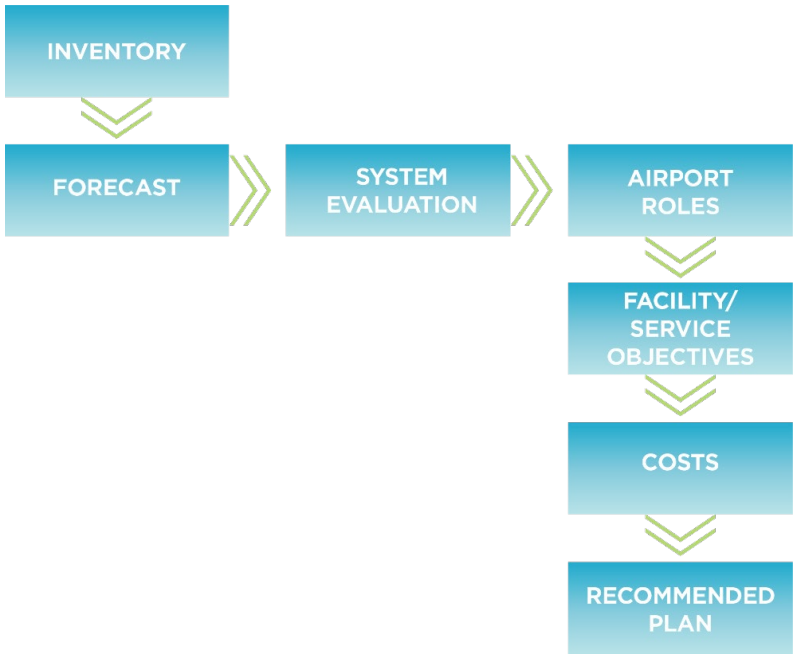
1. INTRODUCTION

In the fall of 2018, the Missouri Department of Transportation (MoDOT) embarked on a study to update Missouri's State Airport System Plan, which was last published in 2002. Since then, Missouri has experienced changes in population and employment, and there have been changes in the aviation industry, including consolidation of the mainline or network commercial airline carriers. Commercial carriers are also flying airplanes with higher seating capacities; this means airlines are carrying more passengers on fewer flights. Since the last System Plan, the general aviation industry has experienced limited and even, in some cases, declining growth. The number of single-engine piston aircraft in the active fleet has declined, but with recent growth in the U.S. economy, the business segment of the general aviation industry has experienced resurgence. Changes in technology have also enabled additional airports in Missouri to have a non-precision instrument approach using Global Satellite Positioning (GPS) equipment. This update to the System Plan reflects changes in the state that have taken place since the last Plan was published, while also considering changes in the aviation industry.

The update to Missouri's State Airport System Plan was accomplished in a series of separate but interrelated steps; these steps are described below and are graphically depicted in **Figure 1-1**.

FIGURE 1-1: SYSTEM PLANNING PROCESS



Source: Jviation

Inventory: Outreach to the 107[1] study airports was the backbone of the inventory effort. Some of the analyses were also based on information provided by MoDOT, as well as data from the Federal Aviation Administration (FAA). The Inventory chapter provides information on current facilities, services, and activity. Data collected and documented as part of the study provided input for all technical elements of the System Plan.

[1] The System Plan included 107 study airports; these airports represent Missouri's public-use airports. It is important to note that there are many other airports in Missouri, but these airports are private-use and were therefore not included in the system planning analysis.

Forecasts: Most recommendations for airports in the state airport system are based on the airport's assigned role, but some are based on projected levels of future aviation activity. As part of the System Plan update, 20-year projections of aviation demand were developed for based general aviation aircraft and annual general aviation operations. Statewide, based aircraft are expected to increase from 3,233 to 3,542, and annual general aviation operation are forecast to grow from 1.05 million to 1.18 million.

System Evaluation: Evaluating the Missouri airport system to identify its adequacies and deficiencies helps the state develop a plan that shapes a viable and balanced system of airports. A series of drive-time performance measures were established for this update to the System Plan. Drive-time service areas for the airports were established using a mapping tool, and additional mapping analysis was undertaken to determine current accessibility ratings for each of the performance measures. This step established a system report card so that in subsequent planning cycles, the airport system can be evaluated using the same performance measures to identify changes between reporting cycles. **Table 1-1** shows measures that were used to evaluate system performance, along with accessibility ratings as they were established by the study's mapping analysis.

TABLE 1-1: CURRENT SYSTEM PERFORMANCE BY MEASURE

Performance Measure	Missouri Residents in Service Area
60-Minute Accessibility to an Airport with Scheduled Commercial Airline Service	
• 60-Minute Current Accessibility to Missouri Commercial Airports	80.9%
• 60-Minute Current Accessibility to Missouri and Nearby Commercial Airports	82.1%
90-Minute Accessibility to an Airport with Scheduled Commercial Airline Service	
• 90-Minute Current Accessibility to Missouri Commercial Airports	85.5%
• 90-Minute Current Accessibility to Missouri and Nearby Commercial Airports	85.9%
30-Minute Accessibility to an Airport with a Published Approach	
• 30-Minute Current Accessibility to a Missouri Airport with a Published Approach	84.7%
• 30-Minute Current Accessibility to a Missouri or Nearby Airport with a Published Approach	86.7%
30-Minute Accessibility to an Airport with an Approach Supported by Vertical Guidance	
• 30-Minute Current Accessibility to a Missouri Airport with a Vertical Guidance Approach	79.7%
• 30-Minute Current Accessibility to a Missouri or Nearby Airport with a Vertical Guidance Approach	83.8%
30-Minute Accessibility to an Airport with Weather Advisory Reporting	
• 30-Minute Current Accessibility to a Missouri Airport with Weather Advisory Reporting	82.6%
• 30-Minute Current Accessibility to Missouri or Nearby Airport with Weather Advisory Reporting	88.0%
30-and 45-Minute Accessibility to Airports Exhibiting Selected NBAA Medium & Light Business Jet Airport Characteristics	
• 45-Minute Current Accessibility to Missouri Airports Meeting Acceptable NBAA Medium Business Jet Airport Characteristics	77.8%
• 45-Minute Current Accessibility to Missouri or Nearby Airports Meeting Acceptable NBAA Medium Business Jet Airport Characteristics	79.3%
• 30-Minute Current Accessibility to Missouri Airports Meeting Acceptable NBAA Light Business Jet Airport Characteristics	70.9%
• 30-Minute Current Accessibility to Missouri or Nearby Airports Meeting Acceptable NBAA Light Business Jet Airport Characteristics	73.1%
• 45- and 30-Minute Current Accessibility to Missouri Airports Meeting Acceptable NBAA Medium or Light Business Jet Airport Characteristics	84.6%

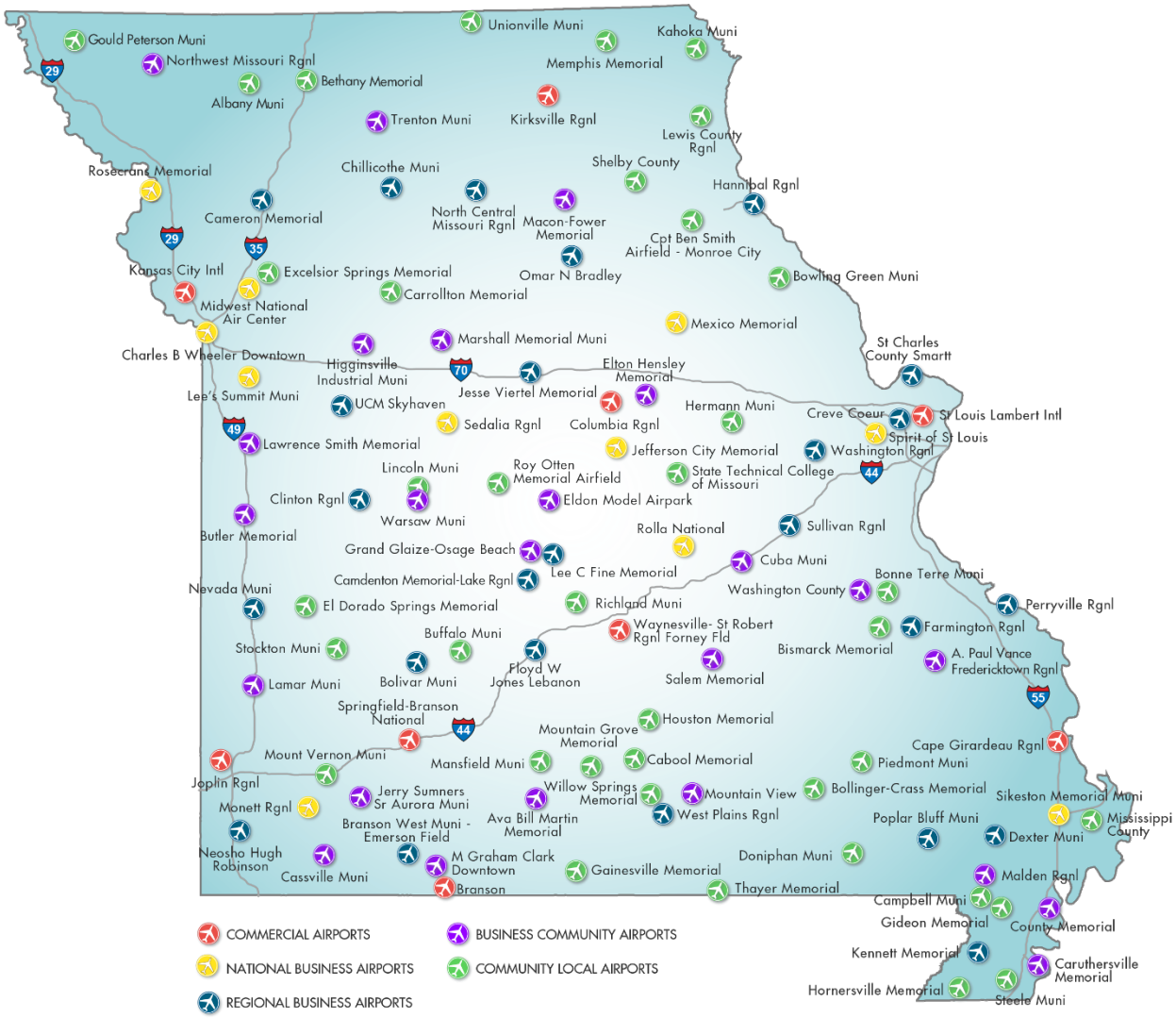
TABLE 1-1: CURRENT SYSTEM PERFORMANCE BY MEASURE

Performance Measure	Missouri Residents in Service Area
• 45- and 30-Minute Current Accessibility to Missouri or Nearby Airports Meeting Acceptable NBAA Medium or Light Business Jet Airport Characteristics	85.7%
System Performance for Pavement Condition Index (PCI)	
• Percentage of System Airports with a PCI of 70 or greater	68.0%

Source: Jviation

Airport Roles: As part of a prior System Plan, MoDOT established different roles all Missouri airports. As part of this update, with input from the study's Project Advisory Committee, airport roles were updated, and a new role category established. Airport roles are based on factors such as facilities, activity, services, and market area characteristics. Airports in Missouri are assigned to one of the following roles: Commercial, National Business, Regional Business, Business Community, and Community Local. **Figure 1-2** shows the recommended airport system.

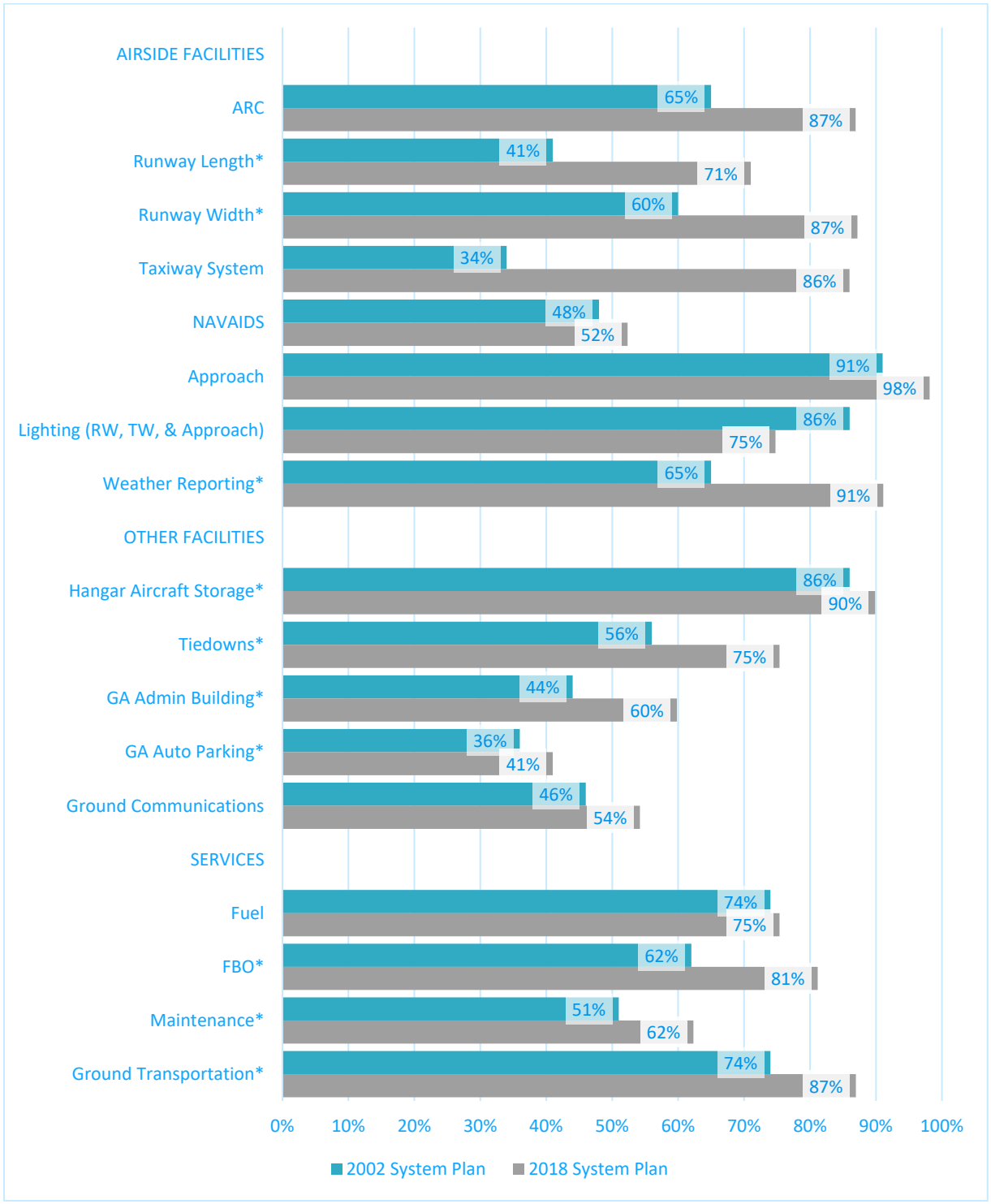
FIGURE 1-2: RECOMMENDED MISSOURI AIRPORT SYSTEM



Source: System Plan analysis; study Project Advisory Committee

Airport Facilities/Future Airport Performance: Airports in each of the airport roles have established facility/service objectives; these objectives are considered the minimum to which each airport should be developed to enable the airport to meet its assigned role in the state airport system. Existing facilities/services at each airport were compared to the airport's respective objectives to identify needed improvements. System performance, both statewide and by airport level for all objectives, is summarized graphically as part of this step in the planning process, and actions needed at each airport to bring the system into full compliance with all objectives are identified. The results of this evaluation were used to establish a report card for each airport; the airport report cards identify projects and anticipated costs needed to improve the system so that Missouri airports are 100 percent compliant with all development objectives. Airport report cards are included in each airport's Individual Airport Report, which are available through MoDOT. **Figure 1-3** shows statewide performance for the facility and service objectives.

FIGURE 1-3: STATEWIDE COMPARISON OF FACILITY AND SERVICE OBJECTIVE PERFORMANCE



Source: MoDOT, Missouri Airport Manager Survey, 2002 Missouri State Airport System Plan
Note: *The 2018 calculation only includes applicable roles. For example, because there is no established objective for the runway length at Local Community airports, these airports are excluded from the 2018 calculation for meeting this objective.

Recommended Plan: The final chapter of the System Plan update identifies costs to improve the system to meet all airport role-related objectives. Statewide costs are summarized in total by airport role and by type of project. Current Capital Improvement Plans (CIPs) for each airport were compared to System Plan recommendations to determine if any airports have projects planned that will enable them to resolve any noted deficiencies related to System Plan objectives. MoDOT also has a Statewide Pavement Management Plan that identifies needed pavement maintenance and improvement projects for most system airports. As part of the recommended plan, projects from the System Plan, CIPs, and Pavement Management Plan were reviewed in an attempt to identify and remove any duplicate projects to avoid double-counting financial requirements for the airport system. The recommended plan identifies estimated five-year and average annual investment needs for the Missouri airports.

The System Plan provides MoDOT with guidance to help ensure that Missouri is served by a balanced and viable airport system. This update provides key information that shows how MoDOT programs and investments have combined to improve the performance of the state airport system since the 2002 System Plan. The approach to updating the System Plan was performance-based, enabling MoDOT to understand:

- How the airport system was performing at the time of the 2002 System Plan;
- How the airport system is currently performing; and
- How the system should be improved in the future to meet statewide transportation and economic objectives.

The strategic approach utilized for this study helps ensure that Missouri has a system of public-use airports that are conveniently located to meet the needs of commercial aviation, business and corporate users, and personal and recreational flyers.

Communication and outreach were underpinnings to the success of this System Plan update. The study started by directly contacting each of the 107 study airports; each airport was contacted by mail and subsequently interviewed. Information on how airports could stay involved in the study was provided via a project website: https://www.modot.org/aviation-general-information. The System Plan update is a top-down study whose recommendations must still be implemented from the bottom-up by individual study airports. Therefore, direct communication with study airports was important to the study's ultimate success.

A project Focus Group meeting was held at the onset of the study. Individuals representing statewide aviation, transportation, and economic interests comprised the Focus Group. These representatives provided input on a variety of topics, including: infrastructure needs for the Missouri airports; funding challenges that the airports face; community support and understanding of the needs and benefits of the airports (including airport grant assurances related to protection from encroachment); weaknesses and opportunities that currently characterize the state airport system; and the potential for national trends in the aviation industry to impact the airports.

A Project Advisory Committee (PAC) was established and met three times over the course of the study to provide input on draft findings and recommendations. The PAC was instrumental in establishing recommended roles for the study airports. Project webinars enabled all airports and others to learn about the final study findings.

The primary output from the update to the System Plan is a Technical Report that documents all study analysis, findings, and recommendations. An Executive Summary provides a high-level summary of the much more extensive Technical Report.

An Individual Airport Report was prepared for each study airport. This report summarizes each airport's specific findings and recommendations from the System Plan and contains each airport's report card. These report

cards provide a summary of projects and costs that the airport should anticipate in the next five years. All study-related reports are available through MoDOT.

Technical elements that form the 2018 Missouri State Airport System Plan are presented in the following chapters.

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