

AIRPARK CIRCULATION STUDY

1.0 INTRODUCTION

Scottsdale Airpark is the preeminent employment center in Scottsdale and the third largest in the Phoenix metropolitan area. Access to the Airpark's multiple commercial and employment centers, as well as traffic congestion at key locations throughout the Airpark and immediate vicinity, are the major transportation concerns. The purpose of this circulation study is to identify and analyze potential transportation solutions for through and destination traffic at Scottsdale Airpark. Primary considerations for this area are:

- ▶ Through, destination, and local traffic circulation;
- ▶ Forecasted traffic volumes along the major streets surrounding and through the Airpark;
- ▶ Functionality of transit services connecting to, and circulating throughout, the Airpark; and
- ▶ Possible intersection enhancements at Scottsdale Road and Frank Lloyd Wright Boulevard, Hayden Road and Frank Lloyd Wright Boulevard, Pima Road and Frank Lloyd Wright Boulevard in particular.

The primary focus area of the Airpark study area is generally bounded by the Scottsdale/Phoenix jurisdictional boundary on the west and the Central Arizona Project (CAP) Canal on the north; the Loop 101 on the east and approximately the Thunderbird Road alignment on the south. Connections on the east-west portion of the Loop 101 (between Scottsdale and Pima/Princess) are being examined, however, the circulation of the area north of the CAP Canal is not being examined in this study (Figure 9-1 and Figure 9-2). The Airpark is also adjacent to two planned development areas: the Scottsdale Road corridor, with the One Scottsdale project, and the substantial continued development of the city of Phoenix Desert Ridge area and the Kierland development.

The Vision, Values, and Goals component of the *Transportation Master Plan* identifies many over-arching goals (based on the *General Plan* Community Mobility Element goals and additional goals regarding sustainability and regional coordination). The following are directly applicable to the Airpark study area:

- ▶ Protect the function and form of regional air and land corridors;
- ▶ Protect the physical integrity of regional networks to help reduce the number, length, and frequency of automobile trips, to improve air quality, reduce traffic congestion, and enhance quality of life;
- ▶ Promote regional diversity and connectivity of mobility choices;
- ▶ Prioritize safe and effective regional transportation connections beyond the City boundaries;
- ▶ Enhance connectivity to regional transportation facilities;
- ▶ Relieve traffic congestion;
- ▶ Optimize the mobility of people, goods, and information for the expected buildout of the City;
- ▶ Maintain Scottsdale's high aesthetic values and environmental standards in the City's transportation system;
- ▶ Emphasize live, work, and play land use relationships to optimize the use of citywide systems and reduce the strain on regional and local/neighborhood systems; and
- ▶ Protect neighborhoods from negative impacts of regional and citywide networks.



FIGURE 9-1: Airpark Area Map — City Context



FIGURE 9-2: Airpark Area Map — Immediate Area Context

In addition to these broader goals, Airpark specific goals are as follows:

- ▶ Improve arterial flow on streets around the Airpark through capacity and operational improvements of streets bordering the Airpark;
- ▶ Create facilities that encourage internal bicycle and pedestrian trips;
- ▶ Create bicycle and pedestrian facilities that complement parallel improvements to the transit system;
- ▶ Acknowledge the value of private enterprise in the Airpark and minimize unwanted roadway impacts;
- ▶ Provide direct freeway access from Loop 101 to the Airpark/Airport if at all possible, working with Arizona Department of Transportation (ADOT), through interchanges on Loop 101 with Northsight Boulevard and Hayden Road;
- ▶ Create transit improvements which include new bus service and potentially HCT; and
- ▶ Create Transportation Demand Management (TDM) measures to address access and circulation concerns for the Airpark area.

1.1 Scottsdale Airpark Background

Scottsdale Airpark was established in 1966. Today, it is an employment and business center that houses approximately 110 business categories (e.g., accounting, auto, publishing, etc.) in a variety of building types, such as commercial office buildings, warehouses, aircraft hangars, retail stores, and hotels. Some areas within the Airpark are redeveloping from office/warehouse and light manufacturing space to showrooms and retail venues.

Located on approximately 2,900 acres of privately owned land just south and west of Loop 101 and 7 miles north of Scottsdale's Downtown area, the Airpark houses approximately 2,550 businesses and is headquarters to more than 30 national and regional corporations¹. In addition, construction of approximately 1.6 million square feet of new office space has either been completed, or is under development.

Scottsdale Airpark is a major economic asset that contributes between \$2.5 billion and \$3 billion annually to the local economy², and in Maricopa County, ranks third in employment areas after Phoenix Sky Harbor International Airport and Downtown Phoenix³. Employment in the Airpark has been growing by about 3,000 employees per year since 2002, and has more than tripled since 1995, increasing from approximately 14,000 to over 50,000 workers as of December 2006. According to the most recent statistics and studies, current growth rates are being realized about four years earlier than originally anticipated. Should these growth trends continue, the Airpark could become the largest employment center in the Metro-Phoenix area. Continued efficient access to businesses located in the Airpark is critical to ensure vitality and sustainable growth. Another factor of note is that the majority of the Airpark's employees commute from areas east and west of Scottsdale, presenting additional transportation issues for the Airpark⁴.

The Airpark area is also near other popular destinations such as hotels/resorts, shopping areas, and golf courses. It is within a mile of WestWorld, a special event and tourist attraction that is home to the Barrett-Jackson Classic Car Auction and the Scottsdale Arabian Horse Show. The

¹ *Scottsdale Airpark 2010 Report*, December 2006

² *Economic Impact of the Scottsdale Airport/Airpark Report*, November 2003

³ Scottsdale Development Update March 22, 2006 (A weekly newsletter from the City of Scottsdale)

⁴ *Scottsdale Airpark 2010 Report*, December 2006

Tournament Players Club Princess golf course, located north of the CAP Canal, is home to the FBR Open, a PGA golf tournament held in January each year.

1.2 Scottsdale Airport

The Scottsdale Airport was first developed in the remote desert north of downtown Scottsdale in 1942 as Thunderbird Airfield II, when it was used by the Army Air Corps as a basic training facility for World War II pilots. The civilian-operated airfield provided initial flight training to 5,500 aviation cadets for World War II service. Closed in 1944, it was turned over to Arizona State College (now ASU) for use as a vocational school for veterans. In 1953, when Arizona State College no longer needed the facility, the Arizona Conference of the Seventh-Day Adventists took over the buildings and field for its Thunderbird Adventists Academy high school and missionary pilot training. When Scottsdale's first *General Plan* was drafted in the 1960s, it included land use designations for the Airport and a surrounding industrial park, both seen as potential economic engines for the City. The City of Scottsdale acquired the Airport in September 1966 and continues to manage its operations. The Scottsdale Airport opened in June 1967⁵. In 2004, there were more than 450 aircraft based at Scottsdale Airport, from single engine recreational planes to corporate jets. In 2006, the Airport accommodated approximately 200,000 general aviation flights and approximately 6,000 passengers, making it one of the busiest single runway facilities in the nation and the busiest corporate jet facility in the state⁶.

One of the most significant aspects of the Scottsdale Airport is the major economic stimulus that it provides to the City of Scottsdale and northeast Valley. The facilities of the Airport and the quality of life and amenities of the Scottsdale area have attracted a large number of businesses that locate on or near the Airport. These same facilities and amenities draw general aviation and corporate business travelers from all over the country to visit Scottsdale for business and recreational purposes. The Scottsdale Airport is an ideal choice for vacationers and business travelers because it is near some of the City's annual signature events such as the Barrett-Jackson Classic Car Auction, the FBR Open PGA golf tournament, and the Scottsdale Arabian Horse Show. Based on the *Economic Impact of the Scottsdale Airport/Airpark Report*, the total value-added of all economic activity at Scottsdale Airport is approximately \$63 million annually in direct revenues; adding indirect and induced impacts increases that figure to \$182 million. This impact comes from a variety of aviation-related activities including charter flight schools, general aviation activities, as well as travel and tourism. These aviation activities create "spin-off" impacts by providing jobs and support structure for other non-aviation business around the community and the state⁷.

The following plans, listed below in chronological order, have been developed to accommodate anticipated growth at the Scottsdale Airport:

- ▶ *Scottsdale Airport Master Plan*, 1974;
- ▶ *Master Plan Update*, 1976;
- ▶ *Airport Master Plan and Noise Compatibility Program*, 1985;
- ▶ *Scottsdale Airport Economic Impact Study*, 1992;
- ▶ *Circulation Study for Scottsdale Airport*, July 1993
- ▶ *Scottsdale Airport Master Plan*, 1997;

5 Fudala, Joan; Scottsdale Airpark News, April 2007

6 [www.scottsdaleaz.gov/airport/pdf/AirportFacts 102205.pdf](http://www.scottsdaleaz.gov/airport/pdf/AirportFacts%202005.pdf)

7 Ibid.

- ▶ *FAR Part 150 Noise Compatibility Study*, 1997;
- ▶ *Scottsdale Airport Tunnel Feasibility Study*, 1998;
- ▶ *Scottsdale Airport Economic Impact Study*, 1998;
- ▶ *Traffic and Feasibility Report for Airport Tunnel Study*, 1999;
- ▶ *Analysis and Forecast of the Economic Base of Scottsdale, with particular Emphasis on the Hospitality Sector and the Combined Airpark/Sonoran Regional Core Character Areas*, 1999;
- ▶ *Development Parcel/Third Street Realignment at Thunderbird Road – Design Concept Report*, May 2003;
- ▶ *Scottsdale Airport Economic Impact Study*, 2004;
- ▶ *FAR Part 150 Noise Compatibility update*, 2006; and
- ▶ *SR101L South Frontage Road and Pima Interchange Connector Ramps– Engineering Feasibility Report*, February 2007.

Note: The Scottsdale Airport Master Plan, 1997 plan update got underway in mid-2007, funded through a grant from the ADOT.

1.3 Airpark Area Prior and Ongoing Study

This section summarizes plans that have been developed to guide Airpark growth and development. It should be noted that some of these plans have been formally adopted; others have been developed for future reference; and some are pending formal adoption. The following documents were reviewed during the development of preliminary transportation improvement concepts.

1.3.1 Scottsdale 2001 General Plan

The Airpark is designated as a Growth Area in the *City of Scottsdale General Plan 2001*. Growth areas are defined as areas of the community that are most appropriate for development focus, that would best accommodate future growth, and facilitate enhanced transportation systems and infrastructure coordinated with development activity. The City can concentrate on improvements in these growth areas that will support planned concentration of a variety of uses (mixed uses) and are oriented to multi-modal (transit, pedestrian, bicycling, autos, etc.) activity.

1.3.2 1999 Economic Forecast and Analysis Report

The 1999 *Economic Forecast and Analysis Report* addressed the Airpark's continued economic growth⁸. The purpose of the study was to define future public infrastructure needs, in anticipation of future development, to facilitate the City's long-term capital improvements planning.

The growth projections in this report, based on a 1989-1995 shift-share analysis, forecast approximately 52,000 employees in 2020. It is expected, however, that this forecast will most likely be realized by 2010 (ten years earlier). This analysis predicted a shift from lower intensity mixed-use warehouse to higher density office buildings and, indeed, this shift appears to be taking place in the Airpark. The report also indicates that this shift should be encouraged to promote Airpark employment growth and sustainability and indicates that it is important to integrate supporting retail services as well as transportation demand management measures (bike routes, car pooling, shuttle routes, etc.).

8 *Analysis and Forecast of the Economic Base of Scottsdale*, Gruen Gruen + Associates, June 1999

The 1999 *Economic Forecast and Analysis Report* also concluded that Scottsdale was growing slightly faster in employment than in residential growth; this trend also continues today. Between 2000 and 2005, Scottsdale grew by a rate of 11.7 percent in population and 34 percent in employment growth⁹. This demonstrates that Scottsdale is attracting a workforce that extends beyond its jurisdictional boundaries. A survey conducted of Airpark businesses, within the context of the *Report*, found that 49 percent of employees lived in Phoenix, 31 percent lived in Scottsdale, and 5 percent in both Glendale and Mesa. The primary commute pattern of employees to the Airpark was east-west, not north-south. (This study was completed before the completion of the Loop 101 Freeway.) In that survey, 60 percent of business owners surveyed indicated that their reason for locating in the Airpark was “owners/top management resides there”; 27 percent cited “proximity to customer base.” The remaining reasons cited in favor of the Airpark location were “accessibility to the Scottsdale Airport” (8 percent), “close to desirable labor base” (2 percent), and “accessibility to Pima Freeway (Loop 101)” (2 percent). Additionally, the *Report* points to Scottsdale’s successful hospitality industry as another factor of Airpark success, and reiterates the strong positive role that quality of life elements evident in Scottsdale — such as proximity to shopping, restaurants, entertainment, cultural venues, and recreation — play in attracting businesses and investors.

1.3.3 Scottsdale Airpark White Paper, December 2003

Scottsdale Airpark was established in 1966 and developed to its current success through 40 years of supporting land use programs and policies implemented by the City of Scottsdale. The *Scottsdale Airpark White Paper*, although not currently adopted, identifies key issues and strategies, summarized below, to ensure continued Airpark expansion and economic vitality¹⁰.

Key Issue #5 Traffic and Circulation

- ▶ The Airpark draws employment regionally.
- ▶ Ample capacity and connection are vital to sustainable economic growth. Efficient accessibility is an important factor to attract new businesses to the Airpark.
- ▶ The Airport, CAP Canal, and Loop 101 are barriers to the local street network and impact local street connectivity, causing traffic congestion. The primary mode of transportation to the Airpark is private automobile which compounds local roadway congestion. Congestion on the Airpark’s internal roadway system is increasing, and more importantly, has spread beyond the usual peak-hour demand.
- ▶ Support of Airpark business and property owners is critical to the success of any proposed transportation strategies.

Strategies

- ▶ Good connections from the regional bus system to the Airpark are necessary.
- ▶ High capacity express bus service should be provided to this area.
- ▶ Multiple connections to the region’s major arterial street network should be provided and enhanced.
- ▶ Accessibility to Pima Freeway (Loop 101) needs to be protected and enhanced where possible.
- ▶ Consider and work toward the installation of additional street connections across and around the existing barriers wherever feasible.

⁹ City of Scottsdale *Demographic Trends Analysis*, October 2005

¹⁰ *Scottsdale Airpark White Paper*, December 2004

- ▶ Improve the capacity of these few links across and around the district.
- ▶ Create a local transit service that serves the internal needs of the business center and connects to nearby residential concentrations.
- ▶ Provide facilities that enable and encourage bicycling and walking as viable and safe means of travel within this area.
- ▶ Encourage all development projects to create strong pedestrian connections to sidewalks from their entries and provide adequate bicycle parking.
- ▶ Provide amenities that make the use of alternative modes of transportation comfortable such as shade, lighting, information kiosks, and seating.
- ▶ Encourage local business to take advantage of the many ways in which transportation demand can be managed, including car and van pooling, staggered work and lunch hours, telecommuting, etc.
- ▶ Encourage larger properties and developments to incorporate on-site shuttles and other services that reduce the need for auto use.
- ▶ Discourage over-sized parking facilities and encourage joint parking where nearby land uses have different peak demands for parking.
- ▶ Enhance the existing street system wherever possible with right-turn lanes, double left-turn lanes, and other intersection capacity improvements.
- ▶ Allow for greater mix of on-site uses in certain areas so that there is less need for employees to get in their cars and drive to dining or services used during the workday.

Key Issue #6 Airport Tunnel

- ▶ A tunnel has been under consideration for several years to connect Raintree and Butherus drives, and thereby enhance circulation to sites along these streets.

Strategies

- ▶ A corridor land use study should be conducted in order to determine an overall strategy for either changing or keeping the existing land uses within it.
- ▶ Any roadway planning for this project should anticipate the increased access desires of property owners and tenants along the route.

1.3.4 Economic Vitality Airpark Area Study

The City of Scottsdale Economic Vitality Department undertook an evaluation of the economic vitality of the Airpark area in 2006.

1.3.5 Greater Airpark Area Planning Study

The City of Scottsdale Advance Planning Division has defined the Greater Airpark as a planning area for further study, building off the 2003 *Scottsdale Airpark White Paper* and addressing issues including land use mix, revitalization of aging infrastructure and buildings, and area character.

2.0 EXISTING CONDITIONS

2.1 Traffic and Circulation

The traffic analysis presented in this report is based upon traffic forecasts prepared by Maricopa Association of Governments (MAG) and the City of Scottsdale. The current MAG model uses data developed in 2005 and was based upon the U.S. Census 2005 which were updated from previous projections and approved in late May/early June 2007. In the spring and summer of 2007, the City of Scottsdale developed a stand-alone sub-regional travel demand model. The model was programmed with a base year (baseline) of 2006 and a forecast year of 2030. The model used the latest socioeconomic projections from MAG to estimate growth in population and employment. In addition, to the MAG data, traffic counts are compiled in Scottsdale every other year. The most recent available information are the 2006 traffic counts.

Scottsdale Airpark contains a network of streets serving the over 2,500 businesses of the Airpark. Access to the Airpark is provided by Loop 101 and the arterial streets of Scottsdale Road on the west, Frank Lloyd Wright Boulevard on the north, and Hayden Road on the east. All of these streets serve citywide and regional traffic. Traffic volumes peak at over 50,000 vehicles per day (vpd) on Scottsdale Road, between Cactus Road and Thunderbird Road, and 47,000 vpd on Frank Lloyd Wright Boulevard, between Hayden Road and Loop 101.

The change in traffic volumes on arterial streets from 1996 to 2004 is shown in Figure 9-3. Loop 101 was opened to traffic in Scottsdale between July 1998 and April 2002, so the volume changes are impacted by the opening of this freeway. Typically, volumes on arterial streets that are parallel to a new freeway will drop and then gradually increase back to pre-freeway levels. The largest increase in traffic in the Airpark study area, over 50 percent, is on Scottsdale Road, from Paradise Lane to north of Loop 101, and on Frank Lloyd Wright Boulevard, from Hayden Road to Loop 101. The increase is due to growth in the area as well as interchange access to the freeway. A decrease in traffic over the eight-year period was realized on Redfield Road, from Hayden Road to 76th Street, and on Hayden Road, from Raintree Drive south.

Scottsdale Road is a regional facility and is an essential direct link between northern Scottsdale and central/southern Scottsdale. Scottsdale Road and Loop 101 are the only continuous north-south roadways in the vicinity of the Airpark. Consequently, Scottsdale Road is critical to traffic circulation in and around the Airpark.

On-street parking and inadequate parking for business use and employees are issues in some places in the Airpark. In locations where shift work is taking place there can be inadequate parking for both the shift that hasn't left yet and the shift that hasn't started yet. When there is a lack of room for parallel on-street parking, drivers often park head-in, which can block truck access to other businesses in the surrounding area. In some places of the Airpark, delivery trucks while unloading goods and/or waiting for the next cargo to be loaded, will park on-street causing concern about remaining available parking and aesthetics. A solution under consideration for the Airpark is to select key roads that are necessary for circulation and identifying those as no parking areas, allowing parking on alternative roads within the Airpark.

2.1.1 Transit

Existing transit service to the Airpark is characterized by four fixed-route bus lines operating on the arterial grid system. These bus routes operate from 5 a.m. to midnight on weekdays

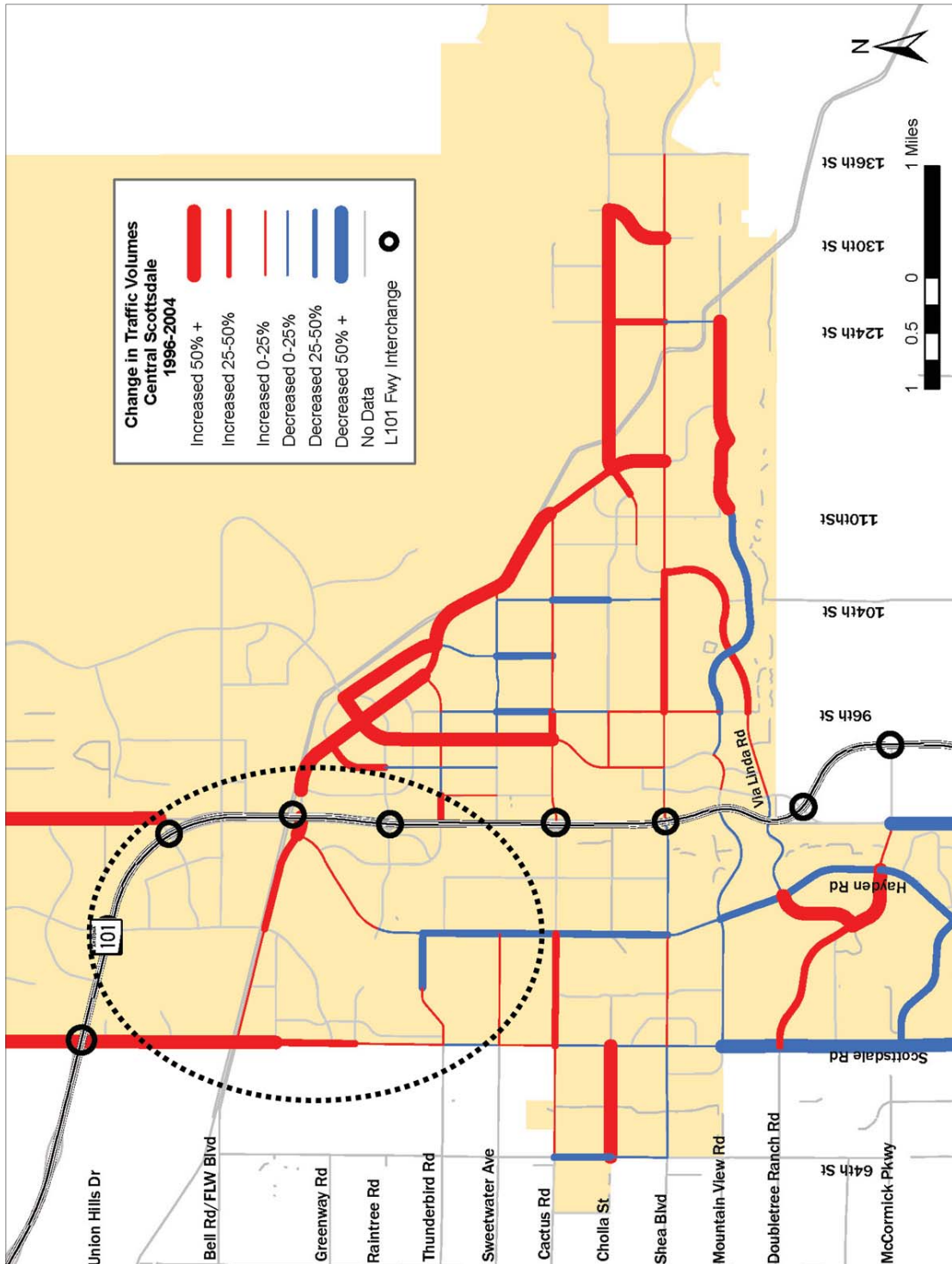


FIGURE 9-3: Change in Traffic Volume, Central Scottsdale 1996-2004

with 15 (peak) to 30 (off-peak) minute headways on the Scottsdale Road and Hayden Road routes, and 30 minute headways both peak and off-peak on the Bell Road/Frank Lloyd Wright Boulevard route. Service is provided at 30 minute headways all day on Saturday and Sunday on the Scottsdale Road and Bell Road/Frank Lloyd Wright Boulevard routes, and with 60 minute headways on the Hayden Road route (Table 9-1).

TABLE 9-1: Existing Transit Services

Route	Name	Origin/Destination	Existing Weekday Headway (peak\off-peak)	Year RTP Funding Begins
Supergrid				
72	Scottsdale/Rural Rd	Loop 101 (July 2007) to Chandler Fashion Center	15 minutes\ 30 minutes	July 2006
81	Hayden Rd/McClintock Dr	Bell Rd to Dobson Rd and Frye Rd	15 minutes\ 30 minutes	July 2014
170	Bell Rd	Hayden Rd to Arrowhead Towne Center	30 minutes	July 2018
154	Greenway Rd	Greenway – 51st Ave to Scottsdale Airport	30 minutes	

Source: HDR | SRBA and TTI RTP Evaluation Reports I, II and II, 2007

2.1.2 Pedestrian and Bicycle Facilities

The Airpark was initially developed as a low-density industrial employment center, and was not designed to readily accommodate pedestrian and bicycle travel. Today, the Airpark is characterized by wide vehicular roadways with narrow sidewalks and no bike lanes. However, the emergence of the Airpark as a major employment center has increased the need for pedestrian and bicycle facilities, especially given the shift from low-density industrial employment to higher density office and commercial development. This shift has resulted in a variety of trip generators that need improved pedestrian and bicycle access. For example, recent developments near the Airpark, such as Kierland Commons, have site layouts that emphasize and encourage internal pedestrian circulation. However, it still remains difficult to access these sites if walking to and from another location. Additionally, the *General Plan* Land Use Map and Character Types Map include areas of urban and mixed-use land uses, primarily to the north and east of the Airpark, to support Airpark employees. These land use categories include single family and multi-family housing that have the potential for providing future transportation options such as a neighborhood circulator, transit or bike routes connecting to, and circulating through, the Airpark. An example of such a project is a 32-acre mixed-use development located between the Greenway-Hayden Loop, Butherus Drive, and Scottsdale Road, called Scottsdale Quarter. This approved project is expected to offer housing, office, and retail opportunities, and a site plan has been approved by the City.

3.0 FUTURE CONDITIONS

3.1 Traffic and Circulation

Forecasted 2030 traffic volumes from the Scottsdale area travel demand model indicate that traffic volumes are expected to closely match proposed roadway capacity for the majority of

major roads in and around Scottsdale Airpark. The greatest anticipated problem areas are: Scottsdale Road from Thunderbird Road to Loop 101, and Frank Lloyd Wright Boulevard from Hayden Road to Loop 101. Some segments of Airpark area roadways may be able to expand capacity through roadway improvements such as intelligent transportation systems (ITS), access management, expanded transit services, intersection improvements, and other measures.

With the implementation of all projects envisioned within the current capital improvements program (CIP) or in this City of Scottsdale *Transportation Master Plan*, Scottsdale Road will still remain the only continuous north-south arterial roadway near the Airpark. The traffic forecast shows continued growth, with traffic volumes on Scottsdale Road increasing from approximately 47,000 vpd in 2006 to as high as 52,900-62,200 vpd between Frank Lloyd Wright Boulevard and Thompson Peak Parkway in 2030. Daily volumes on Frank Lloyd Boulevard are also expected to climb from 47,000 vpd near the Hayden Road/Loop 101 area to nearly 50,800 vpd.

4.0 PLANNED IMPROVEMENTS

4.1 City of Scottsdale Capital Improvement Program (CIP)

Capital improvement projects are identified by the City based on the extent to which they meet the City Council's goal of providing for the safe, efficient, and affordable movement of people and goods throughout the City. Planned transportation projects meet the desired outcome of providing multi-modal options and, therefore, include, but are not limited to, Airpark roads, transit, bicycle, and pedestrian improvements. Table 9-2 contains a listing of roadway improvement projects planned for the Scottsdale Airpark area for fiscal years 2008 through 2012.

TABLE 9-2: Capital Improvement Plan (Airpark area)

Project/Street	Project Description	Estimated Completion
S0304 Frank Lloyd Wright Blvd – Scottsdale Rd to Shea Blvd	Construct a series of localized turn lane improvements and access control modifications, including median modifications, throughout the corridor.	2009
S0317 Thunderbird Rd/Redfield Rd – Scottsdale Rd to Hayden Rd	Build additional turn lanes at Scottsdale Rd and Hayden Rd, and realign 73rd St to the east.	2008
S0601 Loop 101 Frontage Rd north Hayden Rd to Pima Rd	Construct a westbound frontage road on the north side of Loop 101 between the Hayden Rd and Pima Rd/Princess Dr freeway interchanges. The project will include two travel lanes, a bicycle lane, a sidewalk, street lights, and drainage improvements.	2009
NEWB3 Freeway Frontage Rd south Hayden Rd to Pima Rd see note re this project on page 329	Construct an eastbound frontage road on the south side of Loop 101 between the Hayden Rd and Pima Rd/Princess Dr freeway interchanges. The project will include two travel lanes, a bicycle lane, a sidewalk, street lights, and drainage	2010

TABLE 9-2: Capital Improvement Plan (Airpark area) (continued)

Project/Street	Project Description	Estimated Completion
S7005 Scottsdale Rd — Frank Lloyd Wright Blvd to Thompson Peak Pkwy	Design and construct a six-lane major arterial cross section with landscaped median, turn lanes, bicycle lanes, sidewalks, curb and gutter, roadway drainage, and intelligent transportation system facilities. Additional turn lanes at Frank Lloyd Wright Blvd and a new pedestrian crossing of the Central Arizona Project Canal will also be included.	2008
S0405 Loop 101 — North Frontage Rd	Design and construct a frontage road of two westbound lanes, including bike lanes, with roadway drainage, on the north side of Loop 101, from the Scottsdale Rd freeway off-ramp to the Hayden Road freeway on-ramp.	2007
T9902 Loop 101 Park-and-Ride Lot	Complete site selection and environmental clearance process to meet federal grant requirements. Once location is identified, purchase, design, and construct park-and-ride lot.	2009

Although not programmed for construction in the current CIP, an Airport tunnel concept is included in the MAG *Regional Transportation Plan* (RTP). There have been two studies prepared for the City of Scottsdale regarding the Scottsdale Airport Tunnel. The *Airport Area: East/West Corridor Feasibility Study* (October 16, 1991) concluded that none of the three east/west alternatives studied appeared to be cost effective and suggested improving the existing transportation system to eliminate the volume/capacity deficiencies; however, the concept of a tunnel continued to have support so an additional study was developed. The *Traffic and Feasibility Report for the Airport Tunnel Study* (November 23, 1999) evaluated “how” to construct the tunnel, not if it was justified. It analyzed two east/west alignments connecting Butherus Drive west of the Scottsdale Airport to Raintree Drive east of the Airport. The northern alignment provides a direct connection between these streets and the southern alignment followed the existing roadway alignments.

The RTP includes \$64.5 million (2006 dollars) for the construction of a tunnel underneath the Scottsdale Airport. Scottsdale would have to provide 30 percent matching funds, \$19.4 million, to receive the \$64.5 million in regional funding. Thus, there is nearly \$84 million potentially available for tunnel construction or other improvements if they can be shown to provide greater circulation benefits.

In addition to the Capital Improvement Program for Scottsdale roads, transit, bicycle, and pedestrian projects, the Scottsdale Airport also has a capital improvement program, as shown in Table 9-3.

TABLE 9-3: Capital Improvement Program (Scottsdale Airport)

Project	Project Description/Status	Estimate Completion
Taxiway Connector Construction	Out to bid	
Perimeter Rd Construction	Design	
Design and Construct Greenway Connectors	Design	
Airport Terminal Area Renovations	Re-bidding the parking lot	
Airport Security Fencing	Re-bidding with parking lot	
Airport Parking Lot Lighting Upgrades	Re-bidding with parking lot	
Airport Security Lighting (Main Aprons)	Designed/pre-bid phase	
Airport Security System Improvements	Procurement	
Airport Master Plan Update	Underway in March 2007	
Washrack/Pollution Control Expansion	Design	
Airport Pavement Preservation	Phase 1 of 3 completed	
Runway Safety Enhancements Phase 1 (new project)		2007
Terminal Area Parking and Roadway Improvements (amended project)	Increase parking spaces and improve vehicular traffic circulation. Includes landscaping.	2008
Install Apron Lighting (amended project)	Installation of twelve new overhead light poles to increase main apron safety and security	2008
Rotating Beacon Upgrade (amended project)	Raise height of beacon to increase visibility (from 65 feet to approximately 90 feet); replace aging light unit.	2008
Runway Safety Enhancement Phase 2 (new project)		2008
Airport Maintenance Facility (amended project)	Develop suitable storage and workspace for maintenance staff and vehicles.	2008
Pavement Reconstruction – Aircraft Parking Aprons (amended project)	Replace deteriorated pavement; increase weight capacity to accommodate jets	2011
Airpark Taxilanes 1 and 2 Reconstruction (new project)	Replace deteriorated pavement	2009

4.2 Planned (Programmed) Transit Improvements

Planned (programmed) transit service in the Airpark consists of the transit improvements identified in the RTP. The RTP was approved by voters in November 2004 through Proposition 400 and extends the regional half-cent sales tax for transportation for 20 years. The planned transit service in the Airpark in the RTP is provided in Table 9-4. In some cases the routes and operations are the same as existing service, but funding through the RTP will replace or augment City of Scottsdale funding for transit, potentially enabling the City to use funds for other services or routes. The North Loop 101 Connector and the East Loop 101 Connector

(express or limited stop bus service) may help to address future commuter needs. In addition, through the RTP the City has a high capacity transit service in the form of bus rapid transit for the Scottsdale Road corridor up to Shea Boulevard programmed for 2014.

TABLE 9-4: Planned Transit Service

Route Supergrid	Name	Origin/Destination	Planned Weekday Headway (peak\off-peak)	Year RTP Funding Begins
72	Scottsdale/Rural Rd	Loop 101 (July 2007) to Chandler Fashion Center	10 minutes\ 15 minutes\ 30 minutes	July 2006
81	Hayden Rd/McClintock Dr	Bell Rd to Chandler Fashion Center	15 minutes\ 30 minutes	July 2014
138	Thunderbird Rd	Litchfield Rd to Scottsdale Airpark	30 minutes	July 2019
170	Bell Rd	Hayden Rd to Arrowhead Towne Center	15 minutes\ 30 minutes	July 2018
Express Bus/Bus Rapid Transit				
TBD	Scottsdale Rd Bus Rapid Transit	Chandler Fashion Center to Shea Blvd (recommended in Transit Element of Transportation Master Plan to extend to Airpark area)	TBD	July 2014
TBD	North Loop 101 Connector	Surprise Park-and-Ride to Scottsdale Airpark	12 daily trips	July 2007
TBD	East Loop 101 Connector	Chandler Park-and-Ride (Loop 202 and Germann Rd) to Scottsdale Airpark	8 daily trips	July 2008 (pending the completion of HOV lanes on the Loop 101)
TBD	Pima Express	Tempe CBD and Phoenix CBD to Scottsdale Airpark	8 daily trips	July 2012
TBD	Anthem Express	Scottsdale Airpark to Anthem (I-17 and Anthem Way)	10 daily trips	July 2017

Source: HDR | SRBA and TTI RTP Evaluation Reports I, II and II, 2007

5.0 OPPORTUNITIES/RECOMMENDATIONS

5.1 Internal Circulation

Recommendations to facilitate internal circulation over the long-term *Transportation Master Plan* horizon include an effective multi-component parking management strategy, implementation of a Transportation Demand Management (TDM) Program, and the designation of certain streets internal to the Airpark that would facilitate travel of non-motorized modes, that is, pedestrians and cyclists.

5.1.1 Parking Management and Travel Demand Strategies

The implementation of a sustainable parking management strategy is recommended for the Airpark area, as it continues to establish itself as a regionally significant employment generator, with expected increased densities in office and commercial space. A long-range strategy designed to effectively manage existing and future parking supply is recommended. A parking management program may consist of the following basic components: increase the effective supply of short-term parking; reduce overall demand for parking in the Airpark area; and implement TDM incentives. Currently, there are issues with loading and delivery to businesses in the Airpark as well as the availability of on-street parking in some locations.

The effective supply of short-term parking could be increased by implementation of shared parking solutions into the development approval process. Shared parking is a concept that recognizes the fact that different land uses attract customers, workers, and visitors at different times throughout the day. Airpark commercial property developers could benefit not only from lower construction costs, but also from maximizing the benefits of the emerging commercial character where workers and visitors park together in shared facilities thereby reducing reliance on connections to scattered facilities. Shared parking strategies include:

- ▶ Limiting reserved parking for individuals and groups; and
- ▶ Encouraging parking requirements that take into account the peak-demand land uses in the surrounding area and encourage common parking facilities to be located near one another.

Overall demand for parking in the Airpark area could be reduced through encouragement of remote sites for long-term users, local area transit circulators, and pedestrian enhancements to improve access to and from such facilities. Demand reduction tactics may include the following measures:

- ▶ Reinforce walkable, “park-once” districts in the Airpark area where multiple trip purposes can be accomplished with a single automobile trip (that is, home-to-work trips, mid-day lunch and other short internal area trips); and
- ▶ Reinforce pedestrian-scale, context-appropriate streetscape enhancements in each identified “park-once” district.

Travel Demand Management incentives can be implemented that encourage alternative travel modes through development approval incentives for developers agreeing to implement TDM programs, and increased capacity for compact cars, bicycles, and motor bikes.

Many urban and suburban employment centers are successfully managing their parking problems by reducing demand and by encouraging the use of readily available alternatives to

the typical commute by single-occupant vehicle. Such demand reduction policies may include employer transit contributions and flexible work schedules. While policies of these types are almost always initiated by local government, their success depends upon strong commitment and partnership with the local business community.

Changes to land development regulations may be developed to support TDM programs. Credits may be allowed for building owners and developers for the provision of bicycle lockers and other related amenities, and floor-area ratio bonuses may be applied for projects that provide lower parking ratios, or for developments that participate in a local area parking management program. The Bicycle Element of the *Transportation Master Plan* recommends that by 2010 the City reassess the current bicycle incentives program and determine whether additional incentives, or more extensive mandates, should be developed.

The location and design of existing and future parking facilities may be managed in a manner that accommodates multiple trip purposes with a single parking space, through the establishment of “park-once” districts at appropriate points throughout the Airpark. These “park once” districts would be located and sized in a manner to maximize the number of pedestrian trip-making opportunities associated with a single parking event.

5.2 Circulation Options

Regional access to the Scottsdale Airport and Airpark is extremely important to support the expectations that the Airpark will likely become the largest employment center in the Valley. Opportunities for potential improvements have been identified and evaluated based on the ability to meet the *Transportation Master Plan* Goals and relevant technical criteria established by the Scottsdale Transportation Commission.

Airpark area circulation options.

- ▶ Tunnel under the Airport runway
- ▶ Add a ring road to provide additional Airpark area circulation with the southern connection of Thunderbird/Redfield Road to Raintree Drive; the northern connection of a frontage road on the south side of Frank Lloyd Wright Boulevard from Northsight Boulevard to Greenway/Hayden Loop; and using Hayden/Northsight Boulevard on the east side; and 73rd Street on the west.
- ▶ Improve traffic flow on the east side of the Airport through Raintree Drive modifications in the vicinity of Loop 101
- ▶ Improve east/west traffic flow on the west side of the Airport through Paradise Lane modifications
- ▶ Greenway/Hayden Loop/Frank Lloyd Wright Boulevard intersection modifications
- ▶ Frank Lloyd Wright Boulevard modifications
- ▶ Hayden Road/Northsight Boulevard modifications

5.2.1 Tunnel Under the Airport Runway

The Scottsdale Airport runway inhibits roadway connections, especially for east-west traffic, but north-south traffic as well. The City has examined the potential to construct a tunnel with two previous studies: The *Airport Area - East/West Corridor Feasibility Study* (October 16, 1991) and the *Traffic and Feasibility Report for the Airport Tunnel Study* (November 23, 1999). The *Airport Area - East/West Corridor Feasibility Study* recommended improvements to

the existing transportation system to eliminate the volume/capacity deficiencies, and concluded that tunnel alternatives appeared not to be cost effective given available resources. The *Traffic and Feasibility Report* evaluated potential tunnel construction methods, but did not address financial feasibility of the tunnel concept. This report analyzed two east-west alignments that would connect Butherus Drive west of the Scottsdale Airport to Raintree Drive east of the Airport. The RTP approved by the voters in 2004 includes approximately \$65 million (in 2006 dollars) for the construction of a tunnel under the Scottsdale Airport. The City would have to provide 30 percent matching funds or approximately \$20 million to receive the regional funding, providing approximately \$85 million for tunnel construction.

Considerations: While a tunnel would likely improve circulation within the Airpark and would provide connections for people on the east side of the Airport to Phoenix destinations, the construction and operating costs would be high. There may be Homeland Security issues with a tunnel that have become more critical since 9/11. Tunnel construction would impact Airport operations. The preferred location of the tunnel (Butherus to Raintree) may not be feasible, and moving the location reduces the positive impacts of this connection.

The Transportation Commission recommended removing this option from consideration at their June 21, 2007 meeting

5.2.2 Add a Ring Road to Provide Additional Airpark Area Circulation

Thunderbird Road currently curves north to connect to Redfield Road just east of the Scottsdale/Thunderbird roads intersection. The section line alignment of Thunderbird Road is a residential or minor collector level street from 76th Street to 87th Street. Plans are in the design stages for a realignment of 73rd Street to the east with a signal at Thunderbird Road as part of CIP Project S0317. Northsight Boulevard is a private road west of Hayden Road and has a number of sharp turns which could be smoothed to allow for better traffic flow. The ring road concept would include:

- ▶ Building of a frontage road south of Frank Lloyd Wright Boulevard, just north of the Airport runway, connecting Northsight Boulevard to Greenway-Hayden Loop.
- ▶ Enhancements to 73rd Street to provide bicycle and pedestrian facilities and potentially on-street parking and enhancing the connections to the frontage road on the north end of 73rd Street.
- ▶ An enhanced connection from Thunderbird Road to Raintree Drive either by widening Redfield Road between Scottsdale and Hayden roads to four lanes of travel, or by maintaining the option of building a new road (Thunderbird-Raintree Loop) connecting Raintree Drive to the Scottsdale/Thunderbird Road intersection, as Airpark properties redevelop. This new road could be either east or west of Hayden Road, but is designed to become a new east/west connector to get around the Airport.
- ▶ Enhanced turning movements on Thunderbird/Redfield Road to make traffic flow more easily and smoothly.
- ▶ Potentially widening Hayden Road between Redfield Road and Raintree Drive to accommodate additional traffic flow.
- ▶ Realignment of Northsight Boulevard to allow for smooth transition from Hayden Road to the Frank Lloyd Wright/Airport frontage road.

5.2.3 Additional Roadway Improvements for Airpark Circulation

- ▶ Realign 76th Street into 76th Place at Redfield Road, marking by an offset, signalized intersection or could be accomplished by building a skewed intersection.
- ▶ Potential widening of Raintree Drive to six-lanes to accommodated additional traffic flow.
- ▶ Modification of the four-way stop sign traffic control along Paradise Lane to two-way stops or other traffic control measure such as roundabouts to enhance traffic flow east/west along Paradise Lane, providing an alternative to Frank Lloyd Wright Boulevard.
- ▶ Potential right-turn arrows or other intersection modifications at Greenway-Hayden Loop and Frank Lloyd Wright Boulevard intersection.
- ▶ Advance storage lanes for westbound left turns to Hayden Road and eastbound and westbound left turns to Loop 101 on-ramps at Frank Lloyd Wright Boulevard.
- ▶ Advance storage lane for eastbound right turns from Frank Lloyd Wright to the southbound Loop 101 on-ramp.
- ▶ Dual side by side left-turn storage between the Hayden Road and Loop 101 traffic signals on Frank Lloyd Wright.
- ▶ Access road south of the CAP Canal from approximately 600 feet west of Hayden Road to the southbound Loop 101 frontage road with a simple “T” intersection on Frank Lloyd Wright Boulevard.
- ▶ It appears that the roadway system will have enough capacity to defer or delete capital improvement project NEWB3, to provide an eastbound frontage road on the south side of the Loop 101, between Hayden and Pima roads.

5.2.4 Loop 101 Freeway Connections

In addition to internal Airpark circulation, some recommendations involve the roadway and freeway system external to the Airpark area. The following are some preliminary recommendations that need to be worked out with ADOT.

- ▶ Northsight Boulevard/Thunderbird Road to Loop 101 - high occupant vehicle (HOV) connection;
- ▶ Hayden Road to Loop 101 - potential HOV connection; and
- ▶ Miller Road to Loop 101 - enhanced interchange.

With the freeway express bus services to be provided through Proposition 400 in 2007 and 2008, enhancing the connections into the Airpark will benefit area employers and commuters. The East Loop 101 express bus connector is scheduled to begin service following the completion of construction of the HOV lanes on the Loop 101 in summer of 2008. Coordinating HOV interchanges at Northsight Boulevard/Thunderbird Road could enhance the service of this express bus system which terminates at the Scottsdale Airpark.

All of these options would need to be discussed and partnered with ADOT to accomplish.

5.2.5 Bicycle/Pedestrian Improvements for the Airpark Area

- ▶ Direct connection to Frank Lloyd Wright Boulevard for the CAP Canal path (per the recommendations of the CAP Feasibility Study).
- ▶ Future potential grade separation for the CAP Canal path where it meets the Loop 101 Freeway.
- ▶ Initial bicycle facility improvements focusing on:
 - ▶ Greenway-Hayden Loop

- ▶ Redfield Road
- ▶ 73rd Street
- ▶ Hayden Road
- ▶ Raintree Drive
- ▶ Northsight Boulevard
- ▶ Primary pedestrian routes:
 - ▶ 73rd Street
 - ▶ 76th Street
 - ▶ 78th Street

Roadway, freeway interchanges, bicycle and pedestrian improvements are shown in Figure 9-4.

5.2.6 Transit Options

- ▶ Service frequency and hours of service improvements on local bus routes.
- ▶ Use potential future HOV direct access to serve Airpark from East Loop 101 connector and the Surprise/Scottsdale Loop 101 Connector.
- ▶ Connect local and express bus service to park-and-ride located in the vicinity of Scottsdale Road/Loop 101.
- ▶ Enhance Scottsdale Road bus service with limited-stop service (extend the Proposition 400 BRT program from Shea Boulevard to the Airpark or Loop 101). Provide 10 minute peak-hour frequency and enhanced shelters.
- ▶ Examine the feasibility of an Airpark Area Circulator, partnering with the business community.
- ▶ Examine the feasibility of an Airpark transit center.

5.2.7 Transportation Demand Management Options

- ▶ Establish a citywide transportation travel demand program per the Policy Element of the *Transportation Master Plan*.

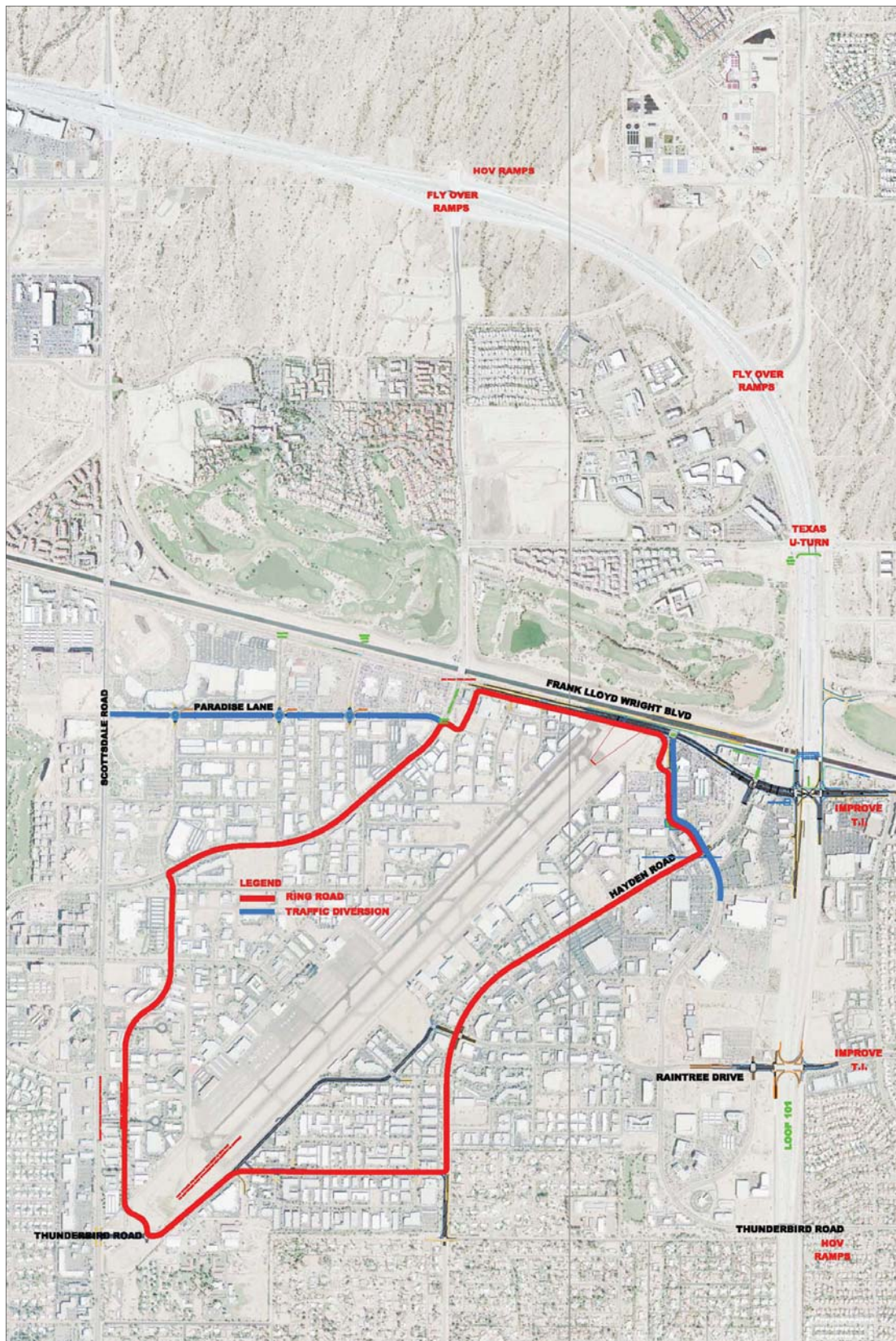


FIGURE 9-4: Airpark Area Roadway System Modifications