INTRODUCTION

This Master Plan provides an evaluation of Falcon Field Airport’s (Airport) aviation demand and an overview of the systematic development that will best meet those demands. The Master Plan establishes development objectives and provides for a 20-year planning period that details the rationale for various study elements including airfield configuration, facility development, on-airport land use recommendations, and support facilities. It also serves as a strategic tool for establishing improvement priorities and justifying the need for federal and state funding assistance.

The Federal Aviation Administration (FAA) recommends that airports update their Master Plan every seven to 10 years, or as necessary, to address local changes at an airport. The last Master Plan for the Airport was completed in 2010. The preparation of this Airport Master Plan is necessary as a timely reassessment of the development direction of the Airport to meet the needs of the local economy and an ever-changing air transportation industry.

The Master Plan has been undertaken to evaluate the Airport’s capabilities and role, to forecast future aviation demand, and to plan for the development of new or expanded facilities that may be required to meet that demand. The ultimate goal of the Master Plan is to provide guidelines for the Airport’s overall maintenance, development, and operation in an environmentally and fiscally responsible manner while adhering to appropriate FAA and Arizona Department of Transportation (ADOT) – Aeronautics Group standards.
An important outcome of the Airport Master Plan process is a recommended development plan that reserves sufficient areas for future facility needs. Such planning will protect development areas and ensure they will be readily available when required to meet these needs. The intended outcome of this study is a detailed on-airport land use concept which outlines specific uses for all areas of airport property, including strategies for revenue enhancement.

**STUDY OVERVIEW**

The City of Mesa (City) is responsible for funding capital improvements at the Airport, as well as obtaining FAA and ADOT – Aeronautics Group development grants. In addition, the City oversees facility enhancements and infrastructure development conducted by private entities at the Airport. The Master Plan is intended to provide guidance for future development and justification for projects for which the Airport may receive funding through an updated capital improvement program (CIP) to demonstrate the future investment required by the City of Mesa, as well as the FAA and ADOT – Aeronautics Group.

The Airport Master Plan will follow a systematic approach outlined by the FAA to identify airport needs in advance of the actual need for improvements. This is done to ensure that the City can coordinate environmental reviews, project approvals, design, financing, and construction to minimize the negative effects of maintaining and operating inadequate or insufficient facilities. The intended result is a recommended development concept which outlines the proposed uses for all areas of the Airport.

The City has contracted with the airport planning firm of Coffman Associates, Inc. to undertake the Airport Master Plan. Coffman Associates is an airport consulting firm that specializes in master planning and environmental studies. The study is prepared in accordance with FAA requirements, including Advisory Circular (AC) 150/5070-6B, Airport Master Plans, and AC 150/5300-13A, Airport Design.

**MASTER PLAN GOALS AND OBJECTIVES**

The primary objective of the Airport Master Plan is to develop and maintain a financially feasible, long term development program which will satisfy aviation demand of the region, while also being compatible with area development, other transportation modes, and the environment. Accomplishing this objective requires an evaluation of the existing Airport to make a determination of what actions should be taken to maintain a safe, adequate, and reliable facility.

This Master Plan is intended to provide guidance through an updated CIP to demonstrate the future investments required by the City. The new planning study also provides justification for new priorities. The plan will be closely coordinated with other planning studies in the area and with aviation plans developed by the FAA and ADOT – Aeronautics Group. This study will also utilize historical planning efforts (i.e., Mesa-Falcon Field Airport Master Plan, 2010 and the most recent update to the Airport Layout Plan [ALP] in 2016).
Specific goals and objectives to be considered in the Airport Master Plan include, but are not limited to, the following:

- Justify proposed development through the technical, economic, and environmental investigation of alternatives;
- Provide an effective graphic presentation of the development of the Airport and anticipated on-Airport land uses that account for aviation and potential non-aviation uses;
- Determine the Airport’s current and future critical design aircraft;
- Establish a realistic schedule for the implementation of the proposed development plan, particularly the short term (1-5 years) CIP;
- Present a plan that adequately addresses local, state, and federal regulations;
- Determine the projected facility needs of Airport users through the year 2036, by which to support airport development alternatives;
- Recommend improvements that will enhance the Airport’s safety capabilities to the maximum extent possible;
- Produce accurate base maps of existing and proposed facilities and updated ALP drawings consistent with FAA standards which will be utilized by the FAA and ADOT – Aeronautics Group in determining Airport grant eligibility and funding;
- Consider sustainability efforts, specifically waste and recycling improvements, as part of the FAA’s updated standards; and
- Develop a robust and productive public involvement program throughout the planning process.

**MASTER PLAN TASKS**

The Master Plan for the Airport specifically addresses the following tasks:

- Assist the City of Mesa, through a Planning Advisory Committee (PAC) which is made up of a group of stakeholders including government representatives, Airport users and tenants, and local community leaders, in determining a vision for the Airport;
- Conduct a series of Public Information Workshops to allow the general public an opportunity to be informed on the Airport and provide input related to the study process;
• Conduct a Strengths, Weaknesses, Opportunities, and Threats (SWOT) analysis, identifying strengths, weaknesses, realistic markets, goals, resources, and strategies to move forward. This analysis will factor the strengths and weaknesses of the Airport to include physical and operational features. The analysis will also present the same for competing airports in the region;

• Based on the realistic evaluation of the facility in terms of configuration, condition, amenities, location, competition, and forecasted aviation demand, establish goals and priorities for the Airport to meet that vision;

• Identify airfield alternatives based on goals and opportunities, as well as applicable FAA design standards. The analysis will include an evaluation of the airfield geometry to address potential runway incursion hot spots and non-standard conditions and provide recommendations for conformance and improvement;

• Provide a landside development plan that identifies areas for accommodating the forecasted growth of aviation and aviation-related businesses and, if appropriate, areas for non-aviation revenue-producing opportunities. Consideration will be given to the potential for new or expanded aviation facilities, including, but not limited to, aircraft storage hangar capacity, aircraft parking apron space, and support facilities;

• Assess compatible land uses near the Airport; and

• Prioritize pavement/facility preservation and rehabilitation recommendations in order of greatest overall positive impact.

BASELINE EXPECTATIONS

A study such as this typically requires some baseline expectations that will be used throughout the analysis. The baseline expectations for this study include:

• The Airport will continue to operate as a publicly-owned, general aviation reliever airport through the 20-year planning period;

• The Airport will continue to serve general aviation tenants and itinerant and/or local aircraft operations by general aviation, air taxi, and military operators;

• The general aviation industry will grow through the planning period as projected by the FAA. Specifics of projected growth in the national general aviation industry are contained in Chapter Two of the Master Plan; and

• A federal and state airport improvement program will be in place through the planning period to assist in funding capital development needs.
**MASTER PLAN ELEMENTS AND PROCESS**

The Airport Master Plan is being prepared in a fashion pursuant to the scope of services that has been coordinated with the City and the FAA. The study has 10 specific elements that are intended to assist in the identification of future facility needs and which provide the supporting rationale for their implementation. Exhibit A provides a graphical depiction of the elements and process involved with the study.

**Element 1 – Initiation** includes the development of the scope of services, budget, and schedule. A PAC is also formed and study material will be assembled in a workbook format. General background information will be established that will include outlining the goals and objectives to be accomplished during the Master Plan.

**Element 2 – Inventory** summarizes facilities and operational data, area airspace, weather conditions, population and economic data, vicinity land uses, and environmental conditions of the Airport and surrounding area. New aerial photography and planimetric mapping of the Airport is also obtained to aid in the study process. An Airports Geographic Information System (AGIS) survey is also implemented into this element and includes the collection of detailed Airport and aeronautical data.

**Element 3 – Forecasts** examines the potential aviation demand for general aviation, air taxi, and military activity at the Airport over a 20-year period. Specific indicators for based aircraft, aircraft operations, and peaking characteristics will be analyzed. The results of this effort are used to determine the types and sizes of facilities which would be required to meet the projected aviation demand at the Airport through the long term planning period.

**Element 4 – Facility Requirements** converts aviation demand needs into types and volumes of actual physical facilities required to meet existing and forecast demands in aviation activity. The critical design aircraft and physical planning criteria based upon AC 150/5300-13A, *Airport Design*, is also established in preparation of a needs assessment for airside and landside facilities.

**Element 5 – Airport Alternatives** considers a variety of solutions to accommodate projected airside and landside facility needs through the long term planning period. An analysis is completed to identify the strengths and weaknesses of each proposed development alternative, with the intention of determining a single direction for development.

**Element 6 – Recommended Master Plan Concept/Capital Program** provides both a graphic and narrative description of the recommended plan for the use, development, and operation of the Airport. A detailed CIP is included which defines the schedule and costs for the recommended development projects. In addition, an economic benefit analysis is conducted to measure and analyze the economic impacts of the Airport.

**Element 7 – Airport Layout Plan (ALP) Drawing Set** is developed to depict existing and proposed facilities and provides the official ALP drawings that are produced as a result of the recommended development plan. These drawings are used by the FAA and ADOT – Aeronautics Group in determining grant eligibility and funding.
Introduction | DRAFT

PAC: Planning Advisory Committee
PIW: Public Information Workshop

[Diagram of project workflow]

INVENTORY
- Airport Facilities
- Airspace and Air Traffic Activity
- Airport Access and Parking, Utilities, and Aerial Photography
- Area Socioeconomic Data
- Local Planning and Land Use
- AGIS Survey

FORECASTS
- Based Aircraft and Fleet Mix
- Annual Operations
- Peaking Characteristics
- Critical Aircraft Analysis

FACILITY REQUIREMENTS
- Design Categories
- Runway Length and Strength
- Support Facilities
- Taxiways
- Airfield Capacity
- Hangar Facilities
- Terminal Building
- Aprons
- Navigational Aids

AIRPORT ALTERNATIVES
- Evaluate Development Scenarios
  - Airside
  - Landside
  - Support

RECOMMENDED MASTER PLAN CONCEPT/ENVIRONMENTAL REVIEW
- Detailed Master Plan Facility and Land Use Plans
- Review/Evaluation of NEPA Environmental Categories
- Noise Exposure
- Recycling Plan

FINANCIAL PLAN/CAPITAL IMPROVEMENTS
- Airport Development Schedule
- Economic Benefit Analysis
- Cost Estimates
- Funding Sources

AIRPORT LAYOUT PLANS
- Airport Layout Plan
- Landside Drawing
- Airspace/Approach Drawings
- On-Airport Land Use Plan
- Property Map
- Land Use Plans

Exhibit A
PROJECT WORK FLOW

PAC #1
PAC #2
PIW #1
PIW #2
PAC #3
PIW #3
PIW #4
Element 8 – Environmental Evaluation provides the City with proper guidance regarding, and to facilitate compliance with, the National Environmental Policy Act (NEPA). Throughout the study process, environmental factors are evaluated that assess existing and future conditions on and adjacent to the Airport. This preliminary environmental evaluation follows FAA guidelines in implementing NEPA. A recycling plan will also be prepared that explores existing recycling efforts at the Airport and will outline opportunities to improve the diversion of waste from landfills.

Element 9 – Public Coordination and Communication provides opportunities to inform the public on the Master Plan process. Working papers are prepared at various milestones in the planning process. A series of PAC meetings and Public Information Workshops are also planned during the process to discuss study findings.

Element 10 – Final Reports and Approvals provide documents which depict the findings of the study effort and present the study and its recommendations to appropriate local organizations. The final document incorporates the revisions to previous working papers prepared under earlier elements into a usable Master Plan document.

STUDY PARTICIPATION

The Airport Master Plan is of interest to many within the local community and region. This includes local citizens, local businesses, community organizations, City officials, Airport users, Airport tenants, and aviation organizations. As a component of the regional, state, and national aviation systems, the Master Plan is of importance to both state and federal agencies responsible for overseeing the air transportation system.

To assist in the development of the Airport Master Plan, the City has assembled a PAC that consists of a group of stakeholders including government representatives, Airport users and tenants, and local community leaders to act in an advisory role in the development of the Master Plan. Members of the PAC will meet four times at designated points during the study to review study materials and provide comments to help ensure that a realistic, viable plan is developed. Table A provides a list of those entities that are represented on the PAC.

Draft working paper materials will be prepared at various milestones in the planning process. The working paper process allows for timely input and review during each step within the Master Plan to ensure that all issues are fully addressed as the recommended program develops.

A series of open house Public Information Workshops are also conducted as part of the study coordination effort. These workshops are designed to allow any and all interested persons to become informed and provide input concerning the Master Plan process. Notices of meeting times and locations are advertised through local media outlets. Draft working papers and other information related to the Master Plan are available to the public via a website dedicated to the study at: http://falconfieldairportstudy.com.
SWOT ANALYSIS

A SWOT analysis is a strategic business planning technique used to identify Strengths, Weaknesses, Opportunities, and Threats associated with an action or plan. The SWOT analysis involves identifying an action, objective, or element, and then identifying the internal and external forces that are positively and negatively impacting that action, objective, or element in a given environment. For this study, the SWOT analysis factors are being applied to the Airport within the confines of the Master Plan. As a result, it provides a continuous vision and direction for the development of the Master Plan.

SWOT DEFINITIONS

As previously discussed, this particular SWOT analysis groups information into two categories:

- **Internal** – attributes of the Airport and market area that may be considered strengths or weaknesses to the action, objective, or element.
- **External** – attributes of the aviation industry that may pose as opportunities or threats to the action, objective, or element.
The SWOT further categorizes information into one of the following:

- **Strengths** – internal attributes of the Airport that are helpful to achieving the action, objective, or element.
- **Weaknesses** – internal attributes of the Airport that are harmful to achieving the action, objective, or element.
- **Opportunities** – external attributes of the industry that are helpful to achieving the action, objective, or element.
- **Threats** – external attributes of the industry that are harmful to achieving the action, objective, or element.

**SWOT ANALYSIS EXERCISE**

The SWOT analysis for the Airport is based upon information gathered during the first PAC meeting that was conducted in November 2017. As previously discussed, the PAC is a diversified group of stakeholders, community leaders, and governmental agencies that represent several interests in the Airport. A SWOT analysis was conducted with this group to identify key factors that might be addressed in the Master Plan. A summary of the results from the SWOT analysis exercise is shown in Table B on the next page. These results were used to frame the subjective or judgmental processing of the data presented in the Master Plan.
<table>
<thead>
<tr>
<th>INTERNAL (attributes of the Airport market area)</th>
<th>STRENGTHS</th>
<th>WEAKNESSES</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Reputation/recognition as being a premier general aviation airport at the national level</td>
<td>• Shorter runway length compared to others in the regional area</td>
<td></td>
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<tr>
<td>• Availability of developable land</td>
<td>• Businesses near Airport that create runway safety and protection zone issues</td>
<td></td>
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<tr>
<td>• Professional Airport management team</td>
<td>• Turf area north of runway system unusable, requiring helicopters to use Echo Ramp</td>
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<tr>
<td>• City Council/City Management involvement and understanding of the Airport</td>
<td>• Limited helicopter parking</td>
<td></td>
</tr>
<tr>
<td>• Airspace conducive to experimental flight testing in close proximity to the north</td>
<td>• Capacity and airspace constraints</td>
<td></td>
</tr>
<tr>
<td>• Two runways (for capacity and emergency use)</td>
<td>• Vehicle segregation on the airfield system</td>
<td></td>
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<tr>
<td>• Weather conditions</td>
<td>• Terrain issues east of the Airport</td>
<td></td>
</tr>
<tr>
<td>• Airport is self-sustaining</td>
<td>• Communicating/educating the value of the parallel runway system</td>
<td></td>
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<tr>
<td>• Aircraft rescue and firefighting (ARFF)-certified fire station on site</td>
<td>• Age/condition of airport traffic control tower</td>
<td></td>
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<tr>
<td>• Proximity to highway infrastructure</td>
<td>• Quality of operations (flight training vs. business use)</td>
<td></td>
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<tr>
<td>• Educational activities offered (flight training)</td>
<td>• Communicating the value and role of the Airport</td>
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<tr>
<td>• Security presence at the Airport</td>
<td></td>
<td></td>
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<tr>
<td>• Airport traffic control tower</td>
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<table>
<thead>
<tr>
<th>EXTERNAL (attributes of the industry)</th>
<th>OPPORTUNITIES</th>
<th>THREATS</th>
</tr>
</thead>
<tbody>
<tr>
<td>• National and global reputation/recognition</td>
<td>• National pilot shortage</td>
<td></td>
</tr>
<tr>
<td>• Vicinity to Phoenix Sky Harbor International Airport</td>
<td>• Encroachment (residential) around the Airport and compatibility with aviation activities</td>
<td></td>
</tr>
<tr>
<td>• UAS/drone market</td>
<td>• Aviation privatization (impacts to the general aviation industry)</td>
<td></td>
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<tr>
<td>• Potential to expand aircraft storage hangars and tiedown areas</td>
<td>• Capacity constraints</td>
<td></td>
</tr>
<tr>
<td>• Ability to disseminate Airport data to users of the facility / better communicate value of the Airport</td>
<td>• UAS/drone market</td>
<td></td>
</tr>
<tr>
<td>• Aviation learning center/educational potential</td>
<td>• Competition at other airports in the Phoenix metropolitan area</td>
<td></td>
</tr>
<tr>
<td>• Ability to increase tenant base</td>
<td>• Future funding availability (competitive nature of federal/state funds)</td>
<td></td>
</tr>
<tr>
<td>• Diversified economy that serves the local area</td>
<td></td>
<td></td>
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<tr>
<td>• Multitude of aviation services that can be offered at the Airport</td>
<td></td>
<td></td>
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<tr>
<td>• Hangar waiting list (demand for more based aircraft)</td>
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