

1. INTRODUCTION

In June 2018, Milwaukee County, Department of Transportation, Airport Division initiated this Master Plan Update for Milwaukee Mitchell International Airport (the Airport, or MKE) to provide a guide for development that will accommodate future aviation needs through the 2040 planning horizon. In preparing the Master Plan Update, the planning team identified and analyzed improvements to airfield, terminal/gate, landside, and support facilities necessary to safely and efficiently accommodate forecast growth in aviation activity at the Airport.

A master plan is one of the most important documents from an airport management and operations perspective, as it guides future airport growth and development. A master plan provides a road map for efficiently accommodating aviation demand throughout the foreseeable future (typically, a 20-year period), while preserving the flexibility necessary to respond to a continually evolving industry and dynamic activity growth characteristics. Aviation has changed significantly in the last 12 years, since the 2009 MKE Master Plan was completed. These changes have been most significant in relation to passenger and baggage screening, technology changes affecting airline check-in procedures, airline aircraft fleet mixes, and aviation industry economics. Importantly and more recently, the aviation industry has also weathered the impacts of the global COVID-19 pandemic, which significantly impacted aviation activity.

The Master Plan Update, prepared following a Federal Aviation Administration (FAA)-defined process, defines a comprehensive plan to guide future development at the Airport. As described in FAA master planning guidance, a master plan provides a framework to guide airport development that cost effectively satisfies forecast demand and considers the potential environmental consequences of that development.¹ In addition to defining and justifying future development, this framework is intended to support a continued planning and decision-making process.

The COVID-19 pandemic significantly impacted the aviation industry, including airports, airlines, and tenants. The schedule for completion of MKE's Master Plan Update was slowed by the challenges in conducting planning, stakeholder, and public involvement meetings, as well as the redirected focus of airport leadership during this time of unprecedented disruption in the aviation system. The conclusions emerging from the Milwaukee Mitchell International Airport Master Plan Update are based on forecasts of future activity prepared and approved by the FAA prior to the COVID-19 pandemic. The dramatic drop in and subsequent recovery of aviation activity suggest that future activity may not grow at the rate indicated in the FAA-approved forecasts during the near- to mid-term horizons; however, the Master Plan Update conclusions and recommended development concept remain valid because future development will typically be incrementally implemented, triggered in response to activity growth and other relevant factors.

The documentation prepared as part of the Master Plan Update provides the sources of data collected, assumptions, technical analyses, findings, and conclusions that form the basis for the recommended development plan for Milwaukee Mitchell International Airport. The document is presented in sequential sections with supporting appendices. The planning process and emerging conclusions are documented in the following sections of this technical report.

- **Section 2 – Inventory of Existing Conditions:** The collection of existing information on the physical, operational, and functional characteristics of the Airport and its immediate environment including information

¹ Federal Aviation Administration, Advisory Circular 150/5070-6B, *Airport Master Plans*, Change 2, January 27, 2015.

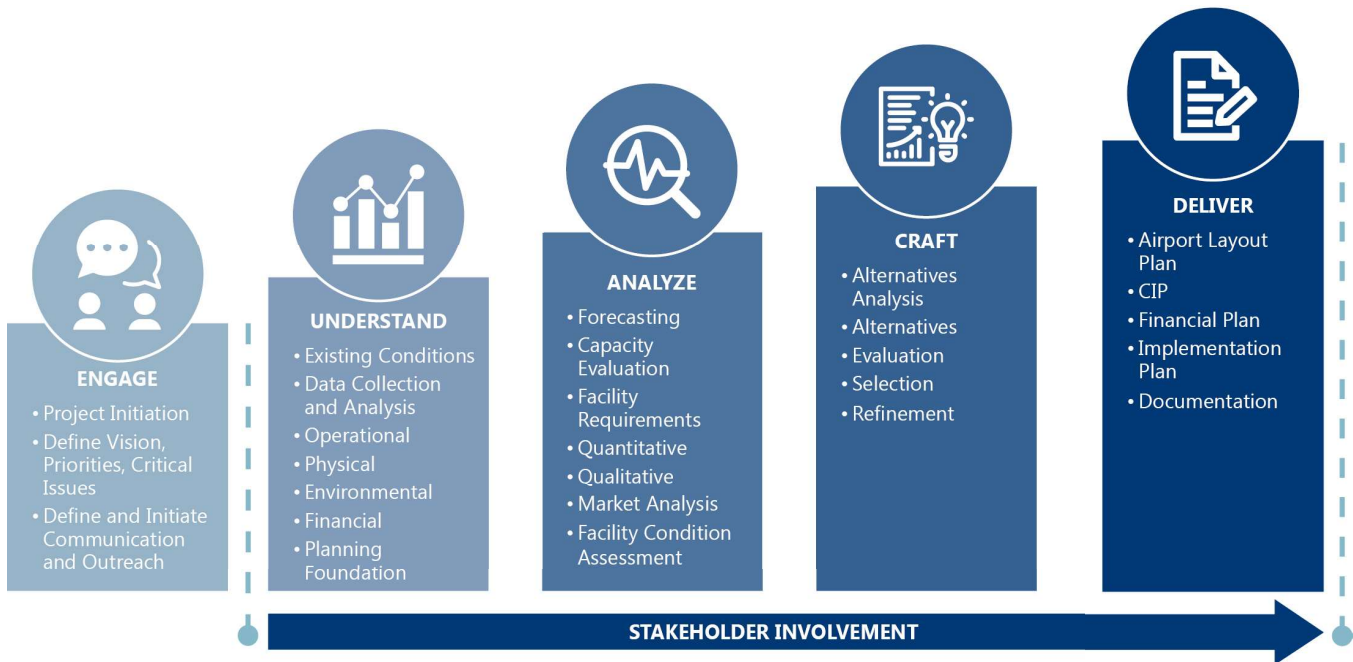
on the Airport's history, airspace and air traffic control facilities, airfield facilities, passenger terminal and concourse facilities, ground access and parking facilities, rail transit facilities, support and ancillary facilities, environmental conditions, meteorological conditions, and utilities.

- Section 3 – **Aviation Activity Forecast:** A review of the historical aviation activity trends at the Airport and the development of forecasts of aviation activity including enplanements (originating, connecting, domestic, international), aircraft operations, and air cargo to provide a basis for facility planning.
- Section 4 – **Demand/Capacity and Facility Requirements:** The analysis of the relationships between existing facility operational capacity and aviation activity demand, and the development of future facility capacity required to safely and efficiently accommodate forecast aviation activity at an appropriate level of service.
- Section 5 – **Alternatives Analysis:** The identification of facility development concepts that meet the facility requirements necessary to accommodate future demand, and the systematic process of evaluation and refinement to identify a preferred plan of development.
- Section 6 – **Airport Development Plan:** The presentation of the recommended development plan, its components, general implementation schedule, and estimated development costs.
- Section 7 – **Environmental Overview:** The review of potential environmental consequences associated with the development actions identified in the Airport Development Plan.
- Section 8 – **Noise Analysis:** The analysis and prediction of aircraft noise associated with aircraft operations at a 10-year horizon in the context of the Airport Development Plan.
- Section 9 – **Implementation Plan:** The description of a project-based implementation of the facilities and changes necessary to meet future demand over the planning horizon.
- Section 10 – **Financial Analysis:** The potential funding sources and a potential funding plan for the Capital Improvement Program (CIP) projects, including major capital expenditures intended to maintain the Airport over the planning horizon and implement improvements required to meet forecast demand.
- Section 11 – **Community and Stakeholder Engagement:** The activities conducted in engaging the community and relevant stakeholders to share intermediate analyses and conclusions, gather feedback, and share the final conclusions.

1.1 METHODOLOGY

The master planning process began with an inventory of the physical and operational characteristics of the Airport and its environs. An aviation demand forecast was developed from the 2018 base year for a 22-year planning horizon (2040) and was ultimately reviewed and approved by the FAA. This forecast was used to establish future requirements for airfield, terminal/gates, landside (access and parking), and support facilities, which were then used to define alternatives for each component. These alternatives were screened, integrated, and evaluated to select an overall preferred development plan. This development plan was subsequently refined to strengthen any deficiencies. An implementation plan, including timing and triggers for the various development components, and construction cost estimates were developed for subsequent use in financial planning. **Exhibit 1-1** presents the master plan process.

EXHIBIT 1-1 MASTER PLAN PROCESS



SOURCE: Ricondo & Associates, Inc., September 2018.

1.2 MASTER PLAN VISION AND GOALS

As a roadmap for the future of Milwaukee Mitchell International Airport, the Master Plan Update defines a development framework for MKE that is intended to:

- Safely and efficiently accommodate future aviation demand throughout the planning period (2040)
- Be responsive to the communities served by the Airport
- Provide flexibility to respond to the dynamic nature of the aviation industry
- Optimize Airport infrastructure and resources in an operationally, financially, and environmentally sustainable manner, and
- Recognize revenue-generating opportunities while effectively managing land uses and development of Airport property.

The future of MKE will reflect a flexible and practical approach to capitalizing on the right-sizing and optimizing of existing facilities, triggered development to accommodate emerging demand, and redevelopment of on-Airport assets, while maintaining functionality of the existing airfield, terminal, access, and support facilities. The Master Plan Update recommends a new development plan, describing the size, location, and implementation plan for Airport facility expansion or development, following an evaluation of development alternatives that tests the demand/capacity relationship and potential effects associated with their implementation.

In working sessions with the Airport leadership, a vision for the future of MKE and master plan-specific goals were established to guide the Master Plan Update, as well as to identify key issues for exploration during the planning process. Input generated from these working sessions highlighted the aviation-related priorities of Milwaukee

County that can influence the planning process and can be captured among the Master Plan Update goals, essentially serving as a vision of the future of the airport within the local, national, and aviation communities.

Identified aviation-related priorities were captured in four main categories:

- **Community**
 - Develop MKE as a centerpiece for community pride.
 - Emphasize partnerships that enhance employment, education, access, and opportunity.
 - Establish MKE as a destination that is viewed as part of the travel experience, recognizing the opportunities for a “front door” that enhances the experience.
 - Recognize the interests of MKE’s community, stakeholders, and passengers in the development of the Airport.
- **Aviation**
 - Be recognized as a reliable and dependable airport for pilots and air service providers.
 - Be recognized as an asset to the regional airspace.
 - Provide flexibility to adapt to a dynamic aviation industry.
- **Economic and Financial**
 - Develop MKE to be an economic generator for the surrounding community.
 - Remain cost competitive with the aviation marketplace.
 - Provide equitable opportunity for the community.
- **Passenger/Customer**
 - As a modern and passenger-friendly airport, become the airport of choice for Wisconsin and Northern Illinois passengers.
 - Deliver a high-quality experience for passengers, providing the opportunity for memorable experiences.
 - Establish the airport journey as part of the overall travel experience.
 - Through technological amenities, provide for a well-connected experience.
 - Create an environment that is a “want to go to” place instead of a “have to go to” or “have to deal with” experience.
 - Strive to become an established, appreciated, and preferred airport “brand,” perceived as an affordable and time-saving gateway.
 - Adapt to changing market conditions and passenger expectations.
 - Leverage differentiators (including quick, easy, and convenient access, greater customer attention, and a more relaxing, less stressful experience than other alternatives) that make MKE unique.

The identified priorities influenced and informed specific development decisions. Alternatives were explored and ultimately specific developments were included in the master plan conclusions. The working sessions suggested an incremental vision for the long-term evolution of MKE, leveraging the aspects of the airport that are functioning

well and recognizing the financial investments and challenges that a more transformative view would encompass. An incremental vision of the Airport's development typically encompasses more moderate changes that occur continuously (as needs are triggered) over time to reach a future state.

In the context of an incremental vision of MKE's future development, input from the working sessions was molded into eight specific goals, identified below, addressing priorities explored during the supporting discussions.

The Master Plan Update goals include:

- Affirm a future-focused airport that supports aviation growth in a safe, efficient, and cost-effective manner through an organized and synergistic long-range development plan.
- Adopt scalable development plans that flexibly accommodate variations in demand and technology over the planning horizon.
- Optimize infrastructure and resources in an operationally, financially, and environmentally sustainable manner.
- Recognize opportunities for enhanced non-aeronautical revenue generation in the utilization of MKE property and amplify the revenue-generating potential of Airport property.
- Seek opportunities for enhanced customer and passenger experience.
- Recognize opportunities to enhance sustainability, resiliency, and environmental sensitivity over time with continued growth of MKE.
- Protect long-range utility of the Airport (post-2040).
- Define a long-range development plan that reflects MKE's role in the community and recognizes diversity in community stakeholder priorities.

The consensus Master Plan Update goals will be used in the development, screening, and evaluation of the alternatives that are explored in the planning process.

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