



Regional Plan Goals & Policies of the Reno-Stead Airport 2013



**Reno-Tahoe
Airport Authority**

**And
up we
go.**

REGIONAL PLAN GOALS & POLICIES OF THE RENO-STEAD AIRPORT

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Reno-Tahoe Airport Authority

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Table of Contents

Chapter	Page
I. INTRODUCTION	3
II. BACKGROUND	5
III. ROLE	9
IV. EXISTING FACILITIES	11
V. VEHICLE / TRANSIT / PEDESTRIAN ACCESS	14
VI. CONSTRAINTS	16
VII. LAND USE	21
VIII. DEMAND FORECAST	26
IX. PROPOSED FACILITIES	31
X. SUSTAINABLE DESIGN	38
XI. POLICIES	39

Figures	Page
Figure 1 – Planning Area	4
Figure 2 - Circulation Plan	15
Figure 3 – Wetlands	18
Figure 4 – Drainage	19
Figure 5 – Injection Wells	20
Figure 6 – Reno Master Plan Designations	23
Figure 7– Airport Land Use Plan	25
Figure 8 – Defined Catchment Area	28

Tables	Page
Table 1 – RTS 2010-2030 Forecast	29

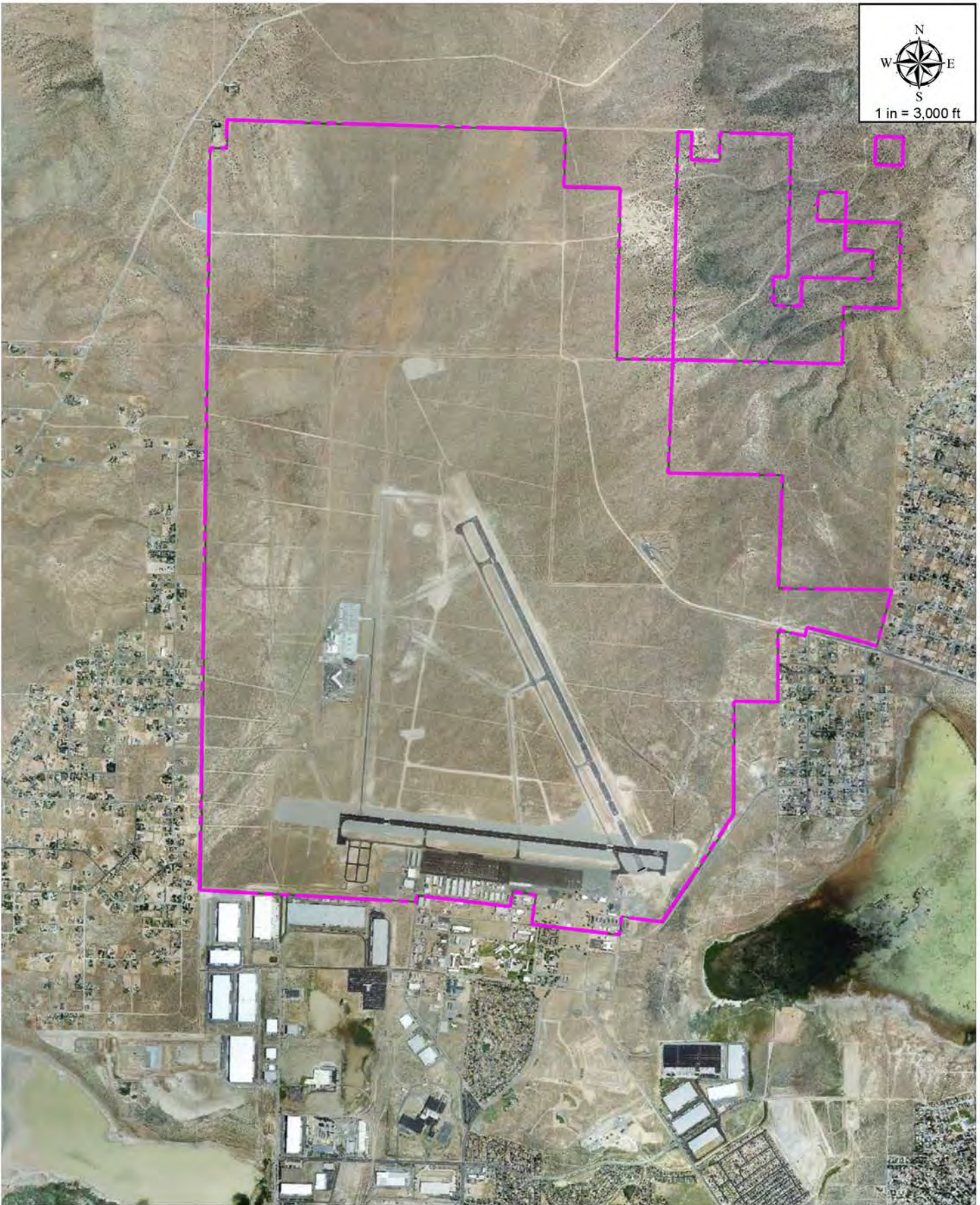
I. Introduction

The Regional Plan Goals & Policies of the Reno-Stead Airport (referred to hereafter as “Document”) has been prepared to provide an overview of the nature of the operations and characteristics of the Reno-Stead Airport (RTS), one of just 3,355 public-use airports that have been identified as significant to the national air transportation system by the Federal Aviation Administration (FAA). This Document also defines the future needs and planned facility improvements to accommodate the demands generated by growth in based aircraft and aircraft operations, allowing the RTS to serve the Truckee Meadows region and fulfill its role as a general aviation reliever airport within the national airport system. This Document provides a framework for future land uses that may occur on property owned and controlled by the Reno Tahoe Airport Authority (RTAA) and is intended to provide a guide for the next twenty years of airport growth.



The timing of specific improvements is, in large part, driven by external demands. Community, regional and national economic factors influence the demand for the services provided at the RTS. Additionally, changes to aircraft characteristics, to navigational aid technology, and to safety and security mandates impact airport facility requirements. Therefore, it must be understood that any long term plan for RTS needs to be flexible and allow the RTAA to respond to these ever changing external influences. The timing and scale of facility improvements identified in this Document are only for planning purposes and may change based on actual future conditions.

This document is based, in part, on previously completed plans and studies commissioned by the RTAA. The planning area is shown on Figure 1.



Reno-Stead Airport
Planning Area

Figure 1

II. Background

Celebrating 71 years of service in 2013, the airport, which was originally constructed in 1942 and operated as the Reno Army Air Base, has changed names and ownership several times. Under military control for its first 24 years of operation, the airport was not open for public use until 1966. The airport has been under the guidance of an airport authority since 1977 when the Nevada Legislature created the Airport Authority of Washoe County. In 2005, the name of the controlling entity was changed to the Reno-Tahoe Airport Authority (RTAA).



Today's airport, the Reno-Stead Airport (RTS), received its current name in 1966.

The RTAA is a quasi-municipal corporation and is also operationally independent, providing its own police and fire departments, along with all administrative functions including human resources, accounting, engineering etc. While the RTAA has eminent domain powers, it has no taxing authority, land use, zoning or development permitting control. The RTAA operates as a business and receives no local sales or property tax dollars. Financially self-sufficient, the RTAA runs both the RTS and the Reno-Tahoe International Airport on fees and rentals collected from airport tenants (e.g. airlines, rental car agencies, restaurants, gaming machines, gift shops, land leases). The annual operations and maintenance expenses of the RTAA is paid



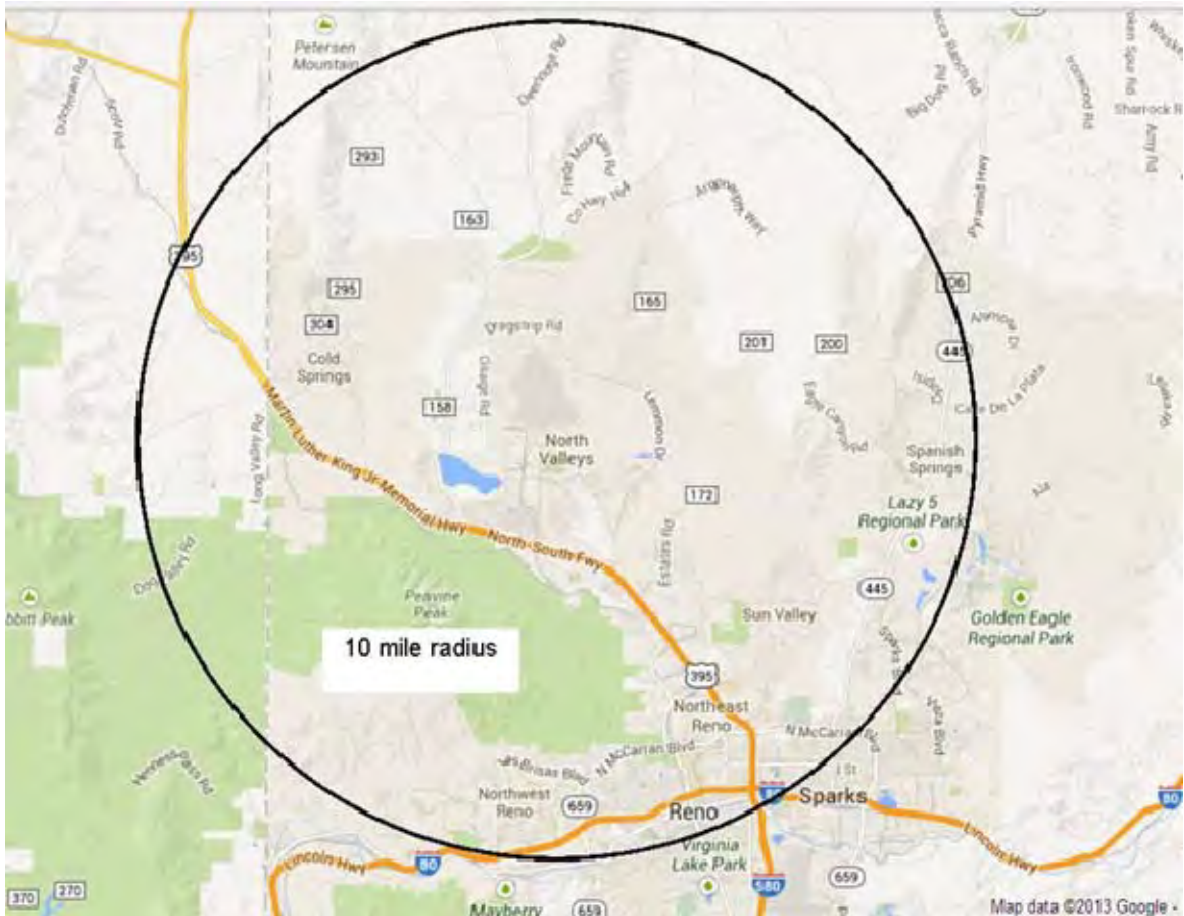
by non-airline sources primarily (68 percent – e.g. parking, rental cars, concessions) with airline sources covering the remainder (32 percent – landing fees, terminal building rent).

Guided by a special act of the Nevada Legislature (Reno-Tahoe Airport Authority Act –Chapter 474, Statutes of Nevada 1977), the RTAA was created to plan, acquire, construct, improve and operate one or more airports within Washoe

County. The RTAA Board consists of nine members appointed by the Reno City Council, Sparks City Council, Washoe County Board of County Commissioners and the Reno Sparks Convention and Visitors Authority (aka County Fair and Recreation Board of Washoe County). The RTAA is charged with maintaining and enhancing facilities at RTS, based on the current type of aircraft operations, consistent with the

requirements of the Federal Aviation Administration (FAA) and the Transportation Security Administration (TSA).

In addition to fulfilling FAA requirements, the RTAA is an “affected entity” as defined in Nevada Revised Statutes 278.026 since it provides planning and facilities related to transportation services within Washoe County. This Document must, therefore, be reviewed for conformance with the adopted 2012 Truckee Meadows Regional Plan. This Document was prepared based upon, and consistent with, the applicable policies of the 2012 Truckee Meadows Regional Plan. The RTAA also submits annual reports to the Truckee Meadows Regional Planning Agency.



Located 10 miles northwest of downtown Reno and in one of the ten designated “Regional Center Planning Area Zoning Overlay Districts”, the RTS encompasses 5,170 acres primarily located within the City of Reno. The RTAA has approximately 245 employees of which 7 are dedicated to RTS fulltime. The total annual economic impact of the RTS activities on the Reno-Tahoe area is approximately \$190 million. In 2012, the RTS handled approximately 64,000 aircraft operations (29,000 local and 35,000 itinerant) and has 230 based aircraft. Exact operations counts at RTS are not known as the RTS is a non-towered airport (also known as an uncontrolled airport). Most of the airports in the nation are non-towered which means that instead

of receiving instructions from a tower controller, pilots follow recommended procedures. The RTS airfield consists of 2 runways capable of accommodating a wide variety of general aviation and military aircraft and can also, if needed, handle commercial and cargo aircraft.

RTS is home to four primary aviation tenants: Aviations Classics, the Nevada Army National Guard (NVNG), Bureau of Land Management (BLM), and the Reno Air Racing Association (RARA).

Aviation Classics is a full-service Fixed Base Operator (FBO) offering a wide variety of services including fuel, repair and maintenance, tie-down and hangar rentals, and weather and flight planning facilities. Aviation Classics has provided FBO services on the field since 1979, initially as CIA Aviation.

The Nevada Army National Guard unit operates CH-47 Chinook, UH-60 Blackhawk, and C-12 Beechcraft King Air aircraft and also mans an NVNG armory with based fuel tankers, heavy trucks and medium duty transports.



The BLM operates a base to combat regional fires which serves all of northern Nevada and several California counties and their operations include single engine air tankers, large tankers, helicopters, and during heavy fire seasons, USAF C-130H aircraft.

RARA leases six hangar facilities at RTS and holds the National Championship Air Race and Air Show (NCAR) annually.



Celebrating 50 years in 2013, NCAR features multi-lap, multi-aircraft races between high performance aircraft on closed courses. Several land acquisitions in excess of 4,000 acres made by the RTAA from 1978 to the present were conducted in support of NCAR and any future development of those areas will occur in consideration of the NCAR's operations.



III. Role

According to the FAA's National Plan of Integrated Airport Systems (2013-2017), as of September 2012 there are nearly 20,000 airports in the nation. Of those 20,000 airports, only 5,171 are open to the public. Of those 5,171 public-use airports, the RTS is one of 3,355 (3,330 existing and 25 proposed) that have been identified as essential to the national airport transportation system.

The first National Airport Plan was created in 1946 via the Federal Airport Act which provided grants for airport projects meeting Civil Aeronautics Administration (CAA) standards. Over the decades, the national airport system has been further developed and refined, however the general principles guiding Federal involvement have remained consistent:

- The airport system must support national defense, emergency readiness and postal delivery.
- The airport system should provide access to as many people as possible (defined as most of the population within 20 miles of the airport).
- The airport system should contribute to both the national economy and international competition.

In order for the airport system to maintain its objectives, each airport within the national airport system is required to:

- be safe, efficient, and permanent,
- be developed and maintained to approved standards,
- respond to improvements to air traffic control systems and technological advancements,
- be flexible and expandable, and
- be compatible with surroundings.

RTS is a general aviation airport that is further classified as one of 268 FAA designated reliever airports. The FAA has encouraged the development of high-capacity general aviation airports which provide general aviation pilots with attractive alternatives to commercial service airports due to the different operating requirements between small general aviation aircraft and large commercial aircraft. In order to be designated as a reliever airport, the RTS must have 100 or more

based aircraft or 25,000 annual itinerant operations. The RTS exceeds both of those requirements.

RTS provides a wide range of facilities and services that benefit both the regional community and links it to the global economy. At the center of the RTS is a safe, well-maintained airfield with sufficient capacity for both existing and future aircraft operation volumes. The facilities primarily support general aviation and military activity. The RTS has also been designed to serve commercial service aircraft if necessary due to natural or manmade disasters. The Reno-Tahoe Airport Authority (RTAA) provides the highly trained and professional workforce required to operate RTS facilities and also provides leasable land, buildings and space for services and service providers in support of general aviation and military operations. While the RTAA strives to provide for the safest possible operations and most convenient and well-maintained facilities at RTS, it must do so in a manner that is not fully reliant on federal support for its continued success.

Optimizing general aviation operations and services and facilitating economic development at the airport are Strategic Priorities for the RTAA. Attracting new business development, especially non-aviation related development, on vacant airport land helps the RTAA increase and diversify revenue and improve the long-term financial stability of the airport. The RTS has vacant land in excess of 3,000 acres available for development. Additionally, the RTAA is committed to encouraging a variety of FBO contracts and other general aviation service providers to optimize the general aviation customer service experience. The new Stead Freedom Flight Terminal / Emergency Operations Center is intended to complement and enhance the general aviation services currently offered by the airport's fixed base operator, Aviation Classics.

IV. Existing Facilities

The RTS encompasses approximately 5,170 acres of land located primarily in the northwest area of the City of Reno. The property is in the Truckee Meadows Services Area as defined in the 2012 Truckee Meadows Regional Plan. It is also located within the corporate limits of the City of Reno. The northeastern most properties, accounting for over 400 acres, fall within unincorporated Washoe County.

The main RTS airfield facilities consist of two active runways:

- Runway 14-32 at 9,000 feet in length; and
- Runway 8-26 at 7,608 feet in length.

Although RTS has no scheduled commercial or cargo service, there is ample room and capacity to accommodate these operations. Both runways are in good condition and can accommodate up to Boeing 737-800 sized aircraft.

RTS has facilities to meet the full range of general aviation needs. RTS has one Fixed Based Operator (FBO) located at the RTS. This FBO, Aviation Classics, serves the needs of



the general aviation sector which includes private pilots, corporate aircraft and charter services. There are a number of private hangars, including t-hangars and

small and large conventional hangars, and aircraft tie-down spaces that are leased to individuals and companies to accommodate storage and maintenance of private aircraft.

All existing hangars are located in proximity to the aircraft parking apron and have direct access to Taxiway A. There are 148 aircraft hangars at RTS and the RTAA has constructed taxi-lanes on the southwest side of the airfield specifically for the development of additional aircraft



storage hangars by a private developer based on demand. Although the RTAA

holds title to the land, hangars and other FBO structures are typically built and maintained by the leaseholders.

RTS has one publicly accessible aircraft parking apron, located south of Runway 8-26. The aircraft parking apron is approximately 230,000 square yards (i.e. 38 football fields). Additionally, there are two designated tie-down areas. The east tie-down area is used by both itinerant and based aircraft while the west tie-down area is used by based aircraft only.

The aviation fuel farm facilities at RTS, located east of Maryland Road, are currently owned by the RTAA, and leased to Aviation Classics. Existing fuel facilities include a 12,000-gallon above-ground Jet A fuel storage tank and two 12,000-gallon above-ground 100 low lead (LL) storage tanks. There is also a self-service fuel island, operated by Aviation Classics, located on the east end of the aircraft parking apron. The self-service island uses one 12,000-gallon 100LL tank for fuel storage. Fuel is accessible 24 hours a day, seven days a week through the self-service fuel island. Fuel is also delivered to aircraft via two fuel trucks owned by Aviation Classics. The trucks consist of one 8,000-gallon truck containing Jet A fuel and one 8,000-gallon truck containing 100LL fuel.

A military installation housing the Nevada Army National Guard (NVNG) is located on the west of the airfield on an approximately 45 acre site. The land the NVNG occupies is leased from the RTAA. The Nevada Army National Guard unit operates CH-47



Chinook, UH-60 Blackhawk helicopters, and one C-12 Beechcraft King Air aircraft and also mans an NVNG armory with based fuel tankers, heavy trucks and medium duty transports. The NVNG performs significant helicopter training operations on and in the vicinity of RTS. The RTAA and NVNG recently completed negotiations to more than double the acreage leased by the NVNG.



The Stead Freedom Flight Terminal, located on the south side of the airport, opened to the public in December 2013. Designed to provide emergency operations center capability while also housing the administrative functions of the airport, the two-story 12,000 square-foot Freedom Flight Terminal also includes a

pilot's lounge, community room and leasable commercial space. The pilot and passenger services offered in the Freedom Flight Terminal complement and enhance those services provided by Aviation Classics, the fixed base operator.



General automobile parking areas are located adjacent to the apron frontage road in close proximity to the Freedom Flight Terminal and Aviation Classics. At least 29 new public parking spaces have been provided south of the Freedom Flight Terminal. Additional parking areas are also located near individual commercial tenants and are primarily used by airport tenants and their employees. Most of the automobile parking areas are not striped. All of the parking spaces at RTS are available at no charge except during the annual National Championship Air Races and Air Show (NCAR) event. During the NCAR event, certain RTAA-owned automobile parking areas are under lease to the Reno Air Racing Association for their use.

V. Vehicle / Transit / Pedestrian Access

The RTS achieves primary vehicular access from a major freeway (US 395) which passes south of the airport and is connected to the airport by the major City of Reno arterial road, Stead Boulevard. US-395 which runs north through Spokane, Washington and south to San Bernardino, CA is approximately 3 miles south of the RTS main gate. Military Road and Moya Boulevard also provide vehicular access into the southern portion of the airport area.

There is no existing public vehicular access to the airport from the north.

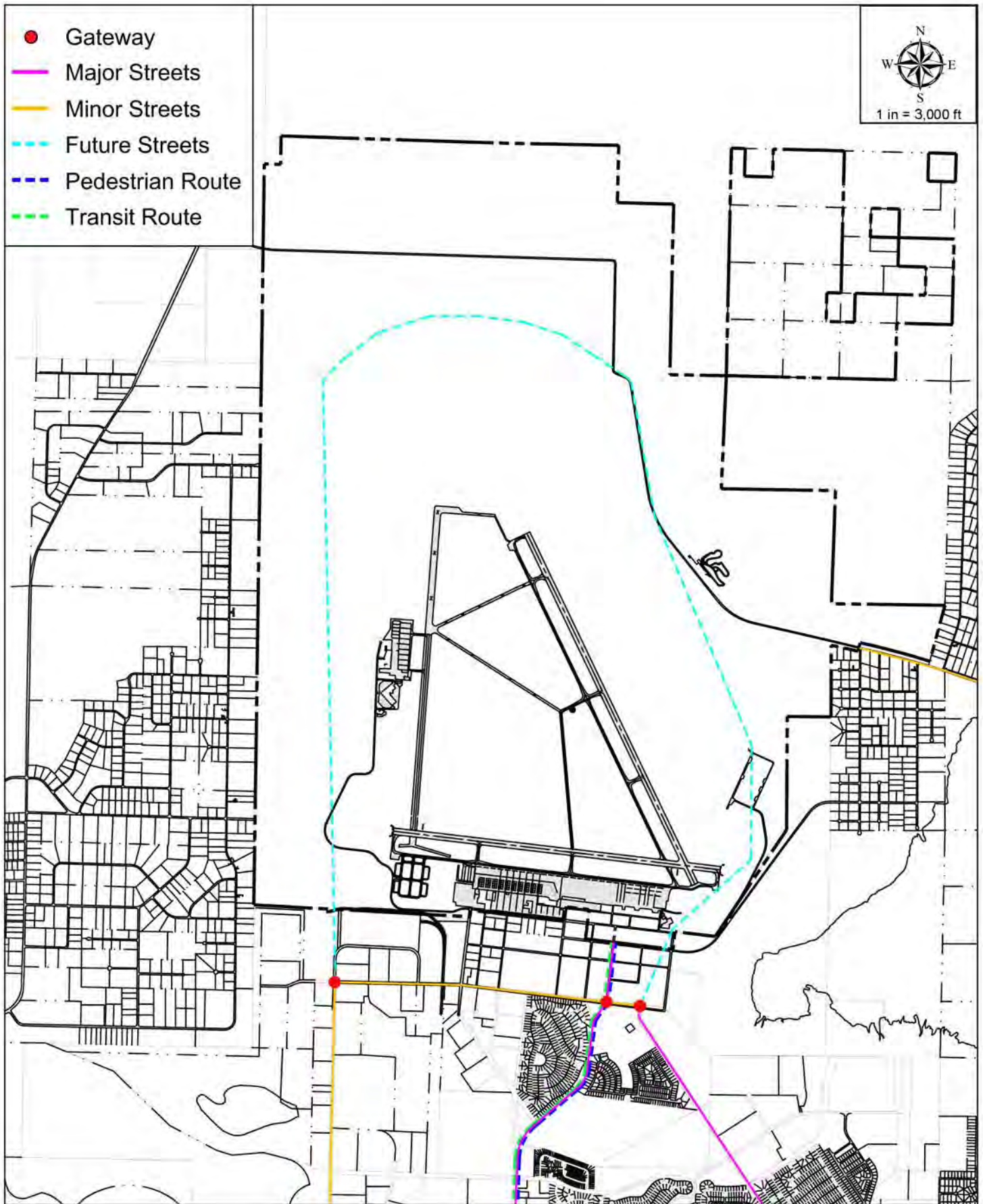
The majority of on-airport vehicular traffic is focused along the southern boundaries. On-airport vehicular traffic to the NVNG base and to the driving course use internal roadways that are maintained by the RTAA. Access via Lemmon Drive from the east is possible; however Lemmon Drive, once on airport property, becomes a private road and may not always be available for public use. As on-airport development grows, the RTAA will construct additional interior roadways as needed. Future conceptual streets include a loop extension of Moya Boulevard to Lemmon Drive and Military Road.

The majority of the users of RTS arrive by vehicle. These trips occur by private automobile, taxis, rental cars, and public transit. Given the nature of the airport operations, very little pedestrian traffic is associated with RTS. However, pedestrian access from the existing public street system (i.e. Stead Boulevard) is provided in proximity to the new Freedom Flight Terminal. This pedestrian corridor also connects with the existing public transit stops along Stead Boulevard, Echo Avenue, and Moya Boulevard. There are no public transit stops on-airport.

The roadway system that surrounds and connects the RTS to the ground transportation network is a mature system. That is, no new roadways are anticipated to be needed. The Regional Transportation Commission (RTC) has not included any upcoming major roadway work within or in proximity to the RTS Planning Area (Regional Transportation Improvement Program 2011-2015). However, the RTAA will continue to work with RTC to assure that no RTS facilities or improvements conflict with the roadway system.

Additionally, a rail spur from the Union Pacific Railroad line terminates adjacent to the airport's southwest property line. This spur is currently used to serve several off-airport industries that have been constructed and expanded in the area. The rail spur could be extended to serve on-airport businesses.

The Circulation Plan for RTS is shown on Figure 2.



Reno-Stead Airport
Circulation Plan

Figure 2

VI. Constraints

The 2012 Truckee Meadows Regional Plan defines development constrained areas as areas consisting of playas, significant water bodies, jurisdictional waters / wetlands in accordance with Section 404 of the Clean Water Act, designated Federal (FEMA) floodway areas within the floodplain Zone AE, natural slopes over 30 percent, publicly-owned open spaces, and properties that are deed restricted to prevent development.

There are no jurisdictional waters of the US / wetlands identified on airport property; however in the vicinity of RTS two water bodies are considered jurisdictional and referred to as Lemmon Lake (also known as Swan Lake) and Silver Lake. Both of these lakes are located outside of the airport boundaries (see Figure 3). RTS is located within a closed hydrographic basin which drains into Silver and Swan Lakes. Therefore, the RTAA is required to maintain control of stormwater runoff that could result from future development to prevent potentially adverse impacts downstream. As required by the Truckee Meadow Regional Drainage Manual (TMRDM), the RTAA has analyzed the 100-year, 24-hour storm event and the 100-year, 10-day storm event to ensure no adverse impact to surrounding areas occur and has developed conceptual drainage facilities to support the full development of all 5,170 acres. The conceptual drainage plan assumes that major drainage improvements will be constructed as the airport property is developed. The conceptual drainage plan includes a large retention basin, two detention basins, and a series of culverts and channels and was estimated to cost over \$100 million in 2011 (see Figure 4). The RTAA will coordinate future RTS development, whether funded by the RTAA or by private developers, to assure that no adverse drainage impacts are created.

The RTS has been determined to be outside the 0.2% annual chance floodplain and does not include any areas that have an AE FEMA Flood Zone designation.

Truckee Meadows Water Authority (TMWA) recharges, stores and recovers water underground within the airport's boundary to increase storage, for drought supply, for plant flexibility, and for emergency and peak demand use. TMWA is authorized to inject Truckee River Water which is treated at either the Glendale or Chalk Bluff water treatment plants and meet drinking water standards. TMWA is currently permitted to inject treated water into four wells (Silver Lake, Air Army Guard, Silver Knolls, and Red Rock) located on the airport (see Figure 5). Injection is conducted seasonally during the fall and winter months. The RTAA will coordinate and work closely with the TMWA to assure that any new development installations are compatible with the TMWA operations at RTS.

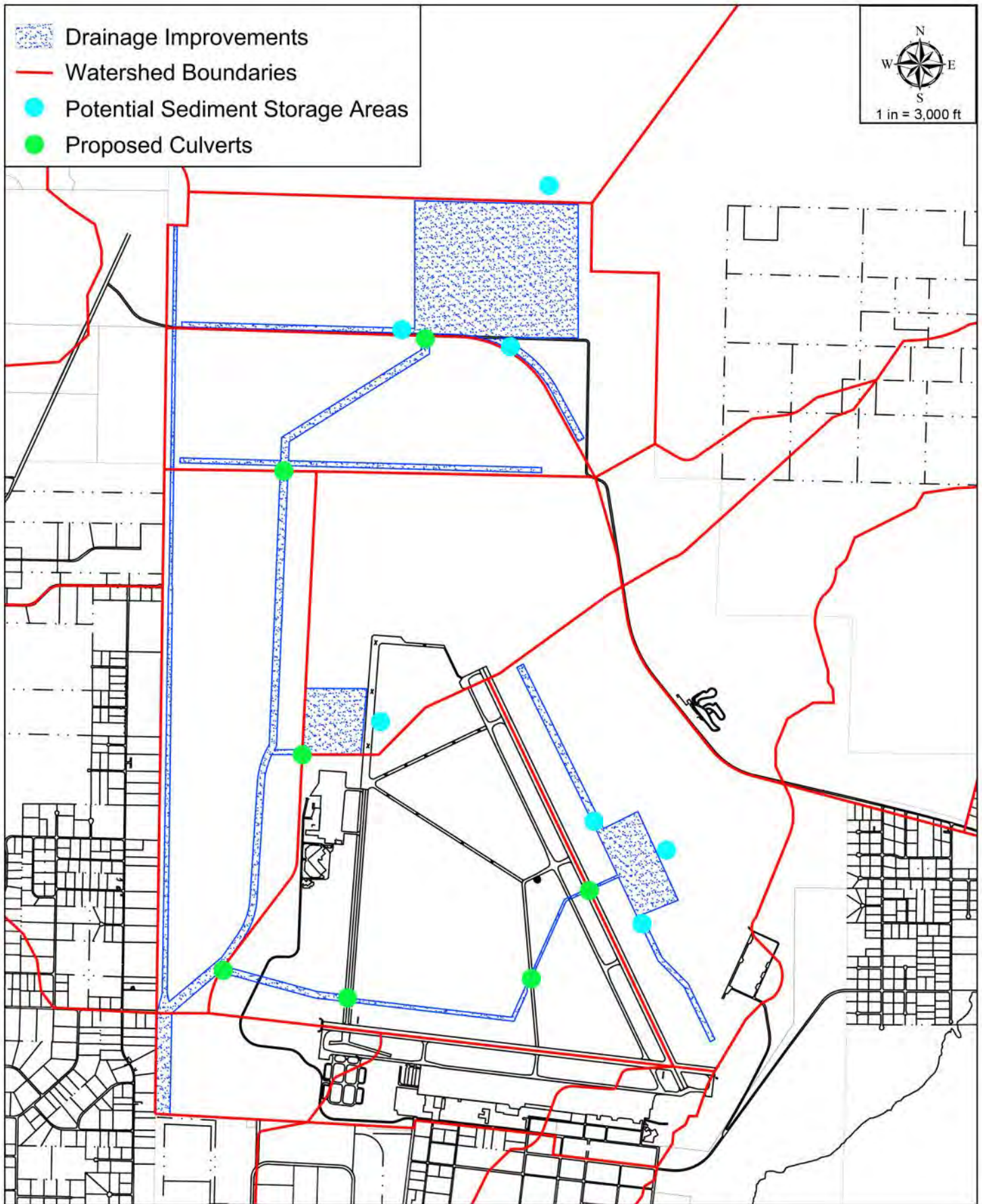
Some of the vacant land owned by the RTAA to the far northeast of the airfield contains natural slopes greater than 30 percent. It is unlikely that the RTAA will propose any new development for this land.

Additionally, over 120 acres of land along the west, north, and east of the airfield have been deed restricted to create a buffer between the airport and off-airport residential uses. A 300-foot buffer runs along the entire western boundary and a 50-foot buffer runs along the north and along the east property lines. Development within those designated buffers has been restricted to underground utilities, drainage and roadway improvements, and security fencing.

There are existing above ground and underground transmission infrastructure on or near the RTS that have been identified as utility corridors. In some, but not all cases, above ground transmission lines may pose a safety risk when located in proximity to airports. The RTAA will continue to work closely with the City of Reno and the affected utility to assure that new utility installations are compatible with the operations of the RTS.

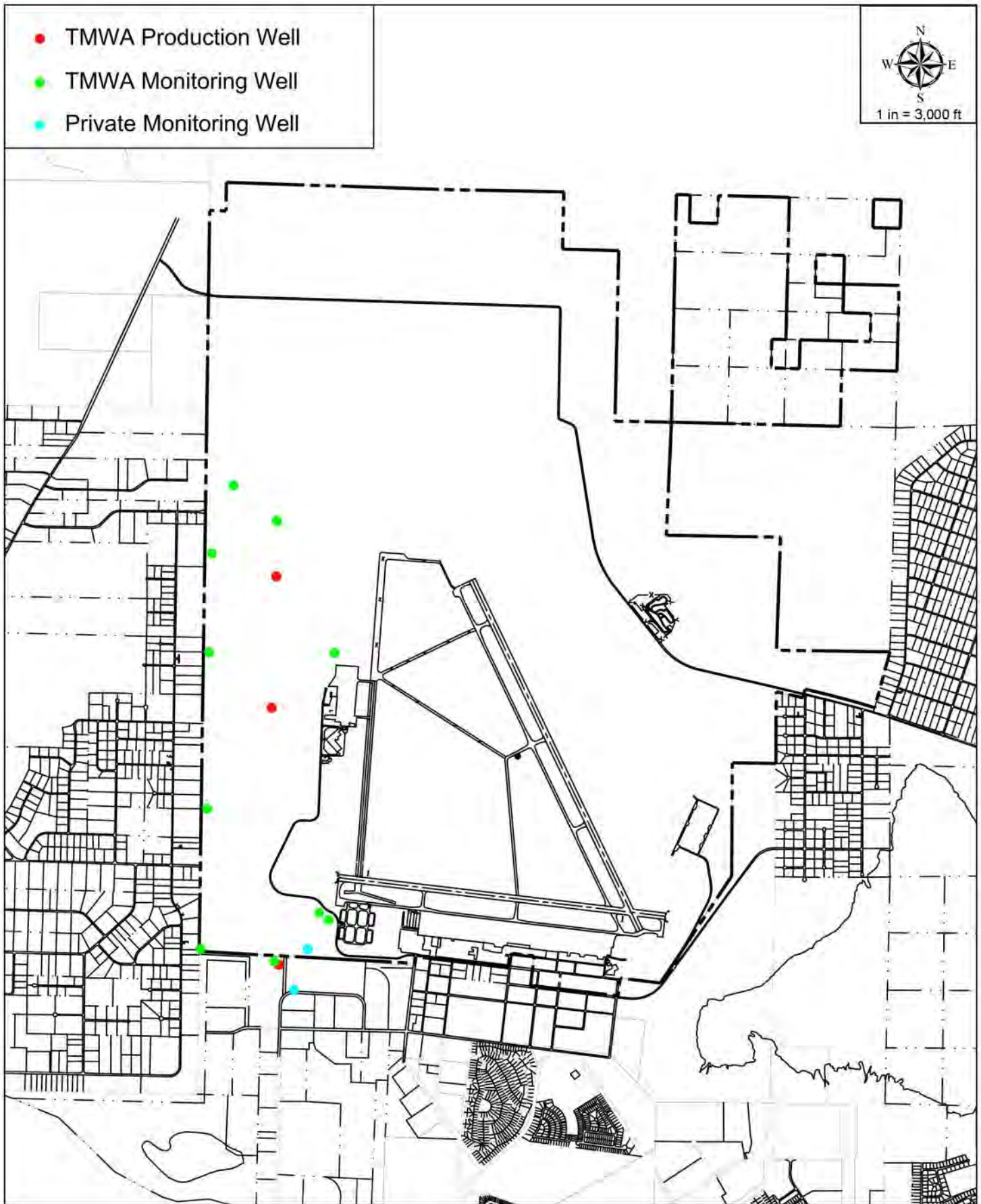


Reno-Stead Airport
Wetlands



Reno-Stead Airport
Drainage Plan

Figure 4



Reno-Stead Airport
Injection Wells

VII. Land Use

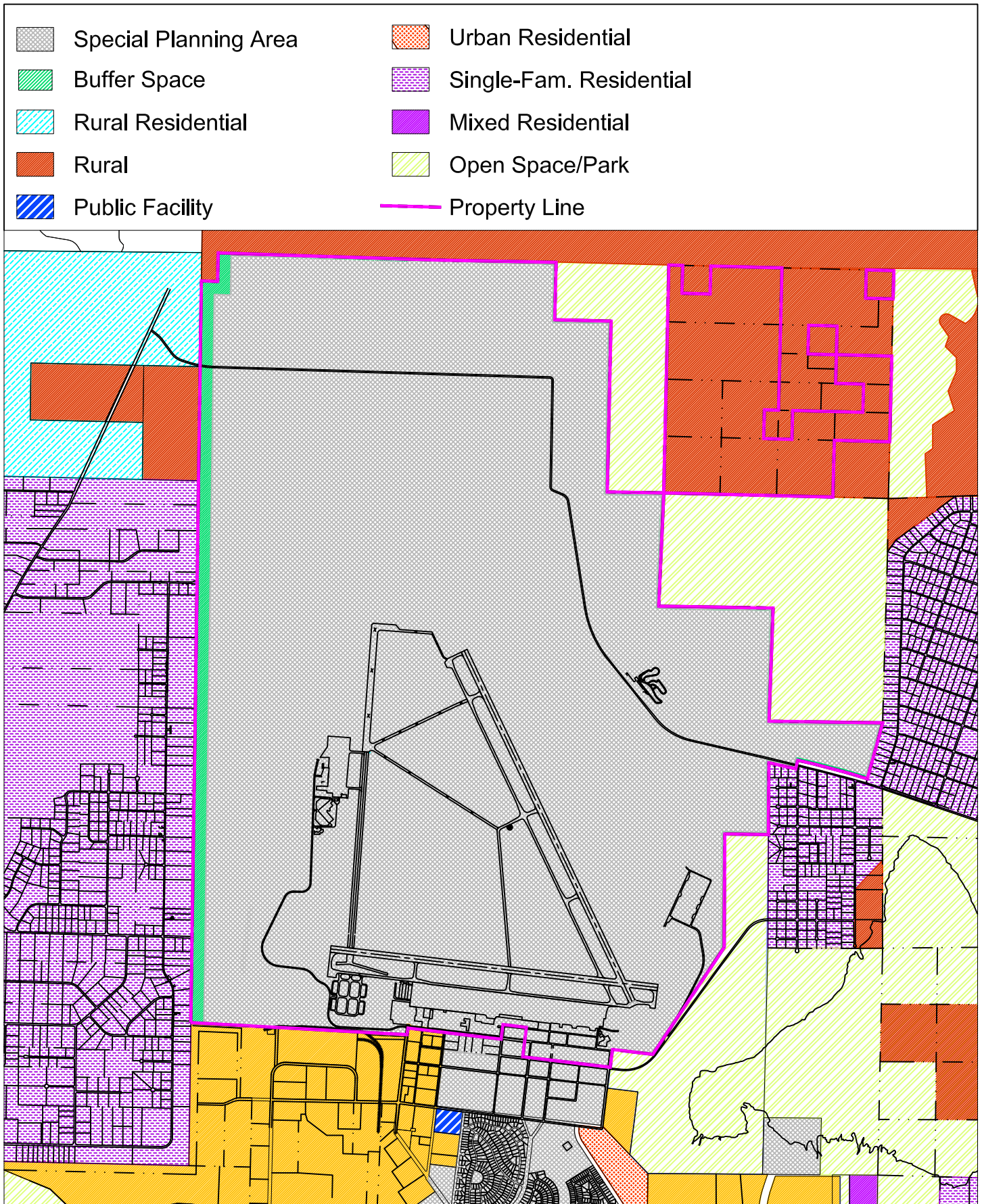
The RTS consists of land uses that either directly or indirectly support the aviation use of the property within the planning area. The RTS is included in the City of Reno Master Plan and has a land use designation of Special Planning Area. A specific regional center plan for RTS and its environs was adopted by the City of Reno in 2003. This plan is called the Reno-Stead Airport Regional Center (RSARC) Plan and was found to be in conformance with the Regional Plan in 2003. Specific Reno Master Plan land use designations are shown on Figure 6.

In accordance with the RSARC, land uses at RTS will occur within one of the following five distinct land use categories as shown on Figure 7:

- **AIRPORT CORE** - Appropriate for facilities directly associated with airport operations (i.e. runways, aircraft hangars, terminal buildings, military operations, general aviation, etc.). This designation also allows all the uses permitted in the Airport Compatible land use category.
- **AIRPORT COMPATIBLE**- Appropriate for public and private developments which are not detrimental to the continued viability of airport operations.
- **AIRPORT CRITICAL AREA** - Trapezoidal areas extending from the ends of the runways. These areas are intended to ensure compatibility with areas designated as flight paths at the RTS with consideration given to both prevention of air navigational hazards and reduction of the risk of injury to both people and property in these designated areas. Generally, these consist of uses that have low expected persons per acre activities.
- **OPEN SPACE / RESIDENTIAL BUFFER** – The Residential Buffer area is intended to provide an open space area between non-residential development and nearby residential areas. Small scale developments, such as recreational and utility facilities, may be appropriate in the Residential Buffer area.
- **NEIGHBORHOOD COMMERCIAL** - Appropriate for public and private developments which are compatible with the primarily low density suburban / single family residential developments along the south and west boundaries and are also not detrimental to the continued viability of airport operations.

The RTAA also owns 423 acres of land to the northeast of RTS, located in unincorporated Washoe County. This land is included in the North Valleys Area Plan

which is a component of the Washoe County Master Plan and is currently zoned General Rural. This vacant land was purchased by the RTAA to protect against future development of non-compatible land uses. As much of this land has slopes greater than 15 percent and as a large amount of easier to develop vacant land is owned by the RTAA, it is unlikely the RTAA will propose any new development for this land within the planning period of this Document. Although unlikely to occur, any future development of this land will occur in full regulatory compliance with Washoe County.



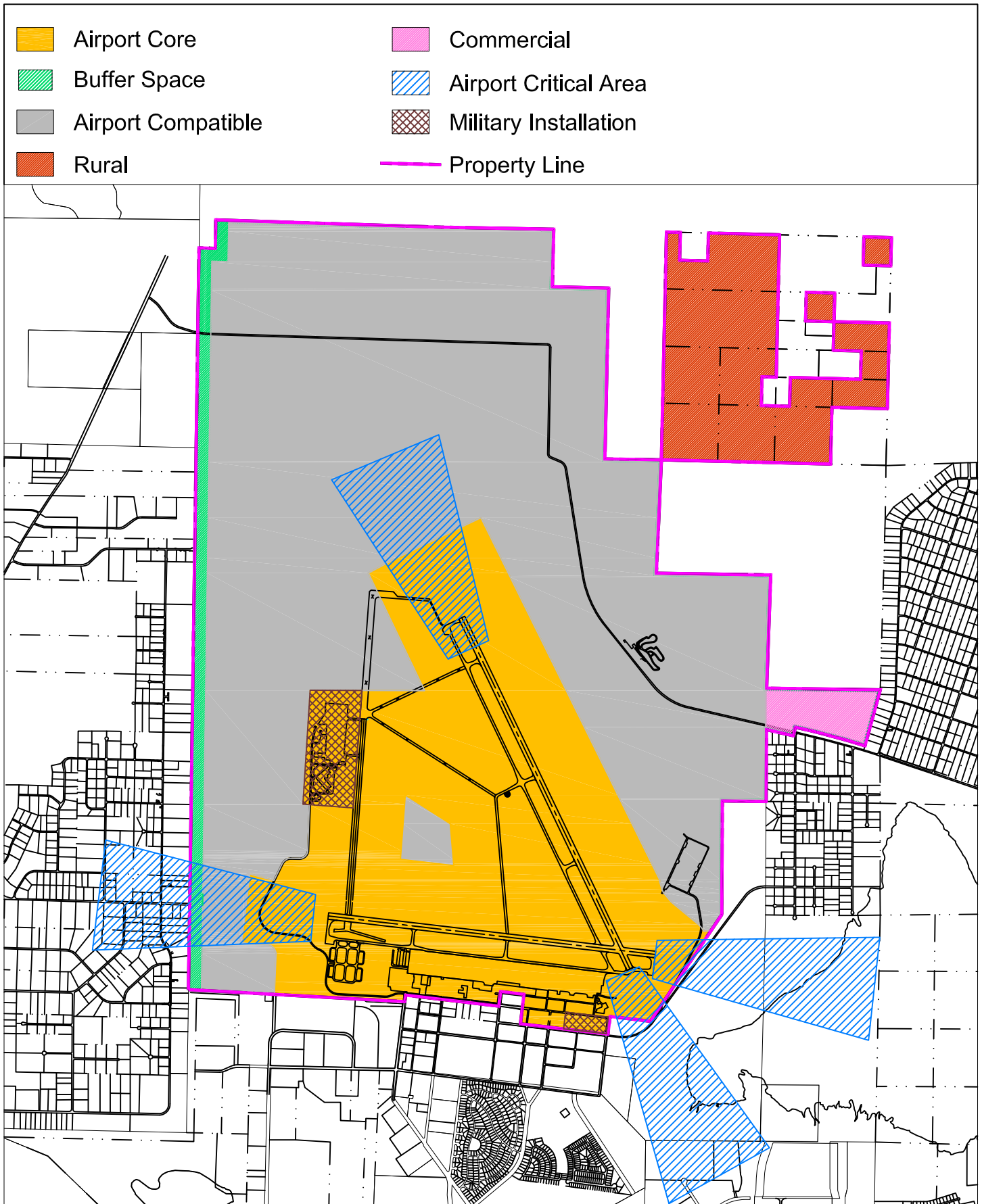
Reno-Stead Airport
Stead Master Plan Designations

In recognition of noise and safety concerns associated with the operations of the RTS, residential uses are not permitted and non-residential intensities are held below the policy standards of Truckee Meadows Regional Plan Policies 1.2.1 and 1.2.14 that would otherwise apply in regional centers. This is recognized in the City of Reno's Title 18 section entitled Reno-Stead Airport Regional Center Planning Area Overlay Zoning District which specifically states:

“...The minimum land use intensities...shall not apply.”

The 2012 Regional Plan has lowered the minimum floor area ratio for non-residential intensities to 1.0 for certain Regional Center Plans including the Reno-Stead Airport Regional Center Plan; however the Planning Principles section of the 2012 Truckee Meadows Regional Plan provides that:

“Some Centers and portions of Corridors may require specialized planning to ensure compatibility with airport and military operations (e.g., Reno-Tahoe Regional Center); the Regional Plan allows for alternative densities in certain circumstances (see Policy 1.2.14).”



Reno-Stead Airport
Land Use Plan

VIII. Demand Forecast

Since the RTAA is an “affected entity”, the demand forecasts for RTS must be consistent with the Washoe County Consensus Forecast. Policy 1.1.1 of the 2012 Truckee Meadows Regional Plan states:

“To conform with the Regional Plan, the master plans, facilities plans, and other similar plans of local governments and affected entities must utilize the adopted Consensus Forecast for determining future regional population estimates for the formulation of goals, policies, and service plans.

The Regional Plan recognizes that some affected entities due to service area size or targeted services need to utilize additional or supplementary population data. If these affected entities utilize additional or supplementary population data, the source and methodology must be clearly described in master plans, facilities plans, and other similar plans. These plans must clearly relate back to the adopted Consensus Forecast.”

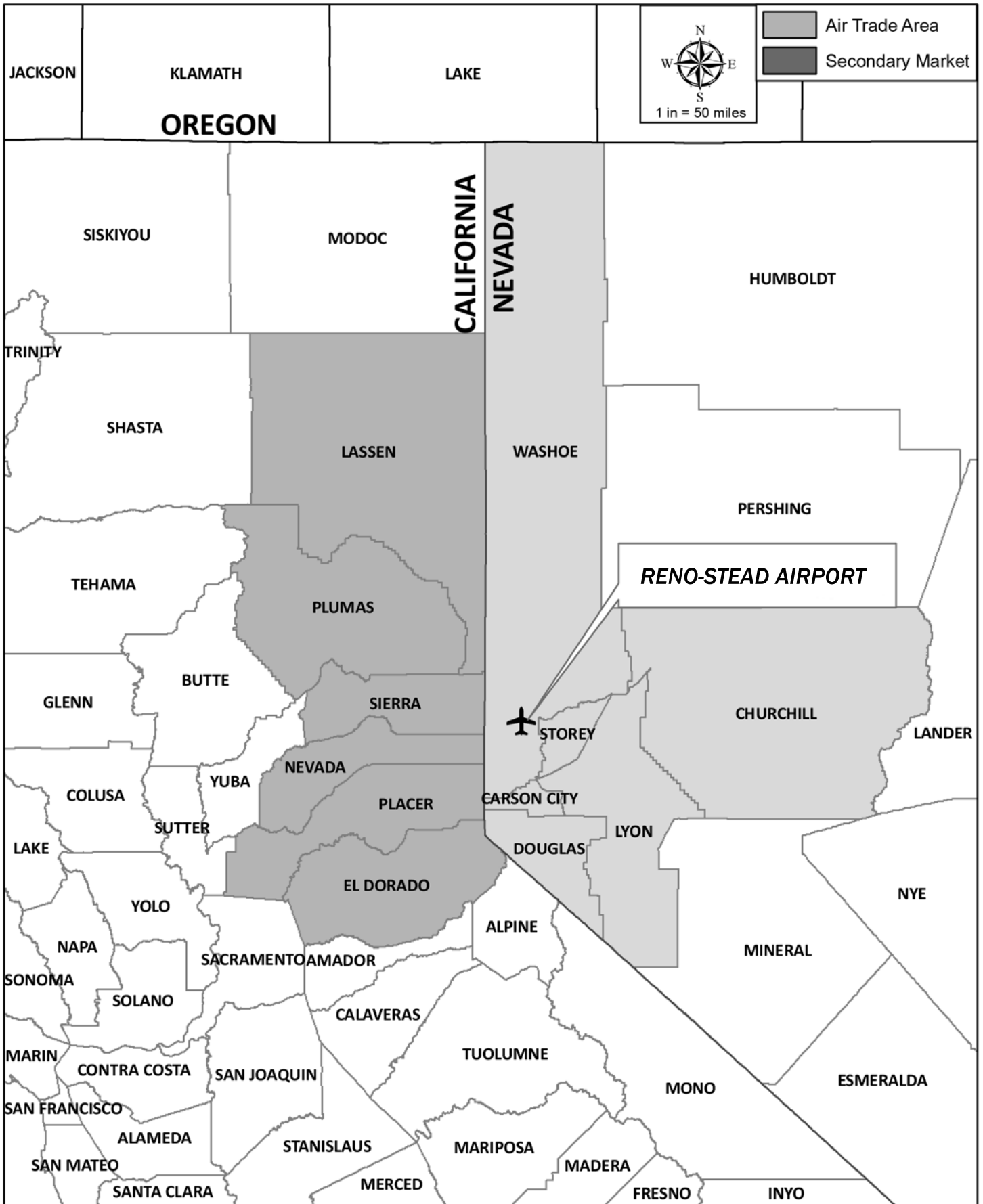
In May of 2012, the Washoe County Consensus Forecast 2012-2032 was completed. This forecast projects that by 2032 the total population of Washoe County will be 560,772 persons. This represents a 1.38 percent annual increase.

In order for the first paragraph of Policy 1.1.1 to have relevance, it is important that the demand for a particular public facility be driven by the increase in population in Washoe County. While the demand for RTAA services and facilities at the Reno-Tahoe International Airport (RTIA) are influenced by population growth in Washoe County, minimal direct correlation exists between Washoe County’s population and RTIA passenger enplanements. The RTAA has therefore used the FAA’s Terminal Area Forecast projections in relation to RTIA future demand. This method was approved by Regional Planning during the 2010 RTIA conformance review process. The Washoe County Consensus Forecast provided a secondary forecast that when compared to the FAA forecast assures that there is consistency between the two forecasts.

Although the RTAA could also utilize the current FAA Terminal Area Forecast (TAF) for RTS as well as for RTIA, it also does not provide the best method for this airport. The current FAA TAF provides detailed information related to RTIA as it focuses primarily on larger airports in the national airspace system. RTS, as a general aviation reliever airport, has minimal historical data included in the FAA TAF, and the current FAA TAF projects no growth for RTS in relation to operations (local and itinerant) or to based aircraft.

Because the FAA TAF typically contains only minimal operational data for RTS, in 2008, the RTAA completed a Forecast of Aviation Demand for RTS which projected the number of based aircraft, aircraft operations, and fuel flowage through 2030. The approach, methodology and conclusions in this Forecast of Aviation Demand were formally approved by the FAA on July 24, 2008.

Since Washoe County represents only a portion of the population served by RTS, the catchment area for the aviation facility demand is expanded to include two distinct service areas: the Air Trade Area and the Secondary Market. The Air Trade Area is defined as the area immediately surrounding RTS, the area whose population and economic activity generate the majority of the airport's aviation activity. The Secondary Market is not the primary source of activity generated at RTS but is close enough to impact other factors of the regional economy and therefore, demand for services at RTS. The Air Trade Area consists of six counties in Nevada: Washoe, Storey, Carson City, Douglas, Churchill and Lyon. The Secondary Market adds into the RTS catchment area six counties in California: Lassen, Plumas, Sierra, Nevada, Placer and El Dorado. This catchment area can be seen in Figure 8.



Reno-Stead Airport
Defined Catchment Area

The FAA approved forecast for RTS considered national general aviation trends as well as state, regional, and local economic and business trends along with demographic changes. General aviation trends included the following: active shipments and billings of general aviation aircraft, active general aviation fleet, number of general aviation hours flown, and the number of active general aviation pilots. Regional and local trends were related to quality of life, location and market access, favorable tax environment, business friendly climate, and tourism.

The forecast for based aircraft was developed using a regression analysis which compared the population of the Catchment Area to based aircraft with adjustments made to the baseline forecast as a result of influencing factors such as the construction of new taxi-lanes ready for hangar development, hangar occupancy rates at Reno-Tahoe International Airport, and the availability of services and navigational aids at other general aviation airports in the catchment area. This FAA approved forecast, which used 2006 as the baseline, projected an aggressive average annual growth rate of 3.1 percent for based aircraft with 261 based aircraft in 2006 growing to 539 based aircraft in 2030. This forecast was then used to project aircraft operations (average annual growth rate of 3.5 percent).

Table 1

Reno-Stead Airport

2010 – 2030 Forecast

<u>Calendar Year</u>	<u>Based Aircraft</u>	<u>Annual Operations</u>
2006	261	64,000
2010	318	86,813
2015	356	97,267
2020	404	110,317
2025	464	126,650
2030	539	147,178

Source 2006 are actual calendar year figures
 2010 and beyond were based on growth rates
 projected in the Forecast approved by the FAA
 on July 24, 2008

In 2010, the RTS was projected to have 318 based aircraft and 86,813 annual operations. In 2013, per FAA registration information there are only 120 aircraft now based at RTS; however 230 aircraft are regularly parked either in hangars or on the ramp, regardless of registration. Additionally, although exact operations counts at RTS are not known, the FAA is still reporting 64,000 annual operations – the same number of operations as was reported in 2006.

Several factors have contributed to growth at RTS not keeping pace with the current FAA approved forecast. The forecast was approved in 2008 before the lengthy national recession had begun to greatly impact the northern Nevada economy. A private developer who had been expected to construct hangars at the new taxi-lane site backed out of the project, and the RTAA decided not to proceed with new hangar construction without proven demand. Despite the fact that based aircraft and annual operations have not kept pace with the projected growth partially as a result of local conditions, this forecast allows the RTAA to assess the needs and requirements for future aviation development and capacity at RTS well beyond 2030. With over \$50 million invested in airport improvements over the past 13 years and over 5,170 acres of land, the RTS has great potential and this aggressive forecast will assure that airport facility planning will not under serve demand.

IX. Proposed Facilities

Each of the facilities identified in Section III was evaluated based on the forecasted demand in Section VIII. In some cases, as will be explained in more detail below, the forecast demand cannot be used to determine all facility needs.

Funding for new facilities could come from a variety of sources. Capital improvement projects at the RTS can be funded by an FAA Airport Improvement Program (AIP) grant, the RTAA operations and maintenance budget, or revenue bonds. The RTAA has no taxing authority and receives no local sales or property tax dollars.

On an annual basis, the FAA distributes monies to all airports nationwide in the form of Airport Improvement Program (AIP) grants for the planning and development of public-use airports. Funds must first be appropriated by Congress before the FAA can distribute them. Current congressional authorization is fixed at \$3.35 billion through Federal FY2015. AIP grant funds are drawn from the Airport and Airway Trust fund which is supported through a user paid system in which commercial passengers are assessed a fee on a per ticket basis. Airport users who do not use commercial aircraft (e.g. general aviation and military passengers) are not assessed these fees. Eligible projects include capital items which serve to develop and to improve the airport in areas of safety, capacity, security, environmental concerns and noise compatibility. Federal dollars are matched by the airport sponsor with local funds. In the case of the RTAA, all AIP funded projects are paid with 93.75 percent federal funds and 6.25 percent local RTAA funds.

There are two types of AIP funding sources, entitlement funds and discretionary funds. Entitlement funds may be accrued over several years to fund a large project or expended annually. Construction costs are not a reimbursable expense; therefore while design may proceed before full funding is received, the RTAA will typically not authorize construction ahead of a grant offer. As a general aviation airport, RTS' entitlement portion is fixed at \$150,000 annually. The RTAA accrued three years of entitlement funds to use in FY2013 for the purchase of snow removal equipment.

Discretionary funds are allocated federally based on how critical a project is to the national airspace system. Runway projects at RTS have historically been funded primarily with discretionary funding as the cost of major runway projects greatly exceeds annual entitlement levels. During Federal FY2013, discretionary funding in the amount of \$337,500 was allocated to RTS for design work for the rehabilitation of Taxiway "C". Construction for this rehabilitation project will proceed in FY2014 pending federal funding.

Additionally, the RTAA allocates about \$2 to \$4 million from its operating budget to be used annually for capital projects that cannot wait for or are not eligible for other funding sources. Typical operating budget projects include facility repairs and infrastructure maintenance.

RUNWAYS

The existing two runways can handle an annual service volume (ASV) of 299,000 operations. Based on existing volumes of approximately 64,000 operations and the 2030 forecast for less than 150,000 annual operations, it is projected that no new runways will need to be constructed within the planning horizon of this Document. RTS can and has accommodated a wide variety of general aviation and military aircraft types.

Runway 14-32, the longest runway at 9,000 feet, is of sufficient length, width, and strength to accommodate regular service from large commercial and military aircraft such as the Boeing 737-800 and the Lockheed C-130. Runway 14-32 is oriented in a northwest to southeast direction. Runway 14-32 underwent a full reconstruction in 2005 and has a load-bearing capacity of 75,000 pounds for single-wheel aircraft, 200,000 pounds for dual-wheel aircraft, and 320,000 pounds for dual-tandem-wheel aircraft.

Runway 8-26 is 7,608 feet and of sufficient length, width, and strength to accommodate regular service from large commercial and military aircraft such as the Boeing 737-800 and the Lockheed C-130. Runway 8-26 is oriented in a generally east to west direction and is the crosswind runway. Runway 8-26 has a load-bearing capacity of 60,000 pounds for single-wheel aircraft, 100,000 pounds for dual-wheel aircraft, and 150,000 pounds for dual-tandem-wheel aircraft. It is the predominantly used runway at RTS.

Both of these runways have runway safety areas that comply with FAA requirements and a variety of navigational aids which improve operational safety. The runways, therefore, exceed the existing and future aircraft operational demand.

Minor modifications and improvements to the runways will be needed to preserve the life of the existing pavement and to support the type and nature of aircraft that may use RTS. Runway reconstruction projects, the only expected runway projects during the planning horizon, are AIP grant eligible, however routine maintenance of the runways (e.g. crack filling, surface overlays) is not eligible for funding and must be paid for through the airport's operating budget.

The next airfield reconstruction project is for Taxiway "C" which connects Runway 8-26 and Runway 14-32. The taxiway pavement has worn to a point where additional patching and crack sealing is not sufficient to maintain the asphalt surface.

The project will be designed in FY 2013-2014 with construction to follow pending available funding.

Should capacity become an issue during the planning horizon, taxiway improvements will be required in order to enhance runway access. Each runway has a full-length taxiway; however dual full-length taxiways would allow safer and more efficient movements between the aircraft parking areas and hangars and the runways. Additionally the closed taxiway near the NVNG base and Taxiway "D" could be rehabilitated to increase airfield frontage and provide more efficient aircraft movements.

GENERAL AVIATION

General aviation refers to all operations at RTS other than military operations. General aviation operations include flight training, air ambulances, air charter, glider activities, among others. The majority of the aircraft operations worldwide are categorized as general aviation.

General aviation at RTS provides valuable services to the community. Amongst other functions, general aviation aircraft provide air transportation into rural communities not served by commercial passenger airlines and provide medical and emergency services, etc. Smaller general aviation aircraft have different airspace, air traffic and operating requirements from commercial airline and air cargo aircraft. These differing requirements have the potential to impact aircraft operations when large and small aircraft mingle on runways, taxiways or aprons. Currently the majority of operations at RTS are smaller general aviation aircraft. The RTAA works with the larger aircraft operators, such as the BLM, to maintain safety for all aircraft operators at RTS.

The RTAA encourages support facilities for general aviation and their related ancillary services and strives to foster a positive business climate for this aviation sector. A newly developed tenant relations and marketing plan currently underway has been well received. Additionally, in support of the Board adopted Strategic Plan, a SWOT analysis brainstorming session with general aviation stakeholders was held in December 2013 at RTIA and a similar exercise will be held with RTS tenants. Next steps include a general aviation user survey and website improvements to help market the existing assets and determine the need and timing of future facilities and services.

The demand for general aviation operations is dependent on the nature of the regional economy. The RTAA does not build capacity, in terms of hangars or FBO facilities, at RTS. These facilities and services are provided by private parties based on market demand.

While the RTAA does not intend to build hangars for general aviation aircraft storage, opportunities for private hangar development as well as additional general aviation support facilities will be made available based on both market demand and fair market value land lease rates. The land use plan in Figure 7 provides over 900 acres of land, built and vacant, adjacent to the runways and taxiways, that may be used for general aviation if the market demands new facilities. Because of the vast amount of land available at RTS, the over 900 acres available is adequate to support not just future general aviation use but also future military use at RTS.

AIRCRAFT STORAGE AND PARKING

A single publicly accessible aircraft parking apron is located south of Runway 8-26 and is approximately 230,000 square yards of which 11,000 square yards is concrete and used for larger aircraft parking. Based aircraft parking is located predominantly west of the temporary grandstands and north of the t-hangars while itinerant aircraft parking is located on the east end.

It is estimated that approximately 20 percent of based aircraft at RTS use tie-down areas instead of hangars. Approximately 32,400 square yards of apron is required to meet the 2030 forecast at 300 square yards per tie-down area. Itinerant aircraft parking is typically short term parking (24 hours or less) and should be located close to terminal, fueling and ground transportation facilities. Using the FAA's detailed approach to calculate peak day itinerant aircraft and 360 square yards per aircraft, approximately 65,460 square yards of apron is required to meet the 2030 forecast. Therefore, the existing paved apron is adequate to meet the planning horizon. Minor modifications (striping and tie-down equipment) of the apron will be needed to accommodate growth. Additionally, new concrete parking areas will likely be required to accommodate larger aircraft. The RTAA's capital improvement program includes design and construction of three new 20,000 square-foot concrete apron pads to be built over multiple years pending funding.

If 20 percent of based aircraft use apron parking, then 80 percent require hangar space. Aircraft at RTS are located in t-hangar units, small standalone hangars and collocated with other aircraft in larger conventional hangars. Based on an average of two aircraft per hangar, 216 hangars will be needed to meet the 2030 forecast. There are currently 148 hangars at RTS and pads ready for 50-60 new hangars when the market demands. Adequate land exists to the west of the new taxi-lanes for additional hangars.

FUELING FACILITIES

All fuel facilities at RTS are managed by the fixed base operator, Aviation Classics. There are 12,000 gallons of storage available in one tank for Jet-A fuel.

There are 24,000 gallons of storage available in two tanks for 100LL (AVGAS) fuel. An additional 12,000 gallon 100LL tank is used as a self service fuel station.

Using 3 gallons 100LL per non-jet operation and 40 gallons Jet-A per jet operation and peak operations, it was calculated that 1,257 gallons of 100LL fuel and 1,800 gallons of Jet-A would be needed on a peak day in 2030. Additionally for planning purposes, a 14-day storage period was used. Therefore, approximately 17,600 gallons of 100LL storage and approximately 25,200 gallons of Jet-A storage would be needed by 2030. As a result, it is expected that an additional 12,000 gallon Jet-A storage tank will be needed within the planning horizon.

MILITARY

The demand for military installation expansion is driven by Federal and State policy decisions that are beyond the control of the RTAA. Military presence is critical to the region.

The RTS provides a controlled secure environment that is necessary for national defense and emergency readiness and is prepared to respond to base modifications or growth whether or not they are related to airport operations

As previously described, RTS has provided the NVNG with a lease area of approximately 45 acres and recently completed negotiations to increase their leasehold by an additional 63 acres. If the NVNG determines at some future date that even more land is needed to perform its function, then this Document will be updated to reflect such facilities.

TERMINAL

The Stead Freedom Flight Terminal located on the south side of the airport opened to the public in December 2013. The previous terminal facilities were located in two separate buildings: a pilots' lounge and an RTAA administrative office building. The new 12,000 square-foot Freedom Flight Terminal includes emergency operations center functions, administrative offices, a pilots' lounge, community room and leasable commercial space.

Although the Freedom Flight Terminal was needed to replace the existing pilots' lounge and administrative offices which were overcrowded and aging, the new building was also designed to act as the main entrance to the airport for those arriving landside and for those arriving airside. No new terminal facilities are expected to be needed during the planning horizon; however there is room to add a 100-foot addition to the west side of the building.

VEHICLE PARKING

General automobile parking areas are located adjacent to the apron frontage road in close proximity to the Freedom Flight Terminal and Aviation Classics. There is approximately 3,500 square yards of unpaved area available for vehicle parking. Additional parking areas are also located near individual commercial tenants and along the apron making it difficult to quantify RTS' vehicle parking capacity. Parking demand at RTS exceeds capacity during the annual National Championship Air Race and Air Show but outside of that annual event, there is adequate parking for current demand.

The new public parking spaces provided south of the Freedom Flight Terminal are striped. Any future vehicle public parking at RTS will be paved, striped and clearly identifiable.

AIR TRAFFIC CONTROL TOWER

RTS is not overseen by an Air Traffic Control presence. Establishing an air traffic control tower (ATCT) at RTS would be associated with an increasing level of aircraft operations combined with a diversity in fleet mix. ATCT services would enhance the safety of the airspace and airfield by managing departure and arrival operations, ground vehicles and other activities. The RTAA has completed a Benefit/Cost Analysis using the projection of based aircraft and future operational activity level approved in the FAA forecast. The analysis has determined that the RTS would be an eligible candidate for the FAA's Contract Tower Program. Should the RTAA decide to apply for the program and be selected, the RTAA will be responsible for the design, construction, and maintenance of the ATCT facility and equipment while the FAA funds the annual cost of staffing.

As the existing tower at RTS cannot be retrofitted to meet current safety and security standards, a new tower would be required. RTAA has identified three possible sites for a contract tower, all located on airport on the southeast side.

UNMANNED AIRCRAFT SYSTEMS

The RTAA has been involved in State of Nevada efforts to attract unmanned aircraft system or unmanned aerial system (UAS) business to the state. The RTS has been recognized as an attractive airport for future UAS business development for a variety of reasons including sparsely populated land, varied topography and weather, and a public use facility (as opposed to military).

Very few airports have access to a large amount of vacant land which could support UAS flights strictly within their boundaries. Additionally, the airport's northern boundary is largely government-owned land. The varied topography and

weather at RTS provide a wide range of testing conditions. And while UAS activity in Nevada has been primarily occurring on military airbases, military airbases are typically unable to accommodate non-military UAS or international UAS businesses as a result of security issues. RTS does not have those limitations.

As part of the FAA Modernization and Reform Act of 2012, the FAA was required to establish six (6) designated UAS test sites. The State of Nevada was selected as one of those six UAS test sites on December 30, 2013. Airports identified in the Nevada selection include Desert Rock Airport, Boulder City Airport, Fallon Municipal Airport in addition to Reno-Stead Airport.

The primary purpose of these UAS test sites will be to facilitate the future integration of UAS into the national airspace system. The UAS market has strong growth potential and is projected to have a \$13.6 billion economic impact nationwide within three (3) years after UAS integration into the national airspace system. The impact of the FAA selection on RTS is difficult to quantify. While the State's selection could result in significant UAS activity growth at RTS or none at all, an increase in UAS activity falls within the general plan for the airport and has been supported, via Resolution 511, adopted by the RTAA Board of Trustees on October 11, 2012.

X. Sustainable Design

The RTAA believes that a healthy natural environment plays a crucial role in the strength of our economy and our quality of life and it is essential for the sustainability of the aviation industry. In order to meet the demands of sustainable aviation development and to protect the natural environment, the RTAA's environmental programs endeavor to improve environmental practices, support pollution reduction and prevention, and foster environmental stewardship. This commitment goes beyond compliance with the law and encompasses the integration of sound environmental practices into our daily decisions and activities. The RTAA has pursued and will continue to pursue a course of responsible environmental stewardship. This is based on three objectives: continual improvement, pollution prevention and regulatory compliance.

RTAA has incorporated an Environmental Management System (EMS) into its everyday practices. Initiatives are incorporated into the planning and development of the RTS and then reviewed and modified annually for effectiveness. Current EMS initiatives at the RTS include storm water pollution prevention, energy conservation / reduction, and construction debris recycling.

Additionally the RTAA has explored and continues to explore alternative energy opportunities including solar, wind and geothermal. Wind power is unlikely to be developed on RTS as a result of land use constraints (height) and the potential for navigational aid interference. Solar and geothermal opportunities are compatible with airport development and will likely be developed in the future in accordance with current FAA guidance. The vast available land, especially in the north, provides ample opportunity for private third-party solar development.

XI. Policies

With the implementation of this Document, the RTAA will use the following policies as a guide in its decision making.

RTS POLICY 1:

The RTAA is committed to environmental awareness, protection and programs that continually improve the RTAA's environmental stewardship, to minimize the impact on the natural environment while developing sustainable aviation business practices.

RTS POLICY 2:

Any updates to RTS plans will be consistent with the adopted Washoe County Consensus Forecast.

RTS POLICY 3:

Development at RTS will be consistent with the Reno-Stead Airport Regional Center Plan.

RTS POLICY 4:

Development at RTS will be consistent with the land use plan depicted in Figure 7.