

INTRODUCTION

The Reno-Tahoe Airport Authority (RTAA) owns and operates the Reno-Tahoe International Airport (RNO or Airport). The RTAA launched a comprehensive update of the Airport Master Plan (Plan) in October 2016. The Plan addresses the future of RNO in the context of socioeconomic changes occurring in the Northern Nevada and Lake Tahoe region, along with an evolving aviation industry and regulatory environment.

The RTAA completed RNO's previous Airport Master Plan in 1991. Since the 1991 study, many smaller, targeted studies have addressed other specific Airport issues. Recent and lasting changes to the region and within the aviation industry have made this the appropriate time to take a comprehensive look at the Airport's potential for the future.

The Nevada State Demographer shows 2.2 percent population growth in the Reno-Sparks Metropolitan Statistical Area (MSA) since 1991. The most recent July 2015 official population estimate for the MSA is 445,930, which represents a 1.2 percent increase for the same period in 2014. Since 2010, the Reno-Sparks MSA population growth rate has hovered between 1.0 percent and 1.4 percent. Within Washoe County, annual population growth rates have averaged 2.9 percent from 1991 through 2007, with a few years reaching upwards of nearly 4 percent growth. Beyond the Reno-Sparks MSA, the population of the 10 counties that make up the Airport's service area grew by approximately 0.7 percent compared to the 2015 Reno-Sparks MSA growth rate of 1.2 percent.

The 2016 estimates by the Nevada State Demographer anticipate a continued growth rate of 1.2 percent annually in the short-term population projections (2015-2020) for the Reno-Sparks MSA and Northwest Nevada area, which translates into approximately 5,000 to 6,000 persons each year. Chapter One, Inventory of Existing Conditions, provides additional demographic information.

Northern Nevada has begun to diversify into a center for emerging manufacturing, research, and technology. Millennials, or those born between 1982 and 2004, make up the fastest growing segment of the workforce and play a significant role in determining the region's future housing, employment, communication, and transportation needs. Northern Nevada and Lake Tahoe continues to define itself as a destination for world-class outdoor activities, entertainment, and industry.

Local governments and the private sector have responded to these changes and subsequent needs through the construction of new housing, recruitment of major employers, and investments in communication technologies and transportation infrastructure. Tesla Motors has committed to an investment of up to \$5 billion for the development of a "gigafactory," which is anticipated to support thousands of new jobs. Fiber optic cables, installed by Switch along Union Pacific's "Overland Route," pass through Reno and Sparks and serve as a primary digital and fiber optic highway for internet traffic in the U.S. The fiber optic highway allows companies such as AT&T, Level 3, Qwest, and Verizon to support the development of data centers for several major technology companies, including Apple, Switch, and eBay. Combined, these data centers are expected to contribute \$2.5 billion of investment into the region.

The commercial airline industry experienced several changes since 1991. Security measures increased because of September 11, 2001. Passengers have fewer choices due to airline consolidation (e.g. fewer

flights, destinations, and airlines to choose from). Cell phones developed into the primary communication device and travel tool for travelers. Ticket costs evolved through add-ons such as checked baggage and seat selection fees. The availability of transportation network companies continues changing how travelers access the airport. Dramatic shifts in oil prices since the recession of 2008 mean higher costs for passengers as average airline fares continue to increase. Similarly, due to the competition among legacy and low-cost carriers', passengers are more willing to travel greater distances before reaching an airport to obtain less expensive fares. Despite these changes, 2015 passenger numbers at RNO show they are starting to recover from the 2008/2009 recession, and the FAA projects that national passenger enplanements will exceed one billion passengers per year before 2030.

The air cargo industry also experienced significant changes since the recession of 2008. Unprecedented fuel costs forced several former major all-cargo carriers such as BAX Global, Emery Worldwide, and Kitty Hawk to ground freighter aircraft, to be acquired, or go into bankruptcy. During the same period, DHL withdrew service from the US domestic market and began concentrating entirely on the international market. As of 2016, more than 90 percent of total domestic annual freight from RNO is flown by FedEx and UPS and the majority of belly cargo is flown by Southwest Airlines. According to Airport Consultants International North America's (ACI-NA) 2015 US air cargo rankings, RNO places 54th for total volume for air cargo handled. Total air cargo handled at RNO has increased by approximately 35 percent since 2009.

Changes also occurred in the general aviation industry following the recession of 2008/2009. From 2005 to 2015, total general aviation operations declined by an annual average of 1.7 percent per year. Despite this overall decline, corporate general aviation and flight training continue to grow as business travelers respond to less frequent commercial flights, and the airlines tackle pilot shortages, while recreational pilots have cut back on flight hours. Older aircraft are being retired and replaced with a sophisticated new generation of general aviation aircraft, complete with state of the art navigation and communication equipment.

The use of unmanned aerial systems (UAS) or drones within the US is an emerging technology that will be considered as part of the Plan. The benefits of UAS are wide ranging but need to be carefully evaluated as they may have an impact to airport operations in the future.

The regulatory environment has evolved, and FAA Advisory Circulars, guidance standards and regulations on airport design and operations, are updated regularly. The FAA has put an increased emphasis on simplifying airfield geometry and meeting design standards, which influence airfield layout and design. The aviation industry continues to adapt to changing environmental regulations, reducing the impacts from aircraft and airport operations. New types of fuel, satellite navigation procedures, and more efficient and quieter engine technology will further reduce some of the negative consequences associated with aircraft operations.

The Plan will serve as a 20-year guide for facility improvement and development at RNO, while also supporting RTAA goals and objectives. A robust analysis of historical trends and regional sensitivity to economic boom and bust will form the basis recommendations on how the Airport can develop and grow, while supporting safe, efficient, and financially and environmentally sustainable operations and providing a high level of customer service.

The sections that follow provide additional detail about the Plan, the process, and the ultimate deliverable.

What is an Airport Master Plan?

An airport master plan is a comprehensive study of an airport that usually focuses on short-, medium-, and long-term development plans to meet future aviation demand. The vitality of air transportation as a community industry makes it important that requirements for new, improved, or expanded airport facilities be anticipated in planning. The scope of an airport master plan focuses on identifying the development and facilities needed to support an FAA-approved forecast.

Many elements of airport operations and management are outside of the scope of this Plan, such as staff organization, marketing, and general repair and maintenance. The Plan focuses on facilities that serve passengers, air cargo, aircraft owners, pilots, and Airport tenants and provides guidance on how the facilities need to be updated and changed to maintain a high level of service to the flying public into the future.

What the Plan “is”

- ❖ A long-term development plan for the Airport over the next 20 years,
- ❖ A detailed and comprehensive data analysis of existing conditions and future trends,
- ❖ A Plan with a focus on long-term facility development and land use,
- ❖ A document assembled through extensive community outreach, and
- ❖ A flexible, living document that will serve the Airport for years to come.

What the Plan “is not”

- ❖ An engineering level document,
- ❖ A rigid “blue print” for future development,
- ❖ A program to move the Airport to another location,
- ❖ A business, strategic, or marketing plan, or
- ❖ An environmental permitting document.

The Plan is one of several documents produced by the RTAA that guides Airport operations. The Plan development considers the other documents already in place and refers to these documents as appropriate.

Master Plan Elements

The Plan is organized into six core elements that translate into comprehensive chapters as the plan is developed. Each element is a building block that will result in the final Plan document. The purpose behind each element is described below.

- ❖ **Inventory:** This element answers the question “What do we have?” This element describes facilities and levels of activity currently existing at the Airport, and how they have changed over time. The inventory is the foundation of subsequent Plan elements.
- ❖ **Aviation Forecasts:** This element answers the question “How much demand do we expect?” Understanding future demand is a critical part in the decision-making process that occurs during Plan development, and the execution of the ensuing capital improvement plan. The forecasts look at the

volume of passengers and cargo, the number of based aircraft, and the movements of aircraft to describe how the use of the Airport will change over time. Aviation forecasts are pivotal in justifying future improvements and helping the FAA determine funding priority. For these reasons, the FAA must approve the aviation forecasts. This is one of only two Plan elements that the FAA formally approves.

- ❖ **Facility Requirements and Demand / Capacity Analysis:** This element answers the question “Are our existing facilities sufficient to meet future demand?” This element can be thought of as a gap analysis between the facilities that the Airport has (inventory) and the facilities it will need (based on the forecasts). This element will yield recommendations on which facilities need improvement, expansion, replacement, and removal and will provide an idea of the scale of facility changes needed to meet future demand. This element will also address the potential for Airport modernization to address evolving technologies and preferences.
- ❖ **Airport Alternatives and Environmental Considerations:** This element answers the question “How will we meet future demand?” This element builds on the recommendations in the Facility Requirements and Demand / Capacity Analysis element, and assesses a variety of alternatives to meet future needs. Alternatives are evaluated based on cost, environmental impact, construction feasibility, and operational integration with the existing airfield and facilities. A preferred alternative for each facility type is recommended based on the analysis and carried forward in the Plan.
- ❖ **Financial Feasibility Analysis and Facilities Implementation Plan:** This element answers the following questions: (1) When do we need to build them; (2) How will we pay for these improvements; and (3) What is the affordability and the potential rates and charges impact on airline costs servicing RNO. The preferred alternatives are plotted on a timeline of when they are expected to be needed, based on the forecasts. A financial plan is prepared that addresses up-front capital costs, ongoing operations and maintenance costs are identified, and the financial impact and feasibility evaluated. The outcome of this element is a phased capital improvement plan that will guide the RTAA through the facility development process.
- ❖ **Airport Layout Plan Set with Exhibit ‘A’:** This element is the graphical depiction of the preferred improvements identified in the Plan. This document shows how the airfield will look once the improvements have occurred and illustrates the conceptual ultimate plan. This is the second part of the Plan that must be formally approved by the FAA. Only improvement projects depicted on an approved Airport Layout Plan are eligible for FAA funding.

Public Involvement is a process that occurs constantly throughout the development of the Plan. The purpose of public involvement is to include Airport stakeholders and other interested parties in the process of developing the Plan. The public involvement process allows questions and concerns to be addressed early in the plan process and is intended to make the Plan reflect the goals and objectives of the stakeholder community the Airport serves. Public involvement for this Plan includes a Master Plan Working Group (MPWG) made up of key stakeholders; open houses for the public; a project website; newspaper, TV news, and website posts; social media outreach; and targeted stakeholder group interviews.

The MPWG consists of local tenants, airline representatives, air traffic control staff, and local stakeholders. The group meets at seven key project milestones and helps guide the Plan, so the product reflects local goals and objectives. The purpose of the MPWG is to provide information to the project team, communicate with respective stakeholders, act as a sounding board for study recommendations, provide high level review of

the plan elements, give feedback on established project goals and objectives, and promote public participation during public information meetings.

Project Vision

The project vision sets the stage for why the RTAA is undertaking the Plan and is the basis for the established goals and objectives. The Plan's ultimate success will be determined by how well the process and recommendations met the vision, described below:

The Plan project vision is to provide an achievable, flexible, fiscally, and environmentally responsible road-map that will help ensure that Reno-Tahoe International Airport can accommodate future activity levels, further its position as a domestic and international gateway, and support regional economic development initiatives.

Project Goals and Objectives

RTAA has specific goals and objectives for the Plan from an organizational perspective. As shown in **Figure I-1**, the goals and objectives reflect the project vision and the high level of service that the RTAA wants to provide to the traveling public.

Figure I-1: Project Goals and Objectives Diagram



- ❖ **Stakeholder Input:** RNO is an essential public facility and Airport development is intended to occur in line with community needs. The Plan should reflect the community. This will be achieved by providing ample opportunities for stakeholders to interact with the project team, become informed on key plan elements and decisions, and share their opinions with the RTAA.
- ❖ **Safety and Security:** The overarching goal of any airport operator is to provide safe and secure facilities for the traveling public, staff, and those who live and work nearby. Improvements recommended in the Plan will undergo a safety management system (SMS) evaluation to address any elements that would compromise safety and security as the plan is implemented.
- ❖ **Economic Viability:** Preserving the long-term economic viability of the Airport is a primary goal. The Plan will include a financial capacity analysis to determine the Airport's current financial condition. This analysis helps to determine what level of capital spending is affordable based on an airport operator's strategic financial goals and objectives. The results will provide guidance on maintaining an affordable climate for the Airport, the Airlines and its partners.
- ❖ **Enhance the Customer Experience:** The Plan has a focus on the customer experience, looking at facility improvements to make travel more enjoyable. The Plan will consider how customers use the Airport facilities from the moment they arrive on property to the moment they leave. Alternative evaluation will consider how changes will improve the overall customer experience.
- ❖ **Environmental Stewardship:** Recommended facility improvements will be evaluated based on their impact to the environment. Plan goals will build on the RTAA's environmental goals and objectives and incorporate airport industry best practices. Improvements will seek to minimize environmental impact in terms of nature and the community.
- ❖ **Optimize Facility Utilization:** The Plan will evaluate the efficiency in how Airport facilities are used and provide recommendations to use facilities differently for greater efficiency. The goal is to make the best use of what currently exists through operational and capital improvements before substantial investment in new facilities. Achieving this goal will help the RTAA control costs while still providing a high level of customer service.
- ❖ **Realistic Aviation Forecasts:** Forecasts will drive decision-making in the Plan and for years to come. Forecasts are developed by industry experts, reviewed by the RTAA and its Airport stakeholders, and ultimately will be accepted by the FAA as reasonable projections of aviation activity. Realistic forecasts will help scale future improvement projects so that a high level of service can be provided without costly overbuilding.
- ❖ **Future Flexibility:** Aviation is a dynamic industry, and the future is uncertain. One of the most important elements of a 20-year plan is flexibility. The Plan will strive to avoid predicting changes but provide recommendations with enough flexibility that the RTAA can continue to adapt despite rapid technological and socioeconomic development.