Phoenix-Mesa Gateway Airport

Airport Master Plan Update

Executive Summary

June 2020

Mead & Hunt

Phoenix-Mesa Gateway Airport

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INTRODUCTION

Phoenix-Mesa Gateway Airport (IWA or the Airport), located in Mesa, Arizona, is approximately 30 miles southeast of downtown Phoenix. Prior to its inception as IWA, the Airport served as a former United States Air Force (USAF) base known as Williams Air Force Base (AFB), which was later closed in September 1993. Williams AFB was converted to civilian use in March 1994, and in 2008, the Airport was renamed the Phoenix-Mesa Gateway Airport. The Phoenix-Mesa Gateway Airport Authority (PMGAA) operates the Airport and is made up of elected officials from the cities and towns of Mesa, Phoenix, Gilbert, Queen Creek, Apache Junction, and the Gila River Indian Community. IWA now consists of approximately 3,040 acres and is classified by the Federal Aviation Administration (FAA) as a small hub commercial service airport.

The prior master plan effort was completed in 2009. Updates to the master plan are often necessary to account for change in market conditions and address the need for future facilities to accommodate growth over the next 20-year planning horizon. The population growth and economic expansion occurring within the region has also necessitated a long-range analysis and plan for IWA's future needs to accommodate aviation demand in a sustainable way.

The preparation of the Airport Master Plan Update has been conducted under the direction of the Phoenix-Mesa Gateway Airport staff, with financial assistance from the FAA, Arizona Department of Transportation (ADOT), and PMGAA. The purpose of this Airport Master Plan Update is to determine the long-range Airport development needs, examine viable and reasonable alternatives, and recommend a realistic plan in consideration of potential environmental impacts. Recommended long-term development will only be constructed if implemented by PMGAA and when actual demand occurs.

Goals and Objectives

The primary goals and objectives, as identified in this Airport Master Plan Update, are to:

- ✓ Maximize the safety and efficiency for the use of the aircraft operational areas and achieve compliance with FAA guidance.
- ✓ Consider the significant amount of marketable Airport developable property and potential demands. The master plan will identify a development program that makes efficient use of airport land for aviation, aviation/airport support, and non-aeronautical facilities, which will maximize the potential for revenue generation.
- ✓ Consider the layout of the airfield based upon the demands related to existing and all potential future aircraft types that could regularly operate at the Airport. This includes consideration of all safety and object clearing standards and current FAA configuration guidance.

- ✓ Consider passenger terminal improvements that are scalable and flexible in their ability to accommodate potential demands. Recommendations will be guided by trigger points that tie improvements to passenger activity levels.
- ✓ Continue to work with the surrounding communities to promote land use compatibility initiatives that minimize the potential for negative impacts, as identified in PMGAA's updated Airport Land Use Compatibility Plan (ALUCP).
- ✓ Promote a Capital Improvement Plan that provides financial sustainability, anticipates reasonable levels of expense and income, and balances facility improvements and infrastructure recommendations with revenues and funding sources.
- ✓ Consider additional passenger transportation modes (i.e. Lyft, Uber, other transportation network companies) in the development of the future terminal improvement program.
- ✓ Recognize environmental development constraints, and appropriately consider in improvement recommendations.

The Master Planning Process

A master plan is a comprehensive process that provides a strategic vision for growth and operation at Phoenix-Mesa Gateway Airport. The master plan documents the process used and results of the tasks that were performed to conform with FAA guidance, including FAA's Advisory Circular (AC) 150/5070-6B, *Airport Master Plans*.

A master plan is a multi-step process of tasks that range from establishing a vision and goals to production and adoption of final documents as identified in **Figure ES-1**.

Figure ES-1: Master Planning Process

Stakeholder and community outreach were an integral part of the master planning process. This included the use of two committees: the Stakeholders Working Group (SWG) and the Technical Advisory Committee (TAC); both provided guidance and input into the planning process. At key milestones, public workshops were held to review and discuss progress. Land use compatibility and noise contours referenced are from PMGAA's 2017 ALUCP.

AVIATION ACTIVITY FORECASTS

The IWA activity forecasts comprise projections of future passenger enplanements, aircraft operations, and based aircraft as seen in **Table ES-1**. The IWA forecasts were developed for the base year of 2018, and future years 2023, 2028, and 2038. Developed forecasts present three planning scenarios: Master Plan Base Growth, Low Growth, and High Growth. The Master Plan Base Growth and Low Growth forecasts include only commercial passenger service and noncommercial aviation activity because IWA currently has no air cargo service. The High Growth scenario includes SkyBridge Arizona's plans to begin and expand air-cargo carrier service at IWA during the planning horizon of this master plan.

Table ES-1: Passenger Enplanement and Operations Forecasts

Measure/Scenario	Actual	Estimate	Forecast			Compounded Annual Growth Rate			
	2017	2018	2023	2028	2038	2017-2018	2018-2023	2023-2028	2028-2038
Enplanements									
Master Plan	681,892	759,033	924,667	1,022,420	1,245,211	11.3%	4.0%	2.0%	2.0%
High Growth	681,892	759,033	1,037,426	1,168,589	1,451,202	11.3%	6.4%	2.4%	2.2%
Low Growth	681,892	759,033	903,617	984,846	1,180,070	11.3%	3.5%	1.7%	1.8%
Commercial Aircraft Operations									
Master Plan	10,372	10,920	12,953	14,070	16,840	5.3%	3.5%	1.7%	1.8%
High Growth	10,372	10,920	14,463	16,020	19,570	5.3%	5.8%	2.1%	2.0%
High Growth*	10,372	10,920	16,795	22,184	31,482	5.3%	9.0%	5.7%	3.6%
Low Growth	10,372	10,920	12,662	13,558	15,967	5.3%	3.0%	1.4%	1.6%
Noncommercial Aircraft Operations									
General Aviation	271,446	282,596	296,256	311,455	345,401	4.1%	0.9%	1.0%	1.0%
Military	7,503	7,503	7,503	7,503	7,503	0.0%	0.0%	0.0%	0.0%
Subtotal	278,949	290,099	303,759	318,958	352,904	4.0%	0.9%	1.0%	1.0%
Total Aircraft Operations									
Master Plan	289,321	301,019	316,712	333,028	369,744	4.0%	1.0%	1.0%	1.1%
High Growth	289,321	301,019	318,222	334,978	372,474	4.0%	1.1%	1.0%	1.1%
High Growth*	289,321	301,019	320,554	341,142	384,386	4.0%	1.3%	1.3%	1.2%
Low Growth	289,321	301,019	316,421	332,516	368,871	4.0%	1.0%	1.0%	1.0%

Notes: Bold scenario equals FAA approved numbers.
Numbers presented on a Calendar Year basis.
* Includes all air-cargo aircraft operations projected by SkyBridge Arizona.

Table ES-2 presents the resulting forecast of general aviation (GA) operations, along with forecasts of military operations and based aircraft at IWA. GA operations for 2018 are estimated based on year-to-date actual data. Beyond 2018, forecast GA operations for IWA are derived from forecast regional GA operations, assuming IWA maintains its 19 percent share of regional, local, and itinerant operations. IWA's local and itinerant operations grow at the same rate as regional local and itinerant GA operations, respectively. Itinerant operations are flights that go to and come from a different airport, and local operations include flights within IWA's local traffic pattern. Military operations are held constant at their 2017 level, while the growth in the number of based aircraft is projected to keep pace with the growth in GA operations.

Table ES-2: Non-Commercial Based Aircraft Forecast

Measure/Scenario	Actual	Est.	Forecast			Compound Annual Growth Rate			
	2017	2018	2023	2028	2038	2017-2018	2018-2023	2023-2028	2028-2038
Noncommercial Operations	278,949	290,099	303,759	318,958	352,904	4.0%	0.9%	1.0%	1.0%
General Aviation	271,446	282,596	296,256	311,455	345,401	4.1%	0.9%	1.0%	1.0%
Itinerant	104,927	114,236	115,835	119,407	128,625	8.9%	0.3%	0.6%	0.7%
Local	166,519	168,360	180,421	192,048	216,776	1.1%	1.4%	1.3%	1.2%
Military	7,503	7,503	7,503	7,503	7,503	0.0%	0.0%	0.0%	0.0%
Based Aircraft	109	116	121	126	139	6.4%	0.8%	0.9%	0.9%

FACILITY REQUIREMENTS

By comparing future facility needs to IWA's existing facilities for the 5-, 10-, and 20-year planning periods, the level of development required to meet future demand was determined. Future facility needs were determined by evaluating facilities according to the design standards in AC 150/5300-13A, *Airport Design,* that are dependent on the critical aircraft. The critical aircraft was identified as a D-V aircraft (Boeing B747-400F) associated with SkyBridge Arizona's projected activity. The Airport's Annual Service Volume (ASV) was calculated at 498,000 aircraft operations, as identified in the Airport's ALUCP.

Airfield Requirements

The existing three-runway airfield can accommodate the forecasted growth in aircraft operations over the next 20 years. In examination of the runway and taxiway system, the master plan identified the following:

- ✓ Insufficient runway length for Runway 12L/30R for B747-400F on expected routes
- ✓ Insufficient circulation and taxiway geometry for Runway 12R/30L
- ✓ High runway occupancy time for aircraft arrivals on Runway 12C/30C
- ✓ Insufficient access to future eastside facilities

- ✓ Runway 12L/30R is considered the commercial runway, but does not offer instrument approaches
- ✓ Airport Surveillance Radar (ASR) model-8 has potential to impact development on the eastside of Airport
- ✓ Existing Terminal VHF Omnidirectional Range (TVOR) has potential to impact future parallel taxiway alignments for Runway 12C/30C

Passenger Terminal Requirements

An examination of the westside passenger terminal complex revealed several improvements to the passenger terminal area are required to meet the anticipated growth in passenger activity. As identified in **Table ES-3**, various functional areas of the terminal were examined to include the passenger check-in area, checked baggage, security screening checkpoint, passenger holdroom, apron (gates), and the number of baggage claim devices. Based upon the analysis, surplus areas are identified in green, and deficiencies are identified in red, in the table below.

Table ES-3: Terminal Requirements Summary

Functional Areas	Existing Facilities	Planning Activity Level (PAL)		
		PAL 1 (2023)	PAL 2 (2028)	PAL 3 (2038)
Check-in Queue (sf) Counters/Bag drops	4,500 32	3,550 26	3,700 27	4,350 31
Checked baggage EDS machines Makeup area (sf)	2 CT-80 11,500	3 MS-EDS 11,400	4 MS-EDS 12,800	4 MS-EDS 15,700
Security screening checkpoint Queue (sf) Lanes	3,800 5	1,950 5	2,250 5	2,650 5
Passenger holdroom Holdroom (sf) Podium, queuing, egress (sf)	15,260 3,950	13,000 3,150	15,300 3,675	19,700 4,725
Apron (gates)	6 ADG III 4 B757	8 ADG III	9 ADG III	11 ADG III
Baggage claim (devices)	2	2	3	3

Source: Inter*VISTAS*, November 2018.
Notes: Existing queues are estimated based on terminal drawings.
Requirement, which is based on a hypothetical medium speed inline system (MS-EDS), includes one EDS machine for redundancy.
Sf = square feet.
Green squares = Surplus / Red squares = Deficiency.

In order to address the identified capacity shortfalls in the near term, terminal improvements should focus on in-filling the terminal buildings and reconfiguring the existing space in a phased program to address the capacity shortfalls. These improvements could likely be accommodated through expansions of the

existing terminal complex toward or along the existing apron. A long-term solution located on the eastside of IWA will ultimately be required. The Airport Master Plan Update recommends several passenger terminal improvements including:

- ✓ The existing terminal annex building (Gates 1 through 4) has reached its useful life and will need to be replaced within the next four years.
- ✓ Inbound and outbound baggage improvements are required to accommodate forecast passenger growth.
- ✓ Additional concourse holdroom space is required to meet level of service goals.
- ✓ Aircraft parking requirements could require additional remain-over-night (RON), remain-over-day (ROD) parking positions, depending on future demand profiles and airline operations.
- ✓ Expansion of the security checkpoint can be mitigated by changes in level of service goals and/or investment in higher throughput technologies.
- ✓ The airline ticketing lobby is sufficient through the planning period using conservative assumptions regarding process automation and offsite check-in.
- ✓ A new, phased, 28-gate, linear-pier demand driven replacement passenger terminal on the east side of the Airport. The initial terminal development program would be based on ADG-III (A320 and B737) and ADG-IV (B757 and B767) aircraft, and at least 10 gates that can be expanded over time as demand dictates. The terminal program will include new aircraft gates, expanded ticket counters, airline ticket offices, outbound baggage screening and baggage claim, Transportation Security Administration (TSA) security screening, concessions, restrooms, and terminal support facilities.

Airfield Support Facility Requirements

Airfield support facilities such as aircraft run-up areas, aircraft aprons for RON or ROD aircraft, fuel storage, and the compass calibration pad were examined to support existing tenants, airline operators, and the local aviation community. The Airport Master Plan Update recommends several improvements to these facilities to include:

- ✓ A designated engine run-up area can accommodate both pre-flight and maintenance, repair, and overhaul engine run-ups in addition to a blast fence.
- ✓ The existing compass calibration pad should provide improved access to users.
- ✓ Avgas and Jet A fueling facilities were determined to have inadequate capacity based upon the forecasts; additional facilities are required for both westside tenants and a new eastside fuel farm.
- ✓ The demand for aircraft ROD and RON will increase based upon the approved forecasts.

Vehicular Access and Parking Facilities Requirements

Passenger parking, rental car parking, employee parking, and temporary parking (cell phone lot), as well as access roads were analyzed for their potential to accommodate forecasted demand. Based upon the

analysis, a number of parking supply deficits show up in the Short-Term (2023) planning horizon and are projected to increase in the Mid-Term (2028), and Long-Term (2038). Deficits were identified in the Hourly Parking Lot, Daily Parking Lot, Rental Car Parking Lot, and Employee Parking Lots. **Table ES-4** identifies existing capacity as well as long-term deficiencies based on the activity forecasts.

Table ES-4: Overall Peak Parking Surplus/Deficit Summary

Lot	FY 2018 Peak	PAL 1 (2023)	PAL 2 (2028)	PAL 3 (2038)
Public Parking Total	1,666	1,266	1,069	563
Hourly Lot	0	-38	-57	-106
Daily Lot	23	-154	-241	-465
Ray Road Economy Lot	1,643	1,459	1,368	1,135
Rental Parking	0	-38	-57	-105
Employee Parking	0	-41	-62	-114
Temporary Parking (Cell Phone Lot)	120	120	120	120

Note: Green squares = Surplus / Red squares = Deficiency.

A Level of Service (LoS) analysis was conducted on IWA's existing roadway system to accommodate forecasted passenger demand. LoS is a qualitative measure used to relate the quality of vehicle traffic service on roadways and intersections by categorizing traffic flow. The LoS analysis considers performance measures, such as vehicle speed, density, and congestion, to assign quality levels of traffic using letters "A" through "F," with A being the best, and F being the worst. The conditions are defined as A – free flow, B – reasonably free flow, C – stable flow, D – approaching unstable flow, E – unstable flow, and F – forced or breakdown flow. A LoS of either A, B, C or D during the peak hours can be considered acceptable.

South Sossaman Road from East Ray Road to East Pecos Road was analyzed to determine the roadway operational LoS. Based upon the results of the roadway capacity analysis, in a no-build scenario, South Sossaman Road does not operate at acceptable LoS from 2030 and beyond. If an eastside terminal is constructed and Airport generated traffic is removed from South Sossaman Road, the road would then operate at an acceptable LoS "D." If an eastside terminal is not constructed, further improvements will need to be made to South Sossaman road to alleviate congestion.

MASTER PLAN RECOMENDATIONS

The recommended conceptual development plan outlines the proposed development and facility improvements that will not only meet the forecasted demand presented in Chapter 2 of the Airport

Master Plan Update, *Forecast*, but also mitigate the deficiencies presented in Chapter 3, *Facility Requirements.* The future Airport development projects included in the conceptual development plan are as follows:

Airfield Improvements

- ✓ Reconstruct segments of Runways 12R/30L and 12C/30C within Phase I (0-5 years) and Phase II (6-10 years). Install new runway LED lighting.
- ✓ Extend Runway 12R/30L by 1,275 feet and Runway 12L/30R by 200 feet.
- ✓ Construct a dual full-length parallel taxiway east of Taxiway C.
- ✓ Construct a full-length parallel taxiway system west of Runway 12C/30C.
- ✓ Construct cross-field taxiways between Runways 12R/30L and 12C/30C and between Runways 12L/30R and 12C/30C.
- ✓ Construct bypass taxiways for Runways 12L and 30L, and a taxiway connector across Runway 12R.
- ✓ Continue to implement the FAA approved solution to Hot Spot-1 for the Taxiway V, B and K intersection.
- ✓ Retain the easement on the approach end of Runway 30R to protect the new ¾ mile approach minima and accommodate the increased Runway Protection Zone (RPZ) dimensions.
- ✓ Construct a new apron for RON/ROD aircraft.
- ✓ Construct Phase 3 of the Alpha Apron.
- ✓ Reconstruct and reconfigure Taxiway G.
- ✓ Reconstruct segment of Taxiway W.
- ✓ Construct new runway markings and signage associated with the runway magnetic change.
- ✓ Relocate the ASR-8 to a future to-be-determined location.
- ✓ Relocate the TVOR to a future to-be-determined location.

Airfield Support Facilities Improvements

- ✓ Relocate the existing compass calibration pad to the northern end of the Airport.
- ✓ Construct a new run-up area for aircraft north of the existing run-up area and repurpose existing run-up area as ingress/egress for future hangar development.
- ✓ Replace the east and west airfield electrical lighting vaults.
- ✓ Expand the existing fuel farm to include six additional 50,000 USG fuel tanks.
- ✓ Purchase a new Aircraft Rescue Firefighting truck.
- ✓ Construct a new fuel farm located on the east side of the Airport to support a new terminal complex.
- ✓ Construct a new Air Traffic Control Tower (ATCT).
- ✓ Implement a Safety Management System (SMS).

Parking (Short-Term) Improvements

- ✓ Transition employee parking out of the Daily Lot as soon as feasible.
  - o Establish permanent location at existing Cell/Ride Share/Taxi lot.
- ✓ Relocate the Cell/Ride Share/Taxi Lot to the northern parcel off South Sossaman Road.
- ✓ Accommodate additional rental car parking demand in the expanded Rental Support Facility on South Sossaman Road and/or the Ray Road Economy Lot based on operator needs/wants (Rental Flex).
- ✓ Make the following improvements to pedestrian crossings adjacent to the existing terminal:
  - o Pavement markings
  - o Refuge islands
  - o Signal/crosswalk timing at controlled intersection.

Parking (Mid-Term) Improvements

- ✓ Relocate rental parking supply to the expanded Rental Support Facility on South Sossaman Road and/or Ray Road Economy Lot based on operator needs/wants (Rental Flex).
- ✓ Expand Ray Road Economy Lot east to construct additional parking spaces, if needed.

Parking (Long-Term) Improvements

- ✓ Transition westside parking facilities to alternative support and value-added uses:
  - o Private aviation parking
  - o Future aeronautical uses
  - o Future economic development opportunities.
- ✓ Construct a new Consolidated Rental Car (CONRAC) facility on the Airport's east side.
- ✓ Construct a new passenger vehicle parking facility on the Airport's east side to support a new passenger terminal complex.

Roadway Improvements

- ✓ Construct a new eastside terminal access road that connects to Hawes Road and Ellsworth Road.

Existing Passenger Terminal

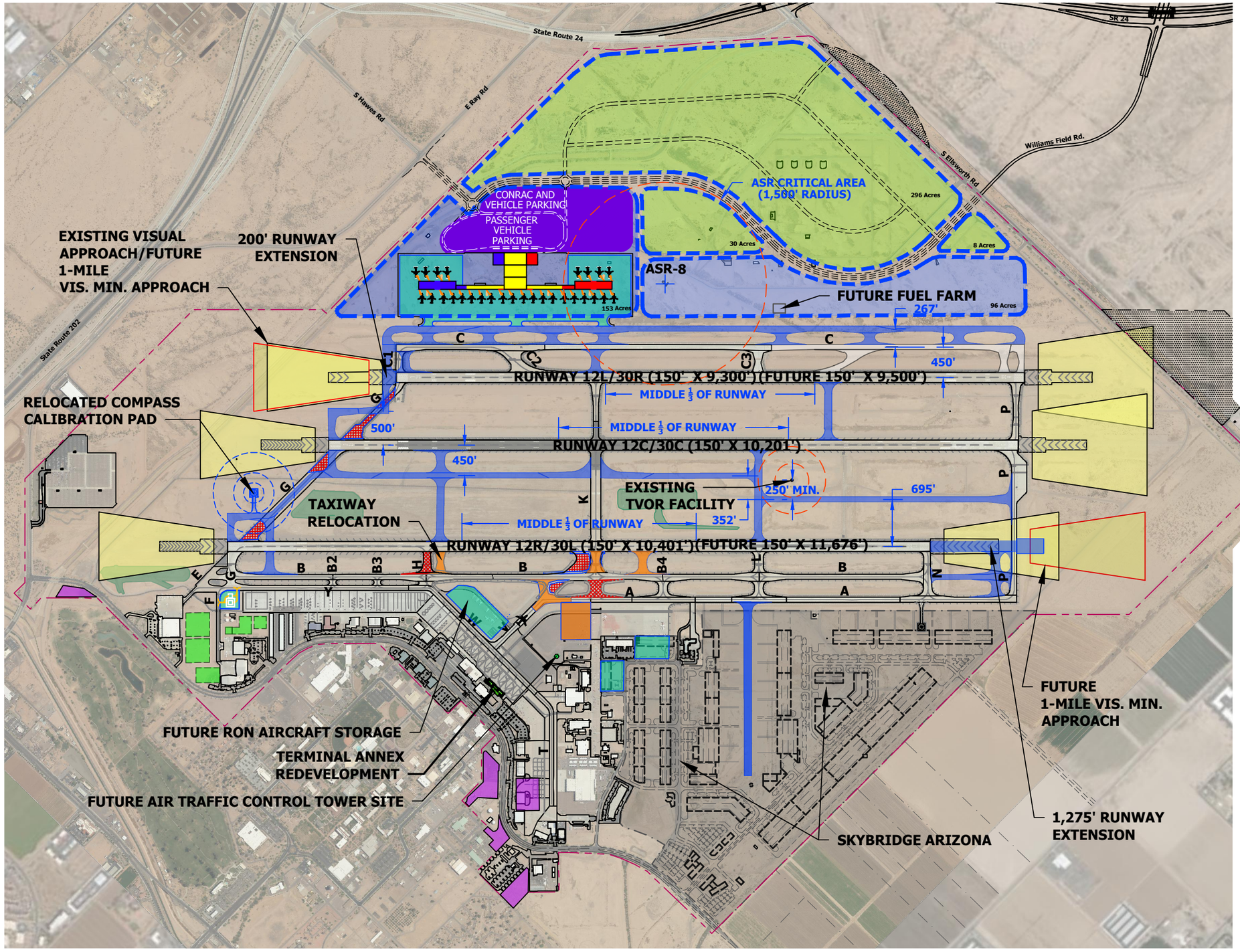
- ✓ Reconstruct the existing Terminal Annex (Gates 1-4).
- ✓ Convert and repurpose the westside terminal to solely accommodate private and GA uses.

Eastside Passenger Terminal

- ✓ Relocate the Ellsworth Channel.
- ✓ Develop a linear-pier passenger terminal on the Airport's east side.

- ✓ Develop adequate support facilities for the initial Phase 1 development program.
- ✓ Construct new apron area to support the eastside passenger terminal.

The Airport's Conceptual Development Plan is depicted in **Figure ES-2**.



Legend

- Existing Runway Protection Zone
- Preliminary Roadway Development
- Future Passenger Terminal Reserve
- Future Aeronautical Development
- Future Non-Aeronautical Development
- Passenger Terminal Support - Parking/Rental Car/TNC
- Existing Detention Ponds
- Existing Easement
- Future Runway Protection Zone
- Future Runway/Taxiway Pavement
- Future Apron Pavement
- Existing IWA Programmed Project
- Pavement to be Removed
- Future Buildings/Development
- Future Economic Development Opportunity
- Passenger Terminal Phase 1 (10) Gates
- Passenger Terminal Phase 2 (9) Gates
- Passenger Terminal Phase 3 (9) Gates

N

0 750' 1500' 3000'

GRAPHIC SCALE IN FEET

Figure ES-2

Preferred Airport Conceptual Development Plan

IMPLEMENTATION & FINANCIAL PLAN

The potential phasing of individual projects, as identified in **Tables ES-5**, **ES-6**, and **ES-7** are separated into three development phases through the planning horizon representing projects that are likely to be developed during each time period (identified on **Figure ES-3**). If funding or facility needs arise sooner or later than projected in the phasing plan, projects can be shifted between phases. Preliminary planning level program cost estimates were prepared for projects identified in the conceptual development plan. Costs for each project by development phase presented in 2019 dollars are shown in the following table and represent a planning level estimate. Projects identified in Phase-IV (20+ Years), **Table ES-8**, were not assigned a cost due to their timing in the project schedule and fall outside of the initial planning horizon.

Table ES-5: Phase-I (0-5 Years) Development Program Project Costs

Federal FY	Project Number	Project Title	Estimated Total Project Cost 2019 Dollars
Proposed FY 2021 CIP Projects			
2021	A1	Reconstruct sections of Runway 12R/30L in Portland Cement Concrete Pavement (PCCP), LED Lighting Upgrade - Design/Construct	$ 24,000,000.00
	A2	Taxiway Whiskey (Reconstruct lowest PCI section in Portland Cement Concrete Pavement) - Design/Construct	$ 800,000.00
	A3	Ellsworth Channel Relocation - Construction	$ 11,440,000.00
	A4	Employee Parking Lot and Westside cell phone lot improvements - Design/Construct	$ 665,000.00
	A5	Safety Management System	$ 312,000.00
		2021 Annual Subtotal	**$ 37,217,000.00**
Proposed FY 2022 CIP Projects			
2022	A6	Taxiway Golf Realignment (End of Runway 12R/30L w/ 90degree connector to Twy G)- Design/Construct	$ 11,580,000.00
	A7	Infrastructure Extensions from Ellsworth Rd to Eastside Development Area) - Design/Construction	$ 17,122,425.00
		2022 Annual Subtotal	**$ 28,702,425.00**
Proposed FY 2023 CIP Projects			
2023	A8	Terminal Annex Redevelopment (Gates 1 to 4) - Design/Construct	$ 14,007,825.00
	A9	Center Runway Section 30 (South end) - Design/Construct	$ 8,630,000.00
		2023 Annual Subtotal	**$ 22,637,825.00**
Proposed FY 2024 CIP Projects			
2024	A10	Parallel Taxiway West of Runway 12C/30C [including VOR jog segment] - Design/Construction	$ 18,316,000.00
		2024 Annual Subtotal	**$ 18,316,000.00**
Proposed FY 2025 CIP Projects			
2025	A11	Remain-Over-Day (ROD)/Remain Over Night (RON) Aircraft Storage Apron - Design/Construct	$ 539,000.00
		2025 Annual Subtotal	**$ 539,000.00**
		Total Phase-I (0-5 Years) Development Program Project Costs	**$ 107,412,250.00**

Table ES-6: Phase-II (6-10 Years) Development Program Project Costs

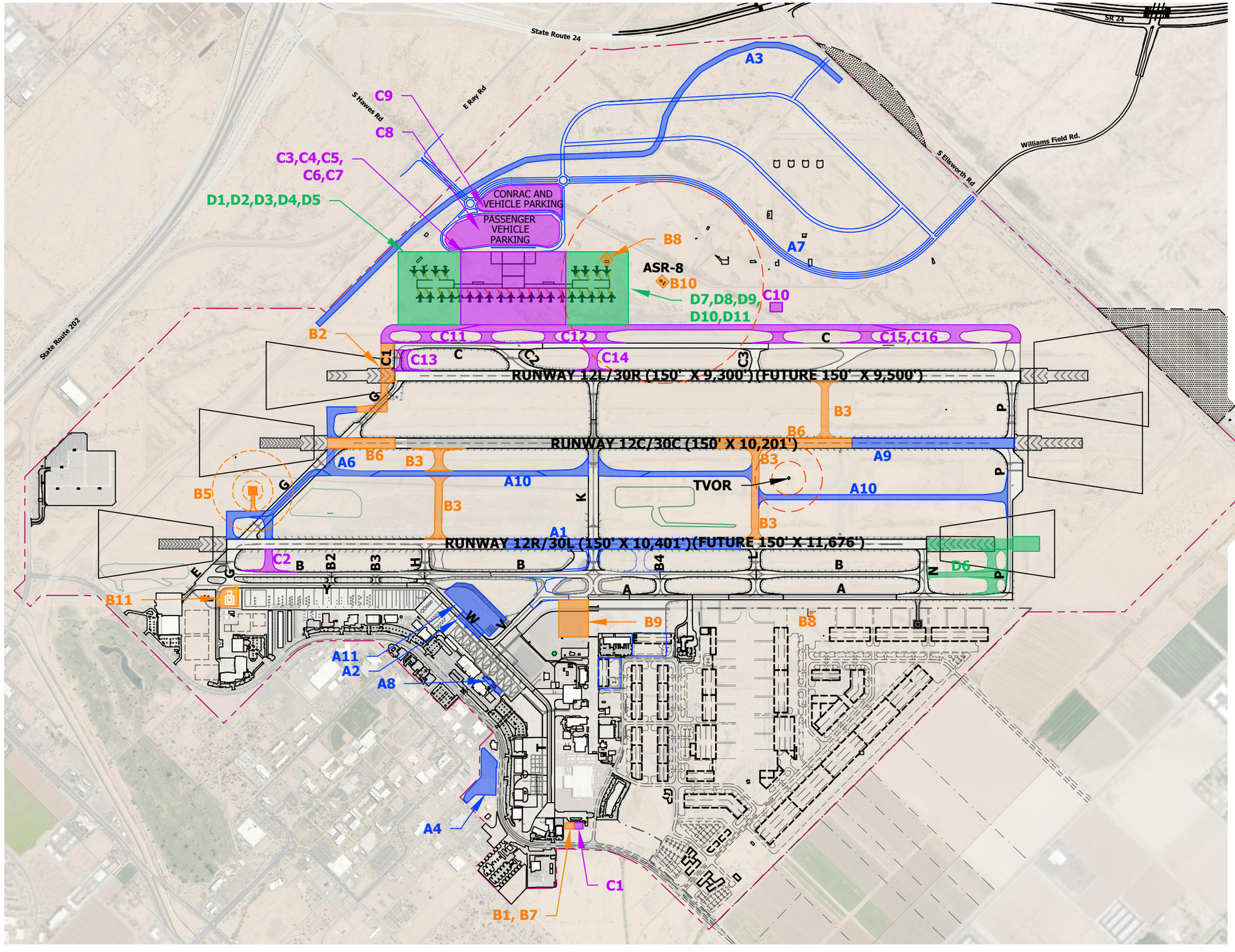
Federal FY	Project Number	Project Title	Estimated Total Project Cost 2019 Dollars
Proposed FY 2026 to 2030 CIP Projects			
6 to 10 Years	B1	Fuel Farm Expansion: (2) 50,000 USG fuel tanks - Design/Construct	$ 1,643,300.00
	B2	Extend Runway 12L/30R by 200' with Bypass Taxiway - Design/Construction	$ 7,197,000.00
	B3	Mid-field Connectors Project - [Hotel, Lima, crossfield connectors] - Design/Construct	$ 9,313,000.00
	B4	Procure 1 new Oshkosh Aircraft Rescue Firefighting Truck - 1,500 USG; 200 USG of AFFF; and 450LB dry chem capacity	$ 900,000.00
	B5	Relocate Compass Calibration Pad - Design/Construct	$ 1,219,000.00
	B6	Reconstruct 1,000' of Runway 12C approach end/Reconstruct 2,000' of Runway 12C/30C in Portland Cement Concrete Pavement (PCCP) with LED Lighting Upgrade	$ 12,748,000.00
	B7	Fuel Farm Expansion: (2) 50,000 USG fuel tanks - Design/Construct	$ 1,643,000.00
	B8	East/West Airfield Electrical Lighting Vault Replacement/Generators with Runway 12L/30R Lighting Upgrade	$ 10,805,000.00
	B9	Alpha Apron Phase 3 - Design/Construction	$ 5,052,000.00
	B10	Increase tower height/relocate existing Airport Surveillance Radar Model 8 (ASR-8)	$ 13,000,000.00
	B11	Maintenance Run-Up Area with Blast Fence - Design/Construct	$ 1,295,000.00
	B12	Runway Magnetic Change - Markings/Signage [All Runways]	$ 300,000.00
		Total Phase-II (6-10 Years) Development Program Project Costs	**$ 65,115,300.00**

Table ES-7: Phase-III (11-20 Years) Development Program Project Costs

Federal FY	Project Number	Project Title	Estimated Total Project Cost 2019 Dollars
Proposed FY 2031 to 2041 CIP Projects			
11 to 20 Years	C1	Fuel Farm Expansion: (2) 50,000 USG fuel tanks - Design/Construct	$ 1,643,000.00
	C2	New Taxiway Bravo 1 connector to Runway 12R/30L - Design/Construct	$ 1,824,000.00
	C3	Eastside Apron Phase 1 - Design	$ 1,206,000.00
	C4	Eastside Apron Phase 1 - Construction	$ 11,910,000.00
	C5	Eastside Terminal Replacement (10 gates + 4 hard stand positions) Phase 1 - Design	$ 16,716,560.00
	C6	Eastside Terminal Replacement (10 gates + 4 hardstand positions) Phase 1 - Construction	$ 167,165,600.00
	C7	Passenger Boarding Bridges for Terminal Phase 1 - Design/Construct	$ 10,000,000.00
	C8	Eastside Terminal Parking Surface Lot - Design/Construct	$ 12,981,750.00
	C9	Eastside Consolidated Rental Car Facility w/ConRAC - Design/Construct	$ 16,602,430.00
	C10	Construct New Eastside Fuel Farm (Jet A, 450,000 gallons) to support Eastside Terminal	$ 7,393,500.00
	C11	Parallel Taxiway to Taxiway C Phase 1 - Design	$ 950,000.00
	C12	Parallel Taxiway to Taxiway C Phase 1 - Construct	$ 10,448,000.00
	C13	New Taxiway Connector South of existing C1 Connector - Design/Construct	$ 1,520,000.00
	C14	New Taxiway Connector South of existing C2 Connector - Design/Construct	$ 1,520,000.00
	C15	Parallel Taxiway to Taxiway C Phase 2 - Design	$ 965,000.00
	C16	Parallel Taxiway to Taxiway C Phase 2 - Construct	$ 12,710,000.00
		Total Phase-III (11-20 Years) Development Program Project Costs	**$ 275,555,840.00**

Table ES-8: Phase-IV (20+ Years) Post Planning Period Projects

Federal FY	Project Number	Project Title
Proposed CIP Projects Beyond FY 2042		
20+ Years	D1	Eastside Apron Phase 2 - Design
	D2	Eastside Apron Phase 2 - Construction
	D3	Eastside Terminal Phase 2 Expansion (9 Gates) - Design
	D4	Eastside Terminal Phase 2 Expansion (9 Gates) - Construction
	D5	Passenger Boarding Bridges for Terminal Phase 2 - Design/Construct
	D6	1,275' Extension to Runway 12R/30L, Taxiway B Extension and Bypass Taxiway in Portland Cement Concrete Pavement (PCCP) - Design/Construct
	D7	Eastside Terminal Phase 3 Expansion (9 Gates) - Design
	D8	Eastside Terminal Phase 3 Expansion (9 Gates) - Construction
	D9	Passenger Boarding Bridges for Terminal Phase 3 - Design/Construct
	D10	Eastside Apron Phase 3 - Design
	D11	Eastside Apron Phase 3 - Construction



Legend

- Phase I - (0 - 5 Years)
- Phase II - (6 - 10 Years)
- Phase III - (11 - 20 Years)
- Phase IV - (20+ Years)

N

0 750' 1500' 3000'

GRAPHIC SCALE IN FEET

Figure ES-3
Project Phasing Plan

Implementing and funding the Airport Master Plan Capital Improvement Program (CIP) for IWA will largely be a function of FAA Airport Improvement Program (AIP) grants, Passenger Facility Charges (PFCs), ADOT grant funds, Member Government Contributions, and Other Funding Sources available at the time of specific project implementation. Other funds include planned third-party funding for specific projects and funding sources not yet identified.

The potential capital improvements necessary to accommodate the future needs of IWA were presented in four phases: Phase I (1-5 years), Phase II (6-10 years), Phase III (11-20 years), and Phase IV (20+ years). The financial analysis and funding plan presented in **Table ES-9** address the estimated capital costs for Phase I and Phase II, together estimated to cover FYs 2021 – 2030. The estimated project costs were developed in 2019 dollars and escalated 2 percent per year from that base year.

Funding source estimates of capital costs beyond FY 2030 (Phase III and Phase IV) are considered speculative this far out, and therefore, are not presented. It is the preference of PMGAA to not issue any debt instruments for the funding of projects within Phases I and II.

The financial projections reflect the anticipated effects of funding the CIP, to the extent of the availability of the identified funding sources through FY 2030. The financial analysis uses the FAA approved activity forecasts as a basis for estimating operating revenues, operating expenses, and CIP funding sources through FY 2030.

Table ES-9: Estimated Capital Costs and Funding Sources

		Total [1]	AIP		PFCs	ADOT Grants	Member Govt.	Other
			Entitlement	Discretionary				
Phase I - FYs 2021 - 2025								
A1	Reconstruct sections of Runway 12R/30L	$ 24,960,000	$ 3,636,000	$ 19,092,576	$ -	$ 1,115,712	$ 1,115,712	$ -
A2	Taxiway Whiskey-Design/Construct	832,000	-	-	-	748,800	83,200	-
A3	Ellsworth Channel Relocation-Construction	11,897,600	-	-	11,897,600	-	-	-
A4	Employee Parking Lot and Cell Phone Lot Improvements	691,600	-	-	-	-	691,600	-
A5	Safety Management System	324,480	-	-	324,480	-	-	-
A6	Taxiway Golf Realignment - Design/Construct	12,274,800	3,672,360	7,505,073	-	548,684	548,684	-
A7	Eastside Airport Terminal Access Roads - Design/Construct	18,149,771	-	-	10,000,000	709,362	-	7,440,409
A8	Terminal Annex Redevelopment - Design/Construct	15,128,451	-	8,954,379	-	400,260	5,773,812	-
A9	Center Runway Section 30	9,320,400	3,709,084	4,778,073	-	416,622	416,622	-
A10	Parallel Taxiway West of RW 12C/30C - Design/Construct	20,147,600	3,746,174	14,600,230	-	900,598	900,598	-
A11	Aircraft Storage Apron (RON/ROD) - Design/Construct	603,680	-	-	-	-	603,680	-
Total Projects for FYs 2021 - 2025		**$ 114,330,382**	**$ 14,763,618**	**$ 54,930,331**	**$ 22,222,080**	**$ 4,840,037**	**$ 10,133,907**	**$ 7,440,409**
Phase II - FYs 2026 - 2030								
B1	Fuel Farm Expansion - Design/Construct	$ 1,873,362	$ -	$ -	$ -	$ -	$ 1,873,362	$ -
B2	Extend Runway 12L/30R with Taxiway	9,600,640	3,783,636	4,958,707	-	429,149	429,149	-
B3	Mid-Field Connectors Project - Design/Construct	10,430,560	-	9,498,068	-	466,246	466,246	-
B4	ARFF Truck	1,026,000	-	-	1,026,000	-	-	-
B5	Relocate Compass Calibration Pad - Design/Construct	1,414,040	-	-	-	-	-	1,414,040
B6	Reconstruct Runway 12C/30C and LED Lighting Upgrade	14,532,720	3,821,473	9,412,022	-	649,613	649,613	-
B7	Fuel Farm Expansion - Design/Construct	1,938,740	-	-	-	-	1,938,740	-
B8	Electrical Lighting Vault Replacement/Generators & 12C/30R LED Upgrade	12,596,700	7,835,551	3,635,004	-	563,072	563,072	-
B9	Alpha Apron Phase 3 - Design/Construction	6,062,400	-	-	6,062,400	-	-	-
B10	Increase Tower Height/Relocate Existing ASR-8	15,860,000	-	-	-	-	-	15,860,000
B11	Maintenance Run-Up Area with Blast Fence - Design/Construct	1,579,900	-	-	-	-	1,579,900	-
B12	Runway Magnetic Change - Marking/Signage	336,000	-	305,962	-	15,019	15,019	-
Total Projects for FYs 2026 - 2030		**$ 77,251,062**	**$ 15,440,660**	**$ 27,809,762**	**$ 7,088,400**	**$ 2,123,099**	**$ 7,515,101**	**$ 17,274,040**
Total Projects for FYs 2021 - 2030		**$ 191,581,444**	**$ 30,204,278**	**$ 82,740,093**	**$ 29,310,480**	**$ 6,963,136**	**$ 17,649,008**	**$ 24,714,449**

Note: [1] The estimated project costs were developed in 2019 dollars and escalated at 2% per year from that base.

The CIP sources and uses by project type, associated with projects listed in **Table ES-9** are identified in **Table ES-10**. The largest funding sources are AIP grants, which are estimated to fund 59 percent of the total CIP costs. PFCs are projected to fund a total of 15.3 percent, followed by 9.2 percent from Member Government Contributions, 3.6 percent from ADOT grants, and the remainder from other funds. The largest uses of CIP funding are estimated for runway and taxiway projects, and access roads totaling approximately 60 percent and 9.5 percent, respectively, of total estimated CIP costs.

Table ES-10: Sources and Uses of Capital Funding

Sources of Capital Funding	Phase I 2021 - 2025	Phase II 2026 - 2030	Total
AIP Entitlements	$ 14,763,618	$ 15,440,660	$ 30,204,278
AIP Discretionary	54,930,331	27,809,762	82,740,093
PFC Paygo	22,222,080	7,088,400	29,310,480
ADOT Grants	4,840,037	2,123,099	6,963,136
Member Contributions	10,133,907	7,515,101	17,649,008
Other	7,440,409	17,274,040	24,714,449
Total Sources	**$114,330,382**	**$ 77,251,062**	**$ 191,581,444**
Uses of Capital Funding	**Phase I 2021 - 2025**	**Phase II 2026 - 2030**	**Total**
Runway/Taxiway Projects	$ 67,534,800	$ 47,496,620	$ 115,031,420
Terminal Improvements	15,128,451	-	15,128,451
Parking	691,600	-	691,600
Fuel Farm	-	3,812,102	3,812,102
Apron Rehabilitation	603,680	6,062,400	6,666,080
Access Roads	18,149,771	-	18,149,771
ARFF	-	1,026,000	1,026,000
Other Projects	12,222,080	18,853,940	31,076,020
Total Uses	**$114,330,382**	**$ 77,251,062**	**$ 191,581,444**

Note: The assumed AIP Discretionary funding is based on the FAA's funding criteria and priority system.

ENVIRONMENTAL CONSIDERATIONS

The Airport Master Plan Update process included an initial environmental overview of the potential impacts that will need to be considered prior to construction of the Airport improvements identified by the recommended plan. The FAA's Airport Environmental Handbook identifies 20 impact categories that should be considered. Of these environmental impact categories, none were determined to be significantly affected by the proposed conceptual development plan based on the initial review undertaken. As projects are undertaken, each will be subject to compliance with the National Environmental Policy Act (NEPA) of 1969 (42 U.S.C. 4321 et seq.) and the guidelines provided in FAA Order 1050.1F, *Environmental Impacts: Policies and Procedures* (Order 1050.1F) (effective July 16, 2015) for necessary documentation required by the FAA prior to initiation.

PUBLIC & STAKEHOLDER INVOLVEMENT

The Airport Master Plan Update included a public and stakeholder coordination process consisting of a SWG, a TAC, and public open house workshops. The SWG, largely composed of community members, was established to engage its members for input and review of working papers, materials, and alternatives throughout the planning process. The TAC was established to engage its members for input and review of working papers, materials, and alternatives during the planning process. The TAC provided more detailed feedback on operational plan elements due to committee member familiarity with the Airport as tenants and airfield users. Public workshops were also held to inform the community at-large about the project and gather feedback throughout the process. During the master plan, there were four SWG and TAC meetings and two open public open house workshops. Five PMGAA Board briefings were conducted at key milestones of the project.

An Airport Master Plan Update project website was also developed to inform interested parties of the status of the Airport Master Plan Update and to encourage public participation. The site encouraged visitors to submit comments or questions concerning the master plan through the website or through the mail. An online survey was also developed to obtain airport user and resident feedback for preferences on several Airport user and nonuser-based questions.

For additional information about the Phoenix-Mesa Gateway Airport Plan, visit the Airport's website at www.gatewayairport.com or call (480) 988-7649.