraints. The first large parcel is expected to become available within the next year. The panel recommends that the State Land Department examine the highest and best use of those lands through preliminary conceptual planning to address both development opportunities and environmental and social needs before sale. A second alternative is for Mesa, Queen Creek, and Apache Junction, along with Maricopa and Pinal counties, to join forces to fund a third-party visioning process for those lands. The Superstitions report began to address this area and now is the

Proposed land uses.

time to explore methods to promote quality growth, before land sales are initiated.

Open Space

The difference between memorable places and places with no discernible character is often most visible in the quality and quantity of public open spaces. Included in this category are streets, parks, trails, and all types of open-space lands. The East Valley in particular suffers from three deficits:

- No regional open-space corridors;
- No trails or links between cities and destinations, although the planned Queen Creek Wash, Sonoqui Wash, and the Roosevelt Water Conservation District (RWCD) East Maricopa Marathon Trails in Gilbert will become connectors when fully completed; and
- Lack of habitat protection for native plants and animals.

The panel recommends the following actions to improve the urban design and character of the public open spaces:

- Develop a regional open-space plan that includes the entire study area and Mesa, Gilbert, and Queen Creek, as well as the state land. Preservation of lands for environmental habitat protection should be part of this effort. An example is the planned Rittenhouse Basin community park area at the southeast corner of Power Road and Williams Field Road.
- Provide direct connections from mass transit stops and surrounding neighborhoods to the ASU and CGCC campuses.
- Require all new developments to incorporate neighborhood links to promote walking and nonvehicular transportation (cycling).
- Provide neighborhood parks with a minimum scale of 5 acres per 1,000 persons, and ensure

that all new homes lie within a quarter mile of usable park space.

- Develop new collector and minor residential street standards that promote comfort, low speed, and shade and enhance the viability of walking and bicycling from homes to local destinations, particularly transit connections.

Transportation

The study area has the ability to operate as a true multimodal transportation hub with road, rail, and aviation opportunities.

Freeways and Arterials

Freeways and arterial roadways are the backbone of the transportation system in the Williams Gateway Area. The grid pattern of arterial roadways was augmented this year by the opening of the Santan Freeway. There is now direct freeway access to the rest of the regional freeway system. The new freeway connections have shifted travel patterns toward grade-separated interchanges with Higley, Power, and Elliot roads and the Superstition Freeway to the north. Another freeway is planned to link the Santan Freeway to the east through Pinal County, connecting with US-60. This new freeway, the Williams Gateway Freeway, is programmed for construction in ten years.

The arterial system in the study area is a grid system, with major arterials spaced every mile. A major improvement to the system is underway with the widening of Ellsworth Road through the center of the study area. However, the grid system is missing several important arterial links through the GM and airport properties and along the eastern border of the study area. Because of the grid pattern, traffic flows have dictated that arterial intersections be signalized and have multiple turning lanes. The road system has a hierarchy of roadway connectivity and function, with the lesser collector streets spaced internally within the arterial grid pattern.

The typical advantages of the grid system are significantly reduced within the study area because of the location of the Williams Gateway Airport and the GM properties. The size of these two properties eliminates the ability of a motorist to find an alternative arterial roadway within one mile. In a 6-mile north-south corridor, Ellsworth Road is the only high-capacity arterial street. Similarly, east-west travel patterns are restricted between Elliot and Germann roads. Transport in the heart of the study area relies exclusively on Ellsworth Road. The absence of other roadways restricts connectivity and mobility and results in less-direct and longer trips—and it will delay the expansion of planned land uses, unless concomitant or preceding additions are made to the arterial infrastructure.

The missing arterial links within and around the study area restrict travel in terms of connectivity and roadway capacity. Traffic to and from residential and retail uses in the study area, Queen Creek, and parts of Pinal County faces heavy congestion during peak travel periods. Most of the existing roads are two-lane farm roads or have been improved only along the frontage of new developments. Partial streets have been built new within rights-of-way that are ultimately designed to be widened to four or six lanes.

In October 2004, the citizens of Maricopa County approved Proposition 400, which allows the continuation of the $0.05 sales tax for transportation improvements over the next 20 years. A number of Proposition 400 projects are in the study area and are programmed for implementation within the next 20 years. Initial projects include improvements to Hawes Road between Santan Freeway and Ray Road and to Ray Road between Sossaman Road and Ellsworth Road by 2010. Many of the north-south arterial roadways are also programmed for improvement, except for a portion of Sossaman Road north of the airport. A number of east-west roadways are not funded within this 20-year program, the most notable being Warner and Williams Field roads to the east of the airport and Germann Road between Signal Butte and Meridian roads.

In addition to the arterial street improvements, extension of the Williams Gateway Freeway through the study area is planned for construction by 2016. This alignment has been delineated and will extend east to Pinal County. As it moves from Maricopa to Pinal County, however, it will need more refinement where it passes through the

State Trust Land in Pinal County. A more southerly alignment was examined but not selected for Williams Gateway Freeway where it will traverse the study area, Queen Creek, and more southerly developing areas in Pinal County.

The panel offers a number of recommendations to help improve travel and mobility within the study area. The grid system is particularly helpful in providing a systematic approach to roadway connectivity and alternatives for trip making. Although many of the arterials are programmed for widening, it is recommended that missing connections that provide additional capacity as well as connectivity and travel options should be reconsidered, in addition to widening-only projects.

The highest-priority links are those that emphasize connections to and from grade-separated interchanges of the freeway system on Crimson, Signal Butte, and Meridian roads. As the GM property redevelops, these links will assist in resolving traffic concerns and provide more north-south travel options for the southern portion of the study area, as well as for Pinal County. Until those roadways are connected in the north-south direction, Ellsworth Road will continue to absorb the majority of the north-south traffic through the center of the study area. In contrast, the western edge of the study area is served by three north-south arterials: Higley, Recker, and Power roads. East-west continuity will be most helped by improvements realigning and connecting Pecos Road to Ellsworth Road south of the airport and continuing Ray Road to the new terminal area and eventually to Ellsworth Road north of the airport.

New arterial links should be planned to accommodate traffic to and from the south and southeast and through the center of the study area to connect with the freeway system. This will assist Queen Creek in establishing improved regional connections and access to the airport; provide an additional connection to the partial construction of the Williams Gateway Freeway; and direct traffic from developments south of Queen Creek more directly to the freeway system.

Initial construction of the Williams Gateway Freeway should consider logical termination within Maricopa County at either Signal Butte or Meridian roads. At a later date and upon refinement of the alignment to the east through Pinal County, the freeway can be extended on a phased basis, east of Meridian Road to Ironwood Road and US-60. The acquisition of the needed right-of-way should begin today.

The timing of the roadway system through the study area needs to be coordinated for roadway projects among the respective jurisdictions: Maricopa County, the city of Mesa, and the towns of Gilbert and Queen Creek. This coordination effort should be overseen by the county so that improvements are implemented to provide the most logical sequencing in opening connections that link the arterial grid and the freeway system. The Arizona Department of Transportation has to be a key participant in this coordination effort.

Public Transportation

Long-distance travel is primarily oriented to the automobile. Transit service is limited to the northwest corner of the study area via the Valley Metro bus service and to shuttle bus services provided between the ASU campuses. Although significant transit improvements are programmed, funded primarily through Proposition 400, the projects are not expected to be implemented in the study area in the next eight years. The light-rail system is under construction in the region, but current planning and funding does not have the system reaching the study area in the foreseeable future. Consideration is underway—as part of an ongoing study of commuter rail—to develop service in the region using the Union Pacific rail line that crosses the southwestern corner of the study area. The new Cooley Station project in Gilbert has designated a location on its plans for a commuter rail station, if such service is provided.

The panel recommends consideration of the following new public transportation services. Public transportation service to the study area is needed today. The ASU and CGCC campuses (especially CGCC) are oriented to commuter students and would be well served by immediate extensions of the current bus service provided by Valley Metro. Connections to, or extension of, the light-rail system in downtown Mesa should be emphasized. A reconsideration of ending the line in downtown Mesa and the costs of such an extension should be

explored in the next 12 to 18 months. An extension of the light-rail system through the campuses to the relocated airport passenger terminal area should be considered.

Water and Sewer

Water is available in the study area from a variety of sources, including Mesa, the Queen Creek Water Company, the Salt River Project, the Central Arizona Project, the RWCD, and groundwater. On the basis of information provided to the panel, it does not appear that water availability is an issue. The panel recommends that in addition to the transportation opportunities mentioned in the previous section, provisions for water and sewer services to the study area be coordinated as part of a consolidated infrastructure plan.

Implementation

The preceding sections of this report outline an ambitious approach to help define, leverage, and develop the assets of the Williams Gateway Area. They offer general strategy recommendations and development concepts that will help the area fulfill its intended role as a vibrant economic engine in the East Valley. This section describes specific steps to implement the panel's recommendations, including establishing a new management structure for the airport that ensures continued leadership, developing an infrastructure plan, and identifying new financial and land use tools that could assist the cities, towns, and counties, as well as a revised approach to marketing. There is also a section dealing with the leadership role of ASU. The panel expects that many of the steps will be undertaken concurrently.

Governance

For 13 years, Williams Gateway Airport has been operated by the Williams Gateway Airport Authority, whose membership includes the city of Mesa, the town of Gilbert, the town of Queen Creek, and the Gila River Indian Community. Recently the city of Phoenix joined the Authority.

The Authority owns the airport in accordance with the terms of the transfer agreement with the federal government. Since the airport is located within the city of Mesa, that city has led the conversion of the airport to civilian use, the planning and execution of the necessary infrastructure for redevelopment, and the construction of new facilities to serve the area. The airport staff has attended to the affairs of the airport with care, concern, and professionalism. As the governing entity, the Authority has been a successful vehicle to unite the communities surrounding the airport. This exemplary intercommunity cooperation has carried over to include land use planning, coordination, and economic development discussions among the Authority members—all of which is very commendable. The panel recognizes the high value of intergovernmental cooperation and therefore recommends that the governance of the airport remain with the Authority. Further, the panel recommends that the Authority consider inviting Maricopa County and the city of Apache Junction to become members, to enhance the regional planning efforts.

To meet the goals of creating a major job center with 96,000 jobs and 68,000 students over the next 25 years, it may be necessary to take a more aggressive approach to the management of the airport including operations, marketing, financing, strategic planning, and development. The panel recommends that the Authority issue a Request for Proposal to seek a private company with the requisite skills, talent, and financial resources to enter into a long-term agreement to undertake the management of the airport and the development of the airport properties within the study area.

Privatization of the airport is not a new concept. Cities from Amsterdam to Australia and across the United States have selected private companies to manage their airports. Alliance Airport in Fort Worth, Texas, although different in its concept and infrastructure, has an organizational structure that can be a model for Williams Gateway Airport. Fort Worth built the runway, taxiway, and roadway infrastructure and entered into an operating agreement with a private company that funded and developed aircraft hangars, distribution and warehouse facilities, and other commercial properties. The personnel of that company have exceptional real property development skills and facility management experience, which has enabled the airport to develop more rapidly and become financially productive while meeting public and private aviation needs.

Privatization shifts much of the financial facility development burden from the Authority to the

contractor, who can assign personnel with appropriate and extensive experience to plan, market, finance, and construct to meet the specific needs of a tenant. This approach does not usually relieve the authority of the responsibility to fund airfield infrastructure and other related repairs and improvements, but it permits the Authority, through the contractor-operator, to seek prospective tenants, determine their needs, and build to suit at an accelerated pace. The operations and economic functions reside with one entity and that entity can be more nimble and pragmatic in its approach to adjusting to the market climate. The Authority and the contractor, through the terms of the agreement, share revenues which can, over a reasonable time, change the financial picture for the owner of the airport from negative to positive.

Consolidated Infrastructure Plan

A missing resource in the economic development equation for the Williams Gateway Area is a consolidated infrastructure plan, perhaps a miniature version of the Maricopa Association of Governments concept. This plan should include water, sewer, drainage, open space, electric service, communications, and especially transportation. While the various long-term plans of the cities, towns, and counties, the Salt River Project, and the airport include the components of such a plan, they should be consolidated into a single document. This plan should be prepared by Mesa and Maricopa County with input from the adjacent jurisdictions and relevant organizations. Mesa should take the lead in preparing the plan, with Maricopa County taking the lead specifically on the transportation components.

The consolidated infrastructure plan should be a long-term blueprint for the provision of infrastructure with details on locations and alignments of the various trunk components for water, sewer, and electricity. Specific information on the service lines should be determined only as individual properties move through the subdivision and site plan process.

Financing

Most jurisdictions and governmental bodies involved with this panel are experiencing acute shortages of funds to implement basic infrastructure. In most jurisdictions where ULI has completed an Advisory Panel, there are a variety of methods for financing public utilities and infrastructure. In Arizona, fewer tools are available to jurisdictions; most notably absent is a local property tax. However, a successful model in the Phoenix area is a community facilities district (CFD).

CFDs are a mechanism whereby developers are allowed to establish separate political subdivisions, distinct from the jurisdiction in which they are located, for the purpose of issuing tax-exempt bonds to finance public improvements. Among other public improvements, CFDs are allowed to finance public roadways, sewer improvements, water improvements, drainage projects, parks and recreational facilities, traffic and street lights, civic buildings, and fire and police stations. The obligation for repaying the CFD bonds is passed on to the end users of the property, who retire the bond obligations over a 25-year period. No residents outside the CFD are responsible for repaying the bonds.

In essence, CFDs are truly a mechanism whereby users pay for growth. The use of CFD financing also allows multiple developers and landowners to come together to fund the construction of regional improvements that benefit an area much larger than a single developer's or landowner's property. The panel recommends that, in conjunction with the preparation of the consolidated infrastructure plan, the cities, county, and airport hire a firm with specialized expertise to bring about the creation of a CFD or a series of CFDs.

Regulatory Tools

The primary goal of regulatory tools used by the communities within the study area should be the long-term protection of the airport by ensuring land use compatibility. Protection can be achieved in a number of ways. Land banking of industrial land is simple but can lead to land use battles and protracted animosities between the development community and municipalities. The panel suggests

adoption of a realistic land use plan that reflects future nonresidential needs. The land use plan recommended earlier in this document is consistent with this approach. The panel suggests enhancing the airfield overlay district by prohibiting single-family residential uses in Airport Overflight Area II and substantially increasing the noise attenuation requirements for other residential uses. Further, the panel recommends that the same zoning overlay be adopted by Queen Creek, which is located in one of the areas most vulnerable to noise.

In a more wide-ranging sense, the general plans for all the jurisdictions associated with the Williams Gateway Area need to be reviewed for long-term sustainability. The Urban Land Institute has provided leadership in the real estate industry regarding sustainability. Sustainability is a means to keep the economic engine of development fueled. Principles that have been adopted by high-growth communities around the country include the following:

- Create a shared vision for the future and stick to it.
- Identify and sustain green infrastructure.
- Remember that the right design in the wrong place is not sustainable.
- Protect environmental systems and conserve resources.
- Provide diverse housing types and opportunities.
- Build centers of concentrated mixed uses.
- Use multiple connections to enhance mobility and circulation.
- Deliver sustainable transportation choices.
- Preserve the community's character.
- Make it easy to do the right thing.

The panel observed that the East Valley is precisely in the path of Phoenix's demographic arrow. Panel members were surprised at the number of pending and approved residential units in the southeast quadrant of the Phoenix metropolitan area. The current (fall 2006) slowdown in the residential market may be helpful to the jurisdictions and the development community by providing a respite and time to consider methods to provide better guidance for development. The principle of building centers of concentrated development should be a priority for the areas around the study area. Smaller concentrated centers of development should also be considered in Pinal County, Apache Junction, Queen Creek, and the remaining unincorporated areas of Maricopa County. Further information regarding these principles can be obtained in the ULI publication *Ten Principles for Smart Growth on the Suburban Fringe* (ULI Catalog Number T24).

Open-Space and Trails Plan

Provisions for walkable communities, pedestrian links to employment areas, and continuous and connected open space are lacking in the study area. Because the study area is on the verge of significant development, now is the time to develop an integrated open-space plan to address connectivity. In addition to providing needed open space for residents, water recharge, and wildlife, the open-space approach can be used as a marketing tool to lure employers to the valley. This approach is consistent with the principles established in the Superstitions report.

Marketing

The image and identity of the Williams Gateway Area is presently defined only by its lack of financial success. Excellent visions and aspirations for the future of the area abound. What is needed now is a concerted effort by the current joint ownership at the airport, ASU, and CGCC to promote the area as a preferred site for high-tech, air freight, industrial, and educational opportunities. A marketing message for Williams Gateway Area must address the following overall aspects:

- Where in the world is the Williams Gateway Area? All marketing maps should show the study area in the center of the market. A map showing a 15-mile radius around Williams Gateway Area would demonstrate how many attractions and facilities are close to the study area.

- What is the "big idea"? Although inelegantly put, the question emphasizes the importance of being able to succinctly state the overarching idea associated with the locality (as can be done in Silicon Valley, along Rt. 128 outside Boston, and in the Research Triangle in North Carolina).
- Who is behind it? Namely, how credible is the promoter (in this case, the local district) and is that promoter likely to be able to accomplish what it is advertising? In the case of a community aspiring to bigger and better projects, it becomes important to include the substantial, credible private partners who are going to assist in making the dream a reality.
- What is the product? It is, of course, important to be able to enumerate what is available to procure (development parcels, buildings, recreational services, affordable homes, great neighborhoods, great schools, etc.). Of special importance is the ability to demonstrate that the products, though similar to products in other communities, are made better by virtue of their location.

Educational Stakeholders Role

ASU and CGCC currently function as an economic engine for the study area. This educational engine is a dominant force in the creation of jobs, the availability of research dollars, and the development of new technology. ASU's mission is to "increase the region's competitiveness by preparing graduates to move directly into professional and technological careers and to become ethical leaders in their professional, public, and personal lives." The community college is a substantial partner with ASU and provides high-quality training for metro area jobs as well as sound preparation for transferring into baccalaureate programs. The educational programs at ASU and CGCC should be nurtured and expanded.

ASU's Polytechnic campus currently offers programs in education, business, allied health professions, technical writing, and human factors psychology, along with science and technology programs in aeronautical management technology, applied biological sciences, computing studies, electronic systems, engineering, technology management, and mechanical and manufacturing engineering technology. Links between these programs and the air freight and industrial components of the airport offer enormous potential for productive synergies. As an international port of entry and a site for commercial and high-tech development, the airport can leverage and enhance the knowledge base of these programs. ASU should consider what other aviation and industry-based programs would contribute to the area's development.

The data on market potential indicate significant growth in the health care field in the greater Phoenix area. ASU and other higher-education institutions should be encouraged to make investments in programs that will help stimulate the development of new hospitals and clinics and leverage medical schools in the PTA to meet the projected demand. Also, ASU and CGCC should be encouraged to expand their programs in allied health areas, wellness, medical technology, nursing, and business programs associated with health care.

Finally, ASU's desire to leverage the acreage at the Polytechnic campus and adjacent property for uses such as a hotel and convention center is an excellent idea. As the academic programs expand, the construction of hospitality infrastructure will help the image of the Williams Gateway Area and enhance the interest of organizations in visiting the campus.

Conclusion

To reemphasize: the panel has ample reason to declare that the Williams Gateway Area is one of the most promising expanses of underdeveloped land in the Phoenix metropolitan area and western United States. Acted upon appropriately, the study area has the capability of becoming both an unprecedented economic engine in the East Valley and a vast well-planned community that integrates residential neighborhoods for many different income levels with outstanding educational and employment opportunities—all built around an airport that could become one of Arizona's most important gateways.

The panel also believes that a key to planning and building a successful area is bringing people in and providing activity. The ASU and CGCC campuses provide destinations for large numbers of people pursuing many interests. Students are looking for excitement, activity, and people to interact with, and the vibrancy and excitement of the university and college should play a role in attracting other business and activities to the area. The panel hopes the area can build on its already strong base to create additional attractive places and neighborhoods for people to live in. This is not a suggestion to recreate Tempe's Mill Avenue at the Polytechnic campus; this campus and area must find its own exciting and compelling vision for the future. But spin-offs from the vitality of the campuses should be enthusiastically pursued.

It now becomes incumbent on Mesa, Gilbert, Queen Creek, the airport, and collaborating stakeholders to ensure that the possibilities of the study area become reality. It will require hard work, creativity, and a single-minded determination to make the study area an economic development jewel for the East Valley and the state. The potential will evaporate quickly unless work starts immediately. Not only must the stakeholders begin planning on all fronts of the panel's recommended action steps, they must also do so together, with the single vision and shared goals that gave birth to this report. An ad hoc, uncollaborative approach should be replaced with a well-coordinated vision, and the stakeholders should take the lead in establishing appropriate, well-designed neighborhoods and districts.

Urban villages should include a substantial amount of employment uses and sustainable and compact residential densities, supplemented by world-class amenities such as recreational uses, parks, and open space. The design and materials used for these communities should be of high quality and competitive with high-end communities and urban centers in the valley. The goal is to present the Williams Gateway Area as an exceptional destination for business and educational opportunities, with supporting residential communities that will allow those functions to flourish.

The success of this vision will require bold moves and dedicated leadership. The public and the private sectors must work together to execute important action plans to achieve the ideals envisioned for the Williams Gateway Area. Bold does not mean foolish, nor does it mean achieving unconditional consensus for each initiative or individual development proposal. Leaders in the community must listen to a diverse set of stakeholders and formulate actions that are in the best interest of the community. Routine moves are also important. The day-to-day nuts and bolts of effective, responsive collaboration of city, town, and county management with the private sector will make the vision coalesce.

The panel has laid out an initial outline and given direction to the path to success. Now local leaders must commit to the vision to achieve success. The opportunities are there, and public and private leaders must be willing to and capable of taking on these challenges.

About the Panel

Alex J. Rose

Panel Chair
El Segundo, California

Rose serves as vice president of development for Continental Development Corporation. He is responsible for managing all development and construction activities for this developer of suburban offices and research and development parks, whose holdings cover 3.5 million square feet in Los Angeles County's South Bay market and San Francisco. Rose oversees acquisitions and new project development; planning and execution of all tenant improvement, core and shell renovation, and new construction work; major facilities maintenance and upgrades; project budgeting and cost controls; internal project management; and architect, engineer, and contractor management.

Over the past 11 years, Rose has overseen the development and acquisition of nearly 1 million square feet of Class A office and medical space, as well as the physical transformation of more than 1 million square feet of single-tenant research and development facilities into multitenant office space, restaurants, retail, and entertainment uses. His current projects include the repositioning and conversion of a 400,000-square-foot office park to medical uses, redevelopment of a 108-acre chemical plant site into 900,000 square feet of promotional and lifestyle retail, redevelopment of obsolete retail property into medium-density residential-over-retail mixed use, and new development acquisitions in excess of $150 million. Prior to assuming the development and construction responsibilities, Rose served as director of property management. He also has extensive experience in title insurance and is a licensed California attorney, with experience in general civil and bankruptcy litigation practices.

Rose received his B.A. in political science from UCLA, his M.B.A. from the University of Southern California, and his J.D. from Southwestern University School of Law. He is a trustee of the Urban Land Institute, a vice chair of ULI's National Program and District Council committees, a member of ULI's Small-Scale Development Council and of the Los Angeles District Council Executive Committee, and the immediate past chair of ULI's Commercial and Retail Development Council. Rose has chaired and served on numerous Advisory Services panels focusing on downtown and transit corridor redevelopment and revitalization and office development issues; he has participated in several ULI office sector workshops.

Daniel M. Conway

Aurora, Colorado

Conway is a real estate marketing and research authority specializing in residential, commercial and industrial, and golf course developments. He has more than 30 years of experience as an urban land economist. In the past 20 years, as president and director of economics and market research for THK Associates, he has conducted residential, commercial, industrial, and golf course economic feasibility and market studies, socioeconomic impact assessments, and financial planning studies.

Projects of particular interest include an international market center and industrial market analysis for the Dove Valley Business Air Park in Arapahoe County; a residential and related uses market analysis for several major developments in Douglas County, including the 1,342-acre Parker City site; and numerous golf course feasibility studies throughout the country. He has completed a wide range of research and analysis of Las Vegas and Reno, Nevada; Oxnard, Palm Springs, and Carmel, California; Kansas City, Missouri; Oklahoma City and Tulsa, Oklahoma; Austin, Texas; Albuquerque and Santa Fe, New Mexico; Seattle, Washington; and Phoenix and

Tucson, Arizona. Under Conway's guidance, THK Associates completes more than 75 golf course feasibility studies and golf driving range market studies and appraisals each year.

Allen K. Folks

Sacramento, California

Folks is a principal and vice president of EDAW, Inc. A licensed landscape architect and planner, he directs the design studio and has prepared master plans and directed the implementation of a wide range of projects in the western United States and in other countries. His waterfront planning experience includes large mixed-use projects in several Bay Area cities and the resolution of issues related to the California Environmental Quality Act. Folks also was very active in the design and preparation of several key waterfront reuse plans for military bases, including those for Mare Island Naval Shipyard and Naval Air Station Alameda.

Folks's current responsibilities in California include the preparation of specific plans for new developments in Napa and Half Moon Bay, a specific plan that addresses urban infill in Walnut Creek, and design of Microsoft's new South Campus in Mountain View. He is also responsible for the master plan for a new development in Cairo, Egypt.

Robert E. Kuhns

Alexandria, Virginia

Kuhns is the director of traffic and transportation planning for Clark Nexsen, a full-service architectural, engineering, planning, and interior design firm. He has 31 years of experience in local and regional transportation planning. He devoted 20 years to the public sector earlier in his career. He now provides professional transportation consulting services to public, private, and institutional clients throughout the country. Kuhns has managed long- and short-range transportation planning efforts, including corridor analyses, downtown plans, campus plans, pedestrian studies, parking studies, and travel forecasts. He has managed and directed transportation projects emphasizing improved traffic operations for municipalities, health and education institutions, community centers, government and military facilities, cultural facilities, and retail and mixed-use centers.

Kuhns has focused especially on providing services for redeveloping and revitalizing urbanized areas, for growing higher-education campuses, and for expanding cultural and tourist venues. He has a master's degree in traffic engineering and transportation planning and an undergraduate degree in civil engineering from the University of Maryland. He is a member of the American Institute of Certified Planners and the Society of American Military Engineers.

Richard L. Perlmutter

Rockville, Maryland

Perlmutter cofounded Argo Investment Company in 1996. The firm currently is developing retail, office, residential, and urban mixed-use projects. Argo's projects include more than 2 million square feet of commercial and residential space. Nearing completion is downtown Silver Spring, a 1.2 million-square-foot mixed-use development in Montgomery County, Maryland. The development includes 400,000 square feet of urban retail spread over four city blocks, 180,000 square feet of class A office, 170 hotel rooms, and 220 condominiums. Also under development is a 45-unit condominium project in the Georgetown neighborhood of Washington, D.C., and an art storage facility in Somerville, Massachusetts.

Previously, as senior vice president of Bank of America, Perlmutter was responsible for managing its real estate portfolio. He began his career in real estate with Oxford Development Corporation and Bozzuto Associates, where he developed more than 3,000 apartments along the eastern seaboard from 1984 to 1990.

Upon graduating from the School of Law at the University of Oregon in 1981, Perlmutter became counsel to the U.S. Senate Committee on Commerce, Science, and Transportation. He completed undergraduate studies in urban planning at the School of Architecture and Urban Planning of the State University of New York at Buffalo and graduate study in urban planning at the School of

Architecture and Urban Planning of the University of California of Los Angeles. Perlmutter is a member of the Executive Committee of the Urban Land Institute's Washington District Council.

John D. Solomon

Prescott, Arizona

During his 40-year career in managing airports and airport systems, Solomon served six cities in a wide range of executive capacities. His most recent position was assistant director of aviation for the city of Phoenix, from which he retired in November 2001. His duties and responsibilities included the operations, maintenance, environmental impact assessment, planning, and development of airports in each city he served. During his career he provided direction for and participated in 14 airport master plan studies for large-, medium-, and small-hub, and general aviation airports and oversaw the construction of more than $1 billion of airport facilities projects. He has extensive experience in conducting community participation panels, charrettes, and public presentations of airport master plans, environmental studies, and planned airport construction projects. Since his retirement, he has served as a consultant on several airport planning and management studies. He currently serves as a member of the Airport Advisory Committee for Prescott, Arizona.

From 1986 until 1988, Solomon served as director and airport management consultant at Landrum and Brown, a premier aviation consulting firm that specializes in facilities, financial, environmental, and management studies for airports.

Upon graduating from Oklahoma State University in 1958, Solomon gained considerable experience in the insurance industry as a claims adjuster while attending law school at Oklahoma City University, before obtaining his first job in airport management. He gained his professional accreditation in 1967; he served as a board member of the American Association of Airport Executives (AAAE) and was president of that organization in 1976. He has also served on the board of the Airport Operators Council and on several state and regional airport organizations. Solomon has received numerous professional awards and recognitions, including the AAAE President's Award and the AAAE Distinguished Service Award, and several commendations from the Federal Aviation Administration.

Zane Segal

Houston, Texas

Segal is a developer, marketing consultant, and real estate broker with Zane Segal Projects, Inc. Specializing in mixed-use, residential, retail, historic, hospitality, urban, and resort properties, he has 27 years of experience in real estate venture management, development, construction, brokerage, and marketing on a range of property types including land, lofts, townhomes, custom homes, low- and mid-rise condominiums, hotels, retail centers, office buildings, subdivisions, and sports facilities, as well as mixed-use projects incorporating several property types.

Segal received his Bachelor of Science degree from the Massachusetts Institute of Technology and his Master of Fine Arts degree from the University of Southern California. He has studied graduate-level architecture at the University of Houston.

Segal is vice chair for advisory services of the Urban Land Institute Houston District Council. He has chaired one and served on eight Advisory Services panels across the country, and he chaired ULI Houston's first two Technical Assistance Program panels. He is a member of a Houston Planning Commission committee that is studying urbanization of the suburbs, is on an advisory committee overseeing a regional visioning project, and serves on the boards of the Citizens Environmental Coalition and Blueprint Houston.

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