CHAPTER 1: INTRODUCTION

Purpose and Scope

The information presented in this report represents the findings for the 2020 Rapid City Regional Targeted Airport Master Plan Update study prepared for the City of Rapid City, the airport owner/sponsor. Airport Master Plans are prepared in accordance with Federal Aviation Administration (FAA) Advisory Circular (AC) 150/5070-6B, *Airport Master Plans.* This project was funded in part by the South Dakota Department of Transportation Office of Aeronautics.

This targeted Master Plan update for the Rapid City Regional Airport will identify development needs to accommodate existing and future aviation demands given the substantial growth in activity and operations since completion of the 2014 Master Plan. The airport's current and forecasted safety, capacity and compatibility needs are addressed in this study. Many projects have been completed and new planning considerations have surfaced since the last Master Plan study was initiated in 2014. Specifically, annual enplanements for 2019 exceeded the forecasted 2033 enplanements from the 2014 Master Plan.

The airport sponsor and KLJ developed the scope for the project in cooperation with FAA Airports District Office and South Dakota officials to identify the specific needs and objectives of the airport. The scope includes work tasks with the purpose of documenting existing conditions, forecasting future aviation activity levels, identifying future facility requirements, formulating, and evaluating development alternatives, preparing implementation plans and engaging the public and other government agencies. Recommendations will be made for improvements that are triggered by safety requirements or demand thresholds.

The project received notice to proceed in November 2019 from the airport sponsor. The baseline project data is from inventory efforts completed in 2020 along with a baseline of existing airport information.

Background

Rapid City Regional Airport sits on 1,655 acres of land nine miles east of the Rapid City Central business district. The airport used to be collocated at the Rapid City Army Air Base that is now known as Ellsworth Air Force Base. Since 1950 the airport has been owned and operated by the City of Rapid City and has expanded to accommodate the aviation needs of the community and Black Hills region including a terminal building in 1989 with an expansion and renovation in 2013. The airport is the second largest in the state of South Dakota with 303,471 revenue passenger enplanements in calendar year 2018. There are four domestic airlines flying to six non-stop destinations year-round and six additional non-stop seasonal destinations.

The community of Rapid City serves as a regional commercial and business hub within tourism hot spots and surrounding agricultural uses. Significant contributors to increases in airport use and passenger enplanements include thriving health care, finance and agriculture industries, along with travel related to Ellsworth AFB, and growth in tourism.

Planning Considerations & Objectives

Planning considerations for an airport master plan are elements that should be evaluated because they have the potential to affect airport facilities over the planning period. Some key considerations and objectives are listed below and referenced on **Figure 1-1**.

Runway Needs & Sustainable Airport Operations

The study will determine runway length and pavement strength requirements. The study will also evaluate alternatives to avoid or minimize closure of the primary runway when the existing runway requires reconstruction, including alternatives relocating the runway.

General Aviation

General Aviation (GA) elements include facilities that serve aeronautical needs beyond needs for commercial airlines. This covers the movement of aircraft as well as parking, service, and storage of aircraft. The airfield is located atop of a low plateau, limiting areas where cost-effective development can occur. Maximizing available space in GA areas is an important element of this study.

Passenger Terminal Area

The terminal building was remodeled in 2013 with significant improvements for passenger screening, rental car and baggage claim areas. Even after the remodel there are several areas that need to be updated to meet current demands. The terminal building currently exceeds capacity thresholds at times for individual flights. This study will look at expansion options for the passenger concourse, baggage handling facilities, and aircraft parking aprons.

Rental Car Areas

Expansion options, including parking garage structures will be analyzed.

Air Cargo Space

Short and long-term options for cargo facilities will be analyzed as part of this study.

Landside Facilities

The study will analyze development areas for support facilities (e.g. snow removal equipment buildings) along with general locations for non-traditional revenue producing facilities (e.g. hotels) that are compatible with airport operations.

Figure 1-1 – Planning Considerations Map

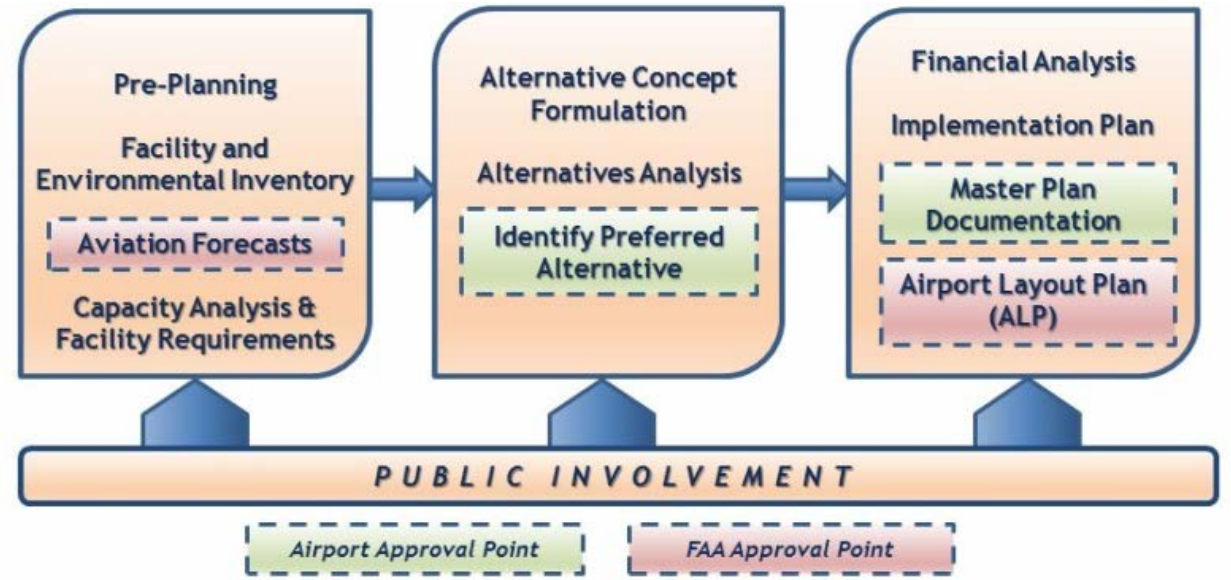
Master Plan Process

Guidelines for completing a Master Plan are set forth in FAA AC 150/5070-6B. Each master plan study scope and level of effort is customized to fit each individual airport's needs and address critical issues.

The Airport Master Planning process involves several coordinated steps. The master plan study for RAP consists of the following elements:

- **Pre-Planning** – Airport development concerns are identified, and planning objectives prepared to address these issues. An overall vision for the study is formulated that will guide the process.
- **Inventory of Existing Conditions** – Overview of airport setting and environment; infrastructure and assets which includes airside, landside, and support facilities; airspace, navigational aids, and airport access utilizing data from an FAA Aeronautical Survey.
- **Environmental Inventory/Overview** – Identify environmental constraints and planning considerations that may affect airport development.
- **Forecast of Aviation Demand** – Using established forecasting methods, estimate current and project future airport activity for general aviation, air cargo, and passenger enplanements.
- **Demand Analysis and Facility Requirements** – Compare the existing capacity with the future demand and identify the facility requirements to satisfy the aviation safety, capacity, and compatibility needs.
- **Alternatives Development and Evaluation** – Identify and evaluate options considering both on-airport and off-airport impacts consistent with the study goals and objectives. A preferred alternative is selected.
- **Implementation Plan** – Provide a comprehensive plan for implementation of the preferred alternative including project triggers, sequencing, and cost estimates.
- **Airport Layout Plan (ALP)** – Document the existing and planned airport facilities through a set of drawings approved by the airport sponsor, state, and FAA.
- **Stakeholder and Public Involvement** – Prepare and execute a plan to engage important airport stakeholder and the public throughout the study to gather their input and address their concerns.

Figure 1-2 – Airport Master Planning Process



Study Documentation & Approvals

The Master Plan Update was divided into chapters of information to document airport planning data, analysis, findings, and recommendation of the study. The following sections included in the narrative report:

- Chapter 1 – Introduction
- Chapter 2 – Facility & Environmental Inventory
- Chapter 3 – Aviation Activity Forecasts
- Chapter 4 – Facility Requirements
- Chapter 5 – Alternatives Analysis
- Chapter 6 – Implementation Plan
- Chapter 7 – Airport Layout Plan

In addition to the chapters, four appendices are anticipated for the Master Plan:

- Appendix A – Glossary of Terms
- Appendix B – Commercial Airports 101
- Appendix C – Meetings & Public Involvement
- Appendix D – Runway Length

Each chapter was prepared separately and distributed to the airport owner for review and comment. After the airport owner's review, each draft chapter findings were made available to key airport stakeholders including the State and FAA for input prior to a final review and approval by the airport owner. Each approved final draft chapter was then published on the airport's website for public viewing.

The Master Plan Update was adopted by the City of Rapid City on [FUTURE DATE]. The ALP was submitted to the State and FAA for review and approval on [FUTURE DATE].

Master Plan Format

The required and recommended contents of Airport Master Plans are detailed per FAA standards. Effective airport master plans are based on the analysis of significant amounts of data, and many airport master plans typically present not only the planning conclusions, but all data and accompanying analysis in considerable detail.

This Master Plan study presents data in a sequential manner following the typical FAA planning process. Appendices are included to provide more detailed information on a subject. In addition, internet hyperlinks are included when appropriate to reference documents that are current as of the time of this report.

Public Involvement

Public involvement is a key component to the successful development of an Airport Master Plan study. The purpose is to encourage information sharing and feedback from airport stakeholders including the airport owner, airport users/tenants, local government officials, resource agencies, elected and appointed officials and the public. Stakeholders were broken into an advisory committee, a strategic partner committee and several focus groups. Public involvement provides valuable input to assist the airport owner in decision making and develop consensus on study conclusions.

See **Appendix C – Meetings & Public Involvement** ***(to be included after public involvement complete)*** for other information including copies of public involvement meeting agendas, attendees, presentations, and summaries.

COVID-19

In the midst of project planning, a pandemic swiftly spread throughout the world and prompted travel bans and restricted gatherings of large groups. These responses had a profound impact on the Rapid City Regional Airport and the surrounding community. The novel (new) coronavirus, identified as COVID-19, was first discovered in China and quickly spread beyond the region reaching the stage of a global pandemic within a few months. It is a respiratory virus that can be spread through droplets generated when an infected person comes in contact with another person. The virus can lead to severe medical complications such as pneumonia in both lungs, several organ complications and even death.

The initial reports of the virus started as a cluster of pneumonia cases in China in December 2019. By mid-January 2020, China reported its first death linked to the new virus and a few weeks later the first cases were reported outside of China in Thailand, Japan, South Korea and the United States. By the end of January, the World Health Organization (WHO) declared the outbreak a global public health emergency with more than 9,000 cases in 18 different countries. Early February the WHO announced the disease caused by the new coronavirus will be known by the official name of COVID-19.

As the infection spread to new territories, governments responded with travel bans, stay-at-home orders, and in some cases mandatory lockdowns. The sudden amount of cases stressed many medical systems with a shortage of supplies, increase of patients in hospitals and an exhaustion of medical workers. Many events, schools, public transportation, business, and major industries were forced to cancel or close, taking a toll on the economies and individual incomes. The travel restrictions along with public fear of getting the virus, forced airlines to drastically cut the number of flights, resulting in

significant profit loss. COVID-19 also spread to air traffic controllers which caused the shutdown of various towers and Air Route Traffic Control Centers (ARTCC). Many aircraft needed to be re-routed and flights were cancelled to avoid the closed airspace.

The United States government signed into law the Coronavirus Aid, Relief, and Economic Security Act (CARES Act) in March 2020 that offered $2.2 trillion to provide economic relief for suffering industries, small business and individual Americans, and support the medical efforts to contain the spread. The aviation industry was included in the act that offered relief for losses related to the direct impact of COVID-19. The CARES Act guaranteed money for passenger air carriers, general aviation operators that conduct flights under Federal Aviation Regulations ("FAR") Part 135, air cargo, businesses critical to maintaining national security and Part 145 aircraft repair stations and ticket agents are also included. The industry is responsible for more than 750,000 jobs directly and supports more than 10 million jobs indirectly.

COVID-19 has changed how and when project meetings are conducted. These aspects will be taken into consideration moving forward trying to construct reasonable results. More details about the unique impacts of COVID-19 will be discussed in Chapter 3.

Conclusion

This Airport Master Plan Update study for the Rapid City Regional Airport provides a guidance document to assist with capital improvement decision making to meet aviation demands over the 20-year planning period. As with any planning study, assumptions made are subject to change due to unpredictable internal and external events. For this reason, this study should be reviewed periodically to verify project scope and triggering events are still valid to meet airport needs.