

**Tucson International Airport
General Aviation Strategic Plan Update
Executive Summary
August 2014**

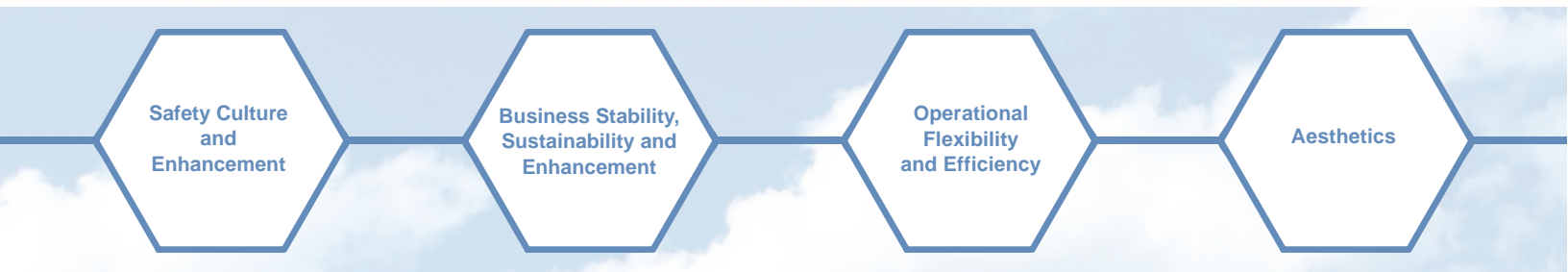


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Tucson Airport Authority (TAA) recognizes the general aviation (GA) community as one of its three primary aviation stakeholders at Tucson International Airport (TIA), along with commercial airlines and the military, and is committed to meeting the needs of all stakeholder groups. In order to meet GA needs and remain consistent with the 2013 TIA Master Plan, the 2014 TIA General Aviation Strategic Plan update was completed.

The Study Goals Include:



The GA Strategic Plan Update will provide recommendations for improving GA facilities and associated services important to customer needs, convenience, and economic growth.

To accomplish the study goals, a variety of elements at TIA were reviewed. Existing conditions, including inventory of existing GA facilities and service providers, were reviewed. Business conditions, including airport revenues and expenditures were examined and a review of airport management policies and best practices, along with marketing and communication methods were also studied. Following the existing conditions review a needs assessment, including a GA activity forecast, a GA users survey and a comparison airport analysis, was accomplished.



After compiling information from the existing conditions review and needs assessment, a development program including financial programming and management policy recommendations was developed.

Existing Conditions Reviewed

Inventory

There are currently three GA areas at TIA: Areas A, B and D.

Area A encompasses approximately 18 acres and is located at the north end of the airport along Valencia Road to the east of the Arizona Air National Guard (AANG) facilities. Area A is home to Million Air, as well as two T-hangar facilities and three clear span conventional storage hangars. Area A has direct taxi lane access to the Runway 21 threshold. The area is partially developed, with a number of vacant parcels available for future development.

Area B encompasses approximately 94 acres and is located northwest of the airline passenger terminal building. Area B is home to several FBO operators including Atlantic Aviation, Hotton Enterprises (Premier Aviation), and Tucson Jet Center (Ratliff Aviation), multiple individual T-hangar tenants and various law enforcement tenants. Area B is the highest use GA area at TIA.

Area D encompasses approximately 136 acres on the west side of the airport and is home to one FBO, Velocity Air (Double Eagle Aviation/Arizona Aero-Tech). GA activity in this area is minimal with most activity being commercial and industrial in nature. Plans for a future relocated runway will make this area unsuitable for GA use.



Policy and Process Best Practices

Throughout the study various components that make up GA have been analyzed at TIA, as well as at several comparison airports. The goal was to identify best policies and processes that could be incorporated into TAA's business practices. The findings show that GA activities at the comparison airports, as well as airports across the country, have been in decline and that none of the comparison airports have specific policies or processes that have produced positive GA growth in recent years. Aviation activity always has and will parallel economic conditions and as the economy improves so too will aviation activity.



The goal was to identify best policies and processes that could be incorporated into TAA's business practices.

Governing Documents

TIA's Minimum Standards, Rules and Regulations, Common Area Maintenance and Tenant Improvement Standards and Leasing and Development Guidelines were reviewed. This review found that while overall TAA is in line with comparison airports, some standards are more restrictive than comparison airports, especially for FBO and SASO operators. Revising the governing documents to keep FBO and SASO standards more flexible and less restrictive may make TIA more attractive to GA businesses and developers.



GA Management

The trend at comparable airports is toward third party management of GA activity through lease agreements or management agreements. Comparison airports that have implemented these management policies have indicated positive results. TAA has already begun moving toward this type of management structure in recent years, having removed itself from providing GA fueling services and by contracting out the management of TAA-owned hangar facilities.

It is recommended that TAA continue to move towards third party management of GA facilities and services.



Marketing and Communication Methods

TAA has a robust marketing and communication campaign for the GA community. TIA's marketing and communication methods, including TIA's website, user meetings, project alert messages, and customer surveys provide GA users the opportunity to interact with airport staff and management and voice their opinions about GA activity at TIA.

TIA's website has a dedicated GA section that provides a range of information to inform and attract TIA users and business.

TAA is active on social media including Facebook and Twitter. These and other social media outlets should be utilized to continue building a close working relationship with the GA community.

Business Conditions Review

The FAA maintains a favorable outlook for GA activity, with long term growth driven by business aviation. However, the FAA projects total GA operations at TIA will continue to decline slightly over the next five years before longer-term growth resumes. In an economic environment where unemployment and fuel costs remain high, disposable income levels have dipped and opportunities for immediate GA growth are limited.



TIA is further restricted by Transportation Security Administration (TSA) regulations that are required as a Part 139 certificated commercial service airport. In recent years, many piston-powered GA aircraft operators that previously based at TIA have relocated simply because there are other airport options in the Tucson area that have less restrictive TSA security environments. A growth area for the GA market is in turbine-powered business aircraft. To take advantage of the changing GA fleet mix and to maximize GA revenue potential, TIA's GA facilities and resources should be focused on accommodating the growing business aircraft market while still maintaining high-class facilities and services for small GA aircraft.

Needs Assessment and Activity Forecast

Revenue from GA activities on the airport including land rent, fuel flowage fees, facility rent and other miscellaneous charges in FY 2012 totaled 2.3% of total TIA revenue. This percentage of total airport revenue has remained relatively constant with anywhere from 1.7% to 2.3% between FY 2007 and FY 2012.

TIA GA activity has declined significantly in the past few years largely as a result of the economic downturn and currently accounts for 45.2% of total TIA operations, down from 65% in 1992.

TIA GA activity also declined due to loss of student pilot operations after closure of a large flight school at Ryan Airfield. Historical GA flight activity was reviewed and compared to FAA forecast activity.

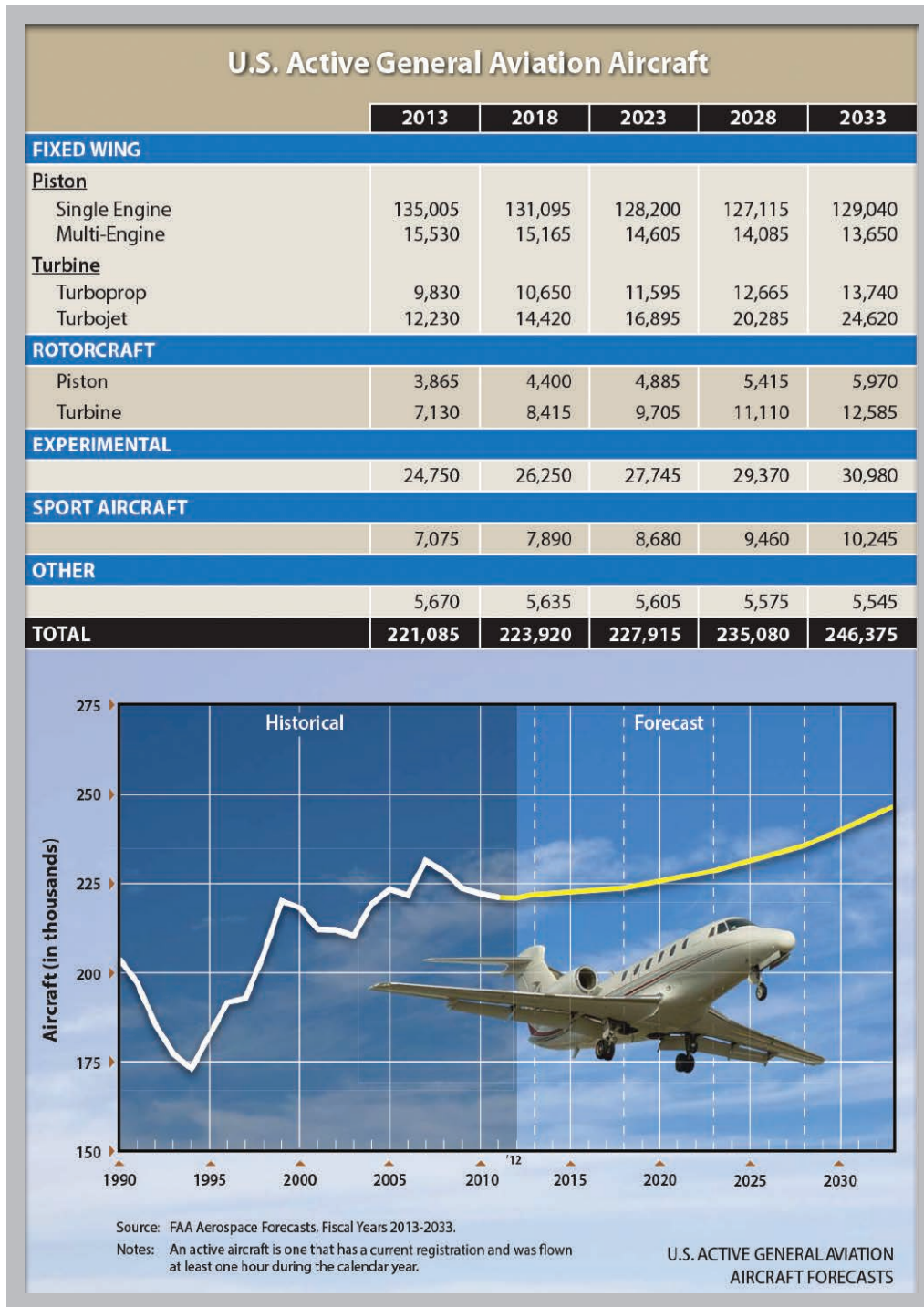
The number of U.S. GA aircraft is anticipated to show slow growth over the next 20 years.

Growth is projected for helicopters, fixed wing turbine, sport and experimental aircraft, with fixed wing piston aircraft declining.

Forecasts of future GA facility needs show that TIA has excess apron, automobile parking, T-hangar, shade hangar and GA terminal space. TIA needs additional executive hangars to accommodate larger aircraft and changing market conditions. Pavement, shade structures and T-hangars in some sections of Area B are past or approaching the end of their useful lives. FBO facilities are space constrained, and helicopter operations adjacent to one FBO hinder future expansion opportunities. Self-serve fuel and wash rack facilities are insufficient for demand. Multiple long-term leases have expired, with direct control of T-hangars reverting to TAA. Repurposing vacant or underutilized facilities is a key to positioning TIA to accommodate the growing business aircraft market and maximizing its GA revenue potential.




GENERAL AVIATION AIRCRAFT FORECASTS



FORECASTS FOR FUTURE GA FACILITY NEEDS

	Anticipated Needs				2033 Difference from 2013
	2013	2018	2023	2033	
General Aviation Hangar Inventory					
Total Based Aircraft	202	217	232	268	+66
Aircraft To Be Hangared	149	161	177	211	+62
Hangar Area Requirements					
Shade Hangar					
Units	7	2	2	3	
Individual Aircraft Positions	73	25	27	31	-42
T-Hangar					
Units	8	5	5	6	
Individual Aircraft Positions	128	76	81	94	-34
Box/Conventional Hangar					
Units	23	14	17	23	
Area (s.f.)	243,467	140,900	176,300	239,100	-4,367
Estimated Individual Aircraft Positions	76	60	69	86	+10
General Aviation Parking Apron Requirements					
Transient Piston Positions					
Apron Area (s.y.)		8,400	9,000	9,600	
Transient Turbine Positions					
Apron Area (s.y.)		33,600	35,200	38,400	
Locally-Based Piston Positions					
Apron Area (s.y.)		8,400	9,600	12,000	
Locally-Based Turbine Positions					
Apron Area (s.y.)		46,400	46,400	46,400	
Helicopter Positions					
Apron Area (s.y.)		8,400	9,000	10,800	
Total Parking Positions	150	92	97	107	-43
Total Apron Area (s.y.)	355,200	105,200	109,200	117,200	-238,000
General Aviation Terminal Services					
GA TERMINAL AREA					
GA Terminal Services Area (sf)	23,790	5,100	5,400	5,900	-17,800
AUTOMOBILE PARKING					
Total Parking Spaces	454	134	142	161	-293

Source: Coffman Associates analysis



Comparison Airports

GA management policies and practices at other airports were reviewed for consideration in making recommendations for policy direction. Six comparison airports (Albuquerque, Boise, El Paso, Fresno, Reno-Tahoe and Tulsa) were identified based on similarity to TIA in GA, air carrier and military activities, geographic location, management structure, urban context, and growth projections.

Each comparison airport has experienced significant declines in itinerant and total GA operations. Economic conditions are primarily to blame for the decline in GA activity since the beginning of the recession in 2008. The post-recession recovery has been slow and uneven, further continuing to dampen GA activities nationwide. Each comparison airport provided a wide range of information for the analysis including lease and hangar rates, fuel flowage fees, badging fees, landing fees, GA restaurant facilities, and approaches to management of hangars and facilities.



Hangar rates vary widely depending upon market conditions and specific hangar rates were not available for some airports. Some comparable airports use periodic fair market value appraisals for lease rates. Fuel flowage and badging fees were consistent among the comparable airports. Only Tucson and El Paso charge GA landing fees. None of the comparable airport have a stand-alone restaurant serving the GA community. Several of the comparison airports have entered into agreements with third party entities to manage GA facilities and services. Positive results of this include freeing airport/authority staff to focus on other lines of business while still generating revenue from land and facility leases.



GA Users Survey

In order to more fully understand the needs of the TIA GA community, the GA users were surveyed. Of 444 users identified and contacted, 110 responses were received.

When deciding where to base their aircraft, respondents consider convenience to home or work the most important factor, followed by availability of hangar facilities and FBO services.

The least important factors were runway length, security/safety related issues and navigational aids. Owners who do not base their aircraft at TIA were asked to rank the reasons not to base at TIA. The most important reasons were unavailability of aircraft storage hangars, high cost of storage hangars and lacking and/or high cost of FBO services.

Survey comments ranged from positive to negative. Some respondents believe TAA is working to improve GA and customer service while others believe GA is merely tolerated at TIA. Some respondents appreciate the safety, security and air traffic controllers while others site security and increased regulation by TSA as a negative. Some users identified the lack of a GA restaurant, unavailability of mid-size hangars, and some areas with poor pavement and facility conditions as negative.

RECOMMENDATIONS

Taking into account all study elements including existing conditions, forecasted activity and future airfield changes, the following GA development plan is recommended. These recommendations have been identified to enhance TIA's GA business practices and environment, and to make operating at TIA more attractive to GA pilots.

The GA environment has changed significantly in recent years with diminishing student pilots and reduced small GA aircraft operations. The FAA is moving steadily towards banning 100LL Avgas, which powers most piston GA aircraft. An unleaded alternative is intended to be available by 2018, but there is still an uncertainty making the future of small GA activities precarious. The most significant growth area within GA is in business aircraft.

TIA needs to position itself to accommodate the changing GA fleet by encouraging the development of GA facilities and services to cater to business aircraft. While not anticipated to be a growing market segment, piston-powered GA aircraft will continue to have a presence at TIA for the foreseeable future. As such, services and facilities for these operators will need to be maintained at appropriate levels and at high-class standards.

Development Plan Recommendations

Implement development plan recommendations as business conditions dictate.

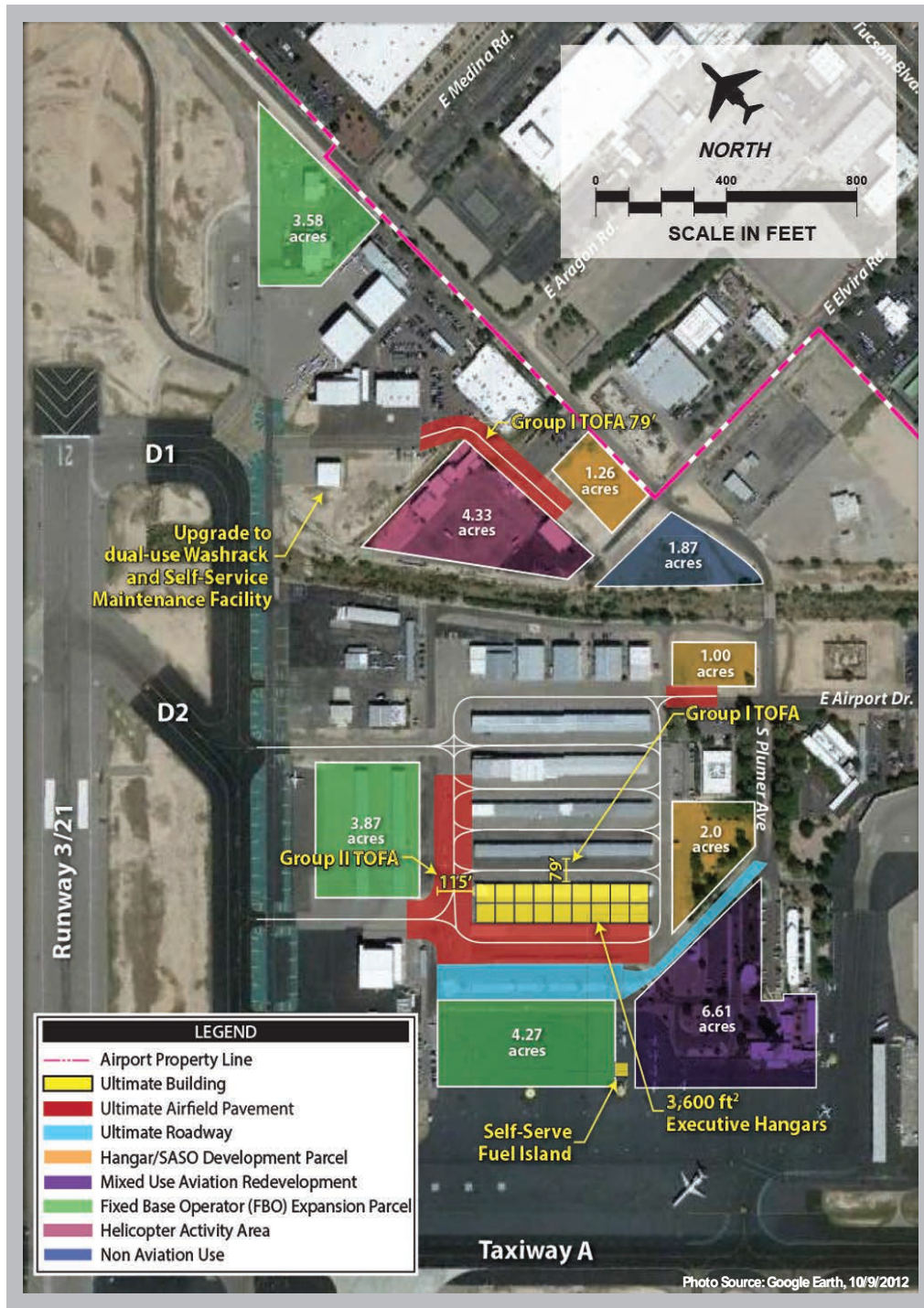
AREA D MASTER PLAN FUTURE LAYOUT



AREA A RECOMMENDED CONCEPT



AREA B RECOMMENDED CONCEPT





Development Plan Financial Analysis and Recommended Timeline

With specific needs and improvements established, the overall initial cost of development and life cycle costs need to be considered. Overall cost of each project in the development plan and a summary analysis of revenue streams/return on investment and induced benefits from proposed GA developments have been reviewed.

The proposed GA capital improvement program is segregated into near term (1-6 years) and long term (7-12 years). Cost estimates for near term projects have been estimated and can be used for planning purposes. More detailed financial analysis should be prepared based on specific project timelines as business needs dictate. In general, airfield infrastructure costs and existing TAA-owned building maintenance and upkeep are assumed to be funded by TAA, while specific site development and cost of new construction will be through private investment. Near term GA developments projected over the next six

years are focused primarily on Area B and include construction of Executive Hangars and a new self-serve fuel island, pavement improvements, signage, lighting, painting and maintenance in existing T-hangars, establishment of a common pilot lounge with restroom, demolition of shade structures and excess T-hangars and site preparation for FBO expansion parcels and the helicopter expansion area. Near term projects are estimated to cost \$8.2 million.

Funding sources are assumed to be a combination of TAA funding of approximately \$811,000 and private investment of \$7,350,000.



Major sources of GA revenue at TIA are land rent, facility leases and fuel flowage fees. GA operating revenues are currently \$1.2 million. Assuming all items in the near term capital improvement plan are accomplished, GA revenues are projected to increase to approximately \$1.7 million in 2020, with a 4.5% compound annual growth rate.

GA PROJECT COST ESTIMATES

GA Project Cost Estimates ¹ Tucson International Airport				
Project #	Project	Quantity	Total Cost	Responsibility
Anticipated Near-Term (1 to 6 Years) Projects				
1	Signage/Wayfinding Program	LS	\$21,600	TAA
2	Lighting Upgrades - Area B	LS	\$21,000	TAA
3	Upgrade Wash Rack to Dual-Use Self-Service Maintenance Facility - Area B	LS	\$10,000	TAA
4	Establish Common Pilot Lounge With Restroom - Area B	LS	\$10,000	TAA
5	Paint TAA-Owned Hangars	LS	\$33,000	TAA
6	Demolition and Site Preparation (Including Utility Upgrades) of Two T-hangar and One Shade Hangar Units - Area B	LS	\$390,480	TAA/Private ²
7	Taxilane Reconstruction/Widening Near Executive Hangar Site - Area B	31,970 SY	\$715,000	TAA
8	FBO Expansion Area Site Preparation/Utility Upgrades - Area B ³	4.27 Acres	\$438,456	TAA/Private ²
9	Construction of Self-Service Fuel Island - Area B FBO Site ³	LS	\$288,000	Private
10	Widen Plumer Avenue and Reconfigure Parking Lot Adjacent to 4.27 Acre Parcel - Area B	LS	\$641,869	TAA/Private ²
11	Construct Executive Hangars - Area B	18 Units @ 3,600 SF	\$5,311,080	Private
12	Site Preparation (Building Demolition, Utility Upgrades) of Helicopter Activity Area - Area B	LS	\$279,907	TAA/Private ²
Anticipated Long-Term (7 to 12 Years) Projects				
13	Taxilane Extension to 1.0 Acre Hangar Development Parcel - Area B	1,600 SY	\$195,030	TAA/Private ²
14	Hangar Development Parcel Site Preparation - Area B	2.0 Acres	\$166,853	TAA/Private ²
15	Taxilane Construction to Helicopter Activity Area and 1.26 Acre Parcel - Area B	3,000 SY	\$193,536	TAA
16	FBO Expansion Area Site Preparation/Utility Upgrades - Area B ³	3.87 Acres	\$152,722	TAA/Private ²
17	Utilities Upgrade - Electrical and IT Cabling for Executive Hangar and SASO Sites - Area A	LS	\$388,560	TAA/Private ²
18	Construct Executive Hangars and Apron Pavement (12,500 lbs. or less) - Area A	4 Units @ 3,600 SF and 2,500 SY of Pavement	\$1,291,746	TAA/Private ²
19	Relocate Perimeter Fence to Remove GA Area B T-hangar Area from Secure Area	700 LF Fence Line & 2 Electronic Gates	\$56,400	TAA
20	Reconstruct Plumer Avenue From Medina Road to Elvira Road - Area B	LS	\$426,450	City of Tucson
Projects Total			\$11,031,689	
¹ Project cost estimates assume a 20 percent contingency and are presented in 2014 dollars. ² Private or TAA funded depending on agreement reached with developer. ³ Development of FBO-related facilities such as hangars and office spaces are excluded from this list and are assumed to be determined by individual FBO entities and funded privately. LS - Lump Sum SF - Square Foot SY - Square Yard Source: Dowl HKM				

GA expenses include items such as depreciation, labor, materials and supplies, maintenance and repair, contractual services, overhead and allocation of airfield costs. Current GA expenses are \$2,147,000 and are estimated to grow with the effects of inflation (2.4% annually) to \$2,476,000 in 2020. The net impact of GA activities including all revenues minus expenses shows a current year net loss of \$927,000, remaining in negative figures throughout the near term to an annual loss of \$808,000 in 2020.



In terms of Return on Investment, TAA's investment of approximately \$811,000 through CIP year 6 is greater than the additional revenue generated of approximately \$304,000. It is common, however, for a GA capital project to not reflect its full benefits until several years after completion.



While difficult to quantify, in addition to direct revenue to TAA, the indirect financial benefits and induced benefits to the Tucson Community of the GA CIP are important to note. These will vary widely depending on the type and timing of the development and economic conditions.

Based on the assumptions described in the previous sections, the GA CIP as it is presented can be funded through a combination of grants, TAA and private investment. As TAA has done in the past, it should continue to monitor its financial situation and market trends to determine which projects should be undertaken and when.



The financial projections were prepared on the basis of available information and assumptions set forth in the previous sections. Some of the assumptions used to develop the projections may not be realized, and unanticipated events or circumstances may occur. Therefore, the actual results will vary from those projected, and such variations could be material.

MANAGEMENT POLICY RECOMMENDATIONS

Safety Culture and Enhancement

- Consolidate all helicopter operations into a designated area per the development plan
- Encourage expansion of space-constrained FBO's
- Develop alternative access points into congested GA Area B
- Revise the pavement management plan to incorporate study recommendations
- Upgrade lighting in Area B to improve visibility

Business Stability, Sustainability and Enhancement

- Seek grant funding, private investment and allocate necessary resources to implement the recommended development plan to improve and expand GA development at TIA
- Revise governing documents to be more consistent with comparable airports and encourage growth of GA
- Review current property values and hangar lease rates
- Move toward third party management of TAA-owned GA facilities and services
- Continue to encourage and assist FBO's with fly-ins and special events with community organizations
- Provide common space for a pilot lounge with restroom in GA Area B
- Continue efforts to bring a new flight school operator to the vacated facility at Ryan Airfield
- Encourage existing flight school expansions at TIA
- Expand marketing and communication methods to reach GA users (community information boards, GA website, use of social media)

Operational Flexibility and Efficiency

- Encourage private development of an FBO and associated self-serve fuel facility at the Executive Terminal
- Encourage new or existing FBO's to offer food/beverages concessions
- Upgrade the wash rack facility to allow self-serve maintenance and install automated payment system
- Research the possibility of relocating the existing perimeter fence to remove GA Area B from the secure area

Aesthetics

- Implement reuse/redevelopment plans for vacant or underutilized facilities to allow for future GA development following development plan recommendations
- Encourage development of new, high-class facilities through private development at the Executive Terminal and adjacent ramp
- Paint existing TAA-owned hangars through a major maintenance program
- Implement a modern signage/wayfinding program throughout the GA area

