



# CAPITAL FINANCIAL PLAN

The Master Plan Concept presented in the previous chapter outlined airside and landside improvements for Chandler Municipal Airport (CHD) that provide the City of Chandler with a plan to preserve and develop the airport to meet future aviation demands. Using the Recommended Master Plan Concept as a guide, this chapter will provide a description and overall cost for projects identified in the capital improvement program (CIP) and development schedule. The program has been evaluated from a variety of perspectives and represents a comparative analysis of basic budget factors, demand, and priority assignments.

The presentation of the capital program is organized into two sections. First, the airport's CIP and associated cost estimates are presented in narrative and graphic form. The CIP has been developed following Federal Aviation Administration (FAA) guidelines for master plans and primarily identifies those projects that are likely eligible for FAA and Arizona Department of Transportation (ADOT) – Aeronautics Group grant funding. Second, capital improvement funding sources on the federal, state, and local levels are identified and discussed.



## AIRPORT CAPITAL IMPROVEMENT PROGRAM

With the recommended concept and specific needs and improvements for the airport having been established, the next step is to determine a realistic schedule for project implementation and the associated costs for the plan. The capital program considers the interrelationships among the projects in order to determine an appropriate sequence of projects, while remaining within reasonable fiscal constraints.

The CIP, programmed by planning horizons, has been developed to cover the short- (years 1-5), intermediate- (years 6-10), and long-term (years 11-20) planning horizons. By using planning horizons instead of specific years, the City of Chandler will have greater flexibility to adjust capital needs as demand dictates. **Table 6A** summarizes the key aviation demand milestones projected at CHD for each of the three planning horizons.

**TABLE 6A**  
**Aviation Demand Planning Horizons**  
**Chandler Municipal Airport**

|                             | Base Year<br>(2019) | Short Term<br>(1-5 Years) | Intermediate Term<br>(6-10 Years) | Long Term<br>(11-20 Years) |
|-----------------------------|---------------------|---------------------------|-----------------------------------|----------------------------|
| <b>BASED AIRCRAFT</b>       |                     |                           |                                   |                            |
| Single Engine               | 379                 | 424                       | 469                               | 552                        |
| Multi-Engine                | 26                  | 24                        | 20                                | 15                         |
| Turboprop                   | 6                   | 7                         | 9                                 | 13                         |
| Jet                         | 8                   | 10                        | 13                                | 20                         |
| Helicopter                  | 22                  | 25                        | 29                                | 40                         |
| <b>TOTAL BASED AIRCRAFT</b> | <b>441</b>          | <b>490</b>                | <b>540</b>                        | <b>640</b>                 |
| <b>ANNUAL OPERATIONS</b>    |                     |                           |                                   |                            |
| <b>Itinerant</b>            |                     |                           |                                   |                            |
| Air Taxi                    | 2,990               | 3,900                     | 4,400                             | 5,100                      |
| General Aviation            | 67,647              | 72,500                    | 77,300                            | 87,400                     |
| Military                    | 199                 | 213                       | 213                               | 213                        |
| <b>Total Itinerant</b>      | <b>70,836</b>       | <b>76,613</b>             | <b>81,913</b>                     | <b>92,713</b>              |
| <b>Local</b>                |                     |                           |                                   |                            |
| General Aviation            | 149,754             | 158,300                   | 165,800                           | 181,900                    |
| Military                    | 72                  | 62                        | 62                                | 62                         |
| <b>Total Local</b>          | <b>149,826</b>      | <b>158,362</b>            | <b>165,862</b>                    | <b>181,962</b>             |
| <b>TOTAL OPERATIONS</b>     | <b>220,662</b>      | <b>234,975</b>            | <b>247,775</b>                    | <b>274,675</b>             |

Source: Coffman Associates analysis

A key aspect of this planning document is the use of demand-based planning milestones. The short-term planning horizon contains items of highest need and/or priority, many of which have been previously defined by airport management. As short-term horizon activity levels are reached, it will then be time to program for the intermediate term based upon the next activity milestones. Similarly, when the intermediate term milestones are reached, it will be time to program for the long-term activity milestones.

Many development items included in the recommended concept will need to follow these demand indicators. For example, the plan includes expanding utility infrastructure and site preparation for constructing new landside facilities to support aircraft activity. Demand for new based aircraft will be a primary indicator for these projects. If based aircraft growth occurs as projected, additional hangars should be constructed to meet the demand. If growth slows or does not occur as forecast, some projects may be delayed. As a result, capital expenditures are planned to be made on an as-needed basis, leading to more responsible use of capital assets. Some development items do not depend on demand, such as airfield improvements to meet FAA design standards. These projects need to be programmed in a timely manner regardless of changes in demand indicators and should be monitored regularly by Airport management.

At CHD, some hangars are owned and managed by the airport and leased to individual tenants, while others are privately owned and managed on land leased from the airport. Because of economic realities, many airports rely on private developers to construct new hangars. In some cases, private developers can keep construction costs lower which, in turn, lowers the monthly lease rates necessary to amortize a loan. The CIP for CHD assumes that site preparation and development for landside facilities will be constructed privately. This assumption does not preclude the possibility of the airport constructing new hangars. Ultimately, the City of Chandler will determine, based upon demand and the specific needs of a potential developer, whether to self-fund landside facility development or to rely on private developers.

As a master plan is a conceptual document, implementation of the capital projects should only be undertaken after further refinement of their design and costs through architectural or engineering analyses. Moreover, some projects may require additional infrastructure improvements (i.e., drainage improvements, extension of utilities, etc.) that may increase the estimated cost of the project or increase the timeline for completion.

Once a list of necessary projects was identified and refined, project-specific cost estimates were prepared. These estimates include design, construction administration, and contingency costs that may arise on the project. ***Capital costs presented here should be viewed only as “order-of-magnitude” estimates subject to further refinement during engineering/architectural design.*** Nevertheless, they are considered sufficient for planning purposes. Cost estimates for each of the development projects in the CIP are based on present-day construction, design, and administration costs. Adjustments will need to be applied over time to account for inflation and changes in construction and capital equipment costs. Cost estimates for these projects were provided by Dibble Engineering, who is providing engineering support for the master plan and is familiar with CHD. Cost estimates for each of the development projects in the CIP are in current dollars.

**Exhibit 6A** presents the proposed 20-year CIP for CHD. Two things must be considered. First, the proposed CIP is a point-in-time analysis which will change annually based on actual demand and changing needs. Second, an estimate of grant (FAA and/or ADOT – Aeronautics Group) funding eligibility has been included, although actual funding is not guaranteed. For those projects that would be eligible for federal funding, Airport Improvement Program (AIP) reauthorization provides for 91.06 percent of the total project cost for CHD. The remaining amount (8.94 percent) would be equally shared (4.47 percent each) between ADOT – Aeronautics Group and the City of Chandler. This eligibility breakdown is based upon the airport’s classification, in addition to the amount of public land within the State of Arizona. Other projects, such as the implementation of certain landside facilities (roadways), are typically not eligible

for AIP grants (outside of non-primary entitlements) or would rank low on the priority scale. As a result, these projects should be planned for airport sponsor funding or funding through specific ADOT – Aeronautics Group programs.

As detailed in the CIP, most projects listed are eligible for federal and state funding. Obviously, demand and justification for these projects must be provided prior to a grant being issued by either the FAA and/or ADOT – Aeronautics Group. It should be noted that certain projects listed in the CIP, while eligible for federal and state funding, are designated for state funding assistance only per the airport’s current CIP on file with the FAA and ADOT – Aeronautics Group.

The FAA utilizes a national priority rating system to help objectively evaluate potential airport projects. Projects are weighted toward safety, infrastructure preservation, meeting design standards, and capacity enhancement. The FAA may participate in the highest priority projects before considering lower priority projects, even if a lower priority project is considered a more urgent need by the local sponsor. Nonetheless, the project should remain a priority, and funding support should continue to be requested in subsequent years.

Some projects identified in the CIP will require environmental documentation. The level of documentation necessary for each project must be determined in consultation with the FAA and ADOT – Aeronautics Group. There are three major levels of environmental review to be considered under the *National Environmental Policy Act* (NEPA) that include categorical exclusions (CatEx), Environmental Assessments (EA), and Environmental Impact Statements (EIS). Each level requires more time to complete and more detailed information. Guidance on what level of documentation is required for a specific project is provided in FAA Order 1050.1F, *Environmental Impacts: Policies and Procedures*. The Environmental Overview presented in Chapter Five addresses NEPA and provides an evaluation of various environmental categories for CHD.

The following sections will describe in greater detail the projects identified for the airport over the next 20 years. The projects are grouped based upon a detailed evaluation of existing and projected demand, safety, rehabilitation needs, and local priority. While the CIP identifies the priority ranking of the projects, the list should be evaluated and revised on a regular basis. It is also important to note that certain projects, while listed separately for purposes of evaluation in this study, could be combined with other projects during time of construction/implementation.

## **SHORT-TERM PROGRAM**

The short-term projects are those anticipated to be needed during the first five years of the 20-year CIP. The projects listed are subject to change based on federal and state funding priorities. Projects related to safety and maintenance generally have the highest priority. This applies to many of the projects identified in the short-term CIP that are associated with maintaining/rehabilitating existing airfield pavements and improving airfield safety. The short-term program considers 18 projects for the planning period as presented on **Exhibit 6A** and depicted on **Exhibit 6B**. The following provides a detailed breakdown of each project.



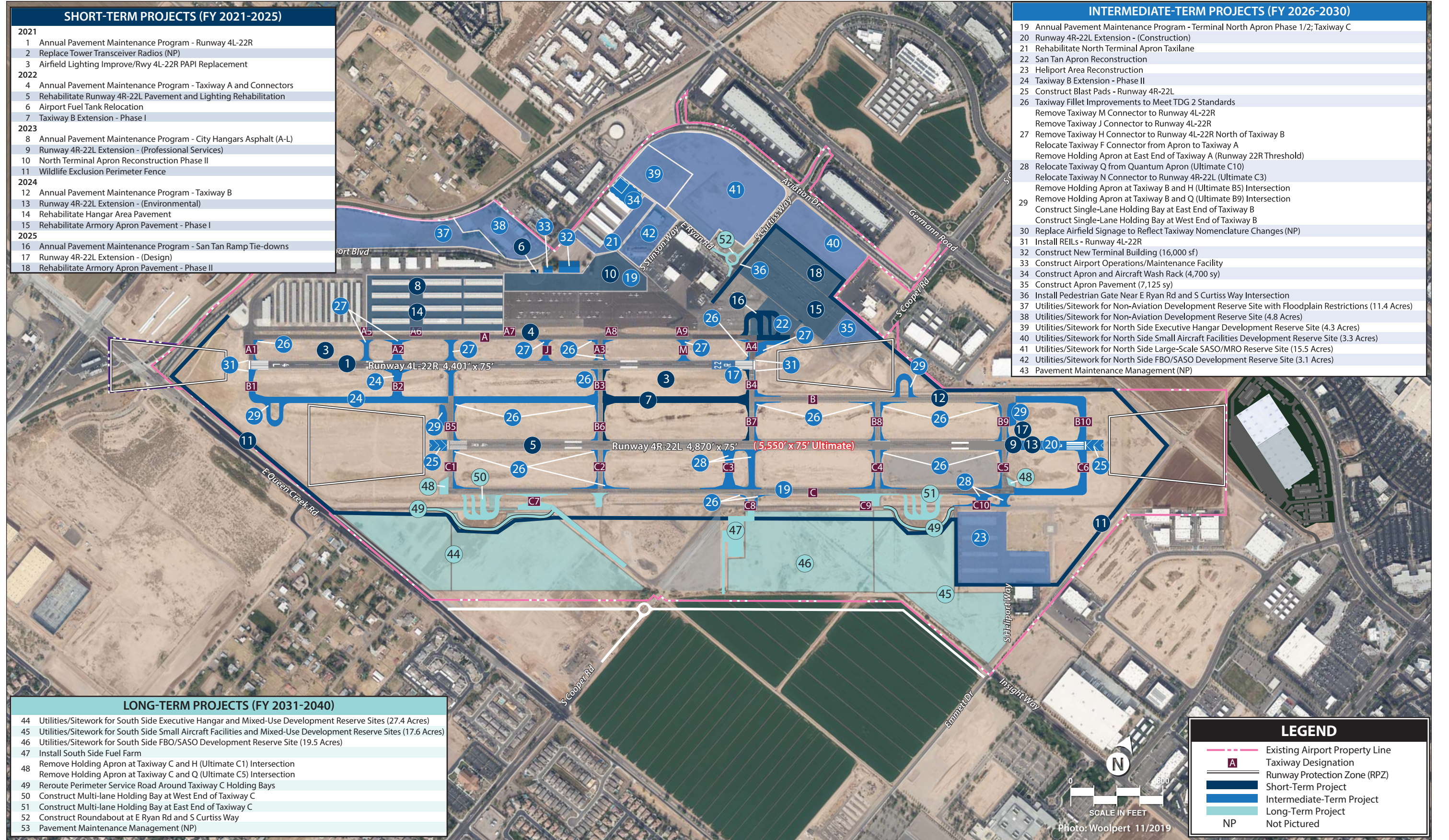
| Fiscal Year                       | Project No. | Project  | Funding Sources |   |             |                 |         |
|-----------------------------------|-------------|--|-----------------|---|-------------|-----------------|---------|
|                                   |             |  | Estimated Cost  | AIP   | ADOT        | Airport Sponsor | Private |
| <b>Short-Term Projects</b>        |             |  |                 |   |             |                 |         |
| 2021                              | 1           | Annual Pavement Maintenance Program - Runway 4L-22R  | \$368,500       | \$0   | \$0         | \$368,500       | \$0     |
| 2021                              | 2           | Replace Tower Transceiver Radios   | \$851,000       | \$0   | \$0         | \$851,000       | \$0     |
| 2021                              | 3           | Airfield Lighting Improve/Rwy 4L-22R PAPI Replacement  | \$1,724,000     | \$1,569,874                                     | \$77,063    | \$77,063        | \$0     |
| 2022                              | 4           | Annual Pavement Maintenance Program - Taxiway A and Connectors   | \$664,200       | \$0   | \$0         | \$664,200       | \$0     |
| 2022                              | 5           | Rehabilitate Runway 4R-22L Pavement and Lighting Rehabilitation  | \$2,825,000     | \$2,572,445                                     | \$126,278   | \$126,278       | \$0     |
| 2022                              | 6           | Airport Fuel Tank Relocation   | \$610,000       | \$0   | \$0         | \$610,000       | \$0     |
| 2022                              | 7           | Taxiway B Extension - Phase I  | \$2,035,200     | \$0   | \$1,831,680 | \$203,520       | \$0     |
| 2023                              | 8           | Annual Pavement Maintenance Program - City Hangars Asphalt (A-L)   | \$433,125       | \$0   | \$0         | \$433,125       | \$0     |
| 2023                              | 9           | Runway 4R-22L Extension - (Professional Services)  | \$350,000       | \$0   | \$0         | \$350,000       | \$0     |
| 2023                              | 10          | North Terminal Apron Reconstruction Phase II   | \$1,860,000     | \$1,693,716                                     | \$83,142    | \$83,142        | \$0     |
| 2023                              | 11          | Wildlife Exclusion Perimeter Fence   | \$1,062,000     | \$0   | \$955,800   | \$106,200       | \$0     |
| 2024                              | 12          | Annual Pavement Maintenance Program - Taxiway B  | \$243,750       | \$0   | \$0         | \$243,750       | \$0     |
| 2024                              | 13          | Runway 4R-22L Extension - (Environmental)  | \$427,000       | \$388,826                                       | \$19,087    | \$19,087        | \$0     |
| 2024                              | 14          | Rehabilitate Hangar Area Pavement  | \$3,092,000     | \$2,815,575                                     | \$138,212   | \$138,212       | \$0     |
| 2024                              | 15          | Rehabilitate Armory Apron Pavement - Phase I   | \$1,720,000     | \$1,566,232                                     | \$76,884    | \$76,884        | \$0     |
| 2025                              | 16          | Annual Pavement Maintenance Program - San Tan Ramp Tie-downs   | \$610,000       | \$0   | \$0         | \$610,000       | \$0     |
| 2025                              | 17          | Runway 4R-22L Extension - (Design)   | \$435,000       | \$396,111                                       | \$19,445    | \$19,445        | \$0     |
| 2025                              | 18          | Rehabilitate Armory Apron Pavement - Phase II  | \$1,720,000     | \$1,566,232                                     | \$76,884    | \$76,884        | \$0     |
| <b>Intermediate-Term Projects</b> |             |  |                 |   |             |                 |         |
| FY 2026-2030                      | 19          | Annual Pavement Maintenance Program - Terminal North Apron Phase 1/2; Taxiway C  | \$861,000       | \$0   | \$0         | \$861,000       | \$0     |
|                                   | 20          | Runway 4R-22L Extension - (Construction)   | \$5,404,000     | \$4,920,882                                     | \$241,559   | \$241,559       | \$0     |
|                                   | 21          | Rehabilitate North Terminal Apron Taxilane   | \$378,000       | \$344,207                                       | \$16,897    | \$16,897        | \$0     |
|                                   | 22          | San Tan Apron Reconstruction   | \$670,000       | \$610,102                                       | \$29,949    | \$29,949        | \$0     |
|                                   | 23          | Heliport Area Reconstruction   | \$2,600,000     | \$2,367,560                                     | \$116,220   | \$116,220       | \$0     |
|                                   | 24          | Taxiway B Extension - Phase II   | \$4,080,000     | \$3,715,248                                     | \$182,376   | \$182,376       | \$0     |
|                                   | 25          | Construct Blast Pads - Runway 4R-22L   | \$470,000       | \$427,982                                       | \$21,009    | \$21,009        | \$0     |
|                                   | 26          | Taxiway Fillet Improvements to Meet TDG 2 Standards  | \$2,600,000     | \$2,367,560                                     | \$116,220   | \$116,220       | \$0     |
|                                   | 27          | Remove Taxiway M Connector to Runway 4L-22R<br>Remove Taxiway J Connector to Runway 4L-22R<br>Remove Taxiway H Connector to Runway 4L-22R North of Taxiway B<br>Relocate Taxiway F Connector from Apron to Taxiway A<br>Remove Holding Apron at East End of Taxiway A (Runway 22R Threshold) | \$1,090,000     | \$992,554                                       | \$48,723    | \$48,723        | \$0     |
|                                   | 29          | Relocate Taxiway Q from Heliport Apron (Ultimate C10)<br>Relocate Taxiway N Connector to Runway 4R-22L (Ultimate C3)   | \$1,140,000     | \$1,038,084                                     | \$50,958    | \$50,958        | \$0     |
|                                   | 28          | Remove Holding Apron at Taxiway B and H (Ultimate B5) Intersection<br>Remove Holding Apron at Taxiway B and Q (Ultimate B9) Intersection<br>Construct Single-Lane Holding Bay at East End of Taxiway B<br>Construct Single-Lane Holding Bay at West End of Taxiway B                         | \$1,220,000     | \$1,110,932                                     | \$54,534    | \$54,534        | \$0     |
|                                   | 30          | Replace Airfield Signage to Reflect Taxiway Nomenclature Changes   | \$618,000       | \$562,751                                       | \$27,625    | \$27,625        | \$0     |
|                                   | 31          | Install REILs - Runway 4L-22R  | \$110,000       | \$100,166                                       | \$4,917     | \$4,917         | \$0     |
|                                   | 32          | Construct New Terminal Building (16,000 sf)  | \$8,000,000     | All potential funding sources will be explored. |             |                 |         |
|                                   | 33          | Construct Airport Operations/Maintenance Facility  | \$510,000       | \$464,406                                       | \$22,797    | \$22,797        | \$0     |

| Fiscal Year                                   | Project No. | Project  | Funding Sources      |                     |                    |                    |                     |
|---|-------------|--|----------------------|---------------------|--------------------|--------------------|---------------------|
|   |             |  | Estimated Cost       | AIP                 | ADOT               | Airport Sponsor    | Private             |
| <b>Intermediate-Term Projects (continued)</b> |             |  |                      |                     |                    |                    |                     |
| FY 2026-2030                                  | 34          | Construct Apron and Aircraft Wash Rack (4,700 sy)  | \$1,522,000          | \$1,385,933         | \$68,033           | \$68,033           | \$0                 |
|   | 35          | Construct Apron Pavement (7,125 sy)  | \$630,000            | \$573,678           | \$28,161           | \$28,161           | \$0                 |
|   | 36          | Install Pedestrian Gate Near E Ryan Rd and S Curtiss Way Intersection  | \$5,000              | \$0                 | \$0                | \$5,000            | \$0                 |
|   | 37          | Utilities/Sitework for Non-Aviation Development Reserve Site with Floodplain Restrictions (11.4 Acres)                                   | \$4,470,000          | \$0                 | \$0                | \$0                | \$4,470,000         |
|   | 38          | Utilities/Sitework for Non-Aviation Development Reserve Site (4.8 Acres)   | \$1,890,000          | \$0                 | \$0                | \$0                | \$1,890,000         |
|   | 39          | Utilities/Sitework for North Side Executive Hangar Development Reserve Site (4.3 Acres)  | \$2,320,000          | \$0                 | \$0                | \$0                | \$2,320,000         |
|   | 40          | Utilities/Sitework for North Side Small Aircraft Facilities Development Reserve Site (3.3 Acres)   | \$1,472,300          | \$0                 | \$0                | \$0                | \$1,472,300         |
|   | 41          | Utilities/Sitework for North Side Large-Scale SASO/MRO Reserve Site (15.5 Acres)   | \$6,080,000          | \$0                 | \$0                | \$0                | \$6,080,000         |
|   | 42          | Utilities/Sitework for North Side FBO/SASO Development Reserve Site (3.1 Acres)  | \$1,216,200          | \$0                 | \$0                | \$0                | \$1,216,200         |
|   | 43          | Pavement Maintenance Management  | \$500,000            | \$0                 | \$0                | \$500,000          | \$0                 |
| <b>Long-Term Projects</b>                     |             |  |                      |                     |                    |                    |                     |
| FY 2031-2040                                  | 44          | Utilities/Sitework for South Side Executive Hangar Development Reserve Site (27.4 Acres)   | \$10,750,000         | \$0                 | \$0                | \$0                | \$10,750,000        |
|   | 45          | Utilities/Sitework for South Side Small Aircraft Facilities Development Reserve Site (17.6 Acres)  | \$6,903,200          | \$0                 | \$0                | \$0                | \$6,903,200         |
|   | 46          | Utilities/Sitework for South Side FBO/SASO Development Reserve Site (19.5 Acres)   | \$7,650,000          | \$0                 | \$0                | \$0                | \$7,650,000         |
|   | 47          | Install South Side Fuel Farm   | \$800,000            | \$0                 | \$0                | \$0                | \$800,000           |
|   | 48          | Remove Holding Apron at Taxiway C and H (Ultimate C1) Intersection<br>Remove Holding Apron at Taxiway C and Q (Ultimate C5) Intersection | \$270,000            | \$245,862           | \$12,069           | \$12,069           | \$0                 |
|   | 49          | Reroute Perimeter Service Road Around Taxiway C Holding Bays   | \$712,000            | \$648,347           | \$31,826           | \$31,826           | \$0                 |
|   | 50          | Construct Multi-lane Holding Bay at West End of Taxiway C  | \$800,000            | \$728,480           | \$35,760           | \$35,760           | \$0                 |
|   | 51          | Construct Multi-lane Holding Bay at East End of Taxiway C  | \$800,000            | \$728,480           | \$35,760           | \$35,760           | \$0                 |
|   | 52          | Construct Roundabout at E Ryan Rd and S Curtiss Way  | \$300,000            | \$0                 | \$0                | \$300,000          | \$0                 |
|   | 53          | Pavement Maintenance Management  | \$1,000,000          | \$0                 | \$0                | \$1,000,000        | \$0                 |
| <b>Short-Term CIP Subtotal</b>                |             |  | <b>\$21,030,775</b>  | <b>\$12,569,012</b> | <b>\$3,404,474</b> | <b>\$5,057,289</b> | <b>\$0</b>          |
| <b>Intermediate-Term CIP Subtotal</b>         |             |  | <b>\$49,856,500</b>  | <b>\$20,982,045</b> | <b>\$1,029,977</b> | <b>\$2,395,977</b> | <b>\$17,448,500</b> |
| <b>Long-Term CIP Subtotal</b>                 |             |  | <b>\$29,985,200</b>  | <b>\$2,351,169</b>  | <b>\$115,415</b>   | <b>\$1,415,415</b> | <b>\$26,103,200</b> |
| <b>Total Master Plan CIP</b>                  |             |  | <b>\$100,872,475</b> | <b>\$35,902,226</b> | <b>\$4,549,867</b> | <b>\$8,868,682</b> | <b>\$43,551,700</b> |

Note: Funding subtotals do not add up to the estimated total master plan CIP due to the uncertainty of funding sources for the new terminal building.









**Project #1: Annual Pavement Maintenance Program - Runway 4L-22R**

**Description:** This project will rehabilitate the runway pavement to maintain a safe operating environment.

**Cost Estimate:** \$368,500

**Funding Breakdown:** Airport Sponsor – 100.00%

**Project #2: Replace Tower Transceiver Radios**

**Description:** Per a 1997 operating agreement with the Federal Aviation Administration (FAA), the City is responsible for maintaining the equipment necessary for the Air Traffic Control Tower's (ATCT's) operation. The ATCT has six receivers and five transmitters that allow the air traffic controllers to communicate with aircraft in the air and on the airfield. These radios are nearing the end of their service life and the manufacturer has notified the airport that support will be ending in the near future, resulting in a lack of parts availability. This project will replace the eleven units and install a new 800-megahertz, 16-channel radio.

**Cost Estimate:** \$851,000

**Funding Breakdown:** Airport Sponsor – 100.00%

**Project #3: Airfield Lighting Improve/Runway 4L-22R PAPI Replacement**

**Description:** Existing electrical wiring was installed in early 1990s and is at the end of its useful life. System has low megger readings and aging light fixtures and PAPIs. This project replaces the airfield wiring, light fixtures, and PAPIs to meet standards.

**Cost Estimate:** \$1,724,000

**Funding Breakdown:** FAA – 91.06 percent / ADOT – 4.47 percent / Airport Sponsor – 4.47 percent.

**Project #4: Annual Pavement Maintenance Program - Taxiway A and Connectors**

**Description:** This project will rehabilitate the taxiway pavement to maintain a safe operating environment.

**Cost Estimate:** \$664,200

**Funding Breakdown:** Airport Sponsor – 100.00%

**Project #5: Rehabilitate Runway 4R-22L Pavement and Lighting**

**Description:** Runway 4R-22L is experiencing large block cracking and some surface raveling. This project will rehabilitate the runway pavement and runway lighting to maintain a safe operating environment.

**Cost Estimate:** \$2,825,000

**Funding Breakdown:** FAA – 91.06% / ADOT – 4.47% / Airport Sponsor – 4.47%

**Project #6: Airport Fuel Tank Relocation**

**Description:** This project replaces the existing underground storage tank with an above ground tank adjacent to the existing self-service station on the terminal apron.

**Cost Estimate:** \$610,000

**Funding Breakdown:** Airport Sponsor – 100.00%

**Project #7: Taxiway B Extension - Phase I**

**Description:** There is currently only one access point to the Runway 22L threshold from the north side. Extending Taxiway B west to Taxiway L improves circulation and mitigates airfield hot spot #1 (congestion on Taxiway N at the Runway 22R threshold).

**Cost Estimate:** \$2,035,200

**Funding Breakdown:** ADOT – 90.00% / Airport Sponsor – 10.00%

**Project #8: Annual Pavement Maintenance Program - City Hangars Asphalt (A-L)**

**Description:** This project will rehabilitate the taxiway pavement to maintain a safe operating environment.

**Cost Estimate:** \$433,125

**Funding Breakdown:** Airport Sponsor – 100.00%

**Project #9: Runway 4R-22L Extension (Professional Services)**

**Description:** An extension to the primary runway is planned to improve operational safety for turbine aircraft operating at CHD. This project involves initial professional services.

**Cost Estimate:** \$350,000

**Funding Breakdown:** FAA – 91.06% / ADOT – 4.47% / Airport Sponsor – 4.47%

**Project #10: North Terminal Apron Reconstruction Phase II**

**Description:** The terminal apron has many wide cracks throughout and has become a safety hazard to aircraft and pedestrians. Full-depth reconstruction of approximately 22,000 square yards (sy) is planned.

**Cost Estimate:** \$1,860,000

**Funding Breakdown:** FAA – 91.06% / ADOT – 4.47% / Airport Sponsor – 4.47%

**Project #11: Wildlife Exclusion Perimeter Fence**

**Description:** CHD experiences continual coyote presence and other ground species encroaching into the movement area. The current fence is inadequate to prevent burrowing animals. This project involves the design and installation of 27,000 linear feet (lf) of enhanced fencing along the airport perimeter in accordance with the airport's analysis of strategies to mitigate wildlife within the airfield system.

**Cost Estimate:** \$1,062,000

**Funding Breakdown:** ADOT – 90.00% / Airport Sponsor – 10.00%

**Project #12: Annual Pavement Maintenance Program - Taxiway B**

**Description:** This project will rehabilitate the taxiway pavement to maintain a safe operating environment.

**Cost Estimate:** \$243,750

**Funding Breakdown:** Airport Sponsor – 100.00%

**Project #13: Runway 4R-22L Extension (Environmental)**

**Description:** An extension to the primary runway is planned to improve operational safety for turbine aircraft operating at CHD. This project involves the preparation of an Environmental Assessment to evaluate potential environmental impacts of an extension.

**Cost Estimate:** \$427,000

**Funding Breakdown:** FAA – 91.06% / ADOT – 4.47% / Airport Sponsor – 4.47%

**Project #14: Rehabilitate Hangar Area Pavement**

**Description:** Significant raveling, block cracking, and some alligator cracking on this apron requires reconstruction to maintain safe operating conditions. This project would reconstruct approximately 56,000 sy.

**Cost Estimate:** \$3,092,000

**Funding Breakdown:** FAA – 91.06% / ADOT – 4.47% / Airport Sponsor – 4.47%



**Project #15:** Rehabilitate Armory Apron Pavement - Phase I

**Description:** The armory apron pavement is experiencing significant wide cracking and is becoming a safety concern for aircraft wheelgear and pedestrians. This project would reconstruct approximately 25,000 sy.

**Cost Estimate:** \$1,720,000

**Funding Breakdown:** ADOT – 90.00% / Airport Sponsor – 10.00%

**Project #16:** Annual Pavement Maintenance Program - San Tan Ramp Tie-downs

**Description:** This project will rehabilitate the apron pavement to maintain a safe operating environment.

**Cost Estimate:** \$610,000

**Funding Breakdown:** Airport Sponsor – 100.00%

**Project #17:** Runway 4R-22L Extension (Design)

**Description:** This project is the final design and construction of a 680-foot extension to the primary runway. The resulting full-length of the runway will be 5,550 feet.

**Cost Estimate:** \$435,000

**Funding Breakdown:** FAA – 91.06% / ADOT – 4.47% / Airport Sponsor – 4.47%

**Project #18:** Rehabilitate Armory Apron Pavement - Phase II

**Description:** The armory apron pavement is experiencing significant wide cracking and is becoming a safety concern for aircraft wheelgear and pedestrians. This project would reconstruct approximately 25,000 sy.

**Cost Estimate:** \$1,720,000

**Funding Breakdown:** ADOT – 90.00% / Airport Sponsor – 10.00%

### Short-Term Program Summary

The short-term CIP includes projects that enhance the overall safety, efficiency, and maintenance of the airfield. The total investment necessary for the short-term CIP is approximately \$21.03 million as detailed on **Exhibit 6A**. A significant amount of the short-term program costs are associated with pavement rehabilitation. As previously discussed, further engineering analysis will determine the degree of pavement rehabilitation associated with the runways and apron areas. Of the overall short-term CIP total, approximately \$15.97 million is eligible for federal and state funding assistance. The remaining approximate \$5.06 million is to be provided through airport sponsor funding outlets.

### INTERMEDIATE-TERM PROGRAM

The intermediate-term projects are those that are anticipated to be necessary in years six through 10 of the Master Plan. These projects are not tied to specific years for implementation; instead, they have been prioritized so that airport management has the flexibility to determine when they need to be pursued based on current conditions. It is not unusual for certain projects to be delayed or advanced based on changing conditions, such as funding availability or changes in the aviation industry. This planning horizon includes 25 projects for the five-year timeframe as listed on **Exhibit 6A** and depicted on **Exhibit 6B**. The following section includes a description of each project.

**Project #19:** Annual Pavement Maintenance Program - Terminal North Apron Phase 1/2; Taxiway C

**Description:** This project will rehabilitate the apron and taxiway pavement to maintain a safe operating environment.

**Cost Estimate:** \$861,000

**Funding Breakdown:** Airport Sponsor – 100.00%

**Project #20:** Runway 4R-22L Extension (Construction)

**Description:** This project is the construction of a 680-foot extension to the primary runway. The resulting full-length of the runway will be 5,550 feet.

**Cost Estimate:** \$5,404,000

**Funding Breakdown:** FAA – 91.06% / ADOT – 4.47% / Airport Sponsor – 4.47%

**Project #21:** Rehabilitate North Terminal Apron Taxilane

**Description:** This pavement area is cracking and has not been sealed or patched since 2014. This project would repair approximately 11,300 sy of pavement that is planned to support new landside facility development on the north side.

**Cost Estimate:** \$378,000

**Funding Breakdown:** FAA – 91.06% / ADOT – 4.47% / Airport Sponsor – 4.47%

**Project #22:** San Tan Apron Reconstruction

**Description:** The San Tan apron is approximately 14,000 sy of apron pavement that caps a Declaration of Environmental Use Restriction (DEUR) area north of the Runway 22R threshold. This pavement is cracking, which allows stormwater into the subgrade, which exacerbates contamination. This project will reconstruct this pavement and add multi-lane holding bay markings.

**Cost Estimate:** \$670,000

**Funding Breakdown:** FAA – 91.06% / ADOT – 4.47% / Airport Sponsor – 4.47%

**Project #23:** Heliport Area Reconstruction

**Description:** This pavement has poor subgrade, which has settled, shifted, and shrunk, resulting in cracks and heaving in the apron pavement. This project reconstructs approximately 33,400 sy.

**Cost Estimate:** \$2,600,000

**Funding Breakdown:** FAA – 91.06% / ADOT – 4.47% / Airport Sponsor – 4.47%

**Project #24:** Taxiway B Extension - Phase II

**Description:** This project extends Taxiway B to the Runway 4L threshold, creating a full-length taxiway between both runways. This will improve airfield circulation and operational safety.

**Cost Estimate:** \$4,080,000

**Funding Breakdown:** FAA – 91.06% / ADOT – 4.47% / Airport Sponsor – 4.47%

**Project #25:** Construct Blast Pads - Runway 4R-22L

**Description:** The existing blast pads on the primary runway are undersized. This project will expand the blast pads to 95 feet wide and 150 feet long to meet design standards.

**Cost Estimate:** \$470,000

**Funding Breakdown:** FAA – 91.06% / ADOT – 4.47% / Airport Sponsor – 4.47%



**Project #26: Taxiway Fillet Improvements to Meet TDG 2 Standards**

**Description:** Existing fillets do not meet taxiway design group (TDG) 2 standards. This project adds fillet pavement to accommodate safe aircraft transitions at airfield intersections.

**Cost Estimate:** \$2,600,000

**Funding Breakdown:** FAA – 91.06% / ADOT – 4.47% / Airport Sponsor – 4.47%

**Project #27: Remove/Relocate Taxiway Pavement to Improve Airfield Geometry (North Side)**

**Description:** This project involves the removal of existing taxiway connectors that provide for direct-access points from the north side apron areas to Runway 4L-22R, or intersecting pavement in the runway's high energy area. These improvements are intended to mitigate the potential for runway incursions and comply with FAA design standards.

**Cost Estimate:** \$1,090,000

**Funding Breakdown:** FAA – 91.06% / ADOT – 4.47% / Airport Sponsor – 4.47%

**Project #28: Relocate Taxiway Pavement to Improve Airfield Geometry (South Side)**

**Description:** This project relocates connecting taxiways on the south side of the airfield to eliminate a direct access point to Runway 4R-22L and to eliminate a high-energy area intersection.

**Cost Estimate:** \$1,140,000

**Funding Breakdown:** FAA – 91.06% / ADOT – 4.47% / Airport Sponsor – 4.47%

**Project #29: Replace Holding Aprons with Holding Bays**

**Description:** The existing holding aprons on the airfield are out of compliance with FAA design standards. This project removes the existing holding aprons along Taxiway B and replaces them with single lane holding bays.

**Cost Estimate:** \$1,220,000

**Funding Breakdown:** FAA – 91.06% / ADOT – 4.47% / Airport Sponsor – 4.47%

**Project #30: Replace Airfield Signage to Reflect Taxiway Nomenclature Changes**

**Description:** The taxiway system designations do not meet FAA standards. This project redesignates out-of-compliance taxiways and includes replacement of airfield signage to reflect the new designations.

**Cost Estimate:** \$618,000

**Funding Breakdown:** FAA – 91.06% / ADOT – 4.47% / Airport Sponsor – 4.47%

**Project #31: Install REILs - Runway 4L-22R**

**Description:** REILs improve operational safety by providing pilots with improved situational awareness and helping them to identify the runway end. This project adds REILs to Runway 4L-22R.

**Cost Estimate:** \$110,000

**Funding Breakdown:** FAA – 91.06% / ADOT – 4.47% / Airport Sponsor – 4.47%

**Project #32: Construct New Terminal Building (16,000 sf)**

**Description:** A new terminal building will provide for expanded and modernized terminal services. The new building will include administrative office space as well as leasable space for aviation businesses.

**Cost Estimate:** \$8,000,000

**Funding Breakdown:** General aviation terminal buildings are not typically eligible for FAA or ADOT grant funding assistance. However, there are often opportunities for public/private partnerships in developing major public-use infrastructure such as this. All potential funding options will be explored in the development of the new terminal building.

**Project #33: Construct Airport Operations/Maintenance Facility**

**Description:** A new operations/maintenance facility located adjacent to the new terminal building will consolidate these activities in a centralized location on the airport. This will allow for better responsiveness to airport users and more efficient coordination among airport staff.

**Cost Estimate:** \$510,000

**Funding Breakdown:** FAA – 91.06% / ADOT – 4.47% / Airport Sponsor – 4.47%

**Project #34: Construct Apron and Aircraft Wash Rack**

**Description:** Aircraft wash racks are common amenities at many general aviation airports. This project adds a wash rack and additional apron pavement to a one-acre site that was previously used as a dump site for construction debris sometime between 1949 and 1964. The City of Chandler has determined this site can be capped with asphalt and returned to useable airport property.

**Cost Estimate:** \$1,522,000

**Funding Breakdown:** FAA – 91.06% / ADOT – 4.47% / Airport Sponsor – 4.47%

**Project #35: Construct Apron Pavement (7,125 sy)**

**Description:** New apron pavement on the north side to provide additional aircraft parking/tiedown capacity.

**Cost Estimate:** \$630,000

**Funding Breakdown:** FAA – 91.06% / ADOT – 4.47% / Airport Sponsor – 4.47%

**Project #36: Install Pedestrian Gate Near E Ryan Rd and S Curtiss Way Intersection**

**Description:** Airport tenants have requested an access gate be added in this location to improve accessibility to aircraft parked on the Armory apron.

**Cost Estimate:** \$5,000

**Funding Breakdown:** Airport Sponsor – 100.00%

**Project #37: Utilities/Sitework for Non-Aviation Development Reserve Site with Floodplain Restrictions (11.4 Acres)**

**Description:** This project involves adding appropriate utility infrastructure and sitework that would accommodate new development. The airport plans to make minimal improvements to this site, which will allow potential developers greater flexibility in developing the site to meet their needs.

**Cost Estimate:** \$4,470,000

**Funding Breakdown:** Private Developer – 100.00%

**Project #38: Utilities/Sitework for Non-Aviation Development Reserve Site (4.8 Acres)**

**Description:** This project involves adding appropriate utility infrastructure and sitework that would accommodate new development. The airport plans to make minimal improvements to this site, which will allow potential developers greater flexibility in developing the site to meet their needs.

**Cost Estimate:** \$1,890,000

**Funding Breakdown:** Private Developer – 100.00%

**Project #39: Utilities/Sitework for North Side Executive Hangar Development Reserve Site (4.3 Acres)**

**Description:** This project involves adding appropriate utility infrastructure and sitework that would accommodate new development. The airport plans to make minimal improvements to this site, which will allow potential developers greater flexibility in developing the site to meet their needs.

**Cost Estimate:** \$2,320,000

**Funding Breakdown:** Private Developer – 100.00%



**Project #40:** Utilities/Sitework for North Side Small Aircraft Facilities Development Reserve Site (3.3 Acres)

**Description:** This project involves adding appropriate utility infrastructure and sitework that would accommodate new development. The airport plans to make minimal improvements to this site, which will allow potential developers greater flexibility in developing the site to meet their needs.

**Cost Estimate:** \$1,472,300

**Funding Breakdown:** Private Developer – 100.00%

**Project #41:** Utilities/Sitework for North Side Large-Scale SASO/MRO Reserve Site (15.5 Acres)

**Description:** This project involves adding appropriate utility infrastructure and sitework that would accommodate new development. The airport plans to make minimal improvements to this site, which will allow potential developers greater flexibility in developing the site to meet their needs.

**Cost Estimate:** \$6,080,000

**Funding Breakdown:** Private Developer – 100.00%

**Project #42:** Utilities/Sitework for North Side FBO/SASO Development Reserve Site (3.1 Acres)

**Description:** This project involves adding appropriate utility infrastructure and sitework that would accommodate new development. The airport plans to make minimal improvements to this site, which will allow potential developers greater flexibility in developing the site to meet their needs.

**Cost Estimate:** \$1,216,200

**Funding Breakdown:** Private Developer – 100.00%

**Project #43:** Pavement Maintenance Management

**Description:** As airfield pavements deteriorate over time, it is necessary to undergo overlay/rehabilitation/reconstruction projects.

**Cost Estimate:** \$500,000

**Funding Breakdown:** Airport Sponsor – 100.00%

### Intermediate-Term Program Summary

The total costs associated with the intermediate term program are estimated at \$49.86 million as presented on **Exhibit 6A**. Of this total, approximately \$22.01 million could be eligible for federal/state funding, and the airport sponsor share is projected at \$2.40 million. Private funding is estimated at \$17.45 million.

### LONG-TERM PROGRAM

The long-term planning horizon considers 10 projects for the 10-year period that are mainly demand-driven. The projects and their associated costs are listed on **Exhibit 6A** and graphically depicted on **Exhibit 6B** as appropriate.

**Project #44:** Utilities/Sitework for South Side Executive Hangar Development Reserve Site (27.4 Acres)

**Description:** This project involves adding appropriate utility infrastructure and sitework that would accommodate new development. The airport plans to make minimal improvements to this site, which will allow potential developers greater flexibility in developing the site to meet their needs.

**Cost Estimate:** \$10,750,000

**Funding Breakdown:** Private Developer – 100.00%

**Project #45:** Utilities/Sitework for South Side Small Aircraft Facilities Development Reserve Site (17.6 Acres)

**Description:** This project involves adding appropriate utility infrastructure and sitework that would accommodate new development. The airport plans to make minimal improvements to this site, which will allow potential developers greater flexibility in developing the site to meet their needs.

**Cost Estimate:** \$6,903,200

**Funding Breakdown:** Private Developer – 100.00%

**Project #46:** Utilities/Sitework for South Side FBO/SASO Development Reserve Site (19.5 Acres)

**Description:** This project involves adding appropriate utility infrastructure and sitework that would accommodate new development. The airport plans to make minimal improvements to this site, which will allow potential developers greater flexibility in developing the site to meet their needs.

**Cost Estimate:** \$7,650,000

**Funding Breakdown:** Private Developer – 100.00%

**Project #47:** Install South Side Fuel Farm

**Description:** As activity levels grow with new south side developments, it will become necessary to install a fuel farm to eliminate the need for fuel trucks to travel to the south side.

**Cost Estimate:** \$800,000

**Funding Breakdown:** Private Developer – 100.00%

**Project #48:** Remove Holding Aprons on Taxiway C

**Description:** The existing holding aprons on the airfield are out of compliance with FAA design standards. This project removes the existing holding aprons along Taxiway C so they can be replaced with holding bays.

**Cost Estimate:** \$270,000

**Funding Breakdown:** FAA – 91.06% / ADOT – 4.47% / Airport Sponsor – 4.47%

**Project #49:** Reroute Perimeter Service Road Around Taxiway C Holding Bays

**Description:** The perimeter service road will need to be rerouted to allow for the construction of two new holding bays on Taxiway C. The road will need to be rerouted so that it lies outside of the taxiway object free area (TOFA).

**Cost Estimate:** \$712,000

**Funding Breakdown:** FAA – 91.06% / ADOT – 4.47% / Airport Sponsor – 4.47%

**Project #50:** Construct Multi-Lane Holding Bay at West End of Taxiway C

**Description:** New multi-lane holding bays are planned that will allow for greater aircraft circulation on the south side of the airfield.

**Cost Estimate:** \$800,000

**Funding Breakdown:** FAA – 91.06% / ADOT – 4.47% / Airport Sponsor – 4.47%



**Project #51:** Construct Multi-Lane Holding Bay at East End of Taxiway C

**Description:** New multi-lane holding bays are planned that will allow for greater aircraft circulation on the south side of the airfield.

**Cost Estimate:** \$800,000

**Funding Breakdown:** FAA – 91.06% / ADOT – 4.47% / Airport Sponsor – 4.47%

**Project #52:** Construct Roundabout at E Ryan Rd and S Curtiss Way

**Description:** A roundabout at this intersection is a safety improvement and will be consistent with the surrounding Chandler Airpark roadway network, which features several roundabouts.

**Cost Estimate:** \$300,000

**Funding Breakdown:** Airport Sponsor – 100.00%

**Project #53:** Pavement Maintenance Management

**Description:** As airfield pavements deteriorate over time, it is necessary to undergo overlay/rehabilitation/reconstruction projects.

**Cost Estimate:** \$1,000,000

**Funding Breakdown:** Airport Sponsor – 100.00%

### Long-Term Program Summary

The total investment necessary for the long-term CIP detailed on **Exhibit 6A** is approximately \$29.99 million. Approximately \$2.47 million is eligible for federal/state funding assistance. The airport’s share of long-term projects is projected at \$1.42 million. Private development funding is projected at \$26.10 million.

### CAPITAL IMPROVEMENT PROGRAM SUMMARY

The CIP is intended as a road map of improvements to help guide the City of Chandler, the FAA, and ADOT – Aeronautics Group. The plan as presented will help accommodate increases in forecast demand at CHD over the next 20 years and beyond. The sequence of projects may change due to availability of funds or changing priorities based on an annual review by airport management, the FAA, and ADOT – Aeronautics Group. Nonetheless, this is a comprehensive list of capital projects the airport should consider in the next 20+ years.

The total CIP proposes approximately \$100.8 million in airport development needs. Of this total, approximately \$40.45 million could be eligible for federal/state funding assistance. The local funding estimate for the proposed CIP is \$8.87million. Private development makes up a significant portion of the CIP at \$43.55million, accounting for the bulk of the landside development.

## **CAPITAL IMPROVEMENT FUNDING SOURCES**

There are generally four sources of funds used to finance airport development, which include:

- Airport cash flow
- Revenue and general obligation bonds
- Federal/state/local grants
- Passenger facility charges (PFCs), which are reserved for commercial service airports

Access to these sources of financing varies widely among airports, with some large airports maintaining substantial cash reserves and the smaller commercial service and general aviation airports often requiring subsidies from local governments to fund operating expenses and finance modest improvements.

Financing capital improvements at CHD will not rely solely on the financial resources of the City of Chandler. Capital improvement funding is available through various grant-in-aid programs on both the federal and state levels. Historically, the airport has received federal and state grants. While more funds could be available some years, the CIP was developed with project phasing to remain realistic and within the range of anticipated grant assistance. The following discussion outlines key sources of funding potentially available for capital improvements at the airport.

### **FEDERAL GRANTS**

Through federal legislation over the years, various grant-in-aid programs have been established to develop and maintain a system of public-use airports across the United States. The purpose of this system and its federally based funding is to maintain national defense and to promote interstate commerce. The *FAA Modernization and Reform Act of 2012*, enacted on February 17, 2012, authorized the FAA's AIP at \$3.35 billion for fiscal years 2012 through 2015. The law was then extended through a series of continuing resolutions. In 2016, Congress passed legislation (H.R. 636, *FAA Extension, Safety, and Security Act of 2016*) amending the law to expire on September 30, 2017. Subsequently, Congress passed a bill (H.R. 3823, *Disaster Tax Relief and Airport and Airway Extension Act of 2017*) authorizing appropriations to the FAA through March 31, 2018, and the *Consolidated Appropriations Act, 2018* extended FAA's funding and authority through September 30, 2018. In October 2018, Congress passed legislation entitled, *FAA Reauthorization Act of 2018*, which will fund the FAA's AIP at \$3.35 billion annually until 2023. This bill reauthorizes the FAA for five years, at a cost of \$97 billion, and represents the longest funding authorization period for the FAA since 1982.

The source for AIP funds is the Aviation Trust Fund. The Aviation Trust Fund was established in 1970 to provide funding for aviation capital investment programs (aviation development, facilities and equipment, and research and development). The Aviation Trust Fund also finances the operation of the FAA. It is funded by user fees, including taxes on airline tickets, aviation fuel, and various aircraft parts.

Several projects identified in the CIP are eligible for FAA funding through the AIP, which provides entitlement funds to airports based, in part, on their annual enplaned passengers and pounds of landed cargo weight. Additional AIP funds, designated as discretionary, may also be used for eligible projects based on the FAA's national priority system. Although the AIP has been reauthorized several times and

the funding formulas have been periodically revised to reflect changing national priorities, the program has remained essentially the same. Public-use airports that serve civil aviation, like CHD, may receive AIP funding for eligible projects, as described in FAA’s *Airport Improvement Program Handbook*. The airport must fund the remaining project costs using a combination of other funding sources, as discussed in the following sections.

**Table 6B** presents the approximate distribution of the AIP funds as described in FAA Order 5100.38D, Change 1, *Airport Improvement Program Handbook*, issued February 26, 2019. CHD is eligible to apply for grants which may be funded through state apportionments, the small airport fund, discretionary funds, and/or set-aside categories.

**TABLE 6B**  
**Federal AIP Funding Distribution**  
**Chandler Municipal Airport**

| Funding Category                 | Percent of Total | Funds*                 |
|----------------------------------|------------------|------------------------|
| <b>Apportionment/Entitlement</b> |                  |                        |
| Passenger Entitlements           | 27.01%           | \$904,840,000          |
| Cargo Entitlements               | 3.50%            | \$117,250,000          |
| Alaska Supplemental              | 0.67%            | \$22,450,000           |
| Nonprimary Entitlements          | 12.01%           | \$402,340,000          |
| State Apportionment              | 7.99%            | \$267,670,000          |
| Carryover                        | 22.85%           | \$765,480,000          |
| <b>Small Airport Fund</b>        |                  |                        |
| Small Hubs                       | 2.33%            | \$78,060,000           |
| Nonhubs                          | 4.67%            | \$156,450,000          |
| Nonprimary (GA and Reliever)     | 9.33%            | \$312,560,000          |
| <b>Discretionary</b>             |                  |                        |
| Capacity/Safety/Security/Noise   | 4.36%            | \$146,060,000          |
| Pure Discretionary               | 1.45%            | \$48,580,000           |
| <b>Set Asides</b>                |                  |                        |
| Noise and Environmental          | 3.37%            | \$112,900,000          |
| Military Airports Program        | 0.39%            | \$13,070,000           |
| Reliever                         | 0.06%            | \$2,010,000            |
| <b>Totals</b>                    | <b>100.00%</b>   | <b>\$3,350,000,000</b> |

\* FAA *Modernization and Reform Act of 2018*

AIP: Airport Improvement Program

Source: FAA Order 5100.38D, Change 1, *Airport Improvement Program Handbook*

Funding for AIP-eligible projects is undertaken through a cost-sharing arrangement in which the FAA share varies by airport size: generally, 75 percent for large- and medium-hub airports, and 90 percent for all other airports. Since the early days of federal participation in airport infrastructure projects, Congress has provided a higher federal share for airports located in states with more than five percent of their geographic acreage comprised of public lands and nontaxable tribal lands. For states that qualify, such as Arizona, the federal share is increased depending on the airport classification. As a general aviation airport, the federal share of eligible capital improvement projects for CHD is 91.06 percent. In exchange for this level of funding, the airport sponsor is required to meet various Grant Assurances, including maintaining the improvement for its useful life, usually 20 years.



## Apportionment (Entitlement) Funds

AIP provides funding for eligible projects at airports through an apportionment (entitlement) program. Primary commercial service airports receive a guaranteed minimum level of federal assistance each year, based on their enplaned passenger levels and Congressional appropriation levels. A primary airport is defined as any commercial service airport enplaning at least 10,000 passengers annually. If the threshold is met, the airport receives \$1 million annually in entitlement funds. Other entitlement funds are distributed to cargo service airports, states and insular areas (state apportionment), and Alaska airports.

General aviation airports included in the *National Plan of Integrated Airport Systems* (NPIAS) can receive up to \$150,000 each year in non-primary entitlement (NPE) funds. These funds can be carried over and combined for up to four years, thereby allowing for completion of a more expensive project. It should be noted that CHD is eligible for and receives NPE funds.

The FAA also provides a state apportionment based on a federal formula that takes into account area and population. The FAA then distributes these funds for projects at various airports throughout the state.

## Small Airport Fund

If a large- or medium-hub commercial service airport chooses to institute a PFC, which is a fee of up to \$4.50 on each airline ticket for funding of capital improvement projects, then their apportionment is reduced. A portion of the reduced apportionment goes to the small airport fund. The small airport fund is reserved for small-hub primary commercial service airports, non-hub commercial service airports, reliever, and general aviation airports. As a general aviation airport, CHD is eligible for funds from this source.

## Discretionary Funds

In several cases, airports face major projects that will require funds in excess of the airport's annual entitlements. Thus, additional funds from discretionary apportionments under AIP become desirable. The primary feature about discretionary funds is that they are distributed on a priority basis. The priorities are established by the FAA, utilizing a priority code system. Under this system, projects are ranked by their purpose. Projects ensuring airport safety and security are ranked as the most important priorities, followed by maintaining current infrastructure development, mitigating noise and other environmental impacts, meeting standards, and increasing system capacity.

It is important to note that competition for discretionary funding is not limited to airports in the State of Arizona or those within the FAA Western-Pacific Region. The funds are distributed to all airports in the country and, as such, are more difficult to obtain. High priority projects will often fare favorably, while lower priority projects may not receive discretionary grants.

## Set-Aside Funds

Portions of AIP funds are set-asides designed to achieve specific funding minimums for noise compatibility planning and implementation, select former military airfields (Military Airports Program), and select reliever airports. As a reliever airport, CHD qualifies for set-aside funding.

## FAA Facilities and Equipment (F&E) Program

The Airway Facilities Division of the FAA administers the Facilities and Equipment (F&E) Program. This program provides funding for the installation and maintenance of various navigational aids and equipment of the national airspace system. Under the F&E program, funding is provided for FAA airport traffic control towers (ATCTs), enroute navigational aids, on-airport navigational aids, and approach lighting systems.

While F&E still installs and maintains some navigational aids, on-airport facilities at general aviation airports have not been a priority. Therefore, airports often request funding assistance for navigational aids through AIP and then maintain the equipment on their own<sup>1</sup>.

## STATE FUNDING PROGRAMS

The ADOT – Aeronautics Group recognizes the valuable contribution to the state’s transportation economy that airports make. Therefore, it administers several programs to aid in maintaining airports in the state. The source for state airport improvement funds is the Arizona Aviation Fund. Taxes levied by the state on aviation fuel, flight property, aircraft registration tax, and registration fees (as well as interest on these funds) are deposited in the Arizona Aviation Fund. The State Transportation Board establishes the policies for distribution of these state funds.

Under the State of Arizona’s grant program, an airport can receive funding for one-half (currently 4.47 percent) of the local share of projects receiving federal AIP funding. The state also provides 90 percent funding for projects which are typically not eligible for federal AIP funding or have not received federal funding. CHD is eligible for these funding allocations.

## Pavement Maintenance Program

The airport system in Arizona is a multi-million-dollar investment of public and private funds that must be protected and preserved. State aviation fund dollars are limited, and the State Transportation Board recognizes the need to protect and extend the maximum useful life of the airport system’s pavement. The Arizona Pavement Management System (APMS) has been established to assist in the preservation of Arizona airports’ system infrastructure.

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<sup>1</sup> Guidance on the eligibility of a project for federal AIP grant funding can be found in FAA Order 5100.38D, *Airport Improvement Program Handbook*.

Public Law 103-305 requires that airports requesting federal AIP funding for pavement rehabilitation or reconstruction have an effective pavement maintenance program system. To this end, ADOT – Aeronautics Group maintains the APMS.

The Arizona APMS uses the Army Corps of Engineers’ “Micropaver” program as a basis for generating a Five-Year Arizona Pavement Preservation Program (APPP). The APPP consists of visual inspections of all airport pavements. Evaluations are made of the types and severities observed, and then entered into a computer program database. PCI values are determined through the visual assessment of pavement conditions in accordance with the most recent FAA Advisory Circular 150/5380-7, *Pavement Management System*, and range from 0 (failed) to 100 (excellent). Every three years, a complete database update with new visual observations is conducted. Individual airport reports from the update are shared with all participating system airports. ADOT – Aeronautics Group ensures that the APMS database is kept current, in compliance with FAA requirements.

Every year, ADOT – Aeronautics Group, utilizing the APMS, will identify airport pavement maintenance projects eligible for funding for the upcoming five years. These projects will appear in the state’s Five-Year Airport Development Program. Once a project has been identified and approved for funding by the State Transportation Board, the airport sponsor may elect to accept a state grant for the project and not participate in the APPP, or the sponsor may sign an Inter-Government Agreement (IGA) with ADOT-MPD – Aeronautics Group to participate in the APPP. CHD participates in this program.

## LOCAL FUNDING

The balance of project costs, after consideration has been given to grants, must be funded through local resources. A goal for any airport is to generate enough revenue to cover all operating and capital expenditures, if possible. There are several local financing options to consider when funding future development at airports, including airport revenues, issuance of a variety of bond types, leasehold financing, implementing a customer facility charge (CFC), pursuing non-aviation development potential, and collecting from special events. These strategies could be used to fund the local matching share or complete a project if grant funding cannot be arranged. Below is a brief description of the most common local funding options.

### Airport Revenues

An airport’s daily operations are conducted through the collection of various rates and charges. These airport revenues are generated specifically by airport operations. There are restrictions on the use of revenues collected by the airport. All receipts, excluding bond proceeds or related grants and interest, are irrevocably pledged to the punctual payment of operating and maintenance expenses, payment of debt service for as long as bonds remain outstanding, or for additions and improvements to airport facilities.

All airports should establish standard basis rates for various leases. All lease rates should be set to adjust to a standard index, such as the consumer price index (CPI), to assure that fair and equitable rates continue to be charged into the future. Many factors will impact what the standard lease rate should be for a particular facility or ground parcel. For example, ground leases for aviation-related facilities should have a different lease rate than for non-aviation leases. When airports own hangars, a separate facility



lease rate should be charged. The lease rate for any individual parcel or hangar can vary due to availability of utilities, condition, location, and other factors. Nonetheless, standard lease rates should fall within an acceptable range.

### **Bonding**

Bonding is a common method to finance large capital projects at airports. A bond is an instrument of indebtedness of the bond issuer to the bond holders, thus a bond is a form of loan or IOU. While bond terms are negotiable, typically the bond issuer is obligated to pay the bond holder interest at regular intervals and/or repay the principal at a later date.

### **Leasehold Financing**

Leasehold financing refers to a private developer or tenant financing improvements under a long-term ground lease. The advantage of this arrangement is that it relieves the airport of the responsibility of having to raise capital funds for the improvement. As an example, an FBO might consider constructing hangars and charging fair market lease rates while paying the airport for a ground lease.

### **Customer Facility Charge (CFC)**

A CFC is the imposition of an additional fee charged to customers for the use of certain facilities. The most common example is when an airport constructs a consolidated rental car facility and imposes a fee for each rental car contract. That fee is then used by the airport to pay down the debt incurred from building the facility.

### **Non-Aviation Development**

In addition to generating revenue from traditional aviation sources, airports with excess land can permit compatible non-aviation development. Generally, an airport will extend a long-term lease for land not anticipated to be needed for aviation purposes in the future. The private developer then pays the monthly lease rate and constructs and uses the compatible facility. Certain areas at CHD have been reserved for non-aviation development. It should be noted that each individual proposed non-aviation development must be reviewed and approved by the FAA.

### **Special Events**

Another common revenue-generating option is permitted use of airport property for temporary or single events. For example, some airports host open house or fly-in events that attracts thousands of spectators from around the region. Airports can also permit portions of their facility to be utilized for non-aviation special events, such as car shows or video production of commercials. This type of revenue generation must be approved by the FAA.

## ***MASTER PLAN IMPLEMENTATION***

To implement the master plan recommendations, it is key to recognize that planning is a continuous process and does not end with approval of this document. The airport should implement measures that allow it to track various demand indicators, such as based aircraft, hangar demand, and operations. The issues that this master plan is based on will remain valid for a number of years. The primary goal is for CHD to best serve the air transportation needs of the region, while achieving economic self-sufficiency.

The CIP and the phasing program presented will change over time. An effort has been made to identify and prioritize all major capital projects that would require FAA and ADOT – Aeronautics Group grant funding. Nonetheless, the airport and FAA review the five-year CIP on an annual basis.

The value of this study is keeping the issues and objectives at the forefront of the minds of decision-makers. In addition to adjustments in aviation demand, decisions on when to undertake the improvements recommended in this master plan will impact how long the plan remains valid. The format of this plan reduces the need for formal and costly updates by simply adjusting the timing of project implementation. Updates can be done by airport management, thereby improving the plan's effectiveness. Nonetheless, airports are typically encouraged to update their master plans every 7 to 10 years, or sooner if significant changes occur in the interim.

In summary, the planning process requires the City of Chandler to consistently monitor the progress of the airport. The information obtained from continually monitoring activity will provide the data necessary to determine if the development schedule should be accelerated or decelerated.