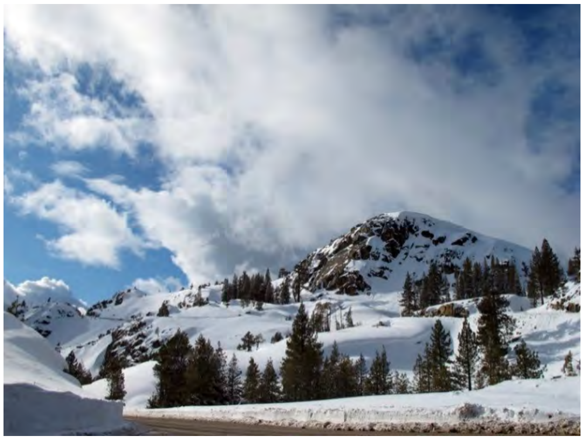
Concept Study

Community Aircraft Hangar

Truckee-Tahoe Airport
Truckee, California

Report prepared by

Project number 2013700-141180.01
June 22, 2016

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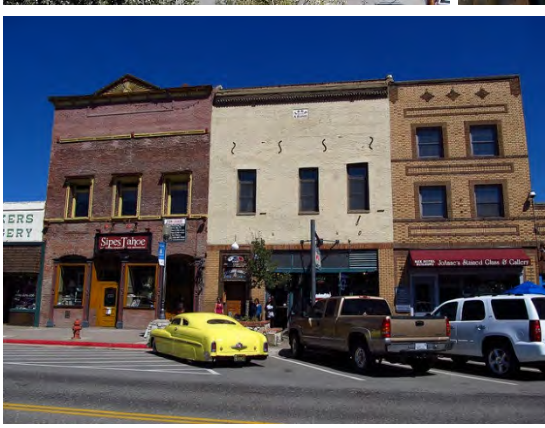


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1. Executive Summary

A. Project Overview

This report reviews the community input, design considerations, and probable costs of a community multi-use hangar for Truckee-Tahoe Airport (TRK). The approach in this process has been to outline the needs and concerns of all of Truckee's stakeholders, as well as the potential impact any new development may have on the airport and surrounding community. By identifying the services and facilities that will best enhance aviation and community needs at TRK, design considerations may be best aligned with airport resources.

The supporting appendices detail options for site location and hangar configurations, the community input that went into determining the focus and scope of the project, how the new facility might serve aircraft at TRK, the potential impact the new project might have on flight traffic, the potential financing costs, and the offsets by revenues generated through additional services.

B. Alternatives

Three (3) sites (**Appendix A**) and eight (8) different hangar configurations (**Appendix B**) were studied to ascertain what combination and location of facilities would best improve services at the Airport, minimize impact on existing operations, and serve the needs of the larger community. Following multiple design studies and community input, Site 3 was selected as the preferred location to site the project. The following options represent the general categories of approaches. Additional features, such as a heated ramp and de-icing capabilities, can be added to these option as desired. These amenities are listed in Section 6 – Alternatives Considered.

Of the 8 hangar configurations developed, three were focused on as representative of primary program alternates. These are:

1) Pre-engineered hangar-only option: Box Hangar, 120' x 120', which could host events of up to 222 people with portable toilets.
2) Architectural hangar-only option: Box Hangar, 120' x 120', which could host events of up to 222 people with portable toilets. This alternative features architectural refinements that responded to community input, surrounding airport buildings, and the area's character.
3) Architectural hangar with ancillary community spaces: Box Hangar, 120' x 120', which includes bathrooms to serve up to 600 people, and included additional community rooms, a kitchen.
4) No hangar option

*All three build options will fit the complete range of aircraft that currently visit TRK.

2. Project Progress

A. Methodology

The concept study was done to define the program for the project, select a site and provide design alternates representing project size, costs and level of finish. This process occurred through meetings with the ad-hoc committee, working with staff, community outreach, and presentations to the Board.

B. Outreach

The airport initially gathered public input from October-November of 2014 using in-person interviews, a public workshop, and on-line input. The public workshop meeting was held on November 5, 2014. The meeting goals were to gather initial program feedback, gather general feedback on location, size and use, and summarize feedback for the design team to use in the creation of a budget and scope. Over 80 comments were recorded during this effort. A summary of the meeting is found in **Appendix C**.

An additional public input session was conducted over the Spring-Summer of 2015. This effort collected comments from the ad Hoc Committee, non-profit/service club interviews (50), a flash vote survey (232) with 120 comments, and 6 on-line comments. The full report is found in **Appendix D**.

Conclusion

1,427 comments were received on the multi-use hangar concept since 2013 (some submitted more than one comment). Throughout the public outreach process, there has been support for a multi-use community/aviation hangar. The results from the polls and presentations are as follows:

Godbe Survey (November 2013)
Majority support for hangar

Master Plan (May 2013)
Support was expressed for multiuse option

Hangar Input Outreach Meeting (November 2014)
Support for multiuse concept with amenities for community events (AV, kitchen)

Spring-Summer 2015 Interviews and surveys by Freshtracks (non-scientific poll).
The option of not building a hangar was offered
Non-Profits: 76% Likely/Absolute support for hangar
FlashVote: 70.3% support for hangar
Of the 3 options shown during the Flashvote, respondents were given choices of hangars with varying levels of services / community space. The results were as follows:

- $3M option: 9.1%
- $6M option: 20.3%
- $9M option: 40.9%

Appendix D also lists the type of events and amenities preferred by Non-Profits. Of particular note for programming purposes, the majority of participants at non-profit events range between 100-400 people during fall and winter seasons.

After the final outreach effort, the results were presented to the Board at a public meeting. Respondents and non-profit groups were encouraged to attend this meeting in order to express their support or concerns for the project. Only two organizations attended the meeting to express support.

3. Community and Aircraft Related Building Characteristics

In determining the sizing of the proposed hangar, emphasis was placed on providing maximum flexibility, both in terms of the type and number of aircraft that might be served, as well as the range and variety of uses that might serve the public over time. A facility was planned to enhance the level of service to current users of the Airport, provide additional revenue for maintenance and operations at the airport, and provide an amenity that would serve a as a meaningful link between the airport and the wider community.

A. Community Considerations

Based on community response, as well as meetings with various service and neighboring agencies, a number of themes emerged on the development of a community hangar. There was support for a multi-use facility during public outreach meetings in November of 2014 (**Appendix C**). A few respondents opted for an aviation only hangar, or no project at all. Of those respondents opting for a multi-use hangar, the majority was split between a project mainly focused on a multi-use approach toward the hangar space itself, and one that also incorporated a commercial kitchen space for event catering and/or culinary training purposes. The need was cited for a large indoor space, for events & programs, due to the area's cold winters. There was also support by area non-profits to develop educational/stem programs in conjunction with the new facility.

Concerns included the potential for increased traffic at the Airport and its possible noise impacts, as well as the practicality of managing competing uses for the space.

To this end, comments were made that there should be no permanent structures set up in the hangar area that would impede aircraft storage, and also that no chemical deicing agents should be used on aircraft that would hinder community use of the facility.

Ideas for community use of the space included a makerspace (community shop with tools to make, craft, repair, create, learn hands-on skills, collaborate, and start businesses), a community kitchen, indoor sporting activities, performance/theater space, and space for skilled art/manufacturing. Educational programs were often mentioned as possible uses for ancillary spaces. These included junior college classes, stem programs for youth, aviation trade school education, trade school, and air museum/restoration displays.

There is also the need for a centralized location to provide emergency response to the surrounding community that could possibly be incorporated in this project.

Concern was raised by some of the importance to collaborate with other proposed or newly designed community centers, to ascertain the level of need for the proposed community functions of this project. If the need is or will be fulfilled elsewhere, it was reasoned tax money might be better spent on library or school programs.

Additional considerations were protecting the view shed of Martis Peak, allowing natural light into the space, air filtration for respite during fire events, insulation for thermal comfort during colder weather, and inspirational architecture.

The majority of pilots polled indicated they would be more likely to store and/or de-ice their current aircraft in a new overnight hangar--avoiding repositioning. This is in line with the Demand Driver Study (see **Appendix E**), which indicated that growth pressures on the Airport are primarily related to the desirability of the surrounding area, as well as local economic development, new housing, and the larger national economy. From this standpoint, storage and de-icing facilities may actually decrease the amount of traffic in and out of TRK by eliminating or reducing the need to reposition larger charter aircraft. However, a sizeable minority (32% polled) consider the availability of aircraft storage to be very important to absolutely necessary. This suggests a decrease in repositionings may be offset by an increase in use by aircraft that formerly chose not to use the airport in the winter, due to lack of deicing. Commercial pilots polled (flying a variety of aircraft) indicated they would be willing to pay in the range or $400-$1200 per night to store their aircraft at TRK.

B. Aircraft Considerations

The aircraft being considered for storage in the proposed hangar largely fall into the categories of turboprops and business jets. About 30% of these transient aircraft types are not adequately served by the Airport's current hangars. Hangar 3 is being designed to provide protected aircraft parking, de-icing and other revenue generating amenities as well as community use and event space.

The largest aircraft being considered for storage in the new hangar is the Gulfstream G650. Configuring the hangar to fit the G650 allows for accommodation of the full range of business jets and turboprops that are currently frequenting the Airport. **Appendix F** shows the wing span, length and tail height of all likely aircraft that may frequent TRK. This chart also reviews whether each aircraft would fit in the design study of 120' x 120' with a sloped roof. This hangar size will provide flexibility and allow for multiple combinations of aircraft. The Airport will be poised to serve aircraft that might otherwise overnight in surrounding airports, and adapt to changing trends. **Appendix G** lists aircraft not served by existing hangar inventory. Executive hangars are currently being considered for development at the Airport. The majority of these aircraft could be accommodated by an oversized executive hangar (Super Exec). TU5 aircraft would only fit within Hangar 3.

Hangar Size

Hangar size will determine not only the maximum-size aircraft that may be stored overnight and/or de-iced, but also the number and configurations of multiple, smaller aircraft that may be served. It also impacts the size of community event that may be held in lieu of aircraft services. The hangar should be sized to allow flexibility for the parking and deicing of numerous configurations of aircraft and to accommodate equipment associated with aircraft storage. The hangar should also be sized to fit within the scale of adjacent structures and the public interface.

Hangar Capacity

- The largest target aircraft considered (G650) has a wingspan of 99'-7", an overall length of 99'-9", and a tail height of 25'-8".
- A width of 120' would allow for a safety zone between this aircraft and hangar walls of 10'.
- A depth of 120' would allow for up to two additional smaller aircraft (such as the Embraer Phenom 100) to be stored alongside the largest design aircraft (see **Appendix H**)
- Alternately, up to five smaller aircraft could be stored within the 120' x 120' footprint (see **Appendix H**)
- **Appendix F** lists the various aircraft considered for storage, all of which will fit within the proposed hangar dimensions.
- Smaller hangar sizes were also considered, including 120' x 100' (which would accommodate a single TU5 aircraft) and 100' x 100' (which would accommodate a mid-size jet, such as a Bombardier Challenger 300, alongside one smaller aircraft.

Hangar Door

- The proposed hangar door has a height of 28 feet and a door opening of 110 feet. This would allow for maximum flexibility regarding the range of aircraft considered (the minimum recommended door width of a G650 is 104'). A smaller door would limit the size of aircraft that can be accommodated by the hangar, and should be considered only in the event that a smaller-scale hangar is desired.
- Maintaining the door height at or below 28 feet greatly reduces the fire suppression requirements of the hangar (Group II versus Group I).
- An additional clearance of 5 feet beyond the hangar door is planned for parked aircraft clearances and/or storage, yielding a hangar building width of approximately 120 feet.

Hangar Bay Clearances
The roof of the hangar was designed to slope down, from east to west, to minimize the visual impact of the structure from the landside. By lowering the roof at the eastern end toward the entrance and ancillary community spaces, a cohesive scale is achieved for the building that welcomes the community. The sloping profile does impact the parking position in storing the largest of the target classes of aircraft. As illustrated in the first set of interior clearance drawings (**Appendix I**), the resulting clearances will require some aircraft to park nose in, while others may park in either direction. **Appendix F** details which aircraft must be pulled into the hangar. Additional attention must be paid to tug routes, sequencing of multiple aircraft storage, and potential placement of deicing equipment. An alternative to pulling larger aircraft into the hangar is to raise the hangar roof by about 5 feet (see **Appendix I**). The taller section allows for all aircraft considered to be either pulled or pushed into the hangar, but with implications to cost and the scale of the hangar in relationship to ancillary community spaces.

Tug Routes
Appendix J displays two possible tug routes in the pull-in scenario necessary for larger aircraft. These routes limit the staging of multiple aircraft, when aircraft must be pulled into the hangar.

C. Traffic Impact Analysis

Chapter 2 (Aviation Forecasts) of the draft Airport Master Plan report provides a detailed description of the factors influencing aviation demand. From a broad perspective, the types of aircraft using the Airport are affected by changes occurring within the entire U.S. fleet. Generally, light piston-engine airplanes make up a significant, but declining share of the nationwide fleet of aircraft. Business jets, turbo-props, and helicopters are increasing in terms of both the total number of aircraft and as a percentage of the fleet. Business jets and turbo-props also have a much higher utilization rate compared to light piston airplanes (i.e., they fly more hours per year).

Another important factor is the regional setting. The Lake Tahoe area is described as a “destination” market. Travel to the area, regardless of mode, is influenced by the desirability of the mountain setting. For the most part, these influences are beyond the Airport’s control. The forecast chapter notes that activity fluctuations may reduce slowly over time as a result of technology enhancements and local economic initiatives to lure permanent jobs to the area. The presence of TRK supports these local initiatives and can be a factor in a business’s decision to locate in the Truckee area.

Airport facilities are the third level of influence of aviation activity. The runway/taxiway system and services available are currently capable of supporting activity by large business jets and turbo-prop aircraft with few constraints. The primary constraints can be grouped as follows:

- **Communications, surveillance, and weather reporting support.** These issues documented in the master plan most directly impact operational delays, not total activity. Improvements would reduce the amount of time to arrive into or depart from the Airport.

- **All-weather operational support facilities and services.** The Airport is difficult to access during poor weather. Consistent with community input, the master plan does not recommend upgrades that would support continuous operation during these conditions. The plan has been updated to postpone improvements to lighting and instrument approach procedures that would be supportive of operations during stormy or poor visibility conditions.
- **Executive Hangars.** There is a waiting list for box-type executive hangars. These hangars are used for permanent and seasonal storage of aircraft. Although some of the aircraft owners on the waiting list would be new to TRK, the overall effect of executive hangar construction on total operations is expected to be minimal.

Typically, such new hangars are provided by an airport's FBO or other private investors as a commercial revenue generating facility serving a variety of functions. As such, the hangar's use for aircraft overnight storage and/or deicing is but one of many potential uses and benefits accruing to the FBO, the airport, and the customer. The nature and volume of an airport's air traffic would not be expected to change solely as a result of such a hangar being available. In this particular application (i.e., aircraft deicing), it can be anticipated that the availability of such a hangar at a typical airport could result in slightly less air traffic since a transient aircraft might prefer to make one visit to the airport and deice in the hangar versus making two flights to reposition at an alternate airport with deicing capability. However, there is a possibility that the new capacity to deice may attract additional aircraft that may have avoided the airport in the past due to a lack of winter hangar storage/de-icing.

A previous report prepared by C&S Engineers, "Truckee Tahoe Airport Hangar 3 Needs Assessment February 2014" came to a similar conclusion. An excerpt from page 4 of that report is as follows:

> *C&S believes that if Truckee Tahoe were to have a business aircraft hangar offering that the relocation flights could decrease at the airport. This information is supported based on discussions that C&S had with Flex Jet, Jet Suite, and Net Jets. All these fractional providers affirmed that repositioning would not occur as frequently at Truckee Tahoe if a hangar was available for transient overnight. The potential reduction from repositioning would also balance out the possible operations that could increase from other interested business aircraft should a hangar be developed at Truckee Tahoe Airport. This increase would come from the catchment within the service area of business aircraft using a less desirable location based solely on the fact that a hangar was available for overnight parking.*

In our professional opinion, the new short-term/overnight hangar would not attract new demand by itself. As noted in the Needs Assessment report, a business aircraft operator will use the nearest facility to the desired destination with a primary purpose of minimizing driving time. These operators will incur additional costs to do so for drop-off and return. The new hangar would certainly be used by the large transient operators (some require hangar storage for overnight parking), but it would be an enhancement to an existing operation. Aircraft with visitors bound for Reno, South Lake, Carson City, and Minden would not use TRK for passenger drop-off due to driving distances. It is also unlikely for TRK to be used for relocation with the new hangar in place because similar facilities exist or are being planned, constructed or expanded at those locations; some also have better all-weather capability. The limited size of the hangar facility combined with a shared peaking calendar reduces the potential for relocation operations from other airports.

The four peak summer months account for 52% of all jet/prop operations when de-icing isn't a concern.

D. Demand Impact on Operations

The two major factors influencing demand for air service at TRK are:

1) Location relative to Lake Tahoe and Truckee (of home, 2^{nd} home, or business)
2) Economic health of the region and the nation as a whole

These factors are outside the influence of Airport policy. Though many users, both based and itinerant, would like to see an increase in services – especially better instrumentation procedures, de-icing service, and larger, box hangars – growth at TRK will likely be unaffected by implementation of these services.

TRK based aircraft numbers are generally in line with national trends, which show a decrease in single, piston-engine aircraft, as well as a more gradual increase in use of turboprop and jet aircraft. The number of aircraft at TRK is limited by the amount of available hangars, but some of the smaller t-hangars remain vacant while over a dozen users are on a waiting list for an executive/box hangar.

Itinerant use of TRK has grown well beyond national trend lines. This is likely due to the desirability of Truckee as a destination, proximity to the Bay Area and Los Angeles, growth of area residential development (especially luxury housing), and improvements to the regional and national economies. As a whole, these users tend to be less price-sensitive than based-users, and therefore less affected by usage fees, fuel rates, etc. And while there is demand by itinerant users for improved services from the Airport (especially de-icing service and overnight hangar space), the lack of these services has probably not significantly affected charter service to TRK, and more likely has increased traffic to and from the Airport by necessitating repositioning during inclement weather.

Concerns were noted, during public outreach, centering around aircraft noise, negative impacts of growth related to expanded airport services, and the desire to limit public expenditures on air service. However, according to public outreach done during the airport master planning process, a majority of participants listed the option of accommodating natural growth, consistent with aviation and community demand, as their preferred option (as opposed to restrictions on further development, on the one hand, and active promotion of expansion, on the other).

A Potential Operations Impact Analysis was modeled to review new operations that may be generated by the creation of Hangar 3. See **Appendix N** for the complete analysis. This study made the following assumptions:

User	Factor	Notes
Community Events per Year	12	Out of 365 total possible. 12 is low against potential displacement of hangar availability by community events.
Average Planes in Hangar/Night	2.75	Hangar is sized to accommodate up to 5 aircraft.
Projected Occupancy Rate	70%	Assumes hangar will not be at capacity year round
Big 5 Take Rate	90%	Current user group at airport, part of 540 total anticipated annual hangar uses that will not generate new trips.
Existing overnight Take Rate	40%	Current user group at airport, part of 540 total anticipated annual hangar uses that will not generate new trips.
Pass Holder Take Rate	30%	Current user group at airport, part of 540 total anticipated annual hangar uses that will not generate new trips.
Average Nights per Hangar Event	1.5	
% New Trips due to Available Hangar Space	40%	Assumes that of the available space remaining, 40% of this will be occupied by aircraft that would not have flown to TRK if hangar services were not available.

These factors resulted in 74.47 new potential annual operations due to available hangar space. This would be an increase of 0.27% of total operations, or approximately 1 new operation every 5 days. This would be an increase of 0.81% of potential impact on turbo prop and jet operations.

Appendix N also includes sensitivity tables, showing different modeling results as the factors listed above change.

E. Current TRK Aircraft/Hangar Compatibility

There are three (3) hangars at TRK that currently serve transient aircraft. See **Appendix K** for the aircraft that these hangars can support.

4. Jurisdictional Reviews

A. Airport Land Use Compatibility Plan

The proposed mixed-use program of the hangar between aviation and community uses will require the Truckee-Tahoe Airport Land Use Commission (ALUC) to review the facility. The potential gathering of over 200 people will trigger this review. This review will be to determine whether the facility is consistent with the policies outlined in the 2004 Truckee-Tahoe Airport Land Use Compatibility Plan (ALUCP). See **Appendix L** for a memo further defining this process. The general strategy for ensuring compatibility is as follows:

- Engage the public/stakeholders early and determine who will be using this facility for events.
- Determine a maximum number of public events in a year and the maximum amount of people that will be expected at each.
- Inform ALUC staff of the intentions of this facility early in programming for the facility. Keep regular communication with ALUC staff during the design and siting of the hangar.

- Highlight that the 2014 Master Plan proposes reducing the runway reference code, critical areas, and forecasted operations from the 1996 Master Plan. Zones lateral the runway could potentially be reduced in the next iteration of the ALUCP.
- As a concession, one idea is to propose closing Runway 11-29 during large gatherings. This would only be for a few hours at a time, a few times a year, and increase the safety at either Site 1, 2, or 3.

B. California Environmental Quality Act (CEQA)

The California Environmental Quality Act (CEQA) requires that the potential environmental impacts of a project be documented prior to a governmental agency making a decision to proceed with the project. The first step in this process is to prepare an Initial Study of Environmental Effects. This document is in the form of a detailed checklist with 17 categories of factors to be considered. The factors range (in alphabetical order) from Aesthetics to Utilities/Service Systems. Much of the information required to complete the Initial Study is often available from existing data sources. However, specialized studies are commonly needed to complete some sections. For each factor it must be determined whether there would be: no impact, less than significant impact, less than significant impact with mitigation incorporated, and potentially significant impact.

The final section of the Initial Study are Mandatory Findings of Significance that must be address by the agency responsible for the environmental document. It is common that a project is first evaluated at a “programmatic” (i.e. general) level and then at a “construction” level.

In the specific case of Hangar 3, the Initial Study is being prepared by a team of consultants working directly for the Airport District. The environmental review of this hangar will be included in the Initial Study to support adoption of the Airport Master Plan. This combined document will evaluate the Master Plan at a programmatic level and Hangar 3 at a construction level. The Hangar 3 project will utilize three specialized studies prepared for the Master Plan: biological, cultural, and traffic (i.e., cars and trucks). A supplemental traffic study is also being prepared for Hangar 3.

Once reviewed and approved by District staff, the Initial Study will be made available for a 30-day public review and comment period. The consultants will review all written comments and provide responses for the District Board to consider. At the public hearing to review the environmental document, the Board will either:

- Accept the project mitigations (if any) as fully mitigating impacts to a less than significant level and approve a Mitigated Negative Declaration, or
- Direct that an Environmental Impact Report be prepared to address any unmitigated impacts.

Following approval of the Airport Master Plan Mitigated Negative Declaration, the Board will have met the CEQA requirements to construct Hangar 3.

C. Parking

Required parking is dependent on which design option and functions are ultimately selected (from **Appendix B**). Based on occupant load, the hangar itself would require 28 spaces (Options 1-2C). This number could be reduced with approval of the planning department based on actual occupants for the hangar, which is anticipated at below 10. The addition of a meeting room to the building would require another 29 spaces, for a total of 57 spaces (Options 3A-3C). Option 4A would require an additional 57 spaces for classroom and meeting areas, as well as 5 spaces for offices.

Additional new parking spaces are planned in conjunction with the project. These will be combined with access parking adjacent to the terminal to meet the parking requirements. Event parking for use in conjunction with the hangar space for large groups will make use of the aviation ramp.

D. Setbacks

The Airport parcel number is 19-440-68-000. The front yard setback is 20 feet from the right-of-way. The interior yard setback is 30 feet. Building height is limited to 45 feet or 3 stories, whichever is less.

E. Building Code Analysis

The building design must conform to 2013 Title 24, California Code of Regulations, which is based on the 2012 edition of the International Building Code. Preliminary code evaluation indicates the following primary criteria will apply to this facility:

Occupancy classification: "Moderate Hazard Storage Group S-1" (repair garage and vehicle storage)
"Assembly Group A-3" (community hall)

Class of construction: Type IIB is anticipated, where all major building elements are "non-combustible" but are not required by the building classification to be protected to carry a fire rating (0-hour). The building is anticipated to be designed as "Unseparated Uses" as defined in Section 508.3. This eliminates the need to separate the hangar space from the remainder of the building.

Exterior wall fire rating: Exterior walls located less than 30 feet from lot lines or a public are required to have a fire-resistance rating of two (2) hours (412.4.1).

Fire rated assemblies: Fire rated assemblies are not anticipated but should be reviewed for specific hazards during the design phase of the project.

Fire suppression: Fully automatic fire suppression (sprinklers) are mandatory since the "fire area" exceeds 12,000 square feet. Group II fire suppression is required for a hangar of this size. There is an exception for FBO's with separate repair facilities on site. Hangars used for storage of transient (<90 days) are exempt from the Foam System requirements.

Fire alarm system: May not be mandatory if the building has a sprinkler system, but recommended in this type of facility to provide faster notification and response to occupants.

Building area limits: The building is anticipated to be designed using "Unseparated Uses" as defined in Section 508.3. Allowable area is 44,175 sf after applying frontage increases (I_f) for clear perimeter and a fully automatic fire sprinkler system (I_s) to the basic allowable area of 9,500 square feet for the A-3 occupancy (most restrictive occupancy). No separation of occupancies is required.

Building height limits: Two stories and a height of 55 feet are allowed.

Exiting requirements: For assembly purposes, exits will be driven by occupancy. Occupancies of 501-1000 people require three (3) exits. Occupancies of 50-500 require two (2) exits. For non-assembly purposes, due to relatively low occupancy levels within the hangar, the number and locations of exits will most likely be driven by maximum allowed exit travel distance for a sprinkled S-1 occupancy, which is 250 feet (rather than number of occupants). The A-3 occupancy areas will need to be evaluated for exiting based on an occupant load factor of 15 sf per person (unconcentrated assembly without fixed seats). Two (2) exits are required from spaces with an occupant load that is greater than 49 occupants.

Toilet facilities: Need to provide minimum number of fixtures required for occupancy level, with male/female parity. The owner may request that female fixtures be reduced based on personnel/operational history. Additional fixtures may be added as desired.

Accessibility: This facility is subject to all standard accessibility requirements including routes to/from accessible parking stalls.

F. Federal Aviation Administration (FAA)

Height

In order to maintain a safe environment for aircraft operations, structures on (and off) an airport are required to clear various airspace surfaces. At TRK, the most critical airspace surface in the building area is the Part 77 transitional surface. The transitional surface is located lateral to the runway and begins 250 feet from the runway centerline. The surface begins at an elevation equal to the runway, and rises one foot vertical for each additional seven feet horizontal away from the runway. These requirements will cause the hangar at Site 3 to be limited to a height of 80'. The current options have a design height between 39' and 44' (see **Appendix C**).

5. Site Studies

Three (3) sites were considered for the location of Hangar 3. Factors such as buildable area, ramp access, public access, utilities, the ALUCP, and airport operations were considered. **Appendix A** displays the three sites considered.

A. Site 1 Summary

Site 1 is located south of the current ramp area, west of the existing General Aviation Terminal Building and adjacent to transient aircraft tie-down locations.

The advantages of this site include:

- Utilization of existing ramp.
- Creation of parking area that could be shared by rental agencies/multi nodal transportation area.
- Placement of GSE equipment and personnel near fuel farm and transient area.

The disadvantages include:

- Placement of hangar/public area near fuel tank (need to verify setbacks).
- Removal of several existing tie-down locations.
- Maneuvering aircraft in and out of hangar may be difficult due to self-serve and transient parking.
- Possibility of extra vehicle parking needed for large events.

B. Site 2 Summary

Site 2 is located just south of the current ramp area, east of the General Aviation Terminal Building and adjacent to the current park area.

The advantages of this location include:

- Connection between the recently constructed Airport terminal building, the community park and this proposed community hangar.
- Direct access to the current ramp area that extends past the current terminal building.
- Use of existing, newly constructed apron area.
- Minimized impacts to the traffic to and from the existing southeast aircraft storage hangars.
- Minimal cost to extend and tie in the existing utilities to the new building.

Disadvantages include:

- Building would be in zone A, which places more restrictions on the creation of spaces for large public gatherings.
- Relocation and/or demolition of Hangar 2 before the new hangar building could be constructed.
- Loss of 11 existing vehicle parking stalls in the new footprint.
- Reconfiguration of the vehicle access control grate to accommodate construction and vehicle access.
- Ramp area in front of hangar could conflict with existing jet parking. Staging of aircraft outside of hangar would displace current premium tie-down spaces.

C. Site 3 Summary

Site 3 would locate the proposed hangar and community area adjacent to the existing T-hangars in the undeveloped area along the western edge of the current apron.

The advantages of this location include:

- The new hangar and community area could be constructed without removing or demolishing existing facilities.
- No loss to the existing parking configuration, and can take advantage of the jet ramp for vehicle parking for large events.

- More flexibility than Site 1 and 2 for maneuvering aircraft in and out of the hangar (takes full advantage of jet ramp).
- Less disruption to front line ramp operations.
- Hangar door faces the East: best alignment for winter.
- Close proximity to administration building, Hangar 2, and park.

The disadvantages with this option include:

- New ramp configuration for connection of Hangar 3 and T hangars. Work may include approximately 11,000 sf of concrete apron to accommodate the recommended load capacity for Hangar 3. (This work is already planned as part of the ramp repair for this area.)
- The existing open flow ditch along the west ramp area would need to be rerouted since it is currently located inside the proposed building footprint.
- Area this may require further environmental investigation, as an undisturbed area, before finally considering this as a viable option.
- Draining redesign would be required to accommodate the current catch channel within the proposed footprint of this facility.

D. Preferred Site

Site 3 was selected as the preferred site. Primary reasons include:

- Best site to maximize existing public parking and ramp for special event parking.
- Preferred site for community/public interface.
- Minimal impact on existing airport operations.
- Preferred site for adjacencies of airport staff.
- Best compatibility with ALUCP.

6. Alternatives Considered

The original program of the study was to develop a hangar that could be used to accommodate overnight aircraft as well as a community gathering space. Through stakeholder and community meetings, a number of additional programmatic elements were considered. Building and design components, as listed in A. Program Spaces (floor area), B. Building Equipment, and C. Aesthetics, are described below. These components represent items discussed for consideration only. Part D. lists the full range of design alternates considered, which incorporate various levels of these buildings and design components to suite the most salient identified airport and community space needs at various funding levels.

A. Program Spaces

- Hangar space of 120’ x 120’.
    - See section 3B for description of hangar sizes. The design size of 120’ x 120’ with a 28-feet tail clearance provides for ample parking configurations of the design aircraft that frequent TRK. Slight reductions to the hangar size of up to 10 feet in each direction are also viable, with reduced clearances for aircraft and equipment.

- Hangar door: Vertical fabric lift versus horizontal panel door.
    - A vertical lift fabric door was deemed preferable for performance and thermal qualities. The vertical lift door is also being considered with multi-sectional panels to provide flexibility in the opening configurations. A horizontal panel door would be less expensive, provide less thermal performance, and require additional floor area for door pockets.
- Associated building system spaces for building systems.
    - The floor space for building systems will vary depending on the mechanical system selected. A mezzanine has also been considered for the storage of such equipment in some of the plan options.
- Ground Service Equipment (GSE) Storage Area
    - A dedicated space for the storage of GSE vehicles and other aircraft support equipment was deemed beneficial to maximize the use of hangar space for aircraft and make the hangar space readily available for community purposes. The GSE storage area would include space for 2 aircraft tugs, a lav cart, a man lift, as well as other tool and cart storage. The GSE space may also include an ice maker and small kitchen counter for aircraft support. Vehicle doors would be provided to give access between the GSE area and the hangar/exterior.
- Small Restroom/janitorial closet for pilots/hangar staff
    - A separate, single person restroom was considered for aviation uses. Some options considered combing this function with the large community restrooms.
- Large restroom to accommodate community gathering for the hangar of 200 (minimum) to 600 people.
    - The California plumbing code requires a specific number of restroom fixtures, based on the occupancy and use of the space they support. Once the hangar is used for assembly purposes, additional fixtures will be required. One option is to provide portable toilets for large gathering events. Bathrooms that can support between 200 and 600 person events were also considered as permanent building components.
- Multi-purpose community room
    - A general purpose room that could be used by the airport and community alike was seen as a benefit for small meetings and activities. A similar space is included in the existing terminal, and is often booked to capacity. The community room could be provided with room dividers so multiple activates could occur at the same time. The room could also be used for maker-space activities. This room should be located adjacent to the prep/commercial kitchen so it can be used for dining events.
- Prep kitchen
    - A prep kitchen was considered to support assembly activities in the hangar. This space would primarily be to stage food that was prepared off site. It would include stainless steel counters, sinks, refrigerators and a small cook area/heating table. A commercial range would not be available in this option.

- Commercial kitchen
    - A larger kitchen was considered to provide the same support as the prep kitchen, as well as allow food to be prepared on site. This kitchen would be equipped and finished to meet health regulations for a commercial kitchen. The space could also be rented out to community members as a maker space.
- Circulation space
    - With the inclusion of additional community spaces and restrooms around the hangar, circulation space will be required. This will provide spaces the ability to be used simultaneously without activities interfering with each other.
- Expanded Community shell space
    - Additional community and airport spaces were discussed as potential future items that might co-locate with Hangar 3. These include:
        - EAA offices
        - Emergency response offices
        - Additional maker spaces
        - Additional meeting spaces

      Areas for these spaces could be included in the initial project as a vanilla shell, and fitted out in the future based on the specific use or tenant.
- Expanded GSE shell space
    - Additional GSE/storage space was discussed. These would be used for support of additional airport equipment, and/or storage for community activities such as chairs or stage. Areas for these spaces could be included in the initial project as a vanilla shell and fitted out in the future.

B. Building Equipment

- Aircraft Deicing
    - Consideration has been made to provide Hangar 3 with radiant heat deicing. This equipment would be suspended from the ceiling and direct vented through the roof to the exterior. The extent of the deicing equipment will be based on the anticipated amount of accumulated snow/ice on the aircraft, and the desired speed of the deicing process. Standard deicing periods can range from 15 minutes to 2 hours.
- In-slab radiant heating
    - In slab radiant heating was selected as the preferred option for most of the alternates considered. This form of heating would provide the highest comfort level for personnel and community activities that use the hangar. It is also the most efficient, as the hangar heat would not be lost when the doors are opened. In slab radiant heat would also provide enhanced snow/ice melt capabilities, though it should not be relied on as the primary aircraft de-icing system.
- 20 feet of heated ramp
    - It is beneficial to provide in slab heating for snow melt of the first 20 feet of ramp outside of the hangar door. This provides space for the aircraft tug to exit the building in icy conditions, and simplifies the snow removal process in front of the hangar.

- Epoxy Flooring
  - An epoxy coating on the floor of the hangar provides a durable, easily cleanable surface below the aircraft. It is also seen as an amenity for community gathering activities.
- LAV dump
  - A lav dump inside the hangar, connected to the sewer line, will provide added service and quick turn-around time for aircraft.
- Ground Power Units
  - Ground Power Units (GPUs) provide aircraft electrical support while they are powered down. It is preferable to provide this service to aircraft that intend to overnight in the hangar.
- Generator
  - A generator can be supplied to provide emergency back-up power to the building. In addition to code-required building life-safety support, the generator would back up key circuits and electrical systems. If a vertical lift hangar door is selected, electrical power is required to raise/lower the door. If a permanent generator is not included in the project, a transfer switch should be included in the main electrical panel to allow for a temporary generator to provide emergency power.
- Roof/gutter snow melt system
  - Structurally enhanced gutters with a snow melt system are recommended for the snow country roofs. This is critical for high roofs that slope onto a lower roof or entrance.
- Aircraft Support
  - Pressurized air drops
  - Water supply
  - Ice machine
  - Washer/Dryer
  - Kitchenette
- Community Support
  - Portable stage and seating

C. Aesthetics

A primary design requirement of Hangar 3 has been to make the building compatible with the architectural vocabulary of the Truckee Tahoe area. The building, in conjunction with the main terminal, will serve as the public front of the Airport. Many design characteristics are being considered to enhance the community nature of this building above a strictly utilitarian option.

- Exterior materials. Primary exterior materials for the project are anticipated to be:
  - Metal Panel, preferably insulated metal wall panels to provide optimal energy performance and clean, interior appearance.
  - Board Formed Concrete – (or similar durable material along ground level)
- Fenestration
  - Large amounts of clerestory and ground floor glazing to support community use.
- Massing
  - Maintain single story spaces towards the west (landside)
  - Continuous slope of main hangar roof from west (low) to east (high) to minimize building size on landside.

- Use of canopies at entrances to break up massing of single story building and provide weather relief at main entrance.

- Interior
    - Epoxy floor at hangar space.
    - Interior walls to 8’ at hangar space to reduce industrial nature of interior.
    - Acoustic Lay-in ceiling in community and circulation spaces.
    - Sealed/stained concrete in circulation areas.
    - Carpet/tile in community activity areas.
- Landscaping
    - Drought tolerant landscaping, similar to the terminal.

D. Design Alternates

Numerous alternates were considered to meet various levels of the program listed above. These were grouped together according to the following:

- Group 0 – Use of existing hangar space at TRK to meet some of program goals.
- Group 1 is a standard, minimal aviation hangar with no additional support spaces. This option is not intended to support assembly gatherings.
- Group 2 – This group of options provides an aviation hangar with minimal aviation and community support amenities.
    - 2A – Enhanced aesthetic improvements to 120’ x 120’ hangar space – intended for aviation and community activities.
    - 2B – Based on 2A, with GSE spaces included.
    - 2C – Based on 2A, with GSE spaces and restrooms for 200 person events included.
- Group 3 – This group of options provides aviation services, assembly use and support of the hangar space, and accessory community-use spaces.
    - 3A – Enhanced aesthetic improvements to 120’ x 120’ hangar space – intended for aviation and community activities, GSE supports spaces, 200 person restrooms, community room and prep kitchen.
    - 3B – Enhanced aesthetic improvements to 120’ x 120’ hangar space – intended for aviation and community activities, GSE supports spaces, 600 person restrooms, community room and a commercial kitchen.
    - 3C – Based on 3B with aircraft deicing equipment added.
    - Group 4 – This group intended to meet the largest number of programmatic options considered.
    - 4A – Based on 3C with additional shell space included for future GA storage and community rooms/offices.
- No Hangar Option

Features	Option 1A	Option 2A	Option 2B	Option 2C	Option 3A	Option 3B	Option 3C	Option 4A
Small to large-sized aircraft warming								
Mono-pitch roof w/ overhangs								
Additional architectural enhancements								
Roof and gutter snow melt system								
Clerestory Windows								
Mega-door								
Hydronic in-floor heat w/ boiler								
Insulated metal wall panels								
Interior walls to 8'								
Sidewalks, enhanced landscaping								
20' of heated ramp								
Roof and wall blocking for metal panels								
Overhead mixed-use doors								
Board-formed concrete wainscoting								
Electrical high bay lighting								
Backup generator								
Epoxy flooring								
Aircraft rectifier								
Basic expanded air services (lav dump, air, water, ice, washer/dryer), and storage for those services								
One internal toilet and office								
Restrooms for 200 people								
Restrooms for 600 people								
More community space and upgraded services for events								
Exterior canopies at entry and kitchen								
Standard kitchen area								
Commercial kitchen area								
De-icing system capable of melting 3" of snow in 20 minutes								
Area east of bathrooms and west of GSE built to vanilla shell								
Events up to 222 people with portable toilets								

*See **Appendix G** for further plan, rendering, cost and descriptions of the above alternates.

7. Deicing

Deicing service is currently absent from TRK, and identified as a service priority by polled pilots – both based and itinerant users (see **Appendix E**). Deicing and anti-icing services are typically provided by application of chemical agents in a specified area designed to capture and treat runoff. An alternate method for deicing is to provide infrared heating. This approach was considered for the community hangar. Ceiling mounted infrared heating units would provide this service, and be arranged to deice single large aircraft or multiple smaller aircraft. The layout of the system will determine the amount of time it takes to deice the aircraft. Radiant heat planned for the floor slab will also contribute to the deicing capabilities of the hangar. Anti-icing agents were ruled out for the interior of the hangar due to the potential conflict with other community uses of the hangar space.

8. Hangar 3 Financial Feasibility Analysis

VJS Lincoln, a national Aviation/Hangar Construction firm, provided preliminary construction estimates for Hangar 3. These estimates were based on national hangar construction pricing, specific input from pre-engineered metal building suppliers on the hangar 3 design, and reviews with local contractors to generate site specific cost data including prevailing wages. Atypical conditions such a high snow loads, high seismicity requirements, and a high cost of construction were taken into account. A baseline estimate was provided for the hangars, with additional amenities priced as indicated in the eight (8) options shown in **Appendix B**.

Method

The consultant developed an Excel cash flow model (Proforma) in order to look at the financial feasibility of the various Hangar 3 development options over a 40 year period. The Proforma utilizes certain stated assumptions related to the projected future operations and the Opinion of Probable Cost (provided by M&H or VJSLincoln) related to development cost in order to generate a 40 year cash flow projection. The Proforma contains a separate 40 year cash flow projections for each development option, set of operating assumptions and the Opinion of Probable Cost for that development option.

Results

The following two pages provide a summary level review of the results and assumptions for each development option. The reader will see that the payback period ranges from 20 years for Option 1 to over 40 years for Option 3, again, with the assumptions utilized.

The difference in the projected financial results provided is largely a function of the Opinion of Probable Cost for the development cost of each option as hangar rental income was held constant under each of the three development options

Appendix M contains the detailed results and assumptions utilized, the 40 year cash flow projections and sensitivity tables for each development option. The sensitivity tables provide the reader with the ability to understand the impacts of changes in the key assumption and to see a range of results with changes in the assumption.

For this project, with the Opinion of Probable Cost constant, the most influential variable to the financial results is hangar rental revenue which is a function of rental rate and frequency/utilization. The second most influential variable is the escalation rate which is deemed to be a combination of inflation and demand.

Truckee Tahoe Airport District
Hangar 3 Feasibility Analysis
Results & Assumptions (40 Year)
5/15/2016

Results thru 2056	Option 1	Option 2	Option 3
Operating Revenues			
Hangar Rental	13,839,700	13,839,700	13,839,700
De-Icing	2,283,100	2,283,100	3,424,600
Community Component	-	-	-
Other Revenue	-	-	-
Total Operating Revenues	16,122,800	16,122,800	17,264,300
Operating Expenditures			
Hangar	6,287,100	6,287,100	6,393,400
De-Icing	342,400	342,400	342,500
Community Component	-	220,300	2,760,600
Other Expenditures	-	-	-
Total Operating Expenditures	6,629,500	6,849,800	9,496,500
Net Operating Cash Flow	9,493,300	9,273,000	7,767,800
Development Cost			
Hangar	3,134,000	3,864,000	4,397,000
GSE Space	-	-	538,000
Community Component	-	1,344,000	3,223,000
Total Development Cost	3,134,000	5,208,000	8,158,000
Net Cash Flow	6,359,300	4,065,000	(390,200)
Base Year Results			
Total Operating Revenues	232,200	232,200	248,600
Total Operating Expenditures	(95,500)	(98,700)	(136,800)
Net Operating Cash Flow	136,700	133,500	111,800
Financial Results			
Break Even Period	2036	2045	2055+
Years to Break Even	20	29	40+
Community Component	-	1,564,300	5,983,600
IRR % w/ Community Component	5.61%	2.66%	-0.21%
IRR % w/o Community Component	5.61%	4.37%	3.59%

Assumptions
Operations

	1	2	3
Hangar Rental Revenue			
Hangar Rental Events/Day	1.00	1.00	1.00
Hangar Rental Average Rate/Day	$500	$500	$500
De-Icing Revenue & COGS			
De-Icing Events/Year	30	30	30
De-Icing Rate	$1,000	$1,000	$1,500
De-Icing COGS	15%	15%	10%
Staffing, Utilities, Maintenance			
Utilities & Janitorial/Year - Hangar	12,100	12,100	13,800
Utilities & Janitorial/Year - Community Component	-	-	10,900
Staffing/Year - Hangar	60,000	60,000	54,000
Staffing/Year - Community Component	-	-	21,000
Repairs, Maintenance, Refurbishment/Year - Hangar	10,800	10,800	16,500
Repairs, Maintenance, Refurbishment/Year - Community Component	-	2,900	4,500
Escalation Factor	3.00%	3.00%	3.00%

Truckee Tahoe Airport District
Hangar 3 Project Options - Opinion of Probable Cost
5/15/2016

Option	Square Feet	Description	Functions/Components	Added Cost	Estimated Project Costs	Hangar	GSE	Aviation	Community Component	Total
0		Do nothing		0						0
0A	3,333	Refit A9 with Infrared Heaters, re-insolate, floor drains	Small to medium sized aircraft warming. Events up to 222 people with portable toilets		150,000		150,000	150,000		150,000
0B	3,433	0A with Restrooms	Add Restrooms for 200 people (M: 1WC, 2UR - F: 3WC) to the side of A9	208,000	358,000		358,000	358,000		358,000
0C	0	Deicing Truck & Site Improvements	Deicing & anti-icing of planes		467,000		467,000	467,000		467,000
0D		Refit A9 & A10 for Maintenance and Hangar 1 for Overnights and Events	Offices and bathroom at A9 (also add fire suppression), new door and heating for Hangar 1		934,000		934,000	934,000		934,000
1	14,400	Basic GA Hangar	Small-large aircraft warming (1-2 Hours) and over-nighting. Events capable with portable toilets, 1 internal toilet & office. Very Basic Looks		3,134,000	3,134,000	-	3,134,000	-	3,134,000
			+ Mono-pitch roof with overhangs	507,000		-	-	-	507,000	507,000
			+ Additional architectural enhancements	135,000		-	-	-	135,000	135,000
			+ Roof & gutter snow melt system	23,000		-	-	-	23,000	23,000
			+ Clerestory windows	30,000		-	-	-	30,000	30,000
			+ Mega-door	217,000		217,000	-	217,000		217,000
			+ Hydronic in-floor heat with boiler	66,000		-	-	-	66,000	66,000
			+ Insulated metal wall panels	238,000		-	-	-	238,000	238,000
			+ Interior walls to 8'	23,000		-	-	-	23,000	23,000
			+ Sidewalks, enhanced landscaping	39,000		-	-	-	39,000	39,000
			+ 20' of heated ramp	149,000		149,000	-	149,000		149,000
			+ Roof & wall blocking for metal panels	60,000		-	-	-	60,000	60,000
			+ Overhead coiling doors	37,000		37,000	-	37,000		37,000
			+ Board formed concrete wainscoting	72,000		-	-	-	72,000	72,000
			+ Electrical high bay lighting	176,000		176,000	-	176,000		176,000
			+ Additional permitting	36,000		18,000	-	18,000	18,000	36,000
			+ Duration (additional 3 months of General Conditions)	266,000		133,000	-	133,000	133,000	266,000
2	14,400	Truckee Hangar Design	=	2,074,000	5,208,000	3,864,000	-	3,864,000	1,344,000	5,208,000
			+ Backup generator	60,000		60,000	-	60,000		60,000
			+ Epoxy flooring	136,000		136,000	-	136,000		136,000
			+ Aircraft rectifier	48,000		-	48,000	48,000		48,000
			+ Basic expected aircraft services (Lav dump, air, water, ice, washer/dryer), and storage for those services	490,000		-	490,000	490,000		490,000
			+ Restrooms for 200 people (M: 1WC, 2UR - F: 3WC)	304,000		-	-	-	304,000	304,000
			+ More community component and upgraded services for events	1,382,000		-		-	1,382,000	1,382,000
			+ Upgrade kitchen area to commercial	102,000		-	-	-	102,000	102,000
			+ Upgrade restrooms 600 people. (M: 3WC, 2UR - F: 6WC)	91,000		-	-	-	91,000	91,000
			+ Add de-icing system capable of melting 3" of snow in 20 minutes.	337,000		337,000	-	337,000		337,000
3	20,080	Multi-Purpose Hangar with Commercial Kitchen & Rapid Snow/Ice melt	=	2,950,000	8,158,000	4,397,000	538,000	4,935,000	3,223,000	8,158,000

Notes:

1. GA Hangar includes minimal 120'x120' hangar structure with sectional sliding doors
2. Modified hangar includes clerestory windows, 3 panel vertical lift fabric door.
3. Cost and Extent of IR system still under review
4. Cost of Deicing pad based on another airport, adjusted for scale and location only. No design has yet been conducted.

KTRK - Hangar 3 Feasibility 5-15-16 Dev Options-Prob Cost

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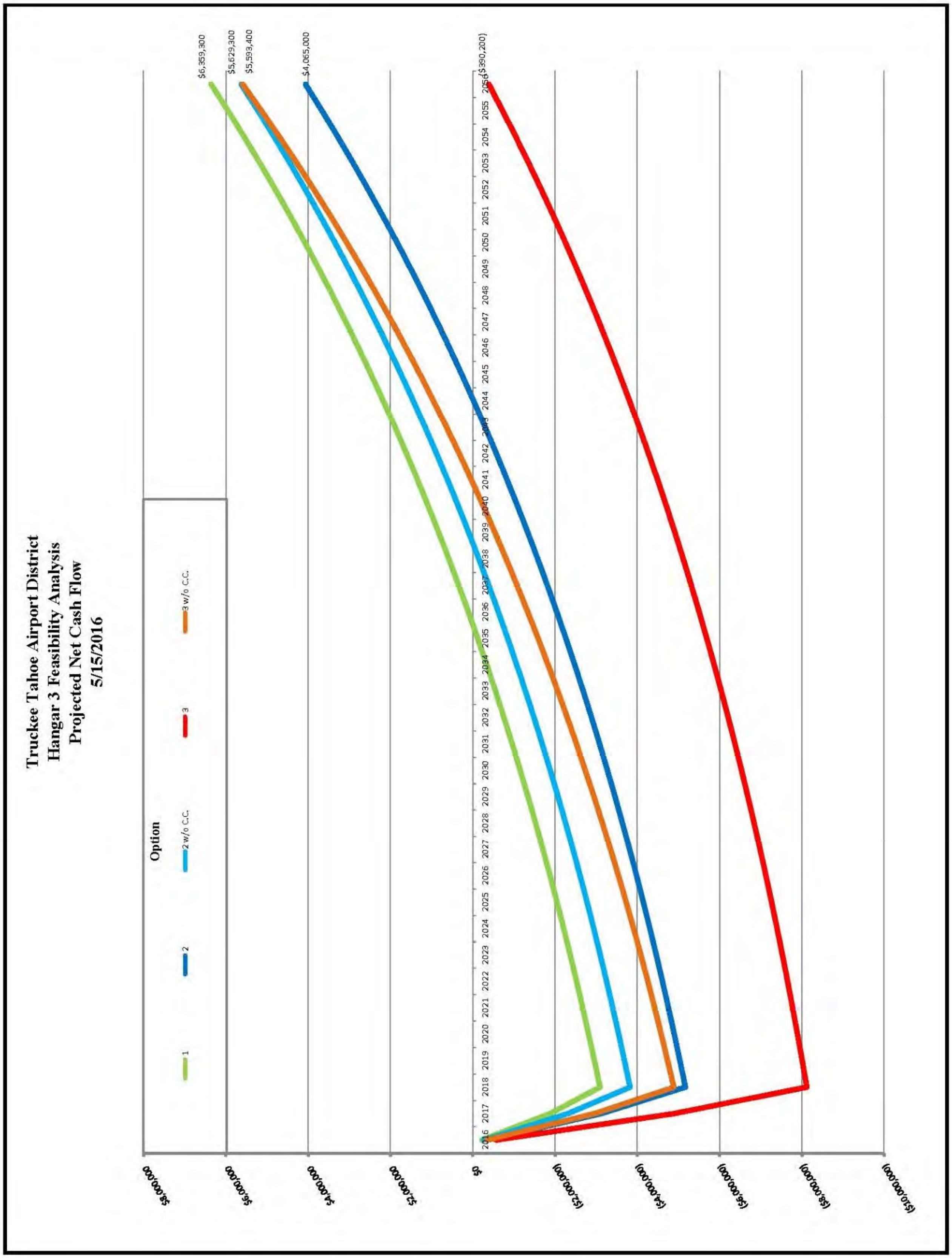
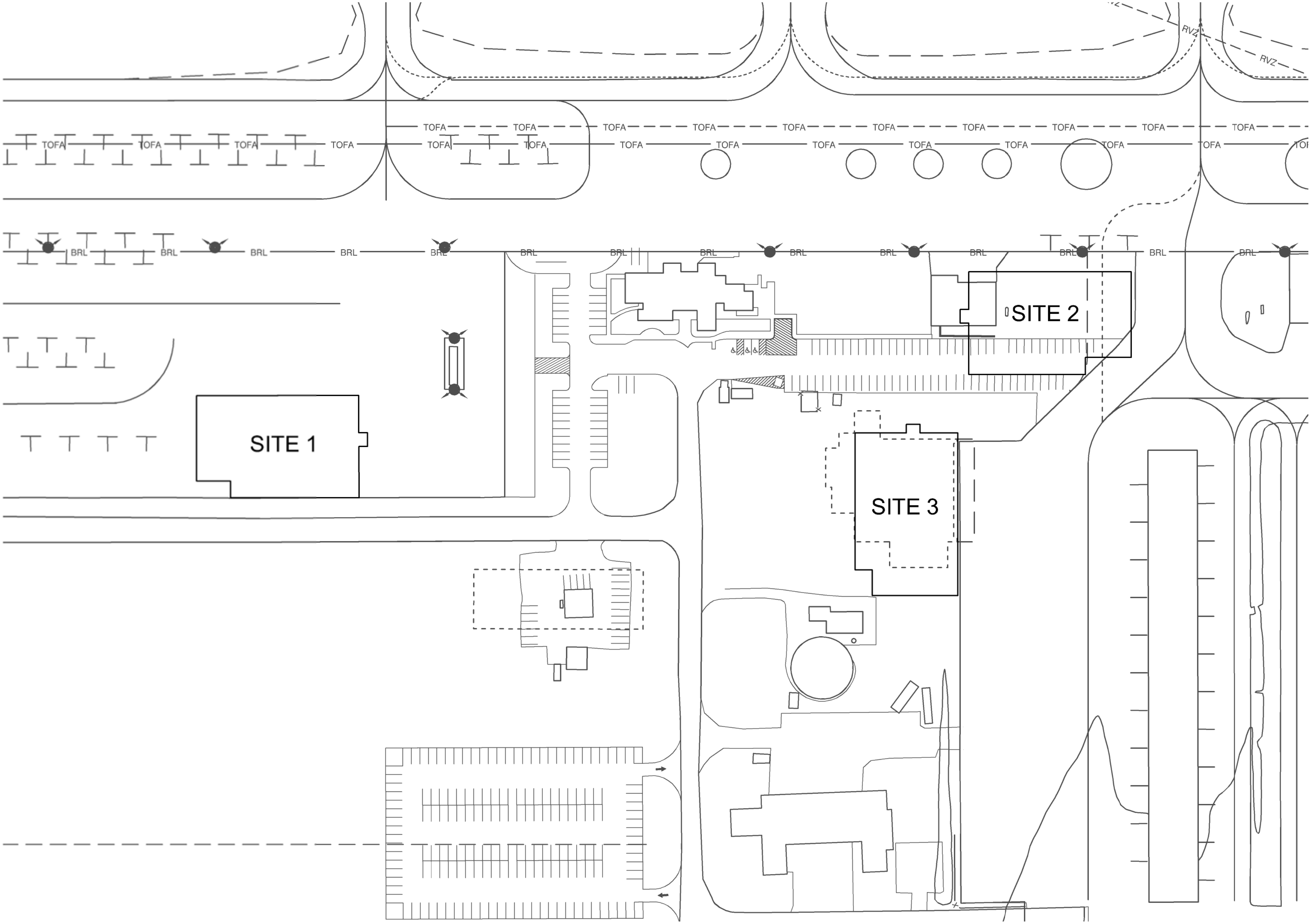

Truckee Tahoe Airport District
Hangar 3 Feasibility Analysis
Projected Net Cash Flow
5/15/2016
Option
1
2
3
2 w/o C.C.
3 w/o C.C.
$6,359,300
$5,629,300
$5,593,400
$4,065,000
($380,200)
$8,000,000
$6,000,000
$4,000,000
$2,000,000
$0
($2,000,000)
($4,000,000)
($6,000,000)
($8,000,000)
($10,000,000)
2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034 2035 2036 2037 2038 2039 2040 2041 2042 2043 2044 2045 2046 2047 2048 2049 2050 2051 2052 2053 2054 2055 2056

9. Hangar Use Policy

A draft hangar use policy has been created by the Airport. The goal is to establish policy instructions to equitably maximize efficiency of both aviation and community use of the proposed H3 Multi-use facilities. The policy sets forth guidelines for uses and rates for both aviation and community uses. Non-profit community uses would receive a priority over other users, including aviation. Aviation users would be able to reserve space in the hangar up to one month in advance. As large community events typically require planning in excess of one month, these events would be able to schedule in advance of aviation uses. See **Appendix O** for the hangar use policy.

Appendix A

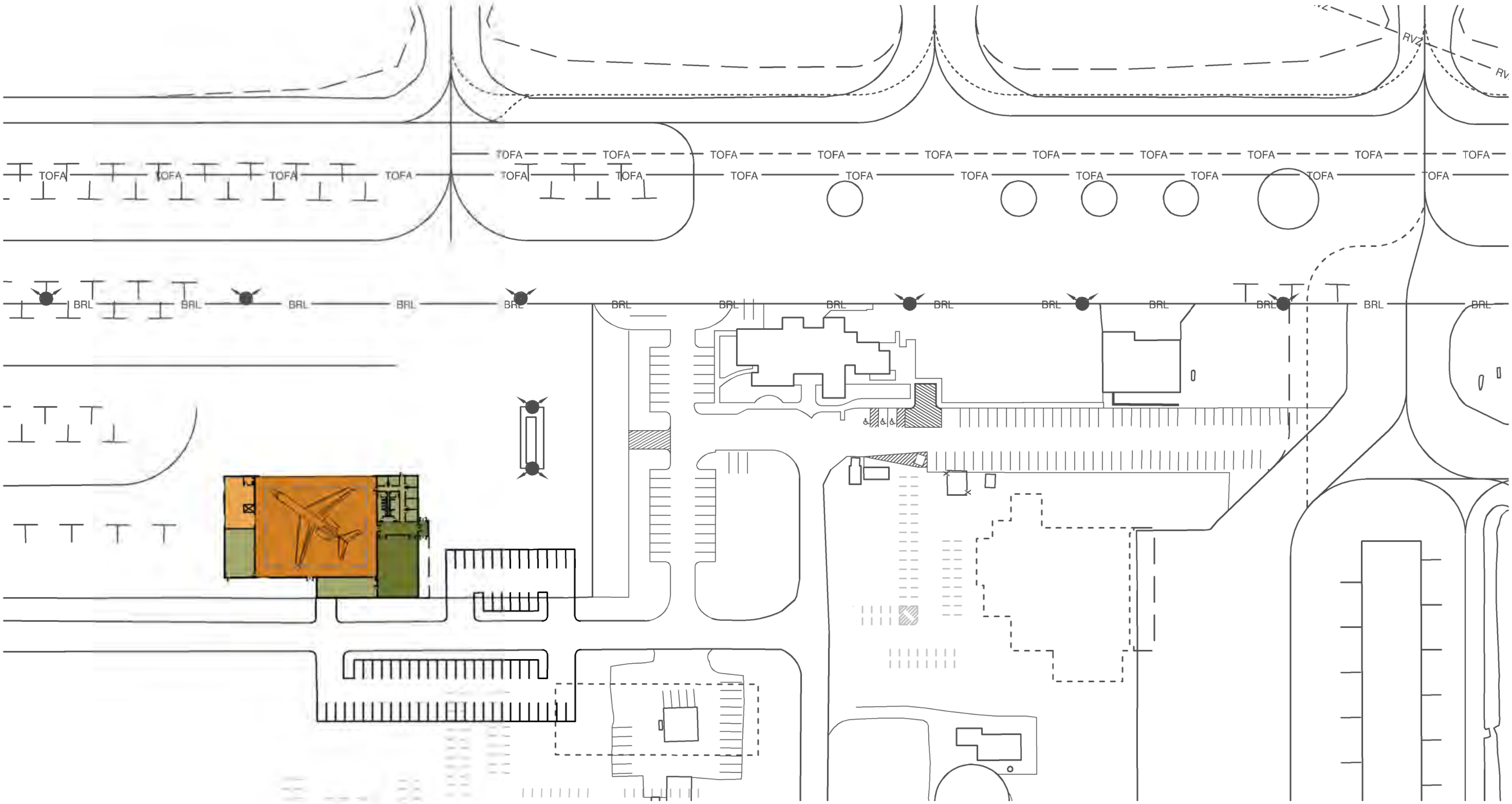
Site Plans



TRUCKEE TAHOE AIRPORT DISTRICT
MULTI-PURPOSE HANGAR/COMMUNITY ROOM
11-05-2014

SITE PLAN - OVERVIEW

Mead & Hunt



PROS:

- UTILIZES EXISTING RAMP
- CREATES PARKING AREA THAT COULD BE SHARED BY RENTAL AGENCIES / MULTI NODAL TRANSPORTATION AREA
- PLACES GSE EQUIPMENT AND PERSONNEL NEAR FUEL FARM AND TRANSIENT AREA

CONS:

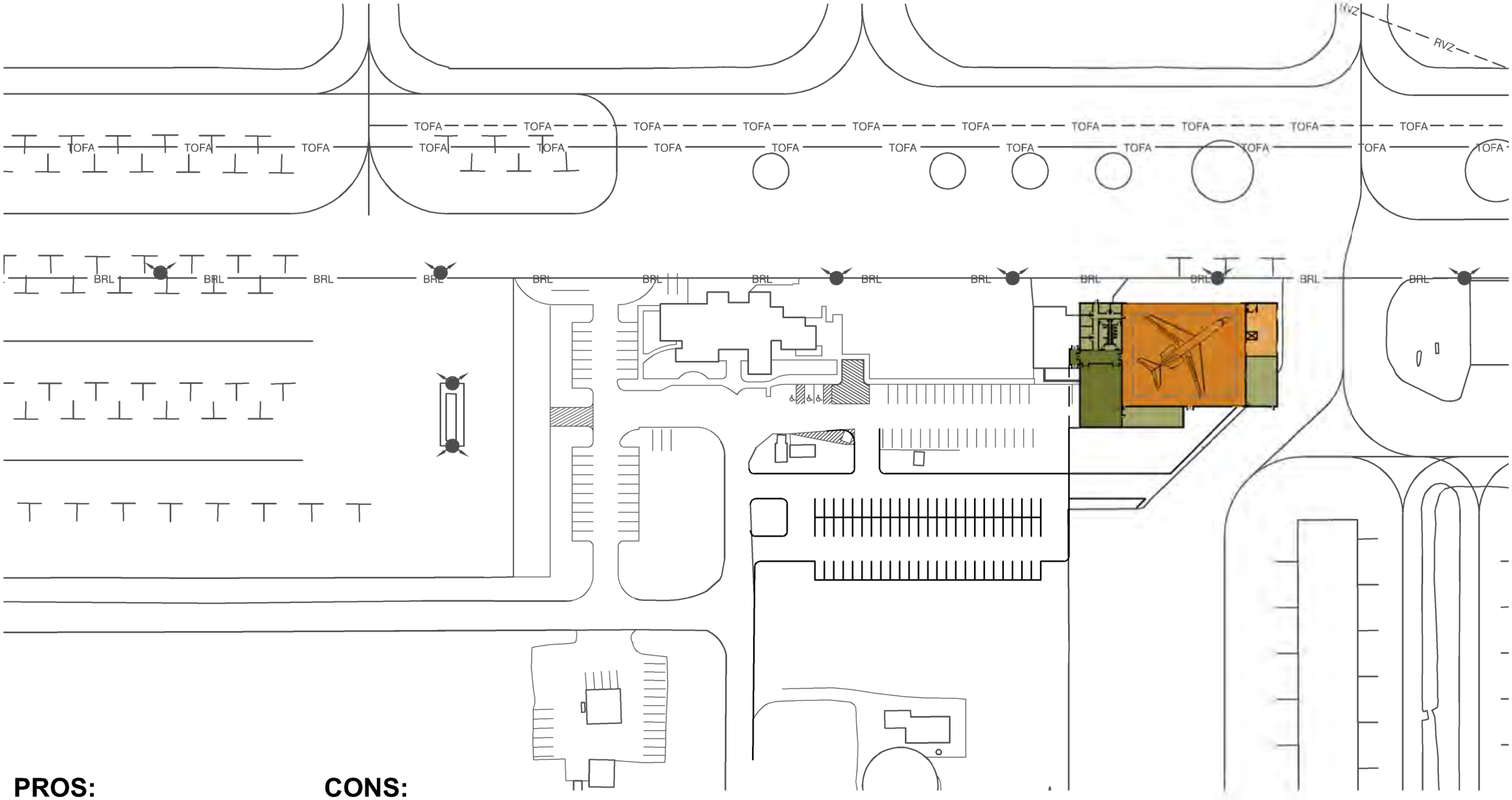
- PLACES HANGAR/PUBLIC AREA NEAR FUEL TANK - NEED TO VERIFY SETBACKS
- REMOVES EXISTING TIE-DOWN LOCATIONS
- MANEUVERING AIRCRAFT IN AND OUT OF HANGAR MAY BE DIFFICULT DUE TO SELF-SERVE AND TRANSIENT PARKING
- MAY REQUIRE EXTRA PARKING FOR LARGE EVENTS

TRUCKEE TAHOE AIRPORT DISTRICT
MULTI-PURPOSE HANGAR/COMMUNITY ROOM
11-05-2014

SITE PLAN - OPTION 1

0 75 150

Mead & Hunt



PROS:

- PLACES MULTIUSE COMPONENTS ADJACENT TO EXISTING PARK
- MULTI-USE HANGAR AND TERMINAL WORK CAN SUPPORT EACH OTHER FOR PUBLIC EVENTS

CONS:

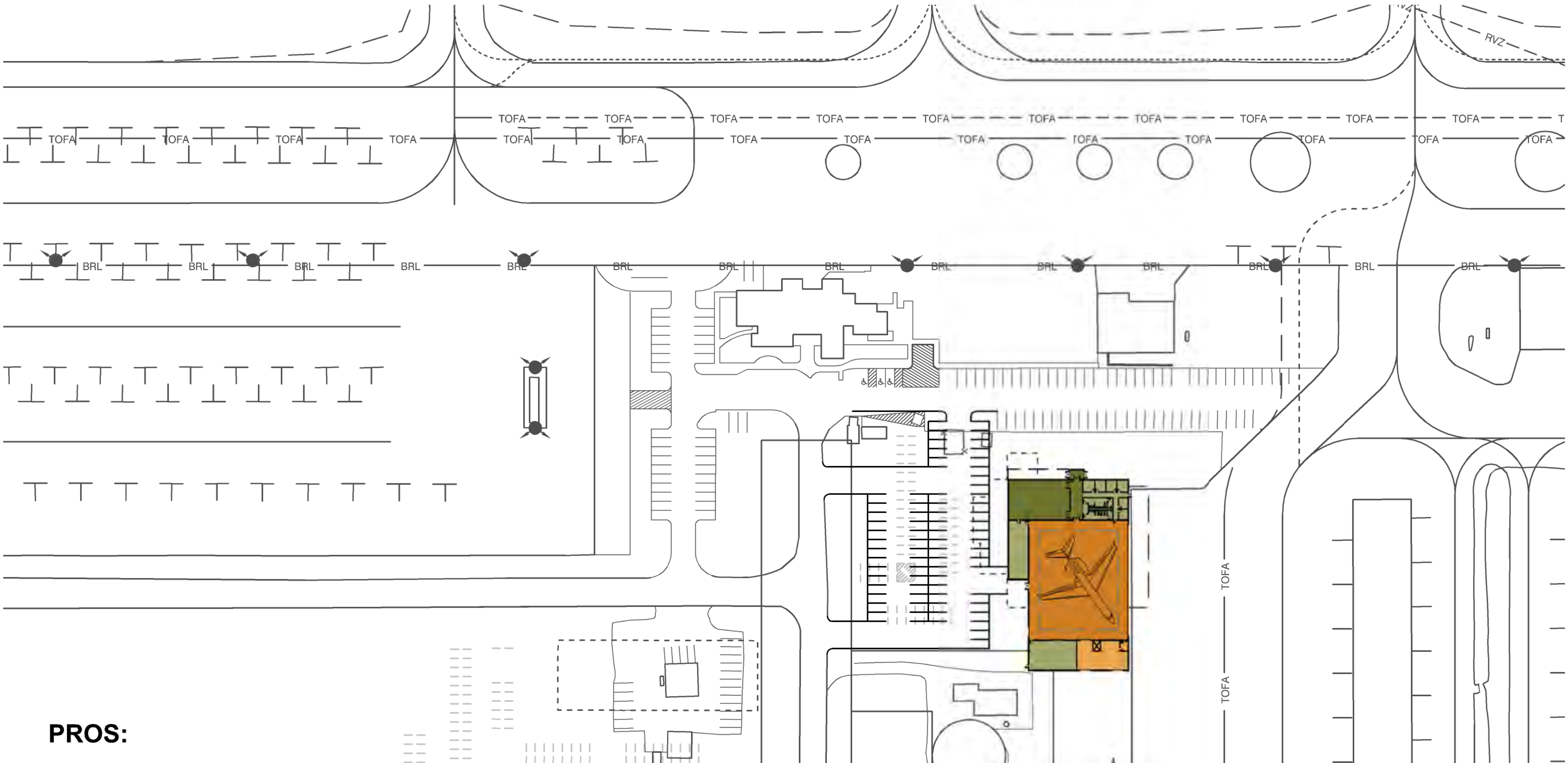
- BUILDING IS IN ZONE A, WILL BE MORE DIFFICULT TO CREATE SPACES FOR LARGE PUBLIC GATHERINGS
- RAMP AREA IN FRONT OF HANGAR COULD CONFLICT WITH EXISTING JET PARKING
- REQUIRES REMOVAL OF HANGAR 2, WHICH STILL HAS USE BENEFITS

TRUCKEE TAHOE AIRPORT DISTRICT
MULTI-PURPOSE HANGAR/COMMUNITY ROOM
11-05-2014

SITE PLAN - OPTION 2

0 75 150

Mead & Hunt



PROS:

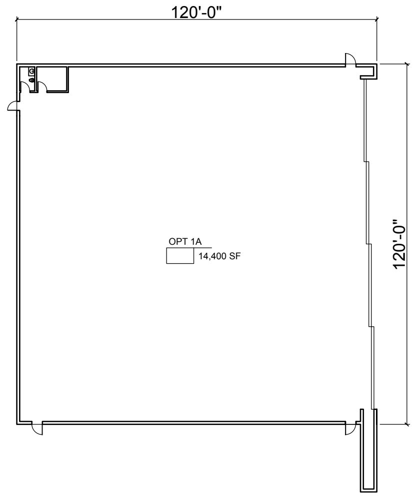
- LEAST CONFLICT WITH EXISTING AIRPORT USES
- CAN TAKE ADVANTAGE OF JET RAMP FOR PARKING FOR LARGE EVENTS
- PROVIDES MORE FLEXIBILITY THAN SITE 1 AND 2 FOR MANEUVERING AIRCRAFT IN AND OUT OF HANGAR (TAKES FULL ADVANTAGE OF JET RAMP)
- LESS DISRUPTIVE TO FRONT LINE RAMP OPERATIONS
- HANGAR DOOR FACES THE WEST: BEST ALIGNMENT FOR WINTER
- PLACES HANGAR CLOSE TO ADMINISTRATION BUILDING, HANGAR 2, AND PLAYGROUND

CONS:

- WILL REQUIRE MORE CIVIL IMPROVEMENTS TO ROUTE BETWEEN HANGAR AND TAXILANE
- WILL LOSE SOME FLEXIBILITY FOR LONG TERM PARKING ON JET RAMP

Appendix B

Hangar Options

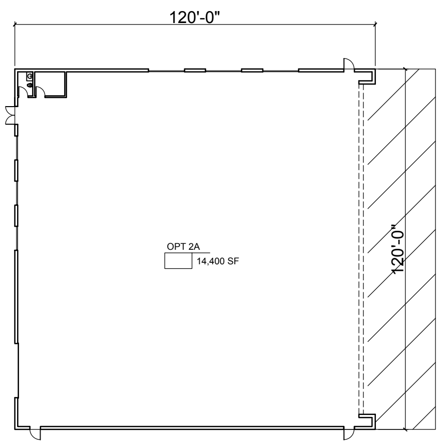


FEATURES:

- SMALL TO LARGE-SIZED AIRCRAFT WARMING
- EVENTS UP TO 222 PEOPLE WITH PORTABLE TOILETS
- ONE INTERNAL TOILET AND OFFICE

COST ESTIMATE:

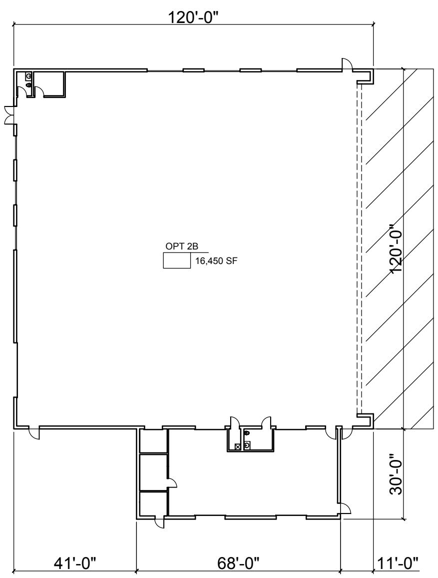
$3,134,000



FEATURES:

- SMALL TO LARGE-SIZED AIRCRAFT WARMING
- EVENTS UP TO 222 PEOPLE WITH PORTABLE TOILETS
- ONE INTERNAL TOILET AND OFFICE
- MONO-PITCH ROOF W/ OVERHANGS
- ADDITIONAL ARCHITECTURAL ENHANCEMENTS
- ROOF AND GUTTER SNOW MELT SYSTEM
- CLERESTORY WINDOWS
- MEGA-DOOR
- HYDRONIC IN-FLOOR HEAT WITH BOILER
- INSULATED METAL WALL PANELS
- INTERIOR WALLS TO 8'
- SIDEWALKS, ENHANCED LANDSCAPING
- 20' OF HEATED RAMP
- ROOF AND WALL BLOCKING FOR METAL PANELS
- OVERHEAD MIXED-USE DOORS
- BOARD-FORMED CONCRETE WAINSCOTTING
- ELECTRICAL HIGH BAY LIGHTING

COST ESTIMATE:
$5,208,000



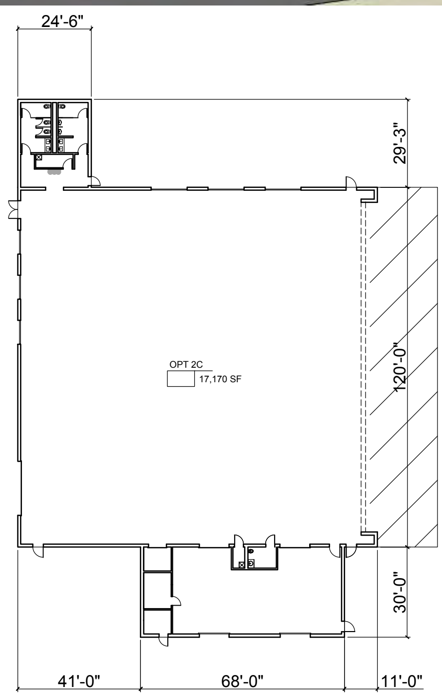
FEATURES:

- SMALL TO LARGE-SIZED AIRCRAFT WARMING
- MONO-PITCH ROOF W/ OVERHANGS
- ADDITIONAL ARCHITECTURAL ENHANCEMENTS
- ROOF AND GUTTER SNOW MELT SYSTEM
- CLERESTORY WINDOWS
- MEGA-DOOR
- HYDRONIC IN-FLOOR HEAT WITH BOILER
- INSULATED METAL WALL PANELS
- INTERIOR WALLS TO 8'
- SIDEWALKS, ENHANCED LANDSCAPING
- 20' OF HEATED RAMP
- ROOF AND WALL BLOCKING FOR METAL PANELS
- OVERHEAD MIXED-USE DOORS
- BOARD-FORMED CONCRETE WAINSCOTTING
- ELECTRICAL HIGH BAY LIGHTING
- BACKUP GENERATOR
- EPOXY FLOORING
- AIRCRAFT RECTIFIER
- BASIC EXPANDED AIRCRAFT SERVICES (LAV DUMP, AIR, WATER, ICE, WASHER/DRYER), AND STORAGE FOR THOSE SERVICES

COST ESTIMATE:
$5,943,300

TRUCKEE TAHOE AIRPORT DISTRICT
MULTI-PURPOSE HANGAR/COMMUNITY ROOM
04-21-2015

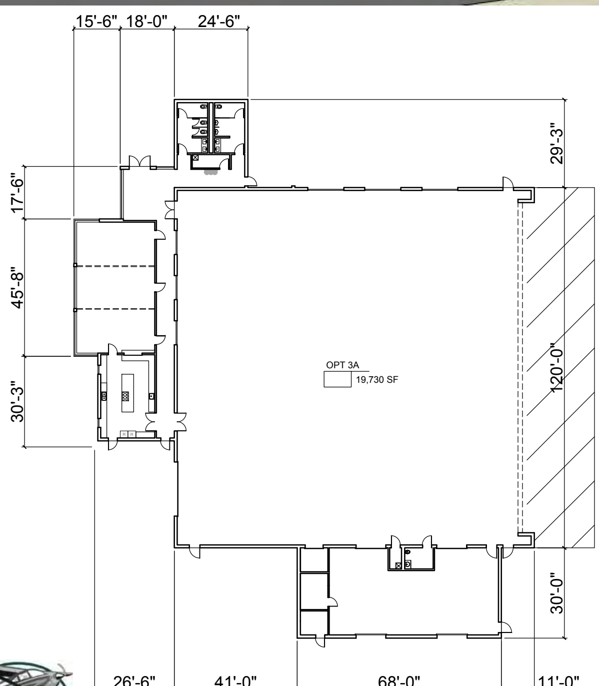
OPTION 2B



FEATURES:

- SMALL TO LARGE-SIZED AIRCRAFT WARMING
- MONO-PITCH ROOF W/ OVERHANGS
- ADDITIONAL ARCHITECTURAL ENHANCEMENTS
- ROOF AND GUTTER SNOW MELT SYSTEM
- CLERESTORY WINDOWS
- MEGA-DOOR
- HYDRONIC IN-FLOOR HEAT WITH BOILER
- INSULATED METAL WALL PANELS
- INTERIOR WALLS TO 8'
- SIDEWALKS, ENHANCED LANDSCAPING
- 20' OF HEATED RAMP
- ROOF AND WALL BLOCKING FOR METAL PANELS
- OVERHEAD MIXED-USE DOORS
- BOARD-FORMED CONCRETE WAINSCOTTING
- ELECTRICAL HIGH BAY LIGHTING
- BACKUP GENERATOR
- EPOXY FLOORING
- AIRCRAFT RECTIFIER
- BASIC EXPANDED AIR SERVICES (LAV DUMP, AIR, WATER, ICE, WASHER/DRYER), AND STORAGE FOR THOSE SERVICES
- RESTROOMS FOR 200 PEOPLE

COST ESTIMATE:
$6,246,800



FEATURES:

- SMALL TO LARGE-SIZED AIRCRAFT WARMING
- MONO-PITCH ROOF W/ OVERHANGS
- ADDITIONAL ARCHITECTURAL ENHANCEMENTS
- ROOF AND GUTTER SNOW MELT SYSTEM
- CLERESTORY WINDOWS
- MEGA-DOOR
- HYDRONIC IN-FLOOR HEAT WITH BOILER
- INSULATED METAL WALL PANELS
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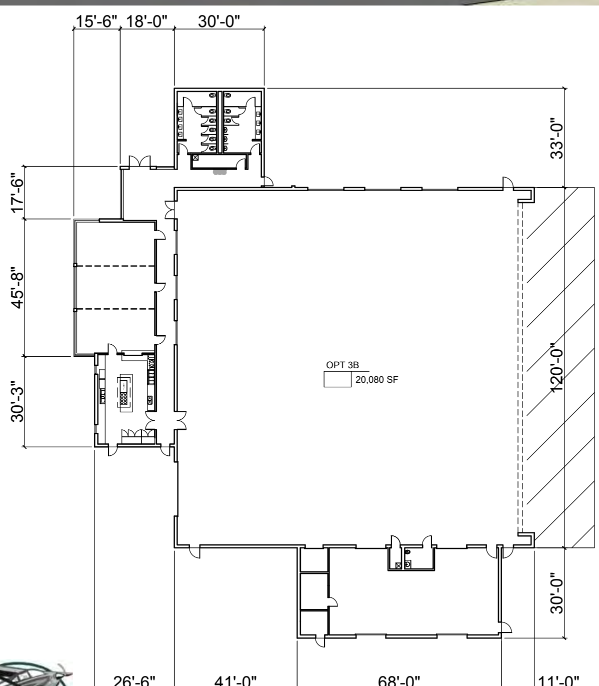
- BOARD-FORMED CONCRETE WAINSCOTTING
- ELECTRICAL HIGH BAY LIGHTING
- BACKUP GENERATOR
- EPOXY FLOORING
- AIRCRAFT RECTIFIER
- BASIC EXPANDED AIR SERVICES (LAV DUMP, AIR, WATER, ICE, WASHER/DRYER), AND STORAGE FOR THOSE SERVICES
- RESTROOMS FOR 200 PEOPLE
- MORE COMMUNITY SPACE AND UPGRADED SERVICES FOR EVENTS
- EXTERIOR CANOPIES AT ENTRY AND KITCHEN
- STANDARD KITCHEN AREA

COST ESTIMATE:

$7,628,800

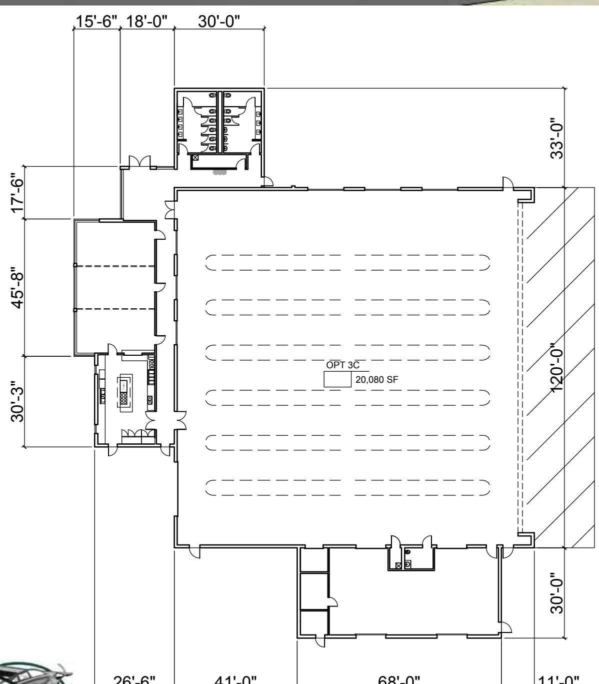


<u>FEATURES:</u>

- SMALL TO LARGE-SIZED AIRCRAFT WARMING
- MONO-PITCH ROOF W/ OVERHANGS
- ADDITIONAL ARCHITECTURAL ENHANCEMENTS
- ROOF AND GUTTER SNOW MELT SYSTEM
- CLERESTORY WINDOWS
- MEGA-DOOR
- HYDRONIC IN-FLOOR HEAT WITH BOILER
- INSULATED METAL WALL PANELS
- INTERIOR WALLS TO 8'
- SIDEWALKS, ENHANCED LANDSCAPING
- 20' OF HEATED RAMP
- ROOF AND WALL BLOCKING FOR METAL PANELS
- OVERHEAD MIXED-USE DOORS
- BOARD-FORMED CONCRETE WAINSCOTTING
- ELECTRICAL HIGH BAY LIGHTING
- BACKUP GENERATOR
- EPOXY FLOORING
- AIRCRAFT RECTIFIER
- BASIC EXPANDED AIR SERVICES (LAV DUMP, AIR, WATER, ICE, WASHER/DRYER), AND STORAGE FOR THOSE SERVICES
- RESTROOMS FOR 600 PEOPLE
- MORE COMMUNITY SPACE AND UPGRADED SERVICES FOR EVENTS
- EXTERIOR CANOPIES AT ENTRY AND KITCHEN
- COMMERCIAL KITCHEN AREA

<u>COST ESTIMATE:</u>

$7,822,300



FEATURES:

- SMALL TO LARGE-SIZED AIRCRAFT WARMING
- MONO-PITCH ROOF W/ OVERHANGS
- ADDITIONAL ARCHITECTURAL ENHANCEMENTS
- ROOF AND GUTTER SNOW MELT SYSTEM
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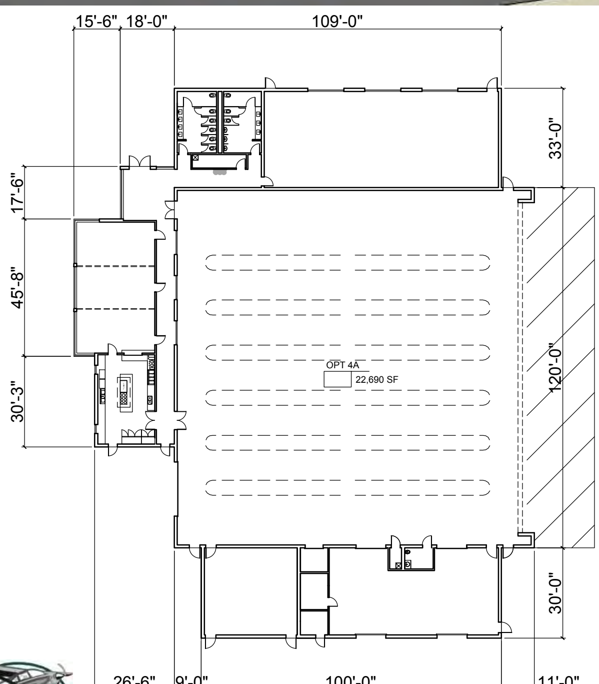
- BASIC EXPANDED AIR SERVICES (LAV DUMP, AIR, WATER, ICE, WASHER/DRYER), AND STORAGE FOR THOSE SERVICES
- RESTROOMS FOR 600 PEOPLE
- MORE COMMUNITY SPACE AND UPGRADED SERVICES FOR EVENTS
- EXTERIOR CANOPIES AT ENTRY AND KITCHEN
- COMMERCIAL KITCHEN AREA
- DE-ICING SYSTEM CAPABLE OF MELTING 3" OF SNOW IN 20 MINUTES

COST ESTIMATE:
$8,158,000



FEATURES:

- SMALL TO LARGE-SIZED AIRCRAFT WARMING
- MONO-PITCH ROOF W/ OVERHANGS
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- RESTROOMS FOR 600 PEOPLE
- MORE COMMUNITY SPACE AND UPGRADED SERVICES FOR EVENTS
- EXTERIOR CANOPIES AT ENTRY AND KITCHEN
- COMMERCIAL KITCHEN AREA
- DE-ICING SYSTEM CAPABLE OF MELTING 3" OF SNOW IN 20 MINUTES
- AREA EAST OF BATHROOMS AND WEST OF GSE BUILT TO VANILLA SHELL

COST ESTIMATE:
$9,274,200

Appendix C

Summary Report

Summary Report
Public Input
Multi-Use Hangar Building Project
November 2014

Input Process Overview

Methodology

- Mini-scope
- Oct-Nov, 2014
- Three input methods:

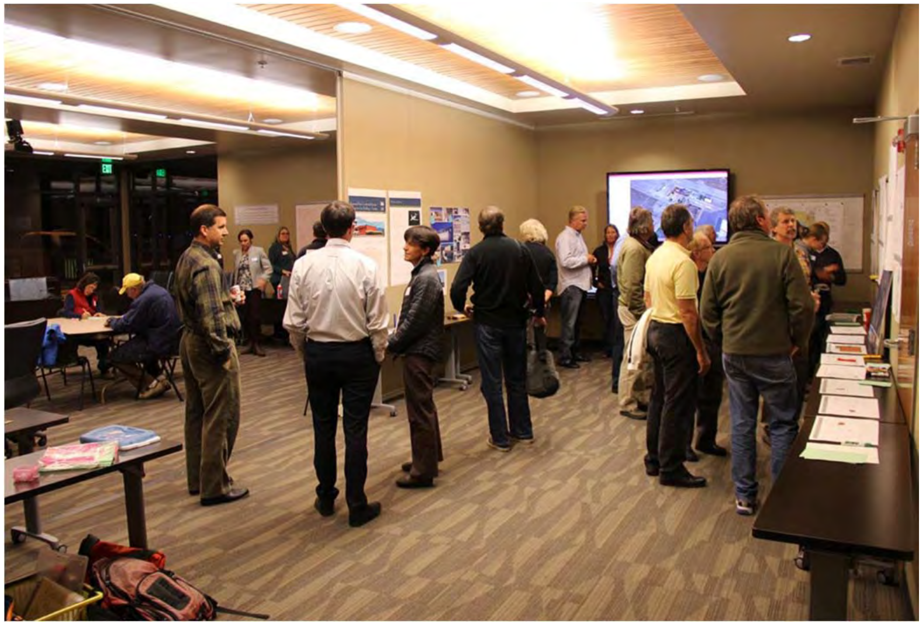
1. In-person interviews
2. Public workshop
3. On-line input

Goals | Purpose

- Gather initial program feedback
- Gather general feedback on location, size, use
- Summarize feedback for design team to use in creation of budget and project scope for Board review/decision re: next steps

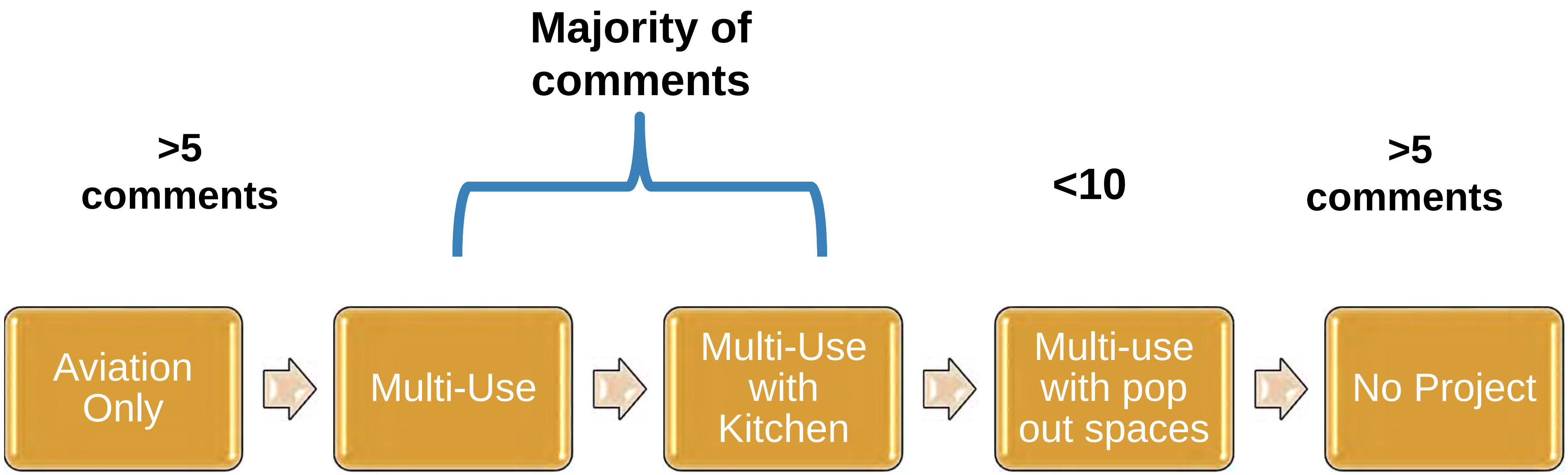
Summary of Input

- 22 individuals submitted comments + questions via TTADmasterplan.org
- 30 attendees at public workshop
- 29 interviews with non-profits, pilots, emergency providers



TOTAL: 80+ comments

Comment Distribution



Themes

Themes

-Strong support for multi-use facility
-Commercial kitchen (for events + incubator concept)
-Regional need for large indoor space for events/programs
-Support for site #3
-Educational/stem programming theme

Questions/concerns

-Noise: Any impacts?
-Joint use: how will this be managed?
-Increased jet traffic—is there a potential for this?

Summary of Input

-Public Workshop, Nov 5, 2014

-On-line (ttadmasterplan.org)

-In-person interviews

Public Workshop Comments

Public Workshop Comments + Questions

Aviation Uses

- No permanent structure or set up in hangar area.
- Hangar primary purpose should be aviation and safety
- No chemical deicing, heat deicing ok
- Let’s do it!

Public Workshop Questions + Comments

Community Use of Space

- Makerspace (aka community shop with tools to make, craft, fix, create, learn, collaborate, hands on skills, build businesses)
- Like community space because keeps costs low for non-profits
- Include folding partitions to accommodate smaller events
- Community Kitchen - Similar to NBIA model/OneWorldKitchen (5)
- Indoor soccer
- A space for skilled art/manufacturing
- Would be valuable to more members of our community

Public Workshop Comments + Questions

Community Use of Space

Education Programs

- Junior college classrooms
- Educational spaces to explore science and math
- Aircraft restoration display
- Joint use with school district and community college for aviation trade school education, leading to A&P FAA licenses. Do this by expanding bays around hangar.
- Displays are for a museum.
- Kids have no trade school or hands on use an aircraft at high school or college. How about an engine shop. Fabrication shop. Assembly shop. Point shop. Electronics shop. Upholstery shop.
- Classrooms all around the perimeter of hangar building
- Air museum / aviation outreach

Public Workshop Comments + Questions

Need

- Collaborate with other newly designed/proposed community centers. Too many already.
- Seems like community need for this project has been filled elsewhere
- Does community need another banquet hall?
- Would tax money be better spent on library or school?
- Already a hangar where decent sized events can be held (ie guest speaker in september)
- Emergency response center location

Building Size/Scale/Considerations

- Height of hangar needs to protect the view shed of Martis. How will that be achieved? Placement is important
- Keep height low
- Lots of windows to let in natural light
- Cool architecture---stretch to create something cool
- Mechanical air filter system for smoke free respite in fire events
- Maximum insulation to accommodate events and energy savings

Public Workshop Comments + Questions

Shared Use of space: Aviation + Community Use

- What happens if there's a conflict between deicing and community event?
- What will administration do when more community events are scheduled than aviation use? Winter safety for deicing needs some priority
- Event space is already available in area. Community uses should be thought of as engaging with community not just when airplane is not stored. Also, are there public safety concerns with dual use?
- Safety & deicing needs to be priority
- How will use of hangar be controlled? Will reservation be needed for planes wanting space at same time?
- "Community events" gathering in a space adjacent to a work space with jet fuel, exhaust, and deicing chemicals does not sound attractive. EPA concerns?

Public Workshop Comments + Questions

Noise

- How will this impact noise due to taxing to/from hangar?
- Maximum pound deadening accommodations. Event noise will need to be controlled.
- If built, then no ingress/egress between 10pm-7am.
- Sound control for community uses?

Increased Operations

- Is this improvement an anticipation of commercial service using smaller “regional” airports?
- Will increasing jet traffic and noise lower home values in Truckee?
- Should taxpayer subsidize environmentally destructive business jet travel?
- Why airport flyer does not address any negative impat such as increasing jet traffic?
- Has community been informed about increased jet noise?
- Which gulfstream IV owner is pushing for this?

Public Workshop Comments+ Questions

Location

Three potential locations for the hangar were shared with public workshop attendees. Comments included:

- Option 2: No!
- Site 3 is good because building size is blocked by fire station
- Like option 3

Process + General Information Comments

- Next time to help with context setting where it sits in relation to all other current development
- Is this outreach transparent?
- Would community uses be permanent or rotating? Specifically would there be office space to rent or just rooms to rent/reserve?

Comment

Here are my comments about the proposed multi-use hangar building—how community groups, pilots, emergency service providers, other might use it. Please also include specific details about needs you or your group may have in order to make the building useful to your efforts. Please submit all comments by 11/12/14 at 5pm.

Comments Via TTADmasterplan.org

On-line Comments Summarized

Aviation Uses

- May be cost effective to build a second hangar to store G-650 size aircraft
- Installation NW of admin building a good choice
- Concerned about potential conflicts between deicing and community events
- Please keep primary use of hangar aviation related

Location

- Keep hangar within a 5 minute walk from main terminal
- Hangar should be near approach at end of runway
- Installation on the "logical" vacant ramp area near hanger "A” not good

Online Comments Summarized

Community Uses

- Commercial/Shared-Use Kitchen (8)
- Indoor sports multi-use space (2)
- Storage for non-profits
- Provide tables and chairs for non-profits
- Hangar used for disaster relief when necessary
- Middle school dance
- Airport is the perfect place for this type of community building

Other

- Taxpayer money should not be used to provide a deicing facility

In-person Interviews

-Non-Profits

-Pilots

-Emergency Service Providers

Emergency Service Provider Input

Groups Contacted

- Red Cross
- Forest Service
- CDF

Needs

- Showers / Restrooms
- Kitchen
- Phone/Internet access (2)
- Separate rooms for various uses (2)
- Parking for large vehicles
- Command Center (3)

**Phred Stoner, TTAD staff conducted calls*

Pilot Mini-Poll

Pilots Polled

1. Jones Airway, LLC C.
2. Kosin
3. Airbrock
4. River Aviation
5. Platform Speciality
6. Nordstrom
7. Duggar Aviation
8. Gary Ellis
9. Jet Edge
10. White Cloud
11. Kaiser
12. Scott McDonald, Charter

Types of Planes

- Falcon 900
- Cessna Citation
- Lear 31
- FalconSO + G5
- Challanger 604 & 300

**Hardy Bullock, TTAD Staff contacted pilots*

Pilot Mini-Poll

Q 1: If KTRK had an overnight hangar that could accommodate either your most common aircraft or your largest aircraft would this allow or cause you to increase flights to KTRK? 1 Yes Allow, 9 No, 2 Yes

Q 2: If KTRK had an overnight hangar that could accommodate either your most common aircraft or your largest aircraft would you use it to store and/or de-ice your aircraft overnight as opposed to repositioning the aircraft for storage to an alternate or neighboring airport? 9 Yes, 0 No, 3 maybe

Q 3: If the cost of this overnight hangar ranged from $400-$2000 per night is this a fee you would pay to store your aircraft inside a hangar overnight?
Range of answers. $2,000 to high, $400-$1,200 range reasonable

Pilot Mini-Poll

Q 4: An overnight stay at KTRK was mandatory. Inclement weather was producing precipitation during the night and shortly before takeoff. Would this pose a greater threat to your operational safety having:

A. Spend the night on the ramp without cover (1)

B. Spend the night inside an unheated hangar (1)

C. Spend the night in a heated hangar (10) Selected as the most common answer as the “Safest” Option. 10 people said they wanted a heated hangar for their aircraft.

Q 5: Would a hangar have considerably more value to you if it had conference rooms, a kitchen, and facilities for meetings or modest crew quarters? Yes 4, No 8

Q 6: Would your pay for selected pricing on a monthly, quarterly, or annual basis to receive a discount for the hangar? Yes 2, N/A 3, No 2, Pay-as-You-Go 5

Non-Profit Phone Interview Summary

Non-Profits Interviewed

- Human Society of Truckee Tahoe
- KidZone Museum
- Inner Rythms Dance
- North Tahoe Events Center
- Rotary
- Truckee Family Resource Center
- Sierra Expedition Learning School
- Tahoe Truckee Unified School District
- Sierra Senior Services
- Soroptimist

Needs

- Commercial kitchen (6)
- Restrooms (2)
- Low to no cost use
- Tables & Chairs (6)
- Stage & Sound (3)
- Dance floor
- Way to divide space into smaller rooms
- Parking (3)
- Projector (4)

**Seana Doherty, Freshtracks, collected feedback*

Attachments
Background Info

1. Full on-line comments

Online Comments (full)

- I support the development of a shared-use commercial kitchen as part of the plan for our newest community/multi-use hangar building. I believe the demand for this would be high with culinary professionals in our area. And I believe it would benefit the economic development of small businesses in Truckee.

- I am in favor of the construction of the new hanger. It would be a great addition to the airport. It could be used for events during the year and provide heated storage for aircraft during snow storms. It could have a catering kitchen for parties, as well as meeting rooms for the community.

- My main concerns have to do with location. I feel that installation on the "logical" vacant ramp area near hanger "A" may be an error. I feel that installation North-west of the current admin building might be a better choice. There should be access from both an uncontrolled parking (car) area as well as the ramp. This would prevent the dangerous mix of cars and aircraft during events.

- I am in favor of a shared use commercial kitchen that would expand the food culture, farm to fork and Slow Foods movement that is expanding in not only Truckee-Tahoe but the Reno municipality as well.

- Indoor sports multi use space: Soccer after school and weekends , low/ no charge community exercise classes during am / school hrs..etc..

Online Comments (full)

- As a local chef and small business owner, I support the development of a shared-use commercial kitchen as part of the plan for our newest community/multi-use hangar building. I believe the demand for this would be high with culinary professionals in our area. And I believe it would benefit the economic development of small businesses in Truckee. Personally I run a small personal chef/catering business that would be very interested in renting space. Adequate refrigeration is always a consideration in these type of buildings.

- I can be reached at 530-582-4882, or by email to discuss the National Business Incubator Association's model for a shared-use commercial kitchen space at the new multi-use hangar. I think it would greatly benefit the community's small businesses, offset your building costs, and serve as a beacon for the forward-thinking individuals who lead this town to make it an economic development center rather than just a ski town! Would love to discuss this with you further!

- Attended workshop tonight and made comments on sticky wall. Forgot to add that you need to include storage for and provide a supply of folding tables and stackable or folding chairs so nonprofits do not need to hire other contractors to provide. An extra fee can be considered to cover the cost and storage on site.

- In the years past at various workshops etc I recall the public was generally against a de-icing facility and service. This service is obviously being pursued by the Ski hill corporations and Upper end residential developers. I do not feel that TAXPAYER money should be spent for de-icing that only benefits a select few. TAXPAYER money should be spent only for facilities and services that serve the greater general aviation population, education, and community oriented programs and services.

Online Comments (full)

- The building will be a great addition to the airport and the community.

- Thank you for the opportunity to offer comments and for sharing this proposed space with the community. As a coach of two sports teams at Truckee High School, Track & Field and Cross Country Running, I feel our community needs indoor space to train over the winter months. I know this may not be in your project's scope, but I'm just putting it out there. We are very limited at THS during the winter and spring training months, and having indoor space to train would greatly help our teams when they have to stay indoors. Having a large space to do running drills, circuit training, and short sprints would be much better than running in the small gym or the halls of Truckee HS Also, gym space is very limited with the number of teams on campus. Also, it'd be good to have a place to host team events such as fundraisers and team awards dinners. We often do potluck dinners for awards, and so having a place to host a large group would be appreciated. Thanks for your time and consideration.

- It is nice to see the TTAD pursuing a multi-purpose building. I understand the core use, aviation storage and related services, assists with TTAD’s current demands; in-climate weather storage, de-icing and etc. Additionally, the building will be ideal to host community events or in the unfortunate circumstances disaster relief efforts.

- The TTAD has built solid support for their annual community flight event – Truckee Tahoe AirFair. A multi-purpose hanger would enhance TTAF as well as act as a catalyst for other events. It is great to see the Board, Mr. Smith and their team pursuing this development opportunity.

Online Comments (full)

- The company I work for has a Citation Jet. We frequent Truckee Airport a dozen or more times a year. There are times during the summer and winter that I always request hanger space for overnight trips. Sometimes space is available, and sometimes it is not. The owner is adament about hangering his asset, to say the least, and it only makes sense when you have expensive equipment. You definitely have a huge amount of space in a number of areas that is not being utilized, and this project would surely fill that purpose. The artist's rendition looks really nice, I really think it blends in well with the sourroundings. If built to the rendition, it will not be "just a hanger", but it will have the appearance of a well thought out project that has a very real purpose in serving, not only the airport, but the community in general, I really like it. The hanger will certainly be large enough to accomodate a variety of different sized aircraft, provide much needed deicing services, and provide a service to the communtiy such as those that you mentioned in the proposal. You have a class-act operation there, and this will only serve to enhance the overall operation, and serve the community. Using the reserve funds as mentioned, I think is a wise choice, and an excellent investment in the future. I also believe you would be crazy not to move forward with this project, as I'm sure there will be opposition, there is a lot more to lose by not executing this project. I know of the three areas you are thinking of. I, personally, would like to be with-in a five(5) minute walk of the main terminal.

  Great project!

Online Comments (full)

- The middle school could use it for their 8th grade graduation dance...it was very effective to have a place at the airport because of proximity to ACMS. Just a thought!

- I think a hangar that could accomodate transient use would be terrific. I would like to emphasize that on an AIRPORT, the primary users should be AIRCRAFT. I hope that no aircraft needing a hangar would be displaced by community events being held in the hangar. Please consider how to ensure that the airport remains primarily open to airport users.

- 1. If the hangar will be used for deicing/anti-icing, its location should be as close as possible to the approach end of the runway most used during winter months. This will minimize unnecessary taxi times that ultimately waste valuable holdover and allowance times associated with the deice/anti-ice process. 2. Many owners of corporate aircraft prefer their aircraft to be hangared during inclement weather. It may be cost effective to build a second hangar for storage of G-650 size aircraft that is not equipped with deice/anti-ice gear. In this manner an aircraft could be deiced and then stored during precipitation periods. When precipitation ceases, the aircraft could depart without further deice/ant-ice procedures. And, of course, rent could be charged for storage. 3. From my experience as a corporate pilot and overseeing a hangar build of approximately the same size as that being proposed, cost overruns may well occur. Under no circumstances should these costs be passed on to the small GA community. 4. A legal means of de-conflicting hangar use between aircraft and non-profits during inclement weather would be essential. Eg: Christmas party during a blizzard. Thank you for affording me the opportunity to comment.

Online Comments (full)

- It makes more sense to me to have one effort for a community building than two. It makes more sense to me to have one footprint than two. It makes sense to have a building at the airport that will attract more of the community to the airport to see that it is a friendly place, and a valuable asset in the community. Just look at the nice playground. There are families that use that who would have never thought of the airport as a friendly place to be. We do not need two community buildings in the Truckee when one could meet all needs. There are plenty of school buildings with cafeteria, gym, and auditorium space that will meet the needs of a community of 16K. The perfect place for a single building to meet the needs of a large gathering is at the airport, and a partnership with other groups wanting a facility makes sense as well.

- I think a hangar that could accomodate transient use would be terrific. I would like to emphasize that on an AIRPORT, the primary users should be AIRCRAFT. I hope that no aircraft needing a hangar would be displaced by community events being held in the hangar. Please consider how to ensure that the airport remains primarily open to airport users.

Appendix D

Summary Public Input

Summary
Public Input
Potential Multi-Use Hangar Building

Updated: 7.28.2015

freshtracks communications

Project Input To-Date

November 2013 — Godbe Survey

Sample Size:
500 residents; 65 pilots

Q19: Support for Multi-Use Hangar (residents only)

Summary:
76% support
13% against
11% undecided

May 2013 — TTAD Master Plan

Sample Size: 500+ comments

Methodology: workshops, survey, on-line comments

Qs:
Which hangar development preferred?

Summary:
Majority preferred the multi-use and executive hangar options

November 2014 — Multi-Use Hangar Workshops

Sample Size: 80+

Methodology: interviews with pilots + non-profits, public workshops, online input
Q: Per proposed concepts, what do you think. Would you come if we built it. Uses?

Summary:
- Multi-use support
- Commercial kitchen
- Regional need for events/programs
- Pilots: not driver for operations

Per Board Request

Spring-Summer 2015 Input

Proposed Multiuse Hangar Project

July 22, 2015

freshtracks communications

Spring-Summer 2015 Input Methodology

1. Ad Hoc Committee Review/Planning
2. Non-profit/service club interviews (50)
3. FlashVote Survey (232) + comments (120)
4. On-line comments (6)

Questions: Potential Public Use

1. If we build a multi-use hangar will the community use it (if yes, how often)? In no, why not.
2. Of the three current options ($3M, $6M, $9M) which option does the community prefer? (FlashVote question only)

Summary of Spring-Summer 2015 Nonprofit/Service Interviews

July 22, 2015

Who: Organizations Interviewed

Arts & Culture
- Arts for the Schools
- For Goodness Sake
- Inner Rhythms Dance
- Moody's Jazz Camp
- North Tahoe Arts Center
- North Tahoe Events Center
- Tahoe Art Haus
- Tahoe Flow Arts
- Tahoe Youth Ballet
- TOCCATA
- Wild & Scenic Film Festival

Sports
- Barcelona NorCal Soccer
- Far West Nordic
- Peak Volleyball / Pinnacle Tahoe Volleyball
- Sierra Avalanche Center
- Truckee Bike Park
- Truckee Little League

Community Improvement & Community Services
- Friends of Truckee Library / Early Literacy Program
- Girls on the Run
- High Fives Foundation
- McConkey Foundation
- Project MANA
- Rotary
- Senior Services
- Sierra Business Council
- Slow Food Lake Tahoe
- Soroptimist
- Tahoe Food Hub
- Tahoe Rim Trail Association
- Truckee Donner Chamber of Commerce
- Truckee Family Resource Center
- Truckee Tahoe Community Foundation
- Truckee Trails Foundation

Education & Youth Development
- Adventure Risk Challenge
- Alder Creek Middle School
- Big Brothers Big Sisters of Nevada County
- Excellence in Education
- KidZone Museum
- Sierra College
- Sierra Expeditionary Learning School
- Squaw Valley Institute
- Squaw Valley Prep/Creekside School
- Tahoe Expedition Academy
- Tahoe Truckee Unified School District

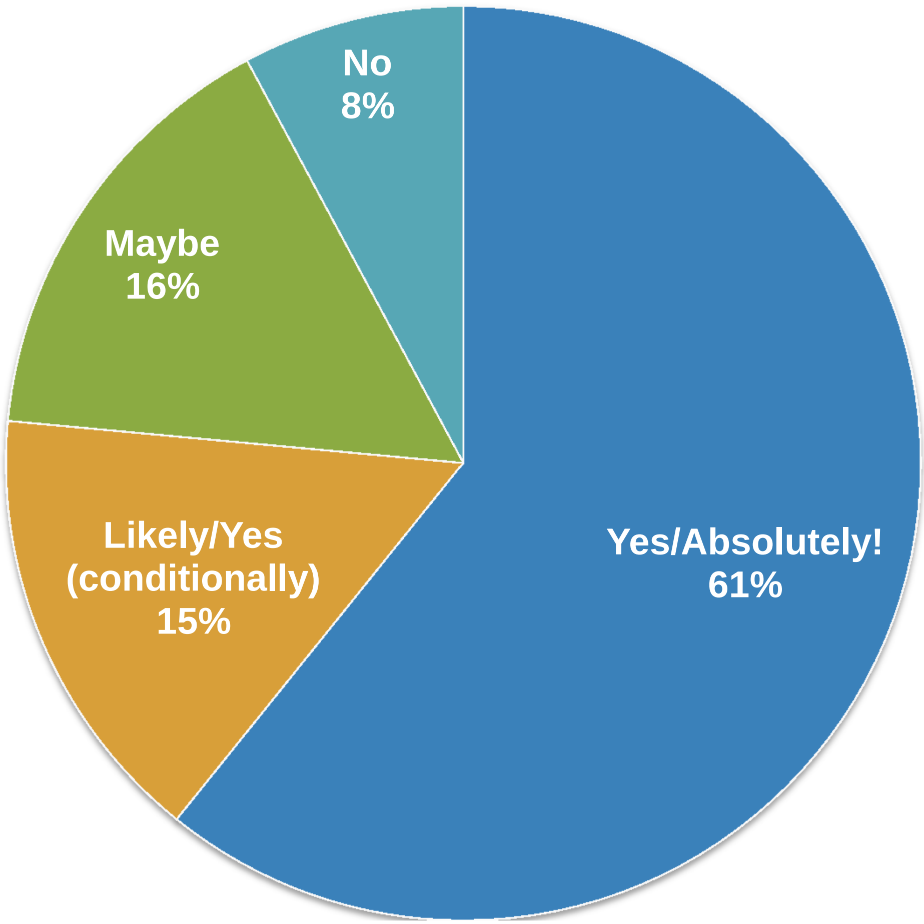
Environment & Animal Welfare
- Humane Society of Truckee Tahoe
- Mountain Area Preservation Foundation
- Sierra State Parks Foundation
- Tahoe National Forest – Truckee Ranger District
- Truckee Donner Land Trust
- Truckee River Watershed Council

What: Questions

Non-Profit Interview Questions

- What events/programs do you currently host?
- If TTAD built community use space, would you use it?
- If yes, what amenities would you want/need? When? For how many?
- If no, why not

If TTAD built an event space, would you use it?



76%=yes

Top Four Amenity Picks

Mentioned by over 20 organizations

- Audio/Visual (sound, light, projector, screen)
- Tables + Chairs
- Commercial Kitchen
- Stage / performance + theater space / black box theater

Other Top Amenities

Mentioned by fewer than 20, but more than 5 organizations

- Dividable space
- Heating and A/C
- Good acoustics/sound proofing
- Wi-Fi
- Some kind of special flooring
- Open air + indoor/outdoor space
- Bar + beer/wine license
- Appealing interior/unique space
- Bathrooms
- Parking

If No, Why Not?

4 groups said no

- Have a need for office / storage space instead or no need

Why not?

- A different organization should build community events space; building a community space is not in alignment with TTAD goals and mission

However; interviewees acknowledged a need for event space by other organizations in the community

What Type of Events Do They Host?

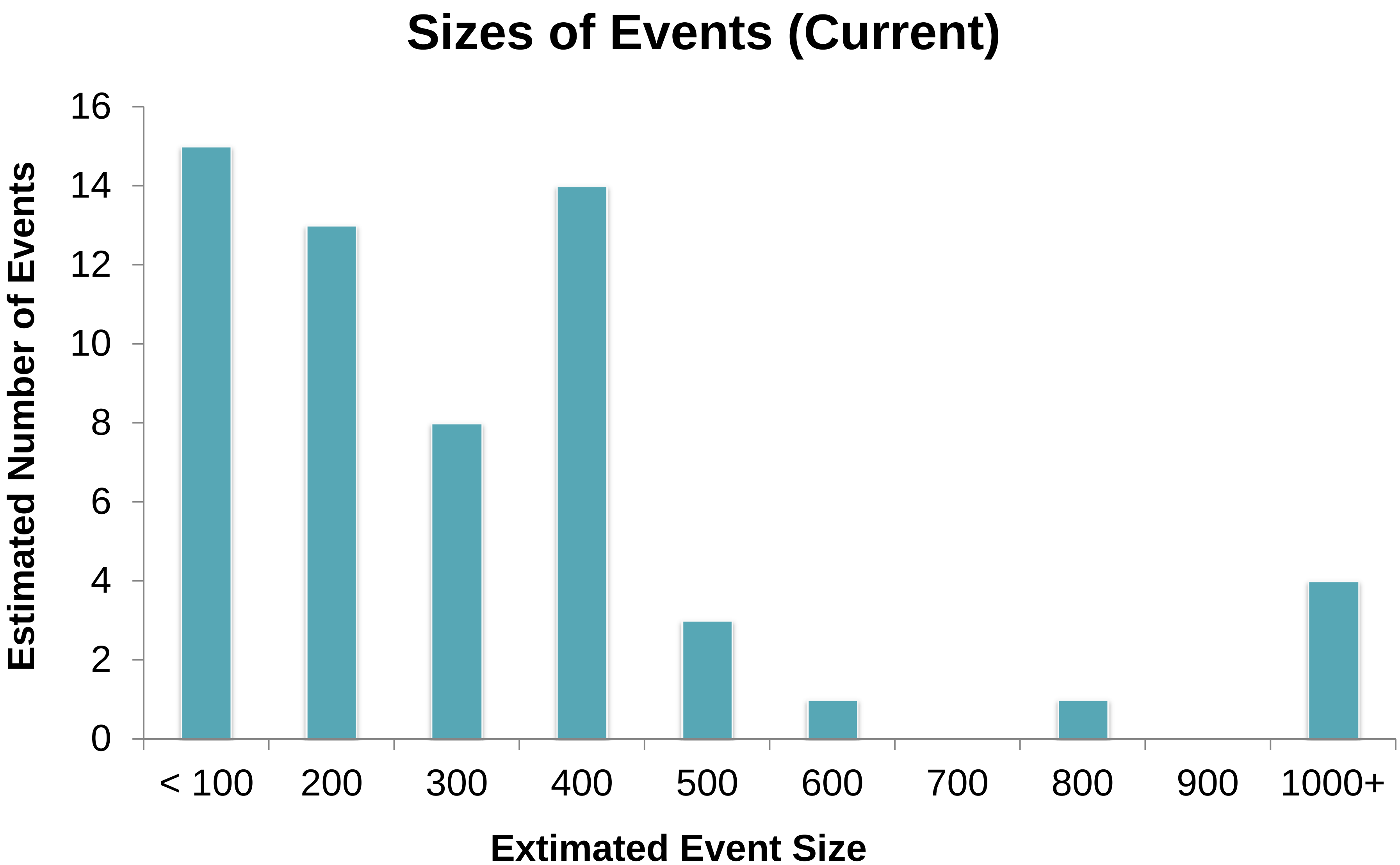
Types of events

- Dinners
- Fundraisers / auctions
- Movies / film festivals / entertainment
- Performances / visual art shows / dances
- Lectures / Speakers / Assemblies
- Science festivals / camps
- Sporting events (volleyball, baseball, hockey, etc.)
- Meetings / conferences

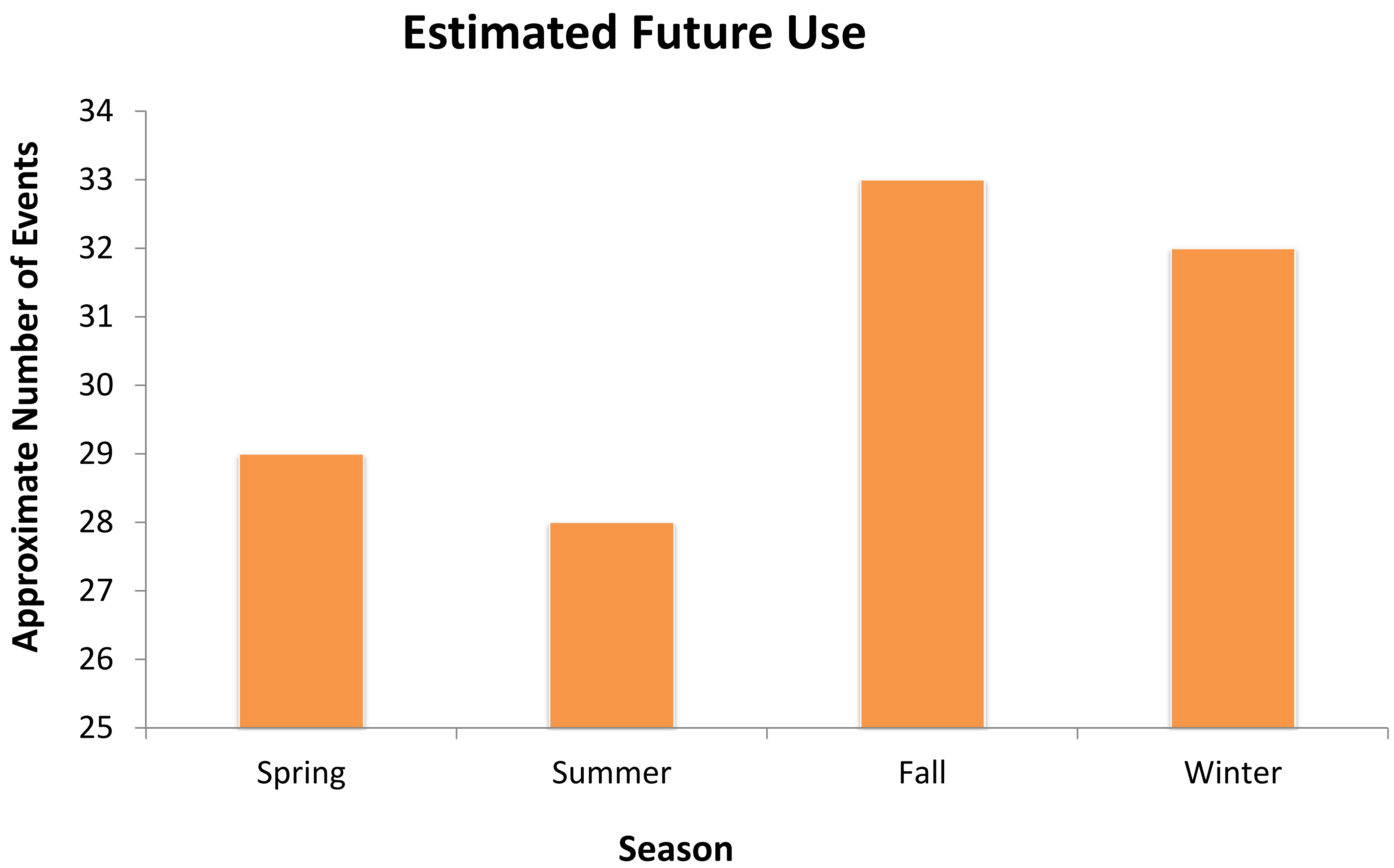
Projected Use

- **Quarterly:** lectures, meetings, movies/films, entertainment, arts, concerts, fundraisers, dinners
- **Monthly:** lectures, meetings, dinners
- **Weekly:** assemblies, soccer practice, food drives
- **5 days/week:** sports practice
- More use during winter (for inclement weather), holidays

Current Estimated Space Needs (Size)



Potential Future Needs (When)

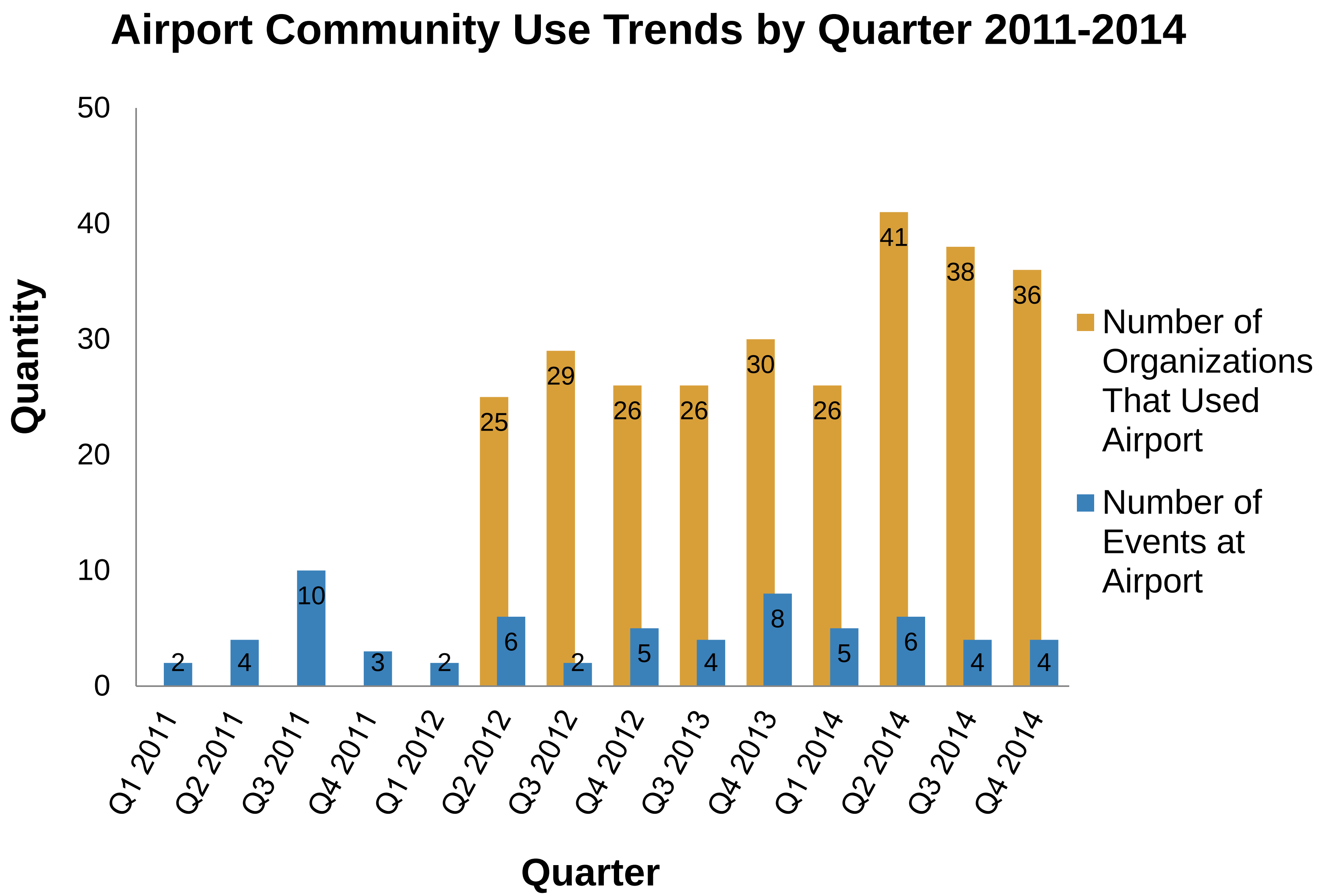


Non-Profit Summary

- 76% support for multi-use hangar that can host events
- Year-round use but greatest in winter + fall
- Event size: 100-400
- Top amenities: audio/visual, chairs/tables, kitchen, stage
- Need for free/low cost event/meeting space
- Overall, those interviewed enthusiastic

Current Use

Current Use of Airport Facilities



FlashVote

232 survey takers

120 comments

FlashVote

The best way to engage citizens

July 22, 2015

kevin@flashvote.com, 510-593-4901

Why FlashVote?

How much EASIER and BETTER would your decision-making be if you could effortlessly…

Engage Large Numbers of Busy Citizens

556

Responses

545 of 852 initially invited (64%)

11 others

- 15% of voting age signed up, 10% responding
  - Incline Village GID, NV (pop. 9,082)

Rapidly

Started:
Jun 16, 2015 11:32am

Ended:
Jun 18, 2015 11:40am

Advisory Groups:
IVGID - All

And Regularly

Recent Survey Results

Summer Shuttle Service

Advisory groups: IVGID - All

Ended: 11 days

Public Works Communications

Advisory groups: IVGID - All

Ended: 26 days

Summer Venues and Community Appreciation

Advisory groups: IVGID - All

Ended: about 1 month

View All Results

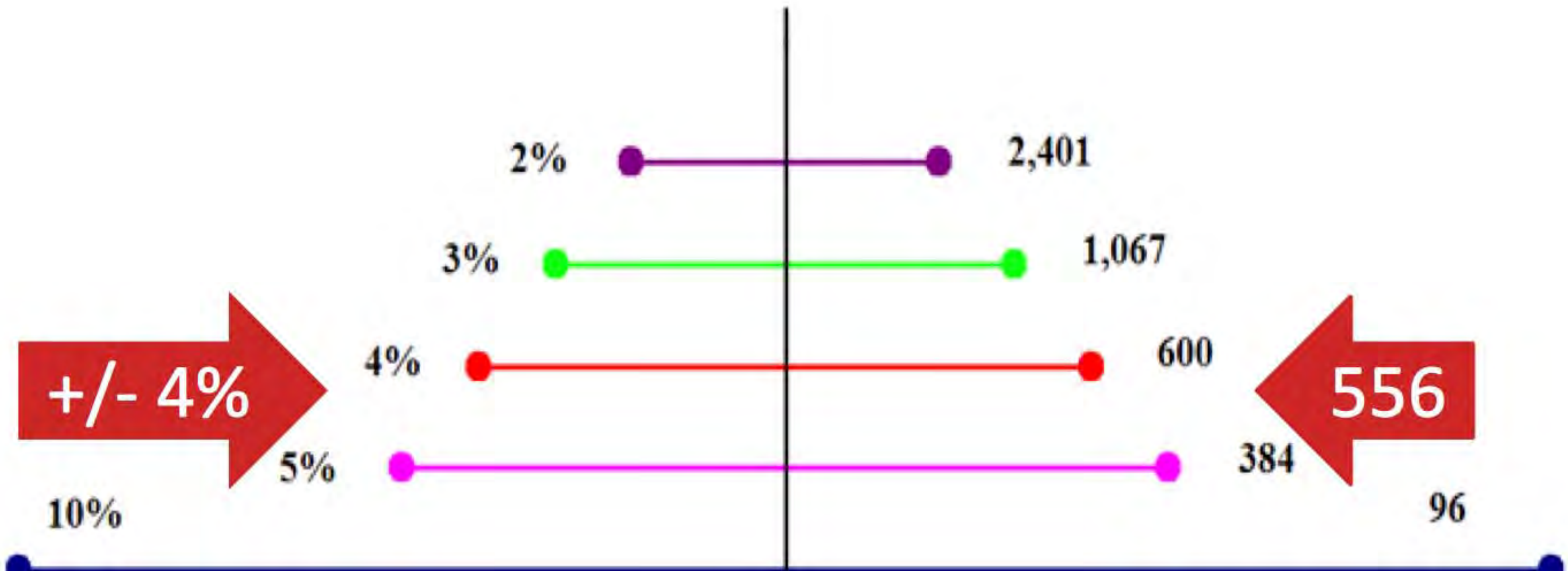
With Inputs Designed for Governments

How would you allocate $100 among the options below?

40	Remaining budget to allocate
	Beach amenities
40	Ice skating rink
20	Expand the trail systems
	More public spaces (plazas, parks, wider sidewalks)
	None of the above

SUBMIT SKIP

Giving Statistically Meaningful Results



- >50% user response limits self-selection bias

That Citizens and Governments Love

"That was cool" "It was incredibly easy"
"I was immediately satisfied"

– Citizens, Incline Village, NV

Delight thousands

"FlashVote is the best thing to happen in this community in the 30 years I've been here"

– Elected Official, Incline Village, NV

Save millions

So Why FlashVote?

Citizen Value
Government Value

10X

Citizen Time/Cost
Government Time/Cost

1/10

FlashVote is the only citizen engagement tool that:

- engages your busiest citizens
- collects scientifically valid and unbiased data
- gets actionable results in days or hours
- requires minimal to no staff effort

HOW IT WORKS

Nuts and Bolts

- You Pick Topic ➔Expert crafted "FlashSurvey"
  - 1 to 5 questions, each targeted to citizen expertise
- We Launch ➔Typical survey duration 1 to 3 days
  - Expect 50% to 70% response rates
- We Report ➔Results available immediately online
  - Results can inform future surveys for best decisions

Case Study

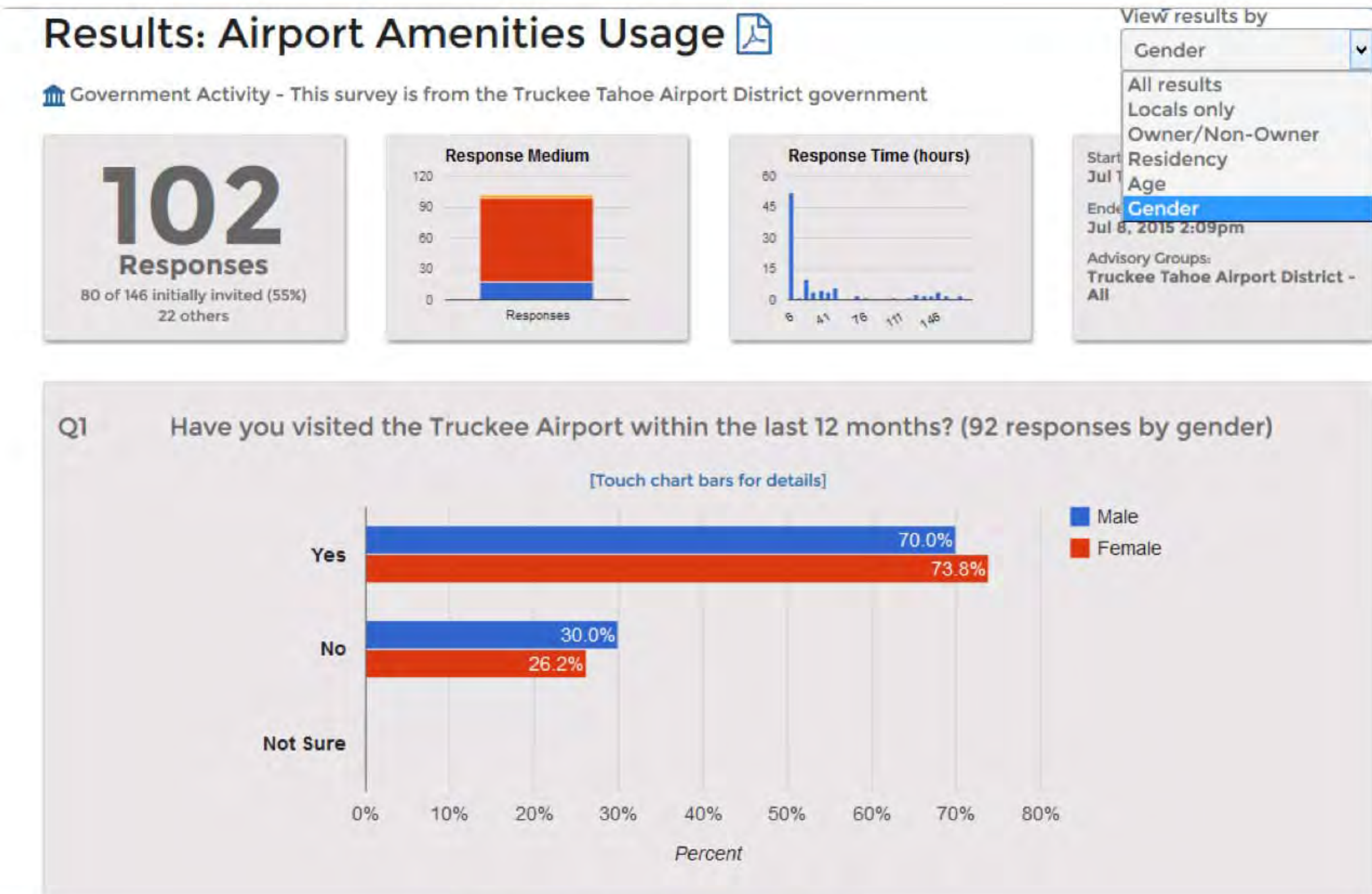
- Extremely well-intentioned elected Trustee makes a proposal for changing trash service
  - Based on his interactions with the public (emails, phone calls and public meetings), Trustee is convinced "a majority of residents are in favor and the rest are indifferent"
  - Launched Monday, had results Wednesday before meeting
- FlashVote finds about 2 to 1 actually against
  - FlashVote users also identified nonobvious flaws in the proposal and suggested better alternatives
- Proposal not adopted and residents saved over $1000 each for unwanted service change

No More (Survey)Monkeying Around

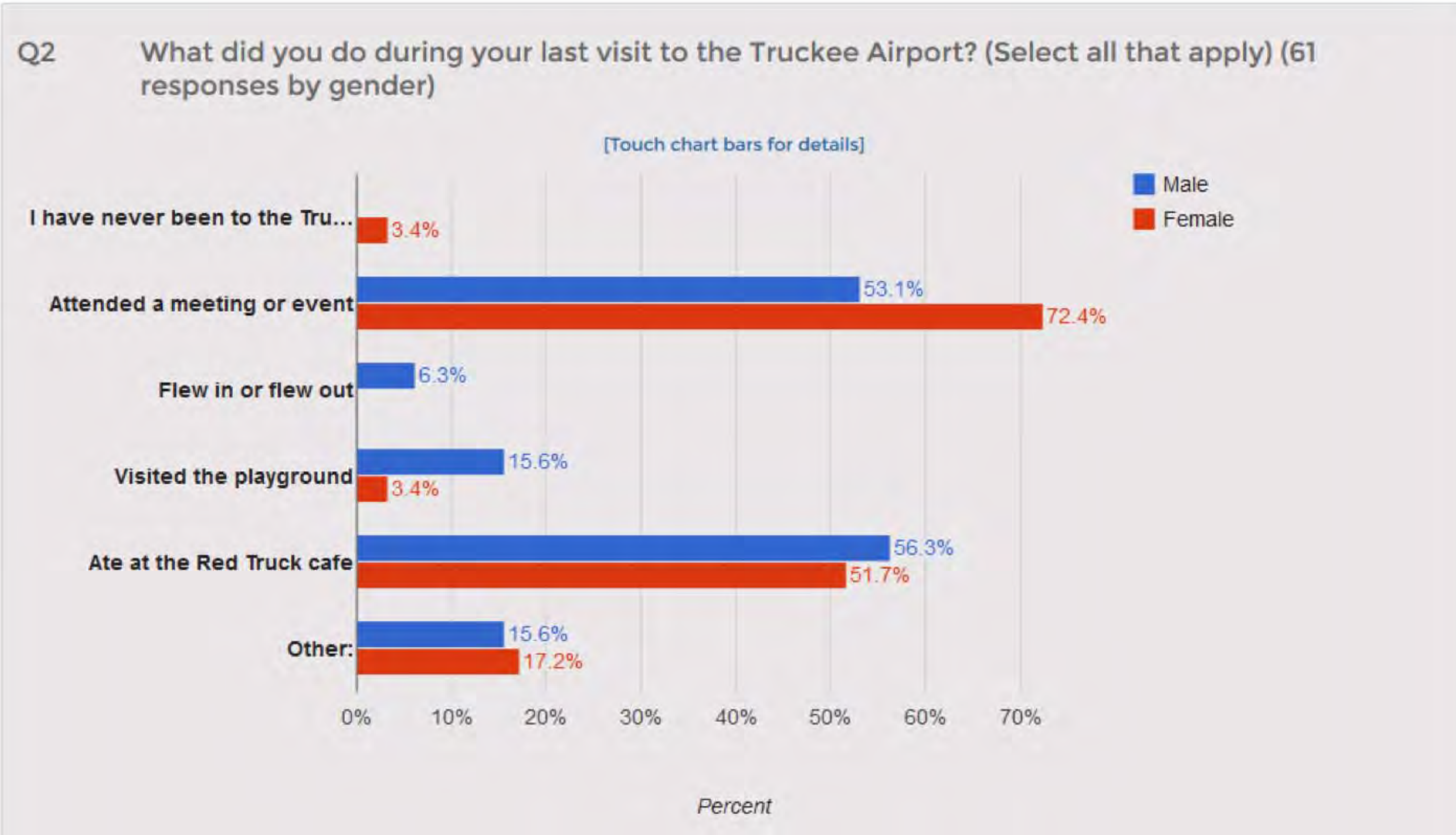
- Response sample is independent of survey topic
- Survey questions are professionally designed/edited
- People are contacted by email, text message and voice calls
- Responses from users are rapid (and once per person)
- Results are automatically shared with all
- Result filtering includes addresses and other demographics

INITIAL RESULTS

First "Teaser" Survey: Q1



First Survey: Q2



First Survey: Q3

Q3 If you could add something(s) to the Truckee Airport to provide additional community benefit and value, what would it be? (51 responses by gender)

Unfiltered responses

When there is an early morning meeting, please have the coffee ready. Thank you

a larger flight school presence

Seems like the airport has a full complement

nothing

More open space. Less development b

Show next 5 responses

Show all 46 remaining responses

Second Survey: Q1

Results: Hangar Options

View results by

All results

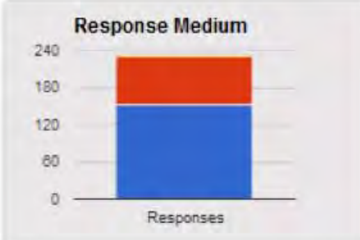
Government Activity - This survey is from the Truckee Tahoe Airport District government

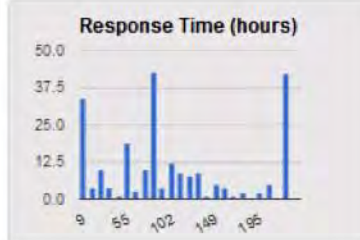
232

Responses

81 of 173 initially invited (47%)

151 others





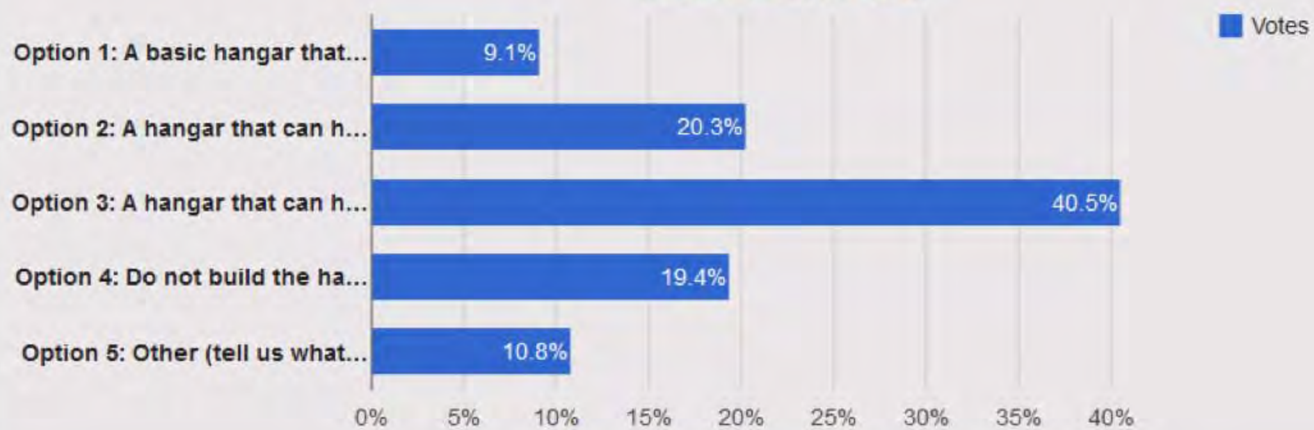
Started:
Jul 11, 2015 9:09am

Ended:
Jul 20, 2015 5:09pm

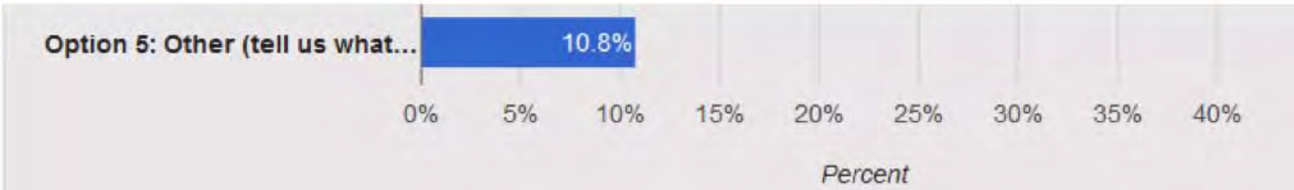
Advisory Groups:
Truckee Tahoe Airport District - All

Q1 Which of the following five hangar building options do you prefer? Click here to see images of the first three options (will open in a new browser tab) (232 responses)

[Touch chart bars for details]



Second Survey: Q1 "Other"



Unfiltered responses

Ootion #2, with kitchen facilities. No need 4 larger space,save reserves,stop property tx subsidy!
Keep local airport taxes focused on necessary airport operations.
All 3 are poor use of tax dollars. Use on-field de-icing and provide $ saved to well-informed need
Option 1 plus small restrooms. Estimated price $3.2 million
You're in aviation - build deicing hangar if needed - don't compete existing meeting/event venues

Show next 5 responses   Show all 20 remaining responses

Second Survey: Q2

Q2 If the Airport builds the multi-use hangar facility, what types of uses/events do you see the community using it for? (120 responses)

Responses containing 'more' | Show unfiltered responses

more meeting space, as the two community rooms in the terminal are often booked, as well as large fundraising space, which would be popular for both tahoe basin non-profits as well as non-profits based in truckee. The District receives a lot of property taxes from residents that live on the lake, we are often forgotten about, some would even say "ignored", and many people believe the airport receives it's funding from only truckee residents.

Picnics, pre-Air Show dinners, ceremonies, summer camps, charity auctions, lots more

Memorial Services, community meetings, community events, if it's there more use will come! But, I don't think it's going to "pay for itself" with fees but I think the airport has enough funding to subsidize it so it works.

All large Truckee Chamber events (Awards dinner, Business Expo, Job Fairs, community input meetings. Hotels will be able to use for group/special events that require more than their 1000 sq ft rooms have (greater revenue in TOT, TBID, sales tax for shops & restaurants where these folks will go afterwards), Will provide a place regardless of weather (huge variable in this area).

We need more community space for events and for permanent activities

Show next 5 responses | Show all 8 remaining responses

FUTURE

Future Topics

- More detailed hangar feature analysis
  - Incremental value, framed with costs per parcel
- Hangar vs other community projects/options
- Feedback on other amenities/services
- Subgroup feedback, geographical feedback, etc…

FlashVote

The best way to engage citizens

Questions?

THANK YOU!

kevin@flashvote.com, 510-593-4901

Publicity Efforts

- *Sierra Sun* Ads
- Biz cards at Air Faire/terminal/events
- Press coverage
- Website
- Connected
- E-blasts
- Facebook

Conclusion

*1,427 comments on the multi-use hangar concept since 2013
(includes duplicated comments)

Godbe (November 2013):
- 76% support

Master Plan (May 2013):
- Strong support for multiuse option

Hangar Input Process (November 2014):
- Strong support for multiuse concept with amenities for community events (AV, kitchen)

Spring-Summer 2015 Input:
- Non-Profits: 76% support
- FlashVote: 70.3% support
    - $3M option: 9.1%
    - $6M option: 20.3%
    - $9M option: 40.9%

Appendix E

Demand Drivers

DEMAND DRIVERS STUDY

TRUCKEE TAHOE AIRPORT

Mead & Hunt

DEMAND DRIVERS STUDY

NOVEMBER 2015

Mead & Hunt

SANTA ROSA
133 Aviation Boulevard
Suite 100
Santa Rosa, CA 95403
707-526-5010

Avaition Management Consulting Group
CENTENNIAL, COLORADO

Developed Knowledge
TRUCKEE, CALIFORNIA

Freshtracks Communications
TRUCKEE, CALIFORNIA

RECYCLED
Paper made from recycled material
FSC® C006263

This paper contains 100% post consumer fiber, manufactured entirely Carbon Neutral Plus and Processed Chlorine Free. It is Green Seal™ and Forest Stewardship Council™ (FSC) certified ensuring responsible forest management.

DEMAND DRIVERS STUDY

EXECUTIVE SUMMARY

The Demand Drivers Study for the Truckee Tahoe Airport (TRK or the Airport) investigates which potential aviation and non-aviation variables correlate to changes in aviation activity at the Airport. Data analysis is augmented by surveys and interviews which explore how the Truckee Tahoe Airport District (TTAD or the District) can affect these variables. Analysis includes factors that are under the control of TTAD, can be influenced by the District, and those that are outside of TTAD control and influence. The core questions for this Study include the following.

- Does the presence of certain airport infrastructure, improvements, and aviation products, services, pricing and facilities encourage aircraft to utilize TRK when they might otherwise choose other airports in the region or not come to the area at all?
- If adding airport infrastructure, improvements, and aviation products, services, and facilities will increase aircraft operations, which have the highest correlation to that increase?
- Are there airport infrastructure, improvements, aviation products, services, and facilities that could be added and/or should be considered for removal in order to change aircraft operation levels?
- What do the passengers want? Why are people coming here?

This Study is organized as follows:

- Executive Summary
- Aviation Demand Drivers
- Non-Aviation Demand Drivers
- Summary and Conclusions
- Appendices

Key Takeaways from this Report:

The two major factors influencing activity at TRK are outside of the control of the Airport:

1. **The location of the Airport and its relation to the Truckee - Tahoe Area.**
2. **The economic health of the nation and region.**

Summary of Findings

Several research methods are used to answer the core questions of the Study, described below.

- A local market assessment.
- Historical analysis of general aviation statistics and trends.
- Correlation analysis of trends to based aircraft and general aviation itinerant operations.
- Surveys of based aircraft tenants and transient aircraft users.
- Interviews of select based tenants and transient users of TRK.

A quantitative assessment of TRK's based aircraft and itinerant aircraft operations performance in comparison to the performance of national and regional aviation industry trends over a 10 year period (2005 to 2014) was conducted. The assessment consisted of a correlation analysis to identify possible demand influencers that might impact activity levels at TRK.

Demand Influencers: Variables that directly or indirectly cause changes in demand under full or partial control of TTAD.

Examples include pavement maintenance, service offerings, and pricing.

Demand Drivers: Variables that are completely outside of TTAD control.

Examples include proximity to final destination, aircraft deliveries and the economy.

The correlation analysis shows that TRK based aircraft have reasonably performed in-line with national aviation trends, meaning that Airport based aircraft increases and declines at a proportional rate to that of the national airspace system. TRK, like the rest of the country, has seen based aircraft decline as aircraft and pilots retire, and aircraft ownership costs grow. It is important to note that TRK based aircraft over the 10 year period studied may have been artificially impacted by the availability of hangar space, including the availability of large hangar space. However, the correlation analysis also shows that itinerant aircraft operations do not have a reasonable correlation with national and regional aviation industry trends. Therefore, this study is unable to draw a reasonable conclusion on national aviation trends being possible demand influencers on TRK itinerant aircraft operations (page 7).

Guiding Principles: This report describes data gathered for the purpose of determining influencers and drivers at TRK. Data and opinions gathers during this project are presented without edit. This report and analysis are intended to be informative rather than prescriptive.

The research results suggest that the primary demand drivers at TRK are outside of TTAD control. These demand drivers include the Airport's proximity to the user's primary or secondary residence, proximity to Lake Tahoe, and proximity to local mountain resorts. Factors that drive demand which are in the control of TTAD include availability of aircraft storage and snow removal capabilities. Surveys and interviews identified additional attributes and amenities desired by airport users such as: deicing services, additional aircraft storage and improved instrument flight rules procedures. Survey respondents believe these factors would support continued growth in Airport use and operations. The key takeaways from this analysis are:

- The correlation analysis suggests that TRK is not the primary demand driver in the local area, but is instead responding to it (page 7 and 27).
- Aviation activity in the region is not spread evenly across the airports, and TRK sees less traffic than five of the seven airports studied according to FAA and TRK records. However, it is possible that some area airports have inaccurate operations numbers (pgs. 11-12).
- The most important reason for using TRK is proximity to where the pilots and passengers want to go, be it recreational or residential (pgs 17, 20, 21, 25, 29, 30)
- Based aircraft at TRK perform in line with national trends; however, growth in based aircraft is limited by the availability of hangars and parking spaces – meaning that there is not much change in based aircraft levels from year to year (pgs. 7, 8, 12).
- Aircraft operations totals have not performed in line with national trends, growing at TRK while national activity indicators have been declining (pgs. 7, 8, 11).
- Survey responses show that there are changes to pricing and service availability that could make users more or less likely to use TRK (pgs. 17, 18, 21, 22, 23, 24).

Based Aircraft and Itinerant Operations Correlation

The number of based aircraft at TRK may be affected by the following aviation demand influencers throughout the forecast period (pg. 8):

- Single Engine Piston New Aircraft Deliveries
- Business Jet New Aircraft Deliveries
- California and United States Active Pilots
- General Aviation and On-Demand 14 CFR Part 135 Active Aircraft (California and United States)
- General Aviation and On-Demand 14 CFR Part 135 Hours Flown (California and United States)

There were not a sufficient number of positive correlations to draw conclusions on demand influencers of itinerant operations (pg. 8).

A core question of this study is "Which of these demand influencers are demand drivers? The results above may help focus on what factors influence based aircraft demand at TRK, however correlation analysis alone cannot answer this question. Supplemental information collected through interviews and surveys provided a more robust understanding. The correlation data suggests that based aircraft at TRK increases and decreases with national aviation factors: aircraft deliveries, active pilots, and hours flown.

Based Operation: Operation by an aircraft that is based at TRK. This operation may be an Itinerant or Local operation.

Transient Operation: Operation (Itinerant or Local) by an aircraft that is not based at TRK.

Itinerant Operation: Takeoff or landing operations of airplanes going from one airport to another airport that involves a trip of at least 20 miles.

Local Operation: Any operation performed by an aircraft that (a) operates in the local traffic pattern or within sight of the tower or airport, or (b) is known to be departing for, or arriving from, flight in local practice areas located within a 20-mile radius of the control tower or airport. (FAA AC 150/5325-4B)

Aviation Interviews

The key takeaway from interviews with pilots who regularly utilize TRK (based and transient pilots) is that the primary reason for basing (or operating) at TRK is the proximity to aircraft owners (or passengers) homes and business. There is also a consensus of those interviewed that proximity to recreational areas and resorts in the Truckee-Tahoe region drives TRK activity (pages 17-18).

Aviation Survey

A survey was sent out to based and transient aircraft customers to determine the needs and perspective of based and transient customers. The following are key takeaways rom this survey (pages 19-24):

- In general, the location of an airport is a significant driver in demand (pg. 20).
- The survey found that 17 of the based aircraft respondents are on the TTAD-maintained wait list for aircraft storage and 13 of the 17 are waiting for a box hangar. This may indicate that current users of TRK will operate here, even when their preferred type of aircraft storage is not available. This is evidence that there are draws outside of airport facilities driving users to the region (pg. 20).
- A significant majority (90% combined) of based and itinerant aircraft respondents determined that the Airport's proximity to their local residence is very important, with 63% of based aircraft respondents stating it was an absolute necessity (pg. 20).
- Facilities that TRK could add that may grow traffic include better instrument procedures, aircraft deicing services or availability of a hangar for deicing, and cheaper fuel (pg. 24).
- Runway dimensions appear to be adequate for most users. Conversely, decreasing runway length could have a significant impact on itinerant operators, as would the elimination of fuel services, increasing fuel pricing or itinerant use fees, not maintaining pavement, and reducing services (pg. 24).

Non-Aviation Demand Drivers

Aviation demand at TRK is found to have a strong correlation with the following non-aviation influencers (pages 27-28):

- Total Residential Housing Units
- Number of Households
- Population
- Median Age
- Average Household Income
- Median Household Income
- Visitor Spending
- Total Revenue
- Average Crude Oil Spot Price
- U. S. Gross Domestic Product (GDP)
- S&P 500 Average Close

Non-Aviation Market Assessment

Discussions with local leaders and developers plus TRK operations staff provided another perspective of what drives demand in the region and at TRK. A summary of findings from these discussions (pages 29-30):

- Customer Base: generally second homeowners, from the Bay Area. Ages range from young families to retirees. Most respondents made the point that these constituents are perceived to be affluent (pg. 29).
- Visitor Demand: Common answers for what drives constituents to the region include recreation activities associated with the mountains and Lake Tahoe, plus proximity and easy access to the Bay Area (pg. 29).
- Area Access: Automobile access still dominates how constituents access the area, however most interviewees described an increase in Airport use by their constituents. This includes some resorts and associations seeing 25 percent of constituents using TRK (pg. 30).
- The lifestyle and area are primary driving factors to the area. Affluent people have chosen to build homes here, and have the means to utilize TRK, if they choose to (pg. 30).

Based on these interviews it is assumed that future high end development will have a positive correlation on aircraft activity at TRK.

TTAD Board Request

After draft review, the TTAD requested correlation between jets and non-jets to aviation and non-aviation data points. Correlation analysis is the process of comparing the trends of two variables over a period of time (e.g., 10 years). There is insufficient data points to identify different correlations between jets and non-jets to the aviation industry or non-aviation data points. In essence, there was only one trend change provided for jets and non-jets (2010, when different percentage splits were provided between jet and turboprop).

1. AVIATION DEMAND DRIVERS

Aviation demand drivers focus on variables and circumstances in the realm of the general aviation industry. The research approach includes quantitative assessment of the performance of demand driver variables over time, and qualitative assessment of user preference and opinion through a survey and interview. The result of the aviation demand drivers analysis is an assessment of what on-airport facilities and services drive demand at TRK, and how changes to these facilities might influence future activity.

1.1 Aviation Demand Influencer Research Results

Research focuses on potential aeronautical demand influencers[1] that might impact activity levels at TRK. Analysis reviews how fluctuations of demand driver variables are reflected in the number of based aircraft at TRK, and the number of itinerant operations at TRK (collectively referred to as "activity levels"). This section focuses on the quantitative data analysis, which is supported by the market assessment described in **Section 1.2,** interviews described in **Section 1.3**, and a survey described in **Section 1.4**.

A. Research Approach

Analysis of demand influencers considers ten years of historical data (for the January 1, 2005 to December 31, 2014 period) and provides an analysis of how Airport activity levels have correlated with the historical demand influencer data sets. Analysis is done at the annual level, using the calendar year. Annual data is chosen to smooth out seasonal peaking that may occur at certain times of the year in the demand influencer data sets which could lead to variables appearing more or less correlated than they should. The following data sets are analyzed to determine correlation with activity levels at TRK.

- New Aircraft Deliveries
- Active Pilots
- General Aviation and On-Demand2 Active Aircraft
- General Aviation and On-Demand Hours Flown

Appendix A provides an overview of the general aviation industry, historical statistics, trends and industry forecasts.

[1] An external factor that makes aircraft operations grow or decline at an airport.

[2] "General Aviation" includes flights operated under 14 CFR Part 91K and 14 CFR Part 135

B. Research Methodology

Potential demand influencers are screened using correlation analysis, which tracks how two independent variables change in relation to each other. This analysis results in a determination of a trend correlation coefficient (correlation coefficient) for each demand influencer at TRK.

The correlation coefficient illustrates the extent to which the value of one variable correlates with a second variable. The correlation coefficient is not impacted by units or scale, but rather, the strength of the linear relationship between the two variables.

While correlation can indicate possible interrelatedness of two variables, it does not imply causality. Variables with a strong correlation coefficient may be influenced by a third variable. An example is the sale of luxury handbags and high end bottles of wine in a given geographic area. The sales numbers of both may grow and decline similarly; however, one would not contend that the sale of handbags is not driving consumers to purchase wine. Instead, a third variable, such as a geographic area's economic and financial growth may be driving demand for both variables. For this reason, professional judgment and industry experience are essential to help explain results of correlation analyses.

This analysis uses the Pearson Product-Movement Correlation Coefficient, which is obtained by dividing the covariance of the two random variables by the product of their standard deviations. This correlation coefficient shows the direction of the relationship by the resulting sign (+ or -). A positive correlation coefficient means that as the value of one variable increases, the value of the second variable also increases. A negative correlation means that as one variable increases, the second variable decreases.

To determine the value of the correlation coefficient (denoted with r), the absolute value of the result is utilized. For example, a correlation coefficient of r = 0.5 indicates a stronger degree of linear relationship than a correlation coefficient of r = 0.4. A correlation coefficient of zero (r = 0.0) indicates the absence of linear relationship while correlation coefficients of r = 1.0 indicate a perfect linear relationship.

C. Research Results

The correlation analysis returns a correlation coefficient for each variable. In order to derive which variables require further investigation, the following criteria were applied.

- r = 0.30 – 0.49 (highlighted in yellow) indicates a moderate positive correlation
- r = 0.50 and above (highlighted in green) indicates high positive correlation

Variables with correlation coefficients less that r = 0.30 were considered to be weakly correlated or negatively correlated, and were not retained for further analysis. Results of the correlation analysis for based aircraft are included in **Figure 1**, and results for itinerant operations are included in **Figure 2**[3]**.**

3 United States includes 50 States and Overseas Territories.

Figure 1: Based Aircraft Correlation Analysis Results

Truckee Tahoe Airport Correlation Analysis (Based Aircraft)											
Demand Influencers	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	TREND CC
Based Aircraft (Total)	233	233	233	233	233	234	223	218	214	212	N/A
New Aircraft Deliveries (U.S)											
SE Piston	2,326	2,513	2,417	1,943	893	781	761	817	908	986	0.57
ME Piston	139	242	258	176	70	108	137	91	122	143	0.32
Turboprop	375	412	465	538	446	368	526	584	645	603	-0.87
Business Jet	750	887	1,137	1,317	874	767	696	672	678	722	0.58
Active Pilots											
California	68,693	65,867	64,129	65,116	61,709	64,529	62,606	61,185	59,841	59,213	0.81
Nevada	6,874	6,757	6,654	6,886	6,677	7,008	6,954	6,927	6,811	6,841	-0.19
*United States**	609,735	597,109	590,349	613,746	594,285	627,588	617,128	610,576	599,086	593,499	0.19
General Aviation and On-Demand 14 CFR Part 135 Active Aircraft											
California	25,337	23,854	23,813	25,292	24,811	22,830	N/A	21,316	20,560	N/A	0.87
Nevada	2,990	3,374	3,512	3,093	2,022	2,030	N/A	2,246	2,322	N/A	0.39
*United States**	224,352	221,943	231,607	228,663	223,876	223,370	N/A	213,665	204,085	N/A	0.91
General Aviation and On-Demand 14 CFR Part 135 Hours Flown (in Thousands)											
California	2,871	3,201	2,540	2,651	2,555	2,350	N/A	2,309	2,331	N/A	0.54
Nevada	413	625	573	377	276	343	N/A	319	323	N/A	0.40
*United States**	26,982	27,705	27,851	26,009	23,763	24,802	N/A	24,554	23,009	N/A	0.62

*Includes other U.S Territories

It is important to note that the based aircraft from 2005 to 2014 may have been artificially impacted by the following two attributes. Due to the winter climate at TRK, a significant majority of based aircraft require hangar storage. During the period from 2005 to 2010, the number of based aircraft was consistent with the number of available hangars at TRK. Therefore, if there were more hangars, TRK may have had more based aircraft. Conversely, from 2011 to 2014, the demand for larger hangars surpassed the availability and the number of based aircraft may have dropped due to the lack of availability. These two observations are supported by the past and current hangar wait lists at TRK. Therefore, it is important to consider that the moderate and high positive correlations with industry trends may be impacted by these artificial impacts.

Figure 2: Itinerant Operations Correlation Analysis Results

Truckee Tahoe Airport Correlation Analysis (General Aviation Itinerant Operations)											
Demand Influencers	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	TREND CC
General Aviation Itinerant Operations	10,213	14,307	15,618	11,031	14,908	15,533	15,398	15,863	16,729	17,875	N/A
New Aircraft Deliveries (U.S)											
SE Piston	2,326	2,513	2,417	1,943	893	781	761	817	908	986	-0.59
ME Piston	139	242	258	176	70	108	137	91	122	143	-0.15
Turboprop	375	412	465	538	446	368	526	584	645	603	0.50
Business Jet	750	887	1,137	1,317	874	767	696	672	678	722	-0.46
Active Pilots											
California	68,693	65,867	64,129	65,116	61,709	64,529	62,606	61,185	59,841	59,213	-0.85
Nevada	6,874	6,757	6,654	6,886	6,677	7,008	6,954	6,927	6,811	6,841	-0.09
*United States**	609,735	597,109	590,349	613,746	594,285	627,588	617,128	610,576	599,086	593,499	-0.31
General Aviation and On-Demand 14 CFR Part 135 Active Aircraft											
California	25,337	23,854	23,813	25,292	24,811	22,830	N/A	21,316	20,560	N/A	-0.79
Nevada	2,990	3,374	3,512	3,093	2,022	2,030	N/A	2,246	2,322	N/A	-0.42
*United States**	224,352	221,943	231,607	228,663	223,876	223,370	N/A	213,665	204,085	N/A	-0.50
General Aviation and On-Demand 14 CFR Part 135 Hours Flown (in Thousands)											
California	2,871	3,201	2,540	2,651	2,555	2,350	N/A	2,309	2,331	N/A	-0.55
Nevada	413	625	573	377	276	343	N/A	319	323	N/A	-0.10
*United States**	26,982	27,705	27,851	26,009	23,763	24,802	N/A	24,554	23,009	N/A	-0.46

*Includes other U.S Territories

For Figures 1 and 2: N/A represents no data available for this year. This does not negatively affect the correlation analysis.

General aviation itinerant operations at TRK have increased over the period studied. Conversely, demand influencers except for deliveries of turboprops, have decreased or remained flat over the period studied. As such, the resulting correlation coefficients are negative. While negative correlation coefficients from can indicate correlation between variables, the potential cause and effect of the negative correlation must be viewed to determine whether further investigation is relevant. For instance, the highest negative correlation coefficient for TRK general aviation itinerant operations was California active pilots (-0.85). However, it is not reasonable to assume that if actions were taken to continue to drive down California active pilots that general aviation itinerant operations at TRK would increase. Therefore, the negative correlations identified in Figures 1 and 2 are only interesting, but not relevant to this demand driver analysis.

D. Findings

The following aviation demand influencers may impact the number of based aircraft at TRK throughout the forecast period. These demand influencers are indices of how busy the regional and national general aviation system is. TRK is a part of this system.

- Single Engine Piston New Aircraft Deliveries
- Business Jet New Aircraft Deliveries
- California and United States Active Pilots
- General Aviation and On-Demand 14 CFR Part 135 Active Aircraft (California and United States)
- General Aviation and On-Demand 14 CFR Part 135 Hours Flown (California and United States)

There were not a sufficient number of positive correlations to draw conclusions on demand influencers of TRK itinerant operations.

The core question of this analysis is “Which of these demand influencers are demand drivers?” Correlation analysis alone cannot answer this question; however, the results help direct further research into what is driving demand for based aircraft at TRK. Correlation suggests (but does not outright confirm) that based aircraft at TRK increases and declines with aircraft deliveries and active aircraft, active pilots, and the number of hours flown. This means that activity at TRK grows and declines in proportion with activity in the overall general aviation system.

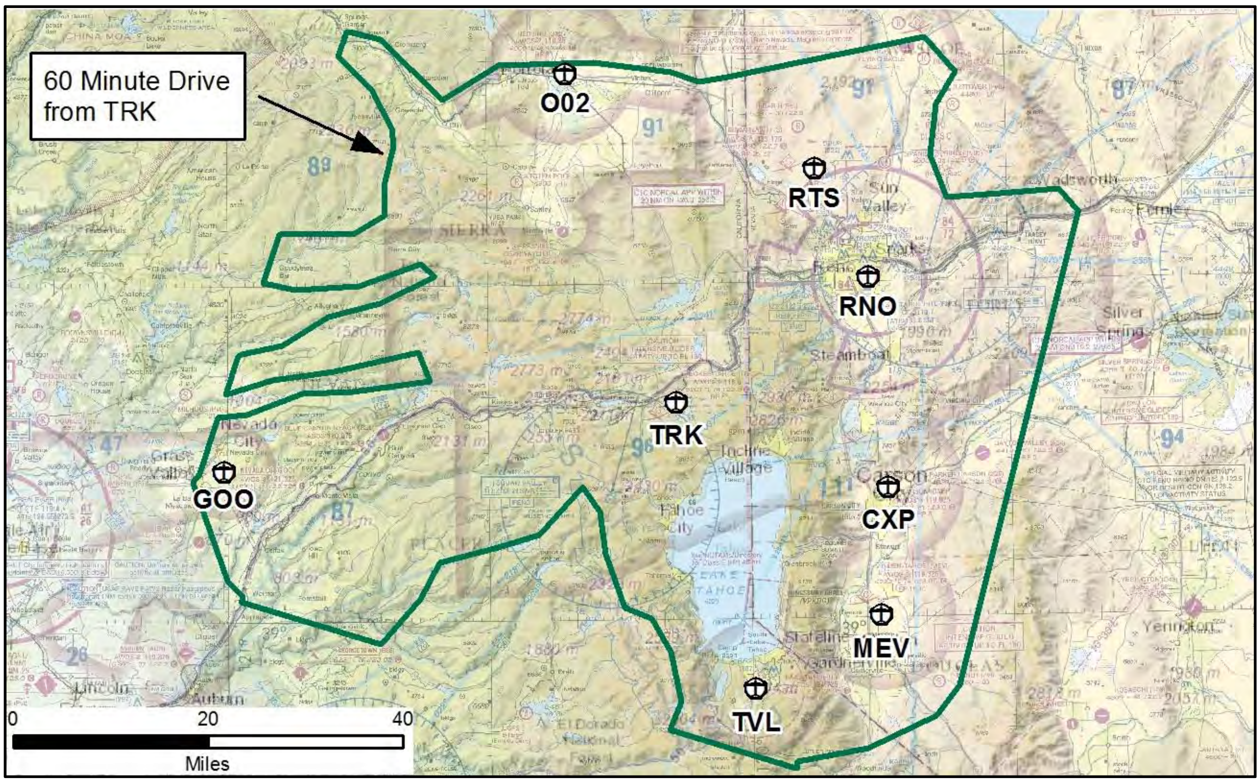
Going forward, the results of the correlation analysis suggest that based aircraft at TRK is not an anomaly, nor is it counter to regional and national trends. The follow up question to these results is “Why do customers base their aircraft at TRK over other area airports?” The Market assessment in **Section 1.2** compares facilities at TRK to other airports, and provides the result of user input on why they choose to use the Airport over other airports.

1.2 Aviation Market Assessment

The Market Assessment looks at competitive airports near TRK and provides analysis of similar and dissimilar facilities and services offered at each compared to TRK. An airport is considered competitive if it is located within 60 miles driving distance, has similar aviation infrastructure, and offers similar products, services, or facilities. There are seven airports that meet these criteria, shown in **Figure 3**.

- Reno/Tahoe International Airport (RNO)
- Reno/Stead Airport (RTS)
- Lake Tahoe Airport (TVL)
- Carson Airport (CXP)
- Minden-Tahoe Airport (MEV)
- Nervino Airport (O02)
- Nevada County Air Park (GOO)

Figure 3: Area Airports



Each of the competitive airports has unique attributes which is difficult to make straight-line comparisons with TRK. The reason for this is that these airport fulfill different roles in the FAA National Airspace System, as shown by their National Plan of Integrated Airport Systems (NPIAS) classifications:

- One Small-Hub Primary Commercial Service airport (RNO)
- Two General Aviation Reliever airports (RTS and CXP)
- Five General Aviation airports (TVL, MEV, O02, and GOO, plus TRK)

RNO is the only airport to have a continuously operating air traffic control tower and air carrier service; whereas the other airports are not towered and primarily serve general aviation users. RNO is included in this assessment because of the destination/resort market that RNO serves and the high level of transient business aviation jet activity.

Competitive airports are reviewed using the following categories: Fuel Volumes, Aircraft Operations, Based Aircraft, and Markets Served. Fuel volumes, aircraft operations, and based aircraft illustrate how the region's air traffic is divided amongst the airports. Markets served helps explain why some aircraft choose one airport over another.

Fuel Volumes

Fuel volumes measure how much fuel is sold at each of the airports. The range of volumes is explained by the location of the airports, corresponding annual aircraft operations, and the operational fleet mix (the various types of aircraft using the airport). TRK ranked fourth in annual fuel volumes.

Figure 4: Fuel Volume Sales at Area Airports

	Fuel Volume (Gallons)		
Airport	**AvGas (100LL)**	**Jet A**	**Total**
Reno-Tahoe International	146,000	2,113,000	2,259,000
Minden Tahoe	500,000	1,000,000	1,500,000
Carson	300,000	200,000	500,000
Truckee Tahoe	92,000	309,000	401,000
Lake Tahoe	35,000	220,000	255,000
Reno/Stead	97,000	121,000	218,000
Nervino	N/A	None	N/A
Nevada County Air Park	102,000	68,000	170,000
Source: Airport Management Interviews			

From a demand drivers prospective, the key takeaway is that all of the airports reviewed sell both Jet A and 100LL fuel. The difference in sales between the two types of fuel provide insight into what aircraft frequent these airports. When associated with based aircraft records that are discussed below, fuel volumes can be used to help determine what types of aircraft are drawn to the airports on an itinerant basis. Since the availability of fuel is not a differentiation between the airports studied, other variables can be evaluated.

Aircraft Operations

Aircraft operations represent the number of takeoffs and landings. Outside of RNO, none of the airports have an airport traffic control tower. This means that operations totals are based on filed flight plans and FAA estimates. This data may not be 100 percent accurate, but represents the best information available. TRK has a wide area multi-lateration system, provided by vector, which provides more accurate aircraft operations counts. The FAA classifies operations as local, where the aircraft stays near the airport, and itinerant, where aircraft fly from one airport to another. This analysis focuses on itinerant operations only because this study looks to determine what makes them fly to one airport over another. Itinerant operations by airport for 2014 are below.

Figure 5: Itinerant Operations at Area Airports

Airport	Itinerant Operations	Regional Market Share
Carson[1]	45,000	24%
Minden Tahoe[1]	37,500	20%
Reno-Tahoe International[2]	34,158	18%
Reno/Stead[1]	19,000	10%
Lake Tahoe[1]	18,887	10%
Truckee Tahoe	13,976	7%
Nevada County Air Park[1]	13,000	7%
Nervino[1]	8,000	4%
Total	189,511	100%

1: Itinerant operations at non-towered airports are typically estimated for official FAA records. It is possible that reported itinerant operations are higher than actual.
2: RNO operations do not include "air carrier"
Source: FAA Terminal Area Forecast, Airport Records (TRK only).

Itinerant operations show how visitors to the region are divided up amongst the area airports. The market share shows that operations are not divided evenly amongst the area airports, with an eight percent gap between the third busiest airport and the fourth busiest airport. One detractor from the quality of this data is that outside of RNO and TRK, these airports do not have an accurate method of monitoring aircraft operations. Therefore, these totals are estimates based on FAA national-level projections or local spot checks for a day a quarter and extrapolated for the entire year. With this in mind, the information presented represents the best data available. The top three airports account for 62 percent of total operations, and the bottom four make up the remaining 38 percent. The uneven distribution of itinerant operations indicates that the busier airports are closer to what draws visitors to the region – be it for business of leisure. Reasons behind why these aircraft choose other airports are explored in **Section 1.3** and **1.4**.

Based Aircraft

TRK has the most based aircraft of all the airports analyzed in the study with 227 based aircraft followed by Carson Airport and Minden Tahoe Airport. Based aircraft are categorized as piston-powered, turbine (jet) powered, and helicopter / other (including ultralights and gliders). This total includes seasonally based, and permanently based aircraft.

Figure 6: Based Aircraft

Airport	Piston Single + Multi	Turbine Jet + Prop	Helicopter / Other	Total	Market Share
Truckee Tahoe	207	12	8	227	22%
Carson	176	5	25	206	20%
Minden Tahoe	193	4	4	201	19%
Nevada County Air Park	134	1	1	136	13%
Reno-Tahoe International	104	9	15	128	12%
Reno/Stead	90	7	12	109	10%
Lake Tahoe	27	0	4	31	3%
Nervino	16	0	0	16	1%
Total	947	38	69	1,054	100%

Source: Airport 5010 Forms, Airport Records (TRK only)
Total based aircraft included permanent and seasonally based aircraft.

The top three airports of the eight studied each have about a fifth of the regional market share, the middle three airports each have about a tenth of the market share, and the bottom two airports have less than five percent of market share combined. Reasons for this distribution include lack of aircraft storage availability (Lake Tahoe) and proximity to population centers (Nervino).

Markets Served

Markets served define the role of an airport in the greater system of nearby airports. The system has one airport with scheduled commercial service (RNO), and two airports with Air National Guard facilities (RNO and RTS). The other airports serve general aviation markets, which include the recreational, flight training, and business markets. Airports build facilities to support the needs of the markets that they serve, or wish to serve. Private industry (or the airport operator) provides services that cater to these markets. Examples of key facilities include runway length, the availability of instrument flight procedures, pavement weight bearing capacity, and aircraft parking and storage. Examples of key services include a fixed base operator, fuel, and maintenance. Airport facilities and services are described in **Section 1.2.2**

1.2.1. Airport Profile

Figure 7: TRK Profile

Item	Information
Airport Name	Truckee Tahoe Airport
FAA Airport Identifier	TRK
City and State	Truckee, California
Distance/Direction from CBD	2 miles East of the Central Business District
Airport Sponsor	Truckee Tahoe Airport District
Type of Airport Sponsor	Airport District
Airport Governing Body	Board of Directors
Type of Airport Governing Body	☒Elected ☐Appointed
Airport Advisory Body	Airport Community Advisory Team
Airport Operator	Truckee Tahoe Airport District
Type of Airport Operator	District
Airport Management	☒Full-Time ☐Part-Time ☐None
Number of Employees	22
Part of an Airport System[4]	No
Type of NPIAS Airport	☐Primary Commercial Service ☐Non Primary Commercial Service ☐General Aviation Reliever ☒General Aviation
Type of Asset Study Airport	☐National ☒Regional ☐Local ☐Basic
Part 139 Airport Classification	☐Class I ☐Class II ☐Class III ☐Class IV
Airport Reference Code (ARC)	AAC: ☐A ☒B ☐C ☐D ☐E ADG: ☐I ☒II ☐III ☐IV ☐V RVR: ☐VIS ☐5000 ☐4000 ☐2400 ☐1600 ☐1200
Market Segments Served	**Industry** ☐Air Carrier *(diversions only)* ☐Military ☒General Aviation **General Aviation** ☒Personal ☒Business ☒Commercial ☒Government
Air Traffic Control Tower	☐FAA ☐Contract ☒None
Aircraft Rescue and Firefighting (ARFF) Index[5]	None, However an ARRF certified truck is housed at the nearby Truckee Fire Protection District Station

[4] An airport system includes multiple airports owned and/or operated by a single sponsor/operator.

[5] Index A (aircraft less than 90 feet in length); Index B (aircraft at least 90 feet but less than 126 feet in length); Index C (aircraft at least 126 feet but less than 159 feet in length); Index D (aircraft at least 159 feet but less than 200 feet in length); and Index E (aircraft at least 200 feet in length).

1.2.2. Subject and Competitive Airport Overviews

Figure 8: Airport Facilities

	Subject Airport	Airport 1	Airport 2	Airport 3	Airport 4	Airport 5	Airport 6	Airport 7
Airport Name	**Truckee Tahoe Airport**	**Reno/Tahoe International Airport**	**Reno/Stead Airport**	**Lake Tahoe Airport**	**Carson Airport**	**Minden-Tahoe Airport**	**Nervino Airport**	**Nevada County Air Park**
FAA Airport Identifier	TRK	RNO	RTS	TVL	CXP	MEV	O02	GOO
City and State	Truckee, CA	Reno, NV	Reno, NV	South Lake Tahoe, CA	Carson City, NV	Minden, NV	Beckwourth, CA	Nevada City, CA
Distance/Direction from Downtown	2 Miles East	3 Miles SE	10 Miles NE	3 Miles SW	3 Miles NE	4 Miles N	1 Mile E	3 Miles E
Distance/Direction from Subject Airport	-	38 Miles by Road 20 Miles by Air	49 Miles by Road 24 Miles by Air	47 Miles by Road 26 Miles by Air	45 Miles by Road 20 Miles by Air	47 Miles by Road 26 Miles by Air	55 Miles by Road 31 Miles by Air	60 Miles by Road 40 Miles by Air
Airport Sponsor	Truckee Tahoe Airport District	Reno-Tahoe Airport Authority	Reno-Tahoe Airport Authority	City of South Lake Tahoe	City of Carson	Douglas County	Plumas County	Nevada County
Type of Airport Sponsor	Special District	Airport Authority	Airport Authority	City	City Council	County	County	County
Airport Governing Body	Board of Directors	Board of Trustees	Board of Trustees	City Council	Airport Authority	County Commissioners	Board of Supervisors	Board of Supervisors
Type of Airport Governing Body	Elected	Appointed	Appointed	Elected	Appointed	Elected	Elected	Elected
Type of Airport Operator	Airport District	Airport Authority	Airport Authority	Airport Department	Airport Authority	Contract Airport Management	Facility Services Department	Airport Department
Airport Advisory Body	Yes	No	No	No	No	Yes	No	Yes
Number of Employees	22 FTE	246 FTE	7 FTE	4 FTE	2 FTE	6 FTE	2 FTE – 4 Temp	3 FTE
Part of an Airport System	No	Yes	Yes	No	No	No	Yes	No
Type of NPIAS Airport	General Aviation	Small Hub	GA Reliever	General Aviation	GA Reliever	General Aviation	General Aviation	General Aviation
Type of Asset Study Airport	Regional	N/A	Basic	Local	Regional	Regional	Local	Local
Part 139 Airport Classification	N/A	Class I	N/A	N/A	N/A	N/A	N/A	N/A
Airport Reference Code (ARC)	B-II		C-III	B-II	B-II	C-III	B-I	B-I
Market Segments Served	GA/Mil/Corp	AC/Mil/GA/Corp	GA/Mil/Corp	GA/Corp	GA/Corp	GA/Corp	GA	GA/Corp
Airport Size (acres)	2,280	1,450	5,170	348	632	996	99	117
Number of Runways	2	3	2	1	1	3	1	1
Longest Runway	7,000' X 100'	11002' X 150'	9,000' X 150'	8,544" X 150'	6101' X 75'	7,400' X 100'	4651' X 75'	4351' X 75'
Weight Bearing Capacity	SW 50.0 DW 80.0	SW 75.0 DW 185.0 DWT 350.0 DDTW 850.0	SW 75.0 DW 200.0 DWT 320.0	SW 70.0 DW 125.0 DWT 210.0	SW 30.0 DW 60.0	SW 50.0 DW 75.0	SW 12.0	SW 30.0 DW
Precision Approaches	None	ILS W/ MALSR	ILS W/ MALSR	None	None	None	None	None
Non-Precision Approaches	GPS	LOC/GPS/VOR/NDB	GPS	GPS/LDA/VOR	GPS	GPS	GPS	GPS/VOR
Air Traffic Control Tower	No	Yes	No	No	No	No	No	No
ARFF Index	N/A	ARFF Index C	N/A	N/A	N/A	N/A	N/A	N/A

Figure 9: Annual Airport Activity Levels

Airport Profiles	Subject Airport	Airport 1	Airport 2	Airport 3	Airport 4	Airport 5	Airport 6	Airport 7
Airport Name	**Truckee Tahoe Airport**	**Reno/Tahoe International Airport**	**Reno/Stead Airport**	**Lake Tahoe Airport**	**Carson Airport**	**Minden Tahoe Airport**	**Nervino Airport**	**Nevada County Air Park**
FAA Airport Identifier	TRK	RNO	RTS	TVL	CXP	MEV	O02	GOO
Aircraft Operations								
Air Carrier	0	34,687	0	0	0	0	0	0
Air Taxi	1,000	12,071	0	1,100	7,500	2,500	0	1,000
General Aviation Local	21,000	4,234	42,000	4,525	38,500	42,000	4,000	14,750
General Aviation Itinerant	12,976	20,751	19,000	17,440	37,500	35,000	8,000	12,000
Military	24	2,125	10,000	475	0	300	0	0
TOTAL	35,000	73,868	71,000	23,540	83,500	79,800	12,000	27,750
Based Aircraft								
Single-Engine	179	68	83	25	155	163	15	126
Multi-Engine	28	36	7	2	21	30	1	8
Jet	12	9	7	0	5	4	0	1
Helicopter	4	7	0	4	3	4	0	1
Other	4 (gliders)	8 (military)	12 (Military) 2 Other	0	22 (UL/Gliders)	0	0	0
TOTAL	227	128	111	31	206	201	16	136
Fuel Volumes								
Jet Fuel (General Aviation)	309,000	Unknown	121,357	219,506	200,000	1,000,000	102,000	102,018
Jet Fuel (Air Carrier)	-	Unknown	0	0	0	0	0	-
Jet Fuel (Military)	-	Unknown	0	0	0	(included above)	0	-
Avgas	92,000	Unknown	97,337	34,880	300,000	500,000	68,000	67,818
Mogas	0	Unknown	0	0	0	0	0	-
Other	-	Unknown	-	-	-	-	-	-
TOTAL	401,000	Unknown	218,694	254,306	500,000	1,500,000	170,000	169,836

Figure 10: Airport Services and Facilities

Airport Profiles	Subject Airport	Airport 1	Airport 2	Airport 3	Airport 4	Airport 5	Airport 6	Airport 7
Airport Name	**Truckee Tahoe Airport**	**Reno/Tahoe International Airport**	**Reno/Stead Airport**	**Lake Tahoe Airport**	**Carson Airport**	**Minden-Tahoe Airport**	**Nervino Airport**	**Nevada County Air Park**
FAA Airport Identifier	TRK	RNO	RTS	TVL	CXP	MEV	O02	GOO
Number of FBOs	1	1	1	1	2	2	1	1
Number of SASOs	1	1	1	0	0	10	0	2
Jet Fuel Price	$4.90 FS	$5.43 FS	$4.65 FS	$4.99 FS	$4.82 FS/$3.45 SS	$4.80 FS	None	$4.95 FS
Avgas Price	$5.64 FS/$5.09 SS	$6.64 FS	$5.43 FS/$5.13 SS	$5.99 FS	$5.16 FS/$4.69 SS	$5.35 FS/$5.25 SS	N/A	$4.80 FS/$4.65 SS
Mogas Price	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Aircraft Ground Handling Services	Yes - (1)	Yes	Yes	Yes	Yes	Yes	No	Yes
Passenger and Crew Services	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
Passenger and Crew Facilities	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
Airframe MRO	Major	Major	Major	Minor	Major	Major	Major	Major
Powerplant MRO	Major (2)	Major	Major	Minor	Major	Major	Major	Major
Propeller MRO	No	No	No	No	No	No	No	No
Radio and Instrument MRO	No	Yes	Yes	No	Yes	Yes	No	No
Paint	No	No	No	No	No	No	No	No
Interior	No	No	No	No	No	No	No	No
Aircraft Rental	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
Flight Training	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
Aircraft Management	No	No	No	No	No	Yes	No	No
Aircraft Charter	No	Yes	No	Yes	Yes	Yes	No	Yes
Aircraft Sales	No	Yes	Yes	Yes	Yes	Yes	No	Yes
Other	Glider Towing	US Customs	Oxygen	Oxygen	Oxygen	Oxygen	None	Oxygen
Type of Facilities								
General Aviation Terminal	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
Community Hangars	No	Yes	Yes	No	Yes	Yes	Yes	Yes
Corporate Hangars	No	Yes	Yes	No	Yes	Yes	No	Yes
Executive Hangars	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
T-Hangars	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Government	No	Yes	Yes	No	No	No	No	No
Military	No	Yes/ANG	Yes/ANG	No	No	No	No	No
Non-Aeronautical	Yes – Café	Yes – Terminal Concessions	No	Yes – Office/ Restaurant	Yes - Office	Yes – Office/Café	No	No
Other	-	-	BLM Air Tanker Base	-	-	BLM Air Tanker Base	-	Cal Fire Air Tanker Base

1.3 Aviation Interview Summary Results

Data presented in **Section 1.1** and **Section 1.2** comes from third parties. Although the data sources are reputable, the information provided lacks first-hand anecdotal information which is necessary to develop a comprehensive understanding of what drives demand at TRK. First-hand information comes from interviews with key tenants and airport users described in this section, and surveys described in **Section 1.4**. Eleven interviews were conducted with key tenants based at TRK and transient users. A broad list of key tenants and airport users was provided by TRK management, and those interviewed were randomly selected. The individuals or companies interviewed were specifically selected to gain a better understanding of the reasons for using TRK and ultimately understanding the underlying drivers of demand there. The interview questionnaire is presented in **Appendix B**.

In order to protect respondent confidentiality, interview summaries are presented in aggregate and individual comments are not attributed to those who made them. General characteristics of the five interviewees based at TRK include the following.

- Interviewees are local residents (primary residence within 45 minutes of the Airport), or have vacation/second homes in the area.
- Interviewees have varying experience at TRK, with the shortest being based for one year and the longest being based for 40 years.
- Some interviewees have private hangars for one aircraft, and others share a hangar or own more than one aircraft.

General characteristics of the five interviewees that are transient users of TRK include the following.

- One is a Part 135 aircraft charter operator based at San Carlos Airport that uses the Airport regularly.
- One is a contract pilot for an aircraft owner based at Livermore Airport that uses TRK on a weekly basis.
- The others are fractional aircraft operators (Flexjet, Flight Options and NetJets) that use the Airport on a regular basis

A. General Feedback

The general consensus provided by each interviewee is that TRK is a quality facility that is well operated. The primary reason for basing aircraft there is almost exclusively driven by location – being close to the aircraft owners home (or second home) and business. Further, interviewees indicated the location of TRK is great – citing close proximity to recreational areas and resort facilities associated with the Truckee-Tahoe region.

More specific feedback indicated that the FBO line services meet and/or exceed customer desires. However, one respondent suggested that line services would be better and more affordable if competition were allowed to occur at TRK. The non-aviation community facilities (park, restaurant, aircraft viewing area, etc.) were also highly rated among interviewees with several citing the airfield webcam as a benefit to TRK. Interviewees gave positive feedback regarding the administration and offered praise for effectively balancing the sometimes competing interest of the flying and the non-flying public.

B. Additional Services/Facilities to Increase/Enhance Operations

Though all respondents are generally satisfied with the maintenance, repair and operation services, many believe certain measures could be undertaken to increase safety. The lack of aircraft deicing services is the most commonly mentioned, as the most desired service by itinerant operators to enhance the safe operation of TRK. The based tenants interviewed park their aircraft in hangars so the lack of deicing services is not a direct impact. Based tenants understand that there is an underlying concern from some residents in the local community that deicing services may increase operations. However, the based tenants indicate that the safety enhancements of deicing services outweigh concerns for increased operations.

There is general support for the construction of a large hangar development for the benefit of Airport users. Several interviewees support this proposed development for safety reasons as it may allow itinerant aircraft to store aircraft overnight during icing conditions. Additional elements relating to increased safety identified by the respondents include extending Runway 2/20 for use during crosswind conditions and implementing a vertically guided instrument approach. Along with increasing safety, several respondents indicated that a vertically guided instrument approach would reduce aircraft delays during adverse weather conditions.

C. Changes in Services/Facilities to Decrease/Impact Operations

The interviewees unanimously opposed the implementation of restrictions or impediments to flight operations, such as a mandatory nighttime curfew. The based tenants indicated that the existing noise abatement procedures are adequate, reduced noise, and supported compatibility of aviation operations with the surrounding community. Based tenants indicate the removal of fuel services would have a negative impact on their operations, and may cause them to consider moving their operation elsewhere or reposition to another airport.

Several based tenants interviewed rely on the aircraft maintenance operator for services, and would be greatly impacted if the services were to close. One of the based tenants expressed concerns relating to the development of incompatible land uses off airport, particularly the proposed 1,000+ dwelling unit development under the primary instrument approach corridor for Runway 20 at Canyon Springs.

Airport rents and fees are other areas of concern among the interviewees. One interviewee stated “the biggest issue affecting operation is the cost of using the Airport… [TRK] is somewhat pricy and that the landing fees are ‘stiff’ for large aircraft operators. Would like to see reduced fees across the board – reduced hangar rents, landing fees and reduced fuel prices.”

D. Cost and Availability of Fuel

Interviewees were divided on how the cost of fuel impacts their operations. Some interviewees believe that the cost of fuel does not impact the frequency or operations at the Airport; however, itinerant operations correlated strongly with the price of oil, indicating otherwise. One interviewee stated “flying to another airport for cheaper gas is a big waste of time” and that the time and fuel used would negate the fuel savings. Conversely, another interviewee tankers in fuel because of the high cost of fuel at TRK. Several respondents purchased sufficient fuel for a return trip at their origin airport because prices were up to two dollars a gallon cheaper than at TRK. TTAD has observed aircraft flying to other airports to purchase fuel, which suggests that increasing the price of fuel may increase operations by some users on account of the repositioning flights.

There was a general agreement amongst the interviewees that fuel availability is important for safe operations at TRK; however, fuel can be purchased for less at other area airports. Interviewees commented that it is difficult to use the self-service fueling facility as the numbers are washed out by the sun and the card system does not recognize credit/debit cards at times.

1.4 Aviation Survey Summary

First-hand data gathered during the interviews described in **Section 1.3** are supplemented by an online questionnaire sent to based and transient users of TRK. The Based Aircraft Questionnaire and Itinerant Aircraft Questionnaire (Questionnaires) are designed to ascertain information to better assist the District in understanding the needs and perspective of TRK's current and future based and transient customers. Questions were vetted through the TTAD's Ad-Hoc advisory committee, and an independent review of two PhD professors with experience in transportation planning and analysis.

The Questionnaires were disseminated to the survey participants between July 28, 2015 and August 24, 2015. The Questionnaires were made available via a dedicated website (QuestionPro) and the link was disseminated via email to the survey participants.

The Questionnaires were distributed to 451 Airport customers (204 based aircraft customers and 247 transient aircraft customers). The based aircraft customers and email addresses were identified from the District's based hangar and tie-down customer lists. The transient aircraft customers were identified from aircraft tail numbers that frequently utilize TRK. The email addresses for the transient aircraft were collected from AMSTAT (an online, subscription based service that tracks owners and operators of turbojet and turboprop aircraft). While 332 surveys were sent to transient aircraft customers, these 332 email addresses represented only 247 unique transient aircraft customers.

A total of 76 based aircraft customers and 27 transient aircraft customers (a total of 103 surveys) were completed prior to close of the data collection period. It is important to note that the response rates are solely based on the number of emails sent and received. There is no way to confirm receipt of the survey emails sent. Further, response rates for transient aircraft customers are provided for both number of emails sent and the number of unique transient aircraft customers included in the emails.

The Based Aircraft responses were analyzed independently of the Itinerant Aircraft responses. However, in certain instances, the same question was included in both Questionnaires. In these instances, the responses from both survey groups were combined. Complete Aviation Survey questions and results are presented in **Appendix C**.

Overall, the results of the combined Questionnaires are considered statistically significant (with a 95% confidence level and a margin of error better than 5%). The table below outlines the specific results of for each category (based, itinerant, and combined).

Figure 11: Survey Response Summary

	Based Aircraft Users	Itinerant Aircraft Users	Combined
Surveys Sent	204	247 / 332	451 / 536
Response	76	27 / 27	103 / 103
Response Rate	37.25%	10.93% / 8.13%	22.84% / 19.22%
Margin of Error	4.45%	8.96% / 9.03%	4.25% / 4.34%
Confidence Level	95%	95% / 95%	95% / 95%

A. Survey Results Overview

Respondent Overview

The respondent population for each Questionnaire was analyzed in a number of areas to help the research team understand the type of aircraft used, operating structure, and relationship to the Truckee/Tahoe area. Of based aircraft respondents, 75 percent own/operate piston single and multi-engine aircraft, while the 60 percent itinerant aircraft respondents own/operate jet aircraft. Regardless of the type of aircraft, 83 percent of based and itinerant aircraft respondents operate their aircraft for personal (non-commercial) use. Distinction must be made that 83 percent of respondents do not represent 83 percent of operations – and more than 17 percent of operations are for commercial purposes at TRK.

Combined, based and itinerant aircraft survey respondents conduct 57 percent of their operations from June to August. Based aircraft respondents were more likely to be residents, with 58 percent having a primary residence in the Truckee/Lake Tahoe area, while 34 percent of itinerant aircraft respondents have a primary residence in the local area. Of all the respondents that own a primary residence in the Truckee/Lake Tahoe area, 93 percent of these homes are within 20 miles of TRK.

Preferred Airport

In an effort to understand the overall standing of TRK within the local area, respondents were asked to identify the preferred airport when visiting the Truckee/Lake Tahoe area. Additionally, the based aircraft location of each respondent was analyzed.

TRK is the preferred airport for 90 percent of 27 itinerant aircraft respondents, and 10 percent preferred RNO.

Of the 76 based aircraft respondents, 50 percent do not have their aircraft permanently based at TRK, meaning that they move it elsewhere for part of the year. Of the remaining 38 respondents, 35 use TRK for permanent aircraft storage and three are on an Airport-maintained wait list for aircraft storage.

For those based aircraft respondents that are permanently based at other airports, 64 stated that they prefer to store their aircraft in box and T-hangars. The survey found that 17 of the based aircraft respondents are on the TTAD-maintained wait list for aircraft storage and 13 of the 17 respondents are waiting for a box hangar. **This shows that there are users who will operate at TRK even when their preferred type of aircraft storage is not available, which suggests that there are draws outside of airport facilities driving users to the region.**

Respondents were asked about what other airports they considered before ultimately selecting TRK. There was no one airport that appeared to be most commonly considered in the selection process, with responses split between South Lake Tahoe Airport (12 percent), Minden-Tahoe Airport (14 percent), Reno-Tahoe International Airport (14 percent), Carson Airport (15 percent), and Reno/Stead Airport (16 percent).

Airport Proximity

In general, the location of an airport is a significant driver in demand. However, the Questionnaires were designed to help the research team understand the significance of this driver along with the ultimate destination of airport users.

A significant majority (90% combined) of based and itinerant aircraft respondents determined that the Airport's proximity to their local residence is very important, with 63% of based aircraft respondents stating it was an absolute necessity. A small majority (52% combined and 53% combined) of based and itinerant aircraft respondents identified the proximity of TRK to Lake Tahoe and local resorts as very important to an absolute necessity.

Figure 12: Airport Proximity Sensitivity

Proximity Analysis	Very Important	Absolute Necessity
Local residence		
Based	32%	63%
Itinerant	50%	23%
Combined	37%	53%
Local Business/Customers		
Based	13%	20%
Itinerant	31%	15%
Combined	18%	19%
Lake Tahoe		
Based	24%	26%
Itinerant	48%	8%
Combined	30%	22%
Local Ski Resorts		
Based	31%	20%
Itinerant	52%	8%
Combined	36%	17%

Airport Amenities

The Questionnaires were designed to allow the research team to understand what amenities at TRK supported additional user demand. The results of the specific amenity (e.g., General Aviation Terminal, availability of aircraft storage, and pricing) varied between the based aircraft respondents and the itinerant aircraft respondents.

While 60 percent of itinerant aircraft respondents considered the General Aviation Terminal very important to an absolute necessity, only 39 percent of based aircraft respondents considered this very important to an absolute necessity. Conversely, 89 percent of based aircraft respondents considered availability of aircraft storage to be very important to an absolute necessity while only 32 percent of itinerant aircraft respondents considered this very important to an absolute necessity.

Aircraft storage pricing was very important to an absolute necessity for 76 percent of based aircraft respondents. However, only 12 percent of itinerant aircraft respondents considered aircraft storage pricing as very important to an absolute necessity. This response pattern suggests with expectations that airport users who do not base their aircraft at TRK are less concerned about hangar rental rates than those that do.

Figure 13: Airport Amenity Sensitivity

Airport Amenities	Very Important	Absolute Necessity
General Aviation Terminal		
Based	29%	10%
Itinerant	48%	12%
Combined	34%	11%
Aircraft Storage (availability)		
Based	36%	53%
Itinerant	24%	8%
Combined	33%	41%
Aircraft Storage (pricing)		
Based	40%	36%
Itinerant	8%	4%
Combined	32%	28%

Airport Attributes

Respondents identified the most important airport facilities and services, and commented on how changes to facilities and services would increase or decrease their use of TRK. The facilities and services identified by more than 50 percent of the survey respondents as "very important" or "an absolute necessity" are identified below. The following Airport attributes identified by more than 50 percent of respondents as very important to an absolute necessity are identified below.

Figure 14: Airport Attributes

Airport Attribute	Based Aircraft Survey Respondents	Itinerant Aircraft Survey Respondents
Runway		
Runway Length	< 50%	68%
Runway Width	< 50%	56%
Runway Weight Bearing Capacity	< 50%	56%
Tower/Instrument Procedures		
Approach Procedures	< 50%	68%
Departure Procedures	< 50%	68%
Airport Services		
Full Service Fueling (Availability)	< 50%	67%
Self Service Fueling (Availability)	54%	--
Fuel Service (Pricing)	59%	56%
Snow Removal Capabilities	71%	72%

The following identifies the percent of respondents that indicated the implementation of the associated airport attribute would result in a 20 percent (or more) increase in aircraft operations at TRK. For example, 35 percent of itinerant aircraft survey respondents indicated that an increase to the runway length would result in more than a 20 percent increase in aircraft operations.

Figure 15: Airport Attribute Changes That Would Increase Operations

Airport Attribute Change	Based Aircraft Survey Respondents	Itinerant Aircraft Survey Respondents
Runway		
Increased Runway Length	6%	35%
Increased Runway Width	6%	27%
Tower/Instrument Procedures		
Tower Controller during Peak Periods	24%	50%
Availability of Clearance Delivery	31%	56%
Enhanced IFR Approach Procedures	42%	80%
Enhanced IFR Departure Procedures	37%	80%
Airport Services		
Aircraft Deicing Services/Equipment	25%	80%
Aircraft Hangar for Pre-heat/Deicing	N/A	76%
Decrease in Jet A Pricing		
10% decrease	N/A	21%
20% decrease	N/A	48%
30% decrease	N/A	50%
40% decrease	N/A	58%
50% decrease	N/A	63%
Decrease in Itinerant Use Fee		
10% decrease	N/A	25%
20% decrease	N/A	33%
30% decrease	N/A	38%
40% decrease	N/A	42%
50% decrease	N/A	42%
N/A = Specific question was not asked to this respondent group.		

The following table identifies the percent of respondents that indicated the implementation of the associated Airport attribute would result in a 20 percent (or more) decrease in aircraft operations at TRK. For example, 30 percent of based aircraft survey respondents and 71 percent of transient aircraft survey respondents indicated that a decrease to the runway length would result in more than a 20 percent decrease in aircraft operations.

Figure 16: Airport Attribute Change That Would Decrease Operations

Airport Attribute Change	Based Aircraft Survey Respondents	Itinerant Aircraft Survey Respondents
Runway		
Decreased Runway Length	30%	71%
Decreased Runway Width	27%	68%
Decreased Runway Weight Bearing Capacity	10%	60%
Airport Services		
Full Service Fueling Only	39%	36%
Self Service Fueling Only	28%	44%
No Fueling Services	68%	64%
Elimination of Aircraft Towing	22%	32%
Elimination of Ground Power	22%	36%
Elimination of Start Carts	16%	32%
Elimination of Lavatory Services	19%	28%
Elimination of Aircraft Maintenance & Repair	50%	36%
Elimination of ARFF (Capabilities)	17%	40%
Elimination of Snow Removal (Capabilities)	71%	84%
Elimination of On-Airport Restaurant	34%	28%
Increase in Jet A Pricing		
10% increase	N/A	25%
20% increase	N/A	42%
30% increase	N/A	50%
40% increase	N/A	58%
50% increase	N/A	58%
Increase in Itinerant Use Fee		
10% increase	N/A	42%
20% increase	N/A	46%
30% increase	N/A	58%
40% increase	N/A	67%
50% increase	N/A	65%
N/A = Specific question was not asked to this respondent group.		

The results of the sensitivity analysis show what types of changes TTAD can implement that may increase or decrease use of TRK. The most important items that would grow traffic include better instrument procedures, aircraft deicing services or availability of a hangar for deicing, and cheaper fuel. Runway dimensions appear to be adequate for most users. Conversely, decreasing runway length could have a significant impact on itinerant operators, as would the elimination of fuel services and the significant increase in fuel pricing and itinerant use fees.

2. NON-AVIATION DEMAND DRIVERS

Non-aviation demand drivers focus on variables and circumstances outside of the realm of the general aviation industry. The research approach includes quantitative assessment of the performance of demand driver variables over time, and a qualitative assessment of user preferences and opinions through interviews. The result of the non-aviation demand driver analysis is an assessment of what activities and features outside of the Airport drive demand at TRK and how changes to these activities and features might influence future activity.

2.1 Non-Aviation Demand Influencer Research Results

Research on non-aviation demand drivers focuses on potential demand influencers outside of aviation that might impact activity levels at TRK. Non-aviation demand drivers can be thought of as reason why people live in or travel to the region. Areas of investigation include the local real estate market, factors that drive recreational visits, and national economic prosperity that support expenditure on general aviation as a method of travel. Analysis focuses on how fluctuations of demand driver variables are reflected in the activity levels at TRK. Results show that non-aviation demand influencers play a major part in why people come to the Airport.

A. Research Approach

Analysis of demand influencers considers ten years of historical data (for the January 1, 2005 to December 31, 2014 period) and provides an analysis of how Airport activity levels have correlated with the historical demand influencer data sets. A map of the study area used for data analysis is included in **Figure 17**. Analysis is done at the annual level, using the calendar year. Annual data is chosen to smooth out seasonal peaking that may occur at certain times of the year in the demand influencer data sets which could lead to variables appearing more or less correlated than they should. The following data sets are analyzed to determine correlation with activity levels at TRK.

Socioeconomic Data[6]

- Households
- Population
- Median Age
- Average Household Income
- Median Household Income

Residential Housing Units

- Total Units
- Unit Sales (All, Greater than $1M, New, New Greater than $1M)

Visitor Spending (millions)

Itinerant Occupancy Tax Revenue (NLTRA[7] & Town of Truckee)

Average Crude Oil Spot Price (Cushing, Oklahoma)

United States Gross Domestic Product – GDP (billions)

S&P 500 Average Close

Truckee Sales Tax (Base)

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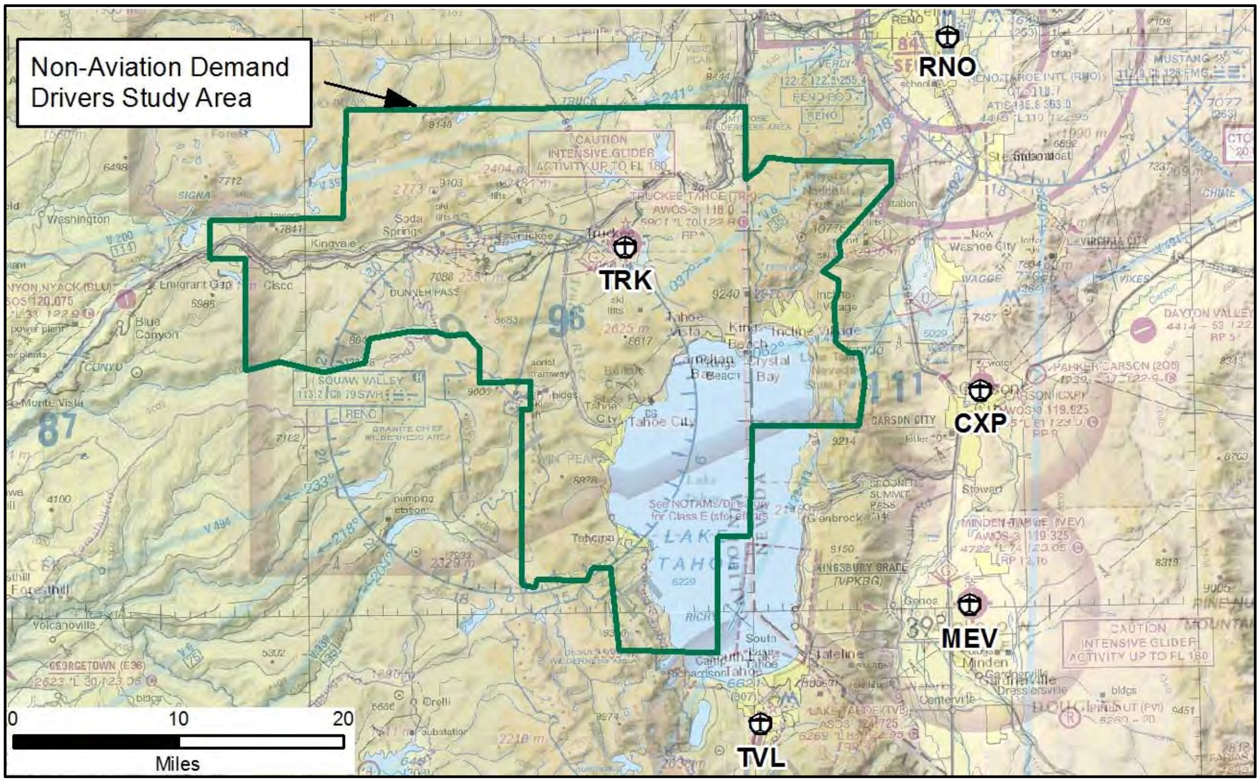
[6] Estimated Data is based on Census data (2000, 2010, 2015 estimate), and used a linear estimation model for the gap years.
[7] North Lake Tahoe Resort Association

Figure 17: Non-Aviation Demand Driver Study Area



B. Research Methodology

Research methodology for the non-aviation demand influences is the same as what is employed for the aviation demand influencers, described in **Section 1.1.B**. Analysis correlates the variables over a period of ten years, and produces a correlation coefficient, a measure of how proportionally the two variables change from year to year.

C. Research Results

The correlation analysis returns a correlation coefficient for each variable. In order to derive which variables require further investigation, the following criteria were applied.

- r = 0.30 – 0.49 (highlighted in yellow) indicates a moderate positive correlation
- r = 0.50 and above (highlighted in green) indicates high positive correlation

Variables with correlation coefficients less that r = 0.30 were considered to be weakly correlated or negatively correlated, and were not retained for further analysis. Results of the correlation analysis for based aircraft are included in **Figure 18**, and results for itinerant operations are included in **Figure 19.**

Figure 18: Based Aircraft Correlation Analysis Results

Truckee Tahoe Airport Correlation Analysis (Based Aircraft)											
Demand Influencers	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	TREND CC
Based Aircraft (Total)	233	233	233	233	233	234	223	218	214	212	N/A
Residential Housing Units											
Unit Sales (All)	2,841	1,795	1,529	1,128	1,274	1,515	1,562	1,871	2,266	1,958	-0.32
Unit Sales (Greater than $1M)	419	354	314	216	134	181	131	182	310	361	-0.08
Unit Sales (Greater than $5M)	8	17	11	7	3	10	5	8	18	14	-0.38
Unit Sales (Greater than $10M)	1	N/A	1	N/A	N/A	2	N/A	3	1	2	-0.33
Unit Sales (New)	265	158	204	114	52	55	30	17	42	61	0.57
Unit Sales (New Greater than $1M)	24	41	57	36	3	N/A	N/A	N/A	6	20	0.47
Total Units	41,183	41,341	41,545	41,659	41,711	41,766	41,796	41,813	41,855	41,916	-0.67
Estimated Data											
Households	16,512	16,604	16,697	16,790	16,882	16,975	17,143	17,311	17,478	17,646	-0.93
Population	40,719	40,740	40,761	40,782	40,803	40,824	41,349	41,874	42,398	42,923	-0.98
Median Age	40	40	40	40	40	40	41	41	41	42	-0.98
Average Household Income	$82,298	$82,665	$83,033	$83,400	$83,768	$84,135	$85,178	$86,221	$87,263	$88,306	-0.96
Median Household Income	$61,001	$61,735	$62,469	$63,204	$63,938	$64,672	$64,810	$64,949	$65,087	$65,226	-0.71
Population (Census)	N/A	N/A	N/A	N/A	N/A	16,164	16,171	16,122	16,144	16,297	-0.36
Visitor Spending (Millions)	$355	$383	$386	$405	$411	$464	$486	$487	$509	$530	-0.87
TOT Revenue (NLTRA)	$7,362,800	$7,047,600	$6,632,300	$7,432,700	$8,598,300	$9,558,700	$9,976,900	$10,629,200	$11,462,500	$11,840,600	-0.89
TOT Revenue (Truckee)	$1,070,400	$1,300,000	$1,342,300	$1,433,700	$1,339,900	$1,433,700	$1,450,900	$1,520,200	$1,827,900	$1,959,000	-0.86
Average Crude Oil Spot Price	$56.49	$66.02	$72.32	$99.57	$61.65	$79.40	$94.87	$94.11	$97.91	$93.26	-0.67
United States GDP (Billions)	$13.10	$13.90	$14.50	$14.70	$14.40	$15.00	$15.50	$16.20	$16.80	$17.40	-0.91
S&P 500 Average Close	1,208	1,318	1,478	1,215	946	1,131	1,281	1,387	1,652	1,944	-0.79
Truckee Sales Tax (Base)	$2,889,900	$3,297,000	$3,453,000	$3,520,000	$2,664,000	$2,530,000	$2,868,000	$2,869,000	$3,086,000	$3,457,000	-0.15

Figure 19: Itinerant Operations Correlation Analysis Results

Truckee Tahoe Airport Correlation Analysis (General Aviation Itinerant Operations)											
Demand Influencers	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	TREND CC
General Aviation Itinerant Operations	10,213	14,307	15,618	11,031	14,908	15,533	15,398	15,863	16,729	17,875	N/A
Residential Housing Units											
Unit Sales (All)	2,841	1,795	1,529	1,128	1,274	1,515	1,562	1,871	2,266	1,958	-0.13
Unit Sales (Greater than $1M)	419	354	314	216	134	181	131	182	310	361	-0.18
Unit Sales (Greater than $5M)	8	17	11	7	3	10	5	8	18	14	0.37
Unit Sales (Greater than $10M)	1	N/A	1	N/A	N/A	2	N/A	3	1	2	0.36
Unit Sales (New)	265	158	204	114	52	55	30	17	42	61	-0.64
Unit Sales (New Greater than $1M)	24	41	57	36	3	N/A	N/A	N/A	6	20	-0.21
Total Units	41,183	41,341	41,545	41,659	41,711	41,766	41,796	41,813	41,855	41,916	0.74
Estimated Data											
Households	16,512	16,604	16,697	16,790	16,882	16,975	17,143	17,311	17,478	17,646	0.77
Population	40,719	40,740	40,761	40,782	40,803	40,824	41,349	41,874	42,398	42,923	0.68
Median Age	40	40	40	40	40	40	41	41	41	42	0.69
Average Household Income	$82,298	$82,665	$83,033	$83,400	$83,768	$84,135	$85,178	$86,221	$87,263	$88,306	0.75
Median Household Income	$61,001	$61,735	$62,469	$63,204	$63,938	$64,672	$64,810	$64,949	$65,087	$65,226	0.74
Population (Census)	N/A	N/A	N/A	N/A	N/A	16,164	16,171	16,122	16,144	16,297	0.76
Visitor Spending (Millions)	$355	$383	$386	$405	$411	$464	$486	$487	$509	$530	0.77
TOT Revenue (NLTRA)	$7,362,800	$7,047,600	$6,632,300	$7,432,700	$8,598,300	$9,558,700	$9,976,900	$10,629,200	$11,462,500	$11,840,600	0.70
TOT Revenue (Truckee)	$1,070,400	$1,300,000	$1,342,300	$1,433,700	$1,339,900	$1,433,700	$1,450,900	$1,520,200	$1,827,900	$1,959,000	0.75
Average Crude Oil Spot Price	$56.49	$66.02	$72.32	$99.57	$61.65	$79.40	$94.87	$94.11	$97.91	$93.26	0.38
United States GDP (Billions)	$13.10	$13.90	$14.50	$14.70	$14.40	$15.00	$15.50	$16.20	$16.80	$17.40	0.78
S&P 500 Average Close	1,208	1,318	1,478	1,215	946	1,131	1,281	1,387	1,652	1,944	0.57
Truckee Sales Tax (Base)	$2,889,900	$3,297,000	$3,453,000	$3,520,000	$2,664,000	$2,530,000	$2,868,000	$2,869,000	$3,086,000	$3,457,000	-0.03

D. Findings

The following non-aviation demand influencers were found to have the strongest correlation with aviation demand at TRK in the period considered. Itinerant operations show more variables with a strong correlation to non-aviation demand drivers than do based aircraft.

- Total Residential Housing Units
- Number of Households
- Population
- Median Age
- Average Household Income
- Median Household Income
- Visitor Spending
- Total Revenue
- Average Crude Oil Spot Price
- U. S. Gross Domestic Product (GDP)
- S&P 500 Average Close

The core question of this analysis is “Which of these non-aviation demand influencers are demand drivers?” The results presented above help direct further research into what is driving demand for aviation activity at TRK, but correlation analysis alone cannot answer this question. For this reason, analysis includes a market assessment in **Section 2.2**, which provides additional information.

Correlation suggests (but does not outright confirm) that activity at TRK grows and declines with various external factors: housing units sold, the number of households, population, household income, visitor spending, revenue, the price of oil, and U.S. GDP.

This means that activity at TRK generally grows and declines in proportion with these socioeconomic factors. As the area experiences growth in homes, population, income and tourist spending, operations at TRK will increase. Likewise, as national and global factors increase, such as the price of oil, the U.S. GDP and the S&P 500, activity at TRK will increase. These local and global factors are generally out of the control of TRK or TTAD.

The correlation analysis suggests that TRK does not drive demand in the local area, but is instead responding to it. Itinerant operations grew from 2005 to 2007, then declined in 2008 when the real estate bubble burst. Itinerant operations returned to pre-recession levels in 2012, similar to the “Unit Sales (All)” variable, although this variable experienced a more pronounced pre-recession decline. The sample size for the “Unit Sales (>$1M)” variable is less than one percent of “Unit Sales (All)” for a given year, on average, which makes it less useful for reporting trends although conventional wisdom suggests that purchasers of homes greater than $1M may be more likely to come to the area by plane than purchasers of less expensive homes. Parallels can be drawn between the absence of “Unit Sales (>$1M)” and the flat post-recession trend of itinerant operations, which shows itinerant operations remaining somewhat unchanged until the more expensive homes began selling again.

The results of the correlation analysis suggest that changes in aviation activity at TRK is not an anomaly, nor is it counter to regional and national socioeconomic trends. Activity seems to respond more strongly to what is occurring in the community surrounding TRK, which is explored in more detail in the following section.

2.2 Non-Aviation Market Assessment

Analysis of non-aviation demand drivers included collection perceptions and opinions of local business, tourism and real estate sector leaders. Between September 28 and October 7, 2015, discussion occurred with 15 local leaders plus operations staff at the Airport to understand their perspective on the topics related to demand drivers of aviation at TRK. The discussions focused on the local leader's perceptions of what brings customers and constituents to the region, how they get to the area, along with perceived trends, influences and predictions for future Airport use.

Interviewees represented Chase International, Martis Camp, Oliver Real Estate, the Truckee Donner Chamber of Commerce, Tahoe Mountain Club, Town of Truckee, and Resort at Squaw Creek, Glenshire Devonshire Residents Association, Lahontan Community Association, Sugar Bowl Ski Resort, Mountain Area Preservation, Incline Village Visitors Association, North Lake Tahoe Resort Association, Carr Long Real Estate and Mountainside Partners. On-the-ground TRK operations staff were also interviewed to give their thoughts on constituents using the Airport. The following questions were asked:

- Who their constituency or customer base is?
- Why they visit the Truckee/Tahoe region?
- How they get to the area?
- If their constituency use TRK?
- If their constituency use TRK more or less than 10 years ago, what has driven that trend (internal or external to TTAD)
- What might drive an increase or decrease in operations at TRK in the future?

The following is a summary of answers to these questions. More detail is presented in **Appendix D**.

A. Constituency or Customer Base

Interviewees were asked to define their customer base. Answers ranged from tourists (at the Resorts) to second homeowners. Second homeowners were a popular answer with the real estate associations. Another caveat to this answer was that the second homeowners were primarily from the Bay Area and ranged from young families, to retirees. It should be noted that respondents made the point that these families are also perceived to be affluent.

Whether or not an interviewee perceived high or low usage of TRK by their customers or constituents was generally tied to affluence, although some affluent communities didn't report as high aviation use as others. For those who represented largely visitor and second homeowner groups, most said the majority of their constituents or customers came from the Bay Area.

B. Visitors to the Truckee-Tahoe Region

When asked what brought their customers or constituents to the Truckee-Tahoe region, recreation and mountain lifestyle were the most common answers, along with proximity to the Bay Area and ease of access to the region. Additional answers include, having a second home in the area, skiing and golf.

C. Access to the Area

Asked to estimate how their constituents travel to the Truckee-Tahoe region, flying to the area was a significant response. As expected, driving to the area dominates how people arrive to these resorts and home associations. However, it is estimated that up to 40 percent of Martis Camp constituents use TRK (almost 25 percent exclusively). Sugar Bowl, Lahontan and Tahoe Mountain Club estimate that 10-25 percent use TRK, while other associations put 5-10 percent of constituents flying into TRK to access the area.

Perceived changes in their constituency's use of TRK varied, with some indicating an increase in use. Martis Camp estimated the completion of homes has directly resulted in an increase of activity at TRK, and others estimate the increase in jet activity while propeller activity has decreased.

D. What has Driven Demand Recently?

For those interviewees who saw an increase in Airport use, nine cited external factors – growth in the luxury real estate product, improvements in the economy, especially the Bay Area, national and international exposure of the Truckee/Tahoe area as a destination, events, and an increase in fractional aviation options.

Few perceived factors internal to, or under the control of TTAD as influencing their constituents or customers' use of TRK. Some perceived services like NetJets and Surf Air as being more prominent at TRK and bringing second homeowners and visitors to the Truckee/Tahoe area.

Interviewees stated that future aviation influences at TRK would continue to be external, or out of the control of TTAD: discussing weather, economy, real estate and recreational assets as factors influencing growth in the region and operations at TRK. The general sentiment was "as long as the economy (tourism, real estate, and overall) continues to grow, aviation use will increase."

E. Conclusions

The Truckee-Tahoe region has recently seen an increase in tourism and homeowners. People who visit the area want to enjoy the mountain lifestyle. In the summer this includes Lake Tahoe, and other outdoor activities. In the winter this primarily includes skiing. Year-round, the area offers an escape from the crowded Bay Area, where most constituents live and work.

People who visit the area access it primarily by driving. However access by aircraft, particularly at TRK, is a significant portion with some associations seeing 5-10 percent of constituents using the Airport on a regular basis. Some associations see up to 25 percent of homeowners using TRK.

Additionally, future residential and report projects that are slated for development (Truckee Railyard, Tahoe Biltmore) are likely to bring in similar clientele, and likely add to aviation demand at TRK.

The lifestyle of the area seems to be the primary driving factor. Affluent people have chosen to build homes here or visit the area on a regular basis. These people have the option to fly into the area and utilize TRK when doing so. The cost of chartering a private aircraft or owning an aircraft is not outside their means. Few perceived factors internal to, or under the control of TTAD as influencing their constituents or customers' use of TRK. Some perceived services like Net Jets and Surf Air as influences that are under the control of TTAD that are increasing operations, especially jets. However, TTAD cannot legally prohibit these users from operating at TRK as a condition of the federal funds that the Airport has received.

3. DEMAND DRIVERS STUDY SUMMARY AND CONCLUSIONS

Research into the demand drivers at TRK shows that the Airport's location and surrounding environs (e.g. real estate, recreation opportunities, and proximity to affluent Bay Area) have a greater influence on demand than does the Airport itself.

Aviation demand driver correlation analyses show that activity at TRK perform in line with national trends. The Airport is not an anomaly in the aviation industry, and is subject to the same periods of growth and decline as surrounding airports and the national airspace system as a whole. Non-aviation demand driver correlation analyses show that itinerant operations at TRK are highly correlated to the local real estate market and overall economic health. Interviews with aviation and non-aviation stakeholders indicate that the underlying reason behind this correlation is that TRK is located in a desirable community where people want to live, vacation, and recreate.

The sensitivity analyses show that there are on-airport measures that can be taken to influence operations to some degree; however, interviewees have suggested that there are ways around some of these. Some users already find the price of fuel too high, so they purchase sufficient fuel to get back to their airport of origin and skip fueling at TRK entirely. This means that perceived high fuel prices may not impact activity, but instead reduce fuel sales and, by association, airport revenue. This may also mean that some additional activity is generated by aircraft 'repositioning' to refuel.

TRK offers similar facilities to several of the other airports in the study area, and Carson, Lake Tahoe, and Minden-Tahoe enjoy similar lakeside proximity. As a result, operations and based aircraft are relatively well distributed around the region, with the exception being Lake Tahoe Airport which has limited aircraft storage space.

The key takeaways from this analysis are as follows:

- The most important reason for using the Airport is proximity to where the passengers and pilots want to go, be it recreational or residential.
- Aviation activity in the region is not spread evenly across the airports, and TRK sees less traffic than five of the seven airports studied.
- Aircraft operations at TRK perform in line with national trends, suggesting that demand is driven by factors impacting the region and the County, not only the local level. If people are flying and they want to go somewhere near TRK, then they chose to operate at TRK.
- Survey responses show that there are changes to pricing and service availability that could incentivize or disincentive use of the Airport.

There are measures and programs that the Airport can put in place to influence use of TRK; however, given the TTAD's legal obligation to operate the Airport for users of the National Airspace System and the desirable area that the Airport is located in, it is expected that TRK will continue to see a similar level of activity into the future. Long-term economic downturn or decline of the tourist industry in the region will have a greater impact on activity levels at TRK than instrument procedures and aircraft storage facilities.

DEMAND DRIVERS STUDY

Appendices

DEMAND DRIVERS STUDY

DEMAND DRIVERS STUDY

Appendix

Appendix A. AVIATION DEMAND BACKGROUND

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A.1 General Aviation Industry Overview

This section provides an overview of the general aviation industry (with primary emphasis on general aviation airports and the general aviation service industry). The aviation industry can be segmented into three primary areas:

- Air carriers – includes scheduled and unscheduled passenger and cargo airlines
- Government (military) – includes federal, state, and local (county and city) agencies and all branches of the military
- General aviation – includes all aviation with the exception of air carriers and government

General aviation is estimated to be a $40 billion a year industry which generates more than $150 billion in economic activity. While 75% of major airline flights operate out of less than 50 major metropolitan airports, only about 420 airports (out of 650 United States airports certified for scheduled airline service) have scheduled airline service – these airports are also used by general aviation. In contrast, there are more than 19,000 landing facilities in the United States that are used exclusively by general aviation of which about 5,200 airports are available for public use. Some key general aviation statistics follow:

- Over 220,000 general aviation aircraft (approximately 95% of all aircraft) are flying in the United States today
- In the United States, general aviation aircraft fly over 27 million hours (nearly two times airline flight hours) and carry 166 million passengers annually
- General aviation and related activities employ more than 1.2 million people who collectively earn approximately $53 billion annually

A. Airports

Communities across the United States depend on general aviation airports to facilitate air transportation, which both builds and sustains local economies. While general aviation airports support a full range of activities including such important public services as medical transport, law enforcement, fire protection, etc., perhaps the most important role of general aviation airport is to provide business access to the community.

B. Aviation Service Industry

Air transportation services and/or aircraft ground services are provided by Fixed Base Operators (FBOs) and Specialized Aviation Services Operators (SASOs). FBOs are defined as a commercial operator engaged in the sale of products and services and the renting or subleasing of facilities consistent with an airport's minimum standards for commercial aeronautical activities. A SASO is defined as a commercial operator that provides any one or a combination of the following activities: aircraft maintenance, avionics or instrument maintenance, aircraft rental or flight training, aircraft charter or aircraft management, aircraft sales, and other commercial aeronautical activities consistent with an airport's minimum standards for commercial aeronautical activities.

At this time, it is estimated that there are approximately 3,400 FBOs and in excess of 20,000 SASOs in operation in the United States at airports having a paved runway of 3,000 feet or more. The 3,000 foot runway length is important as it is normally recognized as the minimum runway length required to accommodate the majority of general aviation aircraft. For higher altitude airports, however, considering the effects of density altitude, longer runways in the 5,000 to 6,000 foot range are typically required to achieve the same safety and performance parameters.

Products, Services, and Facilities

The products, services, and facilities that are offered in the general aviation marketplace have been predicated primarily on the demand created by four distinctly separate operating classifications within the marketplace – personal, business, commercial, and government. These segments are defined and briefly examined, as follows:

a. Personal

In many respects, aircraft owners and operators who have committed time and financial resources to this segment of the industry have done so because of a sheer love of aviation. The "romance factor", which has enthralled both young and old alike, is a very important element in understanding the relationship between people and flying machines.

The aircraft utilized for personal flying are typically based at general aviation airports, both public and private. For the most part, the aircraft used for personal flying are single-engine and light multi-engine piston-powered aircraft, although some larger aircraft, including turbine-powered aircraft, are also used for this purpose. According to the General Aviation Manufacturer's Association (GAMA), there were 199,972 active aircraft being used in the United States in 2013. This segment of the market is typically price oriented, seeking the best price for the service.

b. Business

The business segment of the market is viewed as integral to the long-term growth and development of the general aviation industry. As of 2013, this segment was comprised of more than 26,000 active aircraft, including over 10,000 turboprop and jet aircraft, in the United States. It is estimated that business flights make up over 18% of the 22.8 million hours flown by general aviation each year (GAMA 2014).

One of general aviation's most important roles in the economy of the United States is enhancing the profitability and competitive strength of United States companies and industries. Companies that take advantage of general aviation routinely outperform businesses relying solely on the airlines for travel. Studies have shown that, on average, Standard & Poor's 500 firms that use general aviation to transport management teams, employees, business partners, and customers earned approximately 88% more total return to shareholders than those that do not utilize general aviation (NexaAdvisors). This analysis revealed a correlation between firms utilizing general aviation aircraft and return on equity. It did not conclude that the use of general aviation aircraft increased financial performance.

While approximately 3% of general aviation aircraft are registered to Standard & Poor's 500 firms, the majority of business aircraft are operated by smaller companies. In the Business Aviation Factbook (2014), National Business Aviation Association indicates that 59% of companies operating business aircraft employ fewer than 500 employees and 70% have fewer than 1,000 employees. The business segment of the market is typically service oriented, seeking the best service for the price.

c. Commercial

Commercial aviation is a significant economic engine as it represents companies that use general aviation aircraft for commercial purposes including flight instruction, air taxi (non-scheduled, on-demand), medical transportation (air ambulance), sightseeing, aerial observation (e.g., pipeline/power-line patrol/inspection), aerial application (e.g., agriculture, photography, firefighting, etc.), cargo, and much more. This segment is comprised of more than 39,000 active aircraft. It is estimated that general aviation aircraft used for commercial purposes make up about 50% of the 22.8 million hours flown by general aviation each year (GAMA 2014). The commercial segment of the market is typically value oriented, seeking the best combination of service and price.

A.2 General Aviation Historical Statistics and Trends

For the purposes of this analysis, national general aviation trends, including general aviation new aircraft deliveries, active general aviation aircraft, general aviation hours flown, active pilots, and general aviation fuel consumption were analyzed. The key findings follow.

A. General Aviation New Aircraft Deliveries

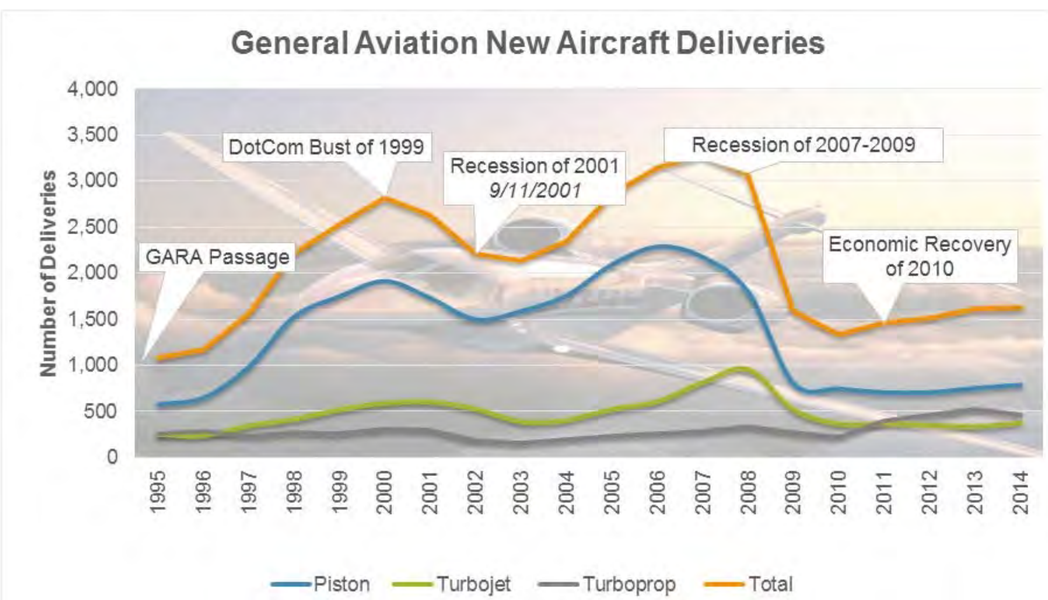
General aviation aircraft deliveries by United States manufacturers reached a high of 17,811 in 1978 and then experienced a significant decline until bottoming out in 1994 at an industry low of 929 units. The significant decline during this period can be attributed to a number of factors including:

- Increased aircraft acquisition costs (relating primarily to the rising costs associated with product liability insurance)
- Increased operating costs (insurance, maintenance, fuel, etc.)
- Implementation of the "luxury" tax in 1986 and repeal of the Investment Tax Credit
- Increased air carrier service capabilities including regional and commute carriers

Following this decline, general aviation aircraft deliveries increased from 929 annual shipments in 1994 to 3,279 annual shipments in 2007 which represents an increase of 253% or a compounded annual increase of 10.2% over the period. This significant increase was attributed to several factors, as follows:

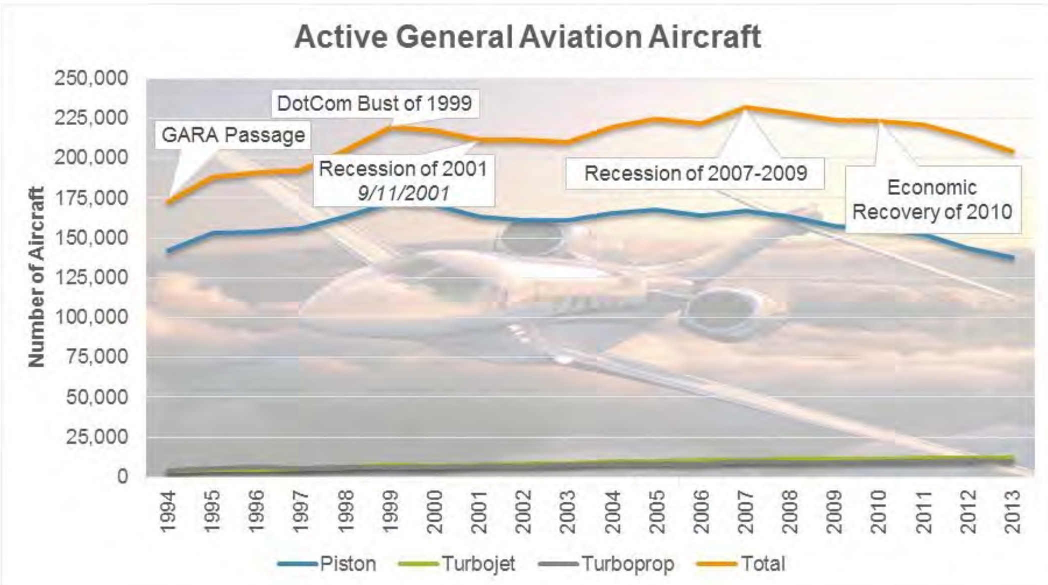
- The passage of the General Aviation Revitalization Act (GARA) in 1994 that limited the liability of aircraft and aircraft parts manufacturers to 18 years
- The proliferation of fractional aircraft ownership programs
- A strong economy during the late 1990s and early 2000s (including low interest rates)
- Entrance by new aircraft manufacturing companies
- Introduction of new aircraft technologies (e.g., composite materials and glass cockpits).

Subsequently, general aviation aircraft deliveries decreased sharply from 2007 (3,279 annual shipments) to 2010 (1,334 annual shipments) due to the economic recession. Since 2010, annual shipments have slowly increased to 1,631 annual shipments in 2014.



B. Active General Aviation Aircraft

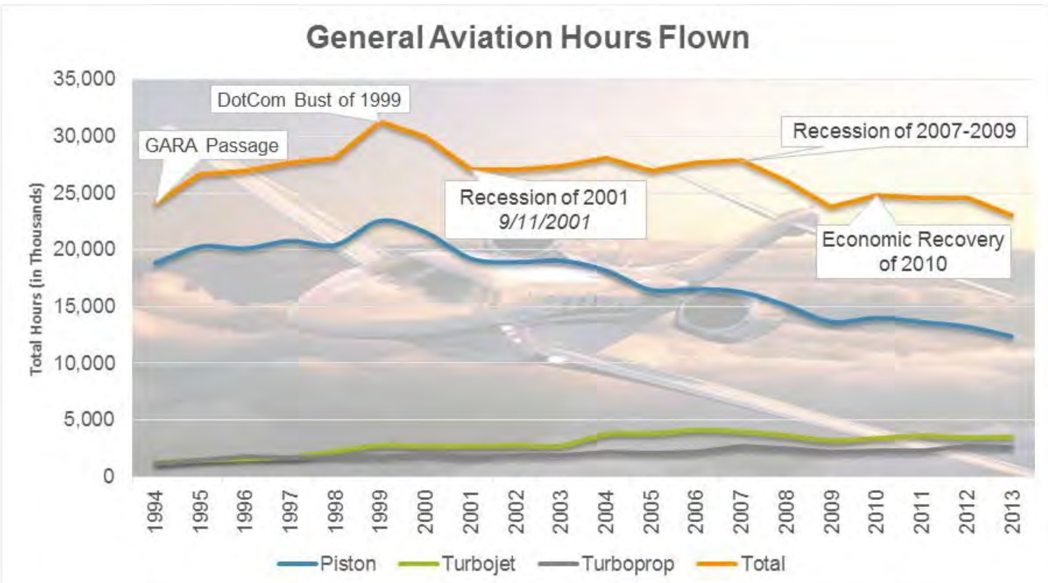
As with new aircraft deliveries, the number of active general aviation aircraft hit a low in 1994 of 172,936. Since that time, the number of active aircraft has steadily increased to 204,085 in 2013. This increase can be attributed to the growth of experimental and turbine aircraft, the resurgence of new aircraft manufacturing (i.e., the growth of new aircraft deliveries and the number of companies developing Supplemental Type Certificate programs to modify and keep the aging aircraft fleet active).



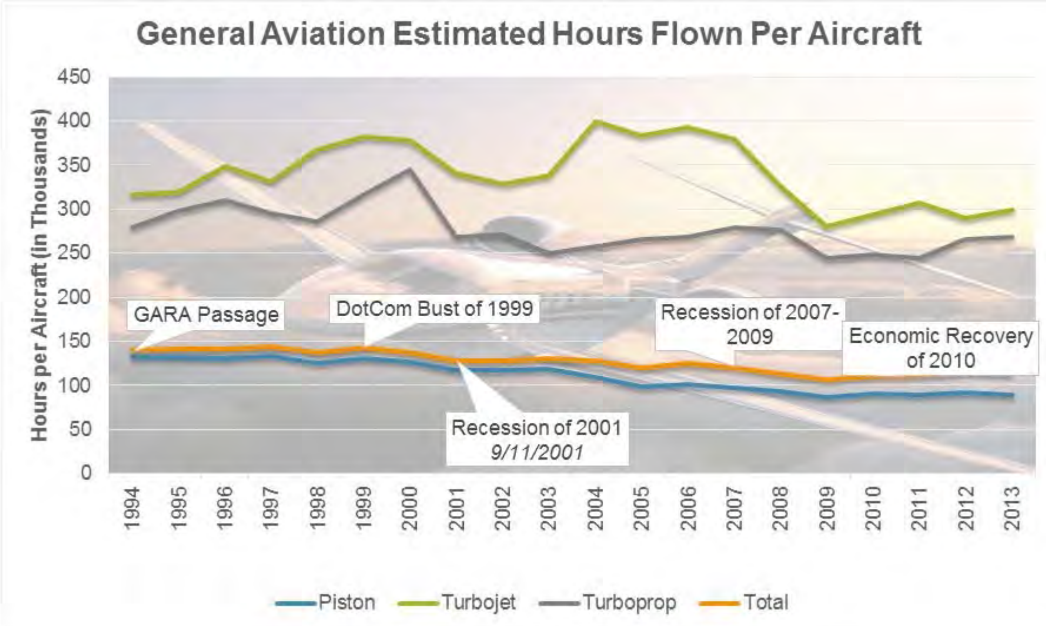
C. General Aviation Hours Flown

The total number of general aviation hours flown in the United States reached a low in 1994 of 24,092,000 hours, which represents a decrease of 43.9% and a compounded annual decrease of 1.7% over the period from the high of 41,017,000 achieved in 1980 (which corresponds with the first year data was available). In recent years general aviation hours flown have declined at a compounded annual rate of 0.8% since 2009 (to 23,009,000 hours flown in 2013).

While the number of hours flown by piston-powered aircraft have fluctuated (declining for the most part) since the early 1980s, the number of turboprop and turbojet aircraft hours flown have been cyclical over this same 34-year period. However, turbine aircraft hours have increased from 3,572,000 in 1980 to 6,075,000 (an increase of 70.1% or a compounded annual increase of 1.6%). These fluctuations can be attributed, in large part, to changes in the economy.

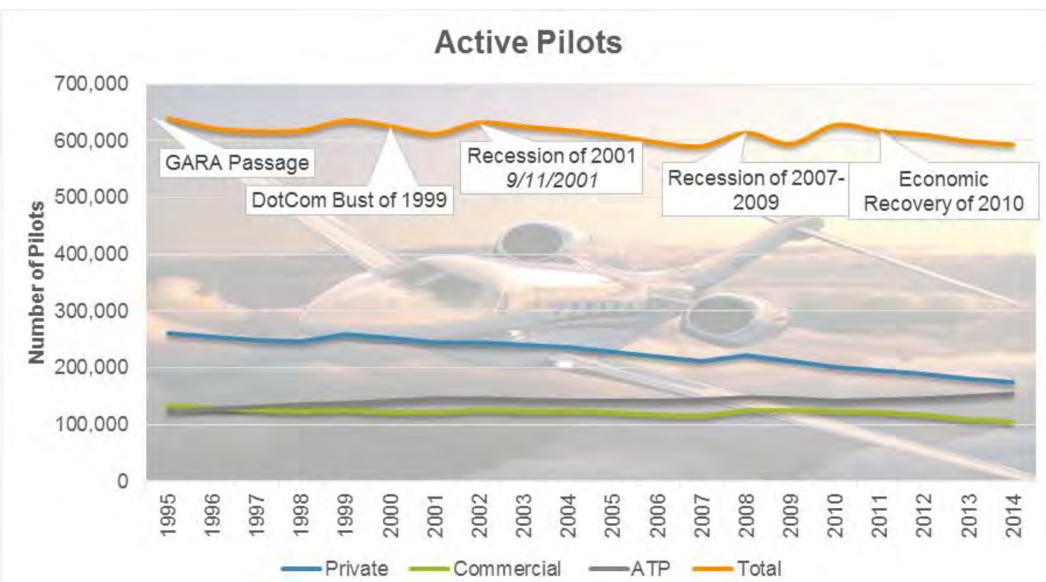


At first glance, the increase in the number of active general aviation aircraft since 1994 and the decline in general aviation hours flown since 1999 appear to be contradictory. However, these divergent trends are supported by the decline in the average number of hours flown per aircraft which has decreased from a high of 194.4 hours per aircraft in 1980 to a low of 106.1 hours per aircraft in 2009 (which represents a decrease of 45.4% or a compounded annual decrease of 2.1% over the period). Average number of hours flown by aircraft has increased slightly since 2009 to 112.7 in 2013 which represents an increase of 6.2% or a compounded annual increase of 1.5% over the period.



D. Active Pilots

Consistent with the trends in general aviation hours flown, the number of active pilots in the United States decreased throughout the 1980s and 1990s. Since peaking at 827,071 in 1980, the number of active pilots has declined 28.2% or a compounded annual decrease of 1.0% annually to 593,499 active pilots in 2014. During this overall decrease, the number of active pilots increased slightly in the late 1990s and early 2000s which can be attributed to pilot development programs. With minor fluctuations, the number of active pilots has remained relatively consistent since 2000. Out of the 593,499 active pilots in 2014, 100,993 or approximately 17.0% hold a Certified Flight Instructor certificate and 306,066 or 51.6% hold instrument ratings.



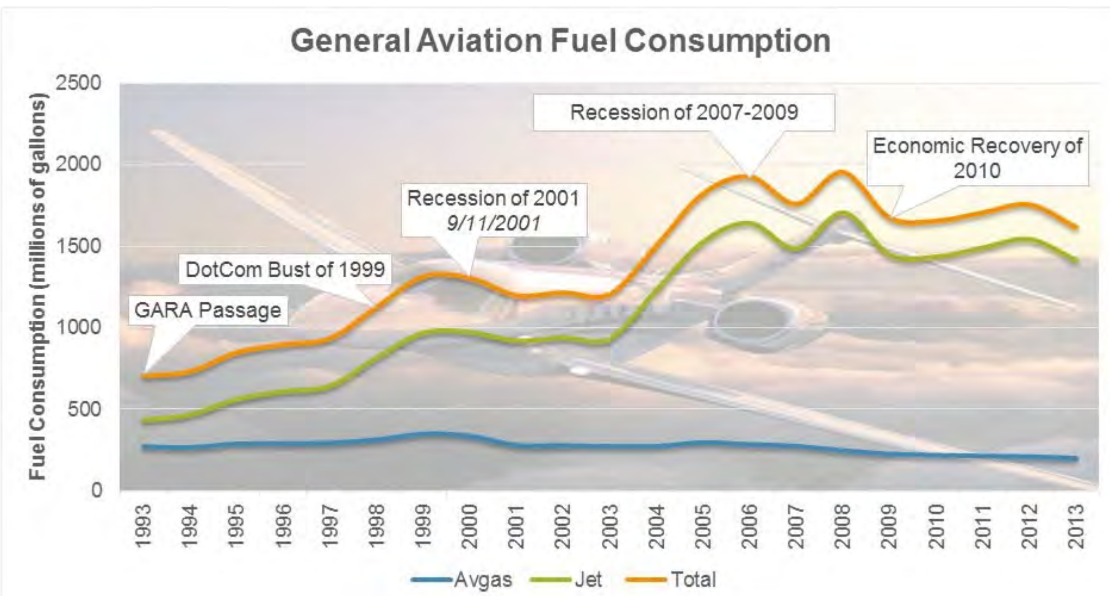
E. General Aviation Fuel Consumption

Total general aviation fuel consumption increased steadily from 1993 (702.8 million gallons) through 2000 (1,304.8 million gallons), which represents a total increase of 85.7% or a compounded annual increase of 9.2%. This trend can be attributed to an increase in aircraft manufacturing, expansion of fractional aircraft ownership, and a robust economy (particularly in the late 1990s). While general aviation fuel consumption declined slightly from 2000 through 2003 (due to the effect from the attacks of 9/11 and the economic recession that followed), general aviation fuel volumes rebounded to well past 2000 levels reaching 1,615.8 million gallons in 2013.

While aviation gasoline volumes declined through 1994 (except for small increases in 1984 and 1990), jet fuel volumes experienced several cycles of growth and decline throughout the same period. The dramatic drop in jet fuel volumes from 1989 to 1993 and the impressive recovery since 1994 are indicative of the resurgence in activity the industry has enjoyed since that time.

Aviation gasoline volumes experienced reasonable growth in the late 1990s only to be hit hard by the attacks of 9/11 and the subsequent recession. With the continued high oil costs this cost sensitive segment of the market continues to lose ground.

FBO revenues and profits are typically driven by the turbine-powered segment of the market. As such, the recovery of jet fuel volumes has been warmly received throughout the aviation service industry. As of 2013, there were 1821.5 million gallons of general aviation fuel consumed.



A.3 Industry Forecasts

The following are based on forecasts developed by the Federal Aviation Administration (FAA) and leading aviation industry product manufacturers including GAMA and Honeywell Aerospace's Business Aviation Outlook.

- General aviation aircraft hours flown are forecast to increase at an average annual rate of 1.4% through 2034.
- General aviation aircraft fuel consumed is forecast to increase at an average annual rate of 2.7% through 2034. Jet fuel consumption is forecast to increase at an average of 3.0% during this same period while avgas consumption is forecast to decrease an average of 0.2% annually through 2034.
- Active general aviation aircraft is forecast to increase at an average annual rate of 0.5% through 2034 with the business jet segment of general aviation aircraft forecast to have the most growth of 3.0% annually over the same time period.
- In 2013, aircraft shipments manufactured worldwide increased by 4.3% to 2,256 aircraft deliveries, while billings increased to 24.0% to $23.4 billion, the second-highest industry billing number ever recorded.

It is anticipated that increased aircraft manufacturing and general aviation hours flown will translate into additional general aviation fuel demand (volumes). It is expected that as the number of active aircraft increase, the demand for FBO products, services, and facilities (i.e., terminal buildings and aircraft parking, tiedown, and hangar space) will increase as well. In addition, as activity levels increase, the general aviation services industry will strengthen.

DEMAND DRIVERS STUDY

DEMAND DRIVERS STUDY

Appendix

Appendix B. **AVIATION INTERVIEW QUESTIONNAIRE**

Appendix B. AVIATION INTERVIEW QUESTIONNAIRE

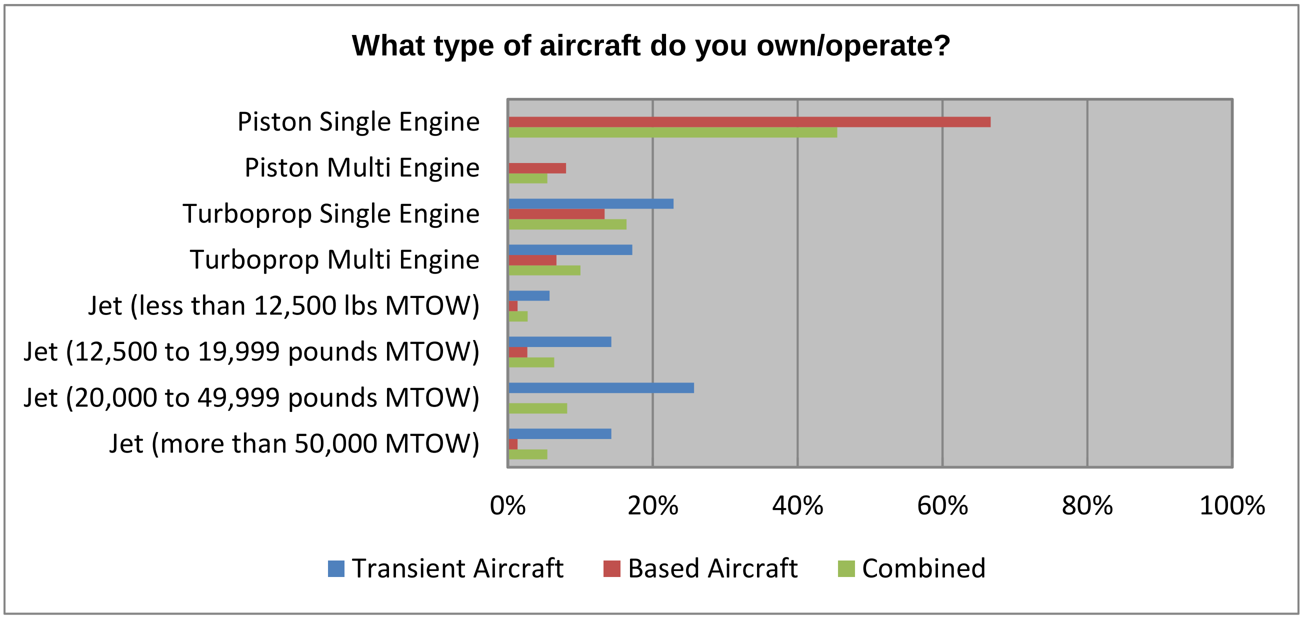
- Why do you choose to use TRK?
- What is your general opinion of the Airport (not the staff or the District)
- What type of aircraft do you own/operate?
- How do you operate your aircraft? (Part 91/91K/135)
- Are you based at TRK? If so Why? Of not Why Not?
- What type of aircraft storage facility would you like to rent at TRK?
- How often do you use the Airport and what season do you use it the most?
- Do you have a residence or business near the Airport?
- What attributes attract you to the Airport?
  - Location
  - Facilities
  - Services
- What additional services/facilities would increase your operations at the Airport?
  - Enhance instrument approach/departure procedures?
  - Aircraft deicing services?
  - Community hangar?
  - Enhanced Aircraft Maintenance & Repair?
  - Enhanced Line Services?
  - Enhanced Airside Infrastructure? (runway/taxiway/ramp/hangars)
- What changes in services/facilities at the Airport would decrease/impact your operations at the Airport
  - Reduced Airside Infrastructure?
  - Reduced Line Services?
  - Reduced Ground Transportation?
  - Lack of Fueling Services?
  - Reduced Aircraft Maintenance & Repair Services?
- If you had your way, what would you change to make TRK a more attractive place to use?
- What change(s) would have would have the greatest negative impact on your use of the Airport?
- Does the cost of fuel impact your choice of using the Airport? How much fuel do you purchase annually?
- Is there anything else you would like to add or discuss regarding Truckee Tahoe Airport?

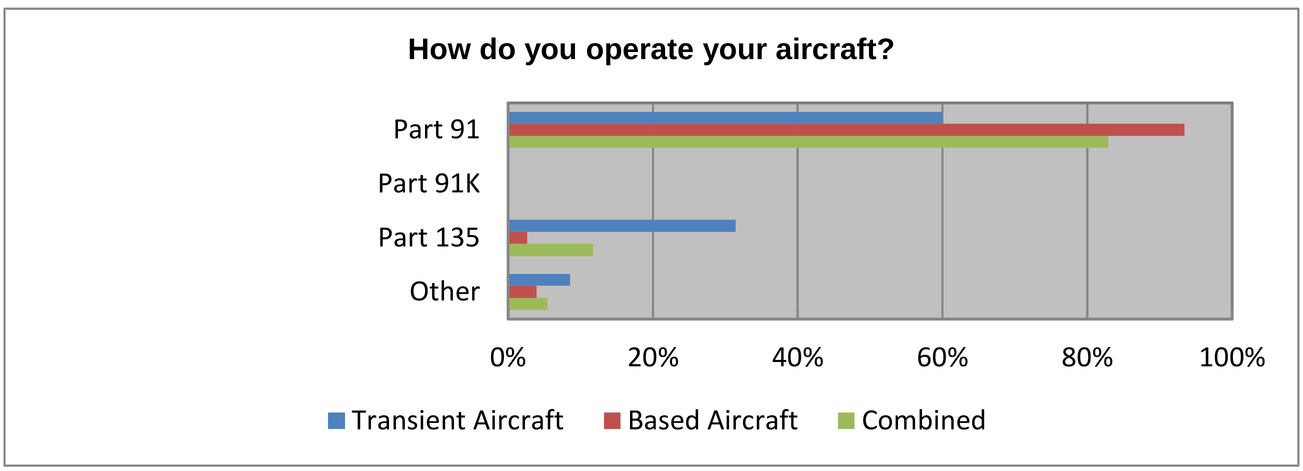
DEMAND DRIVERS STUDY

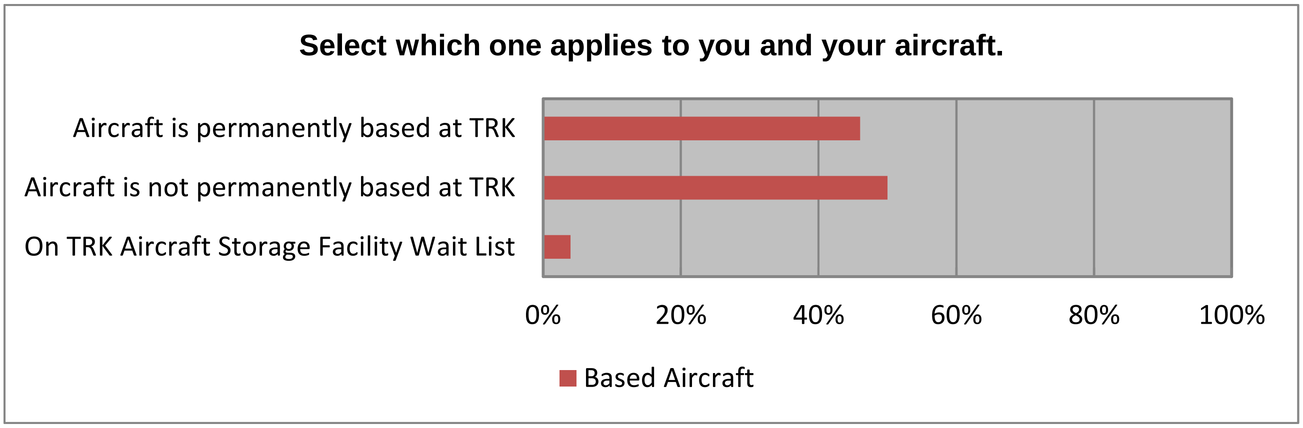
Appendix

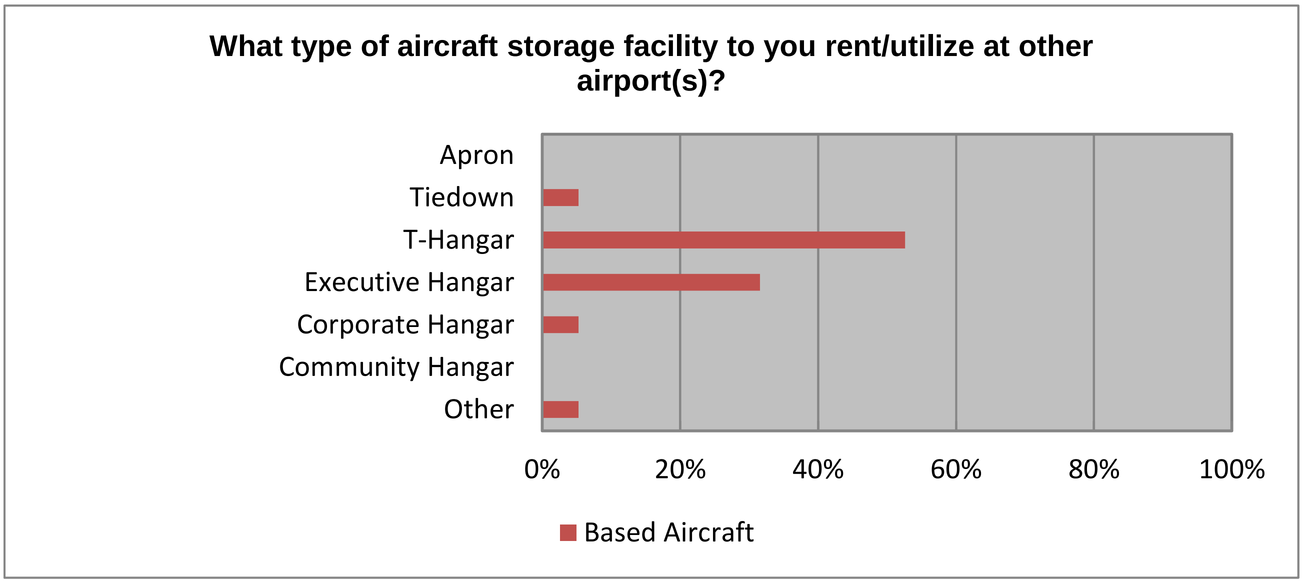
Appendix C. **AVIATION SURVEY RESULTS**

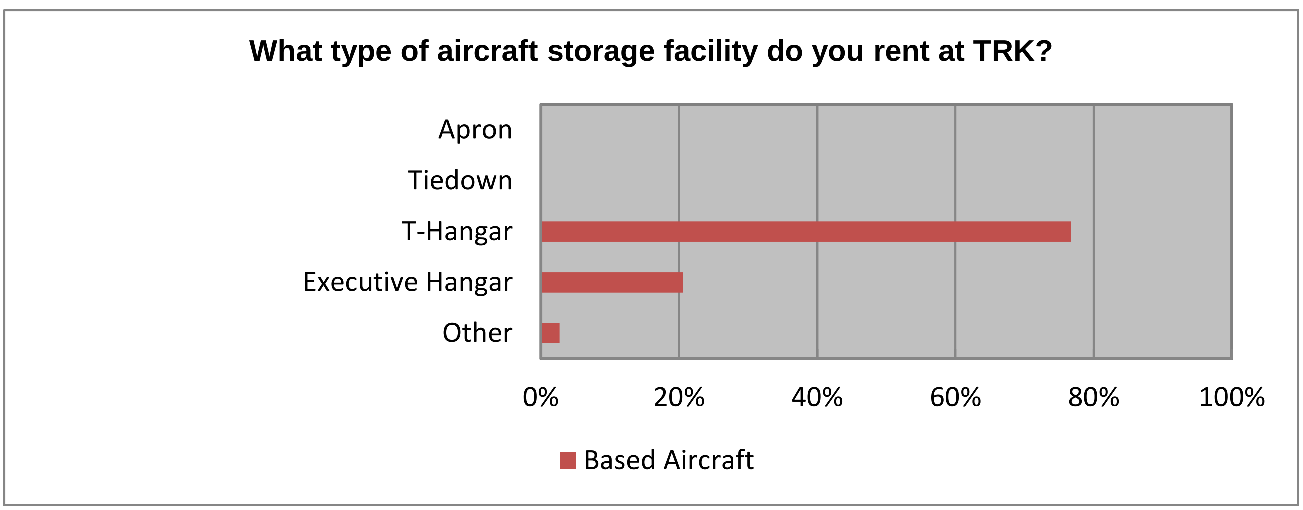
Appendix C. AVIATION SURVEY RESULTS

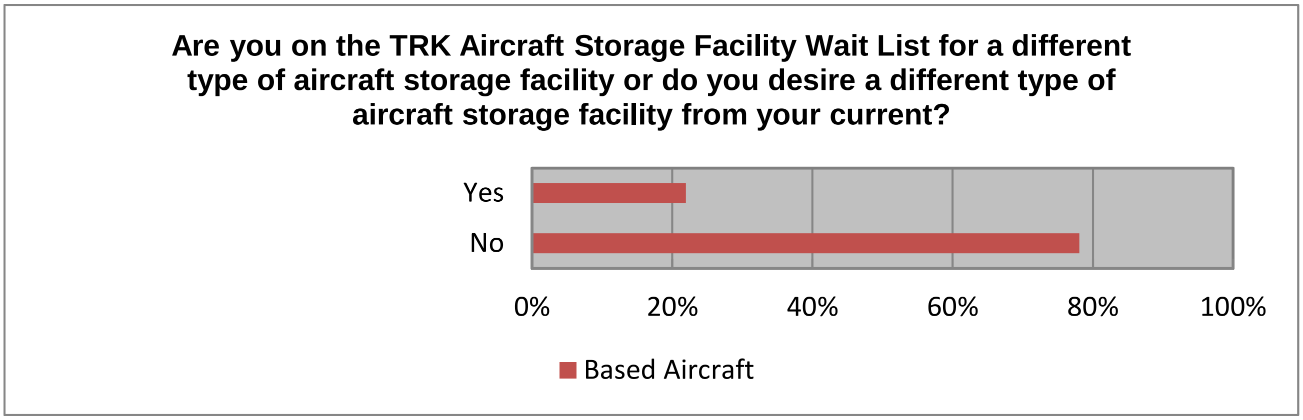


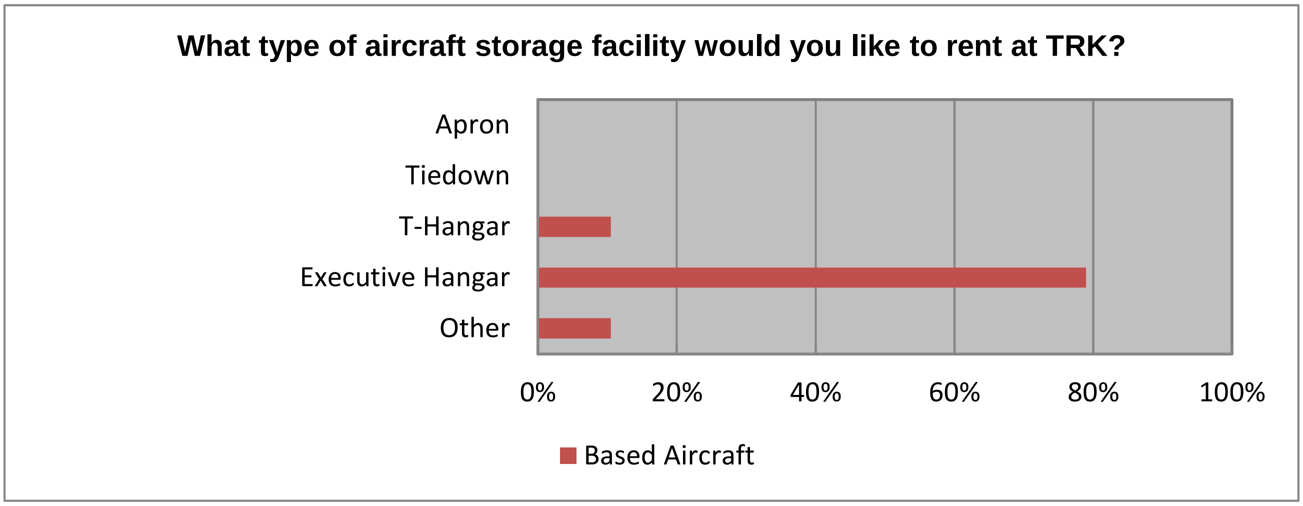


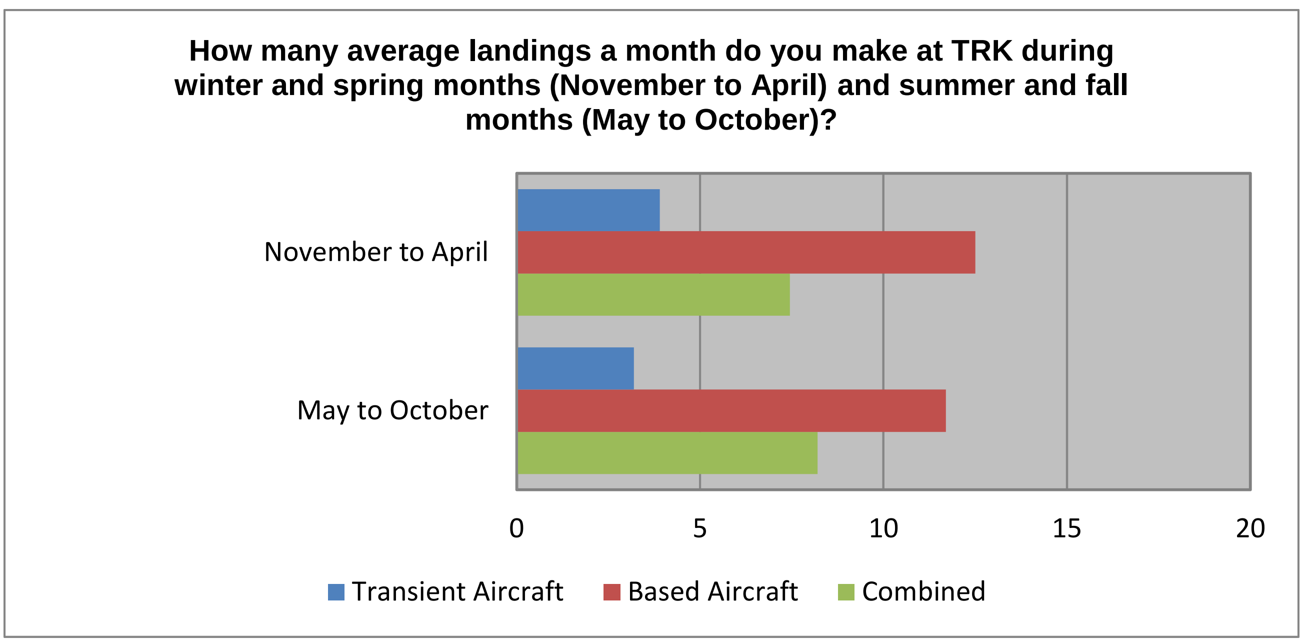

Select which one applies to you and your aircraft.
Aircraft is permanently based at TRK
Aircraft is not permanently based at TRK
On TRK Aircraft Storage Facility Wait List
0%
20%
40%
60%
80%
100%
Based Aircraft

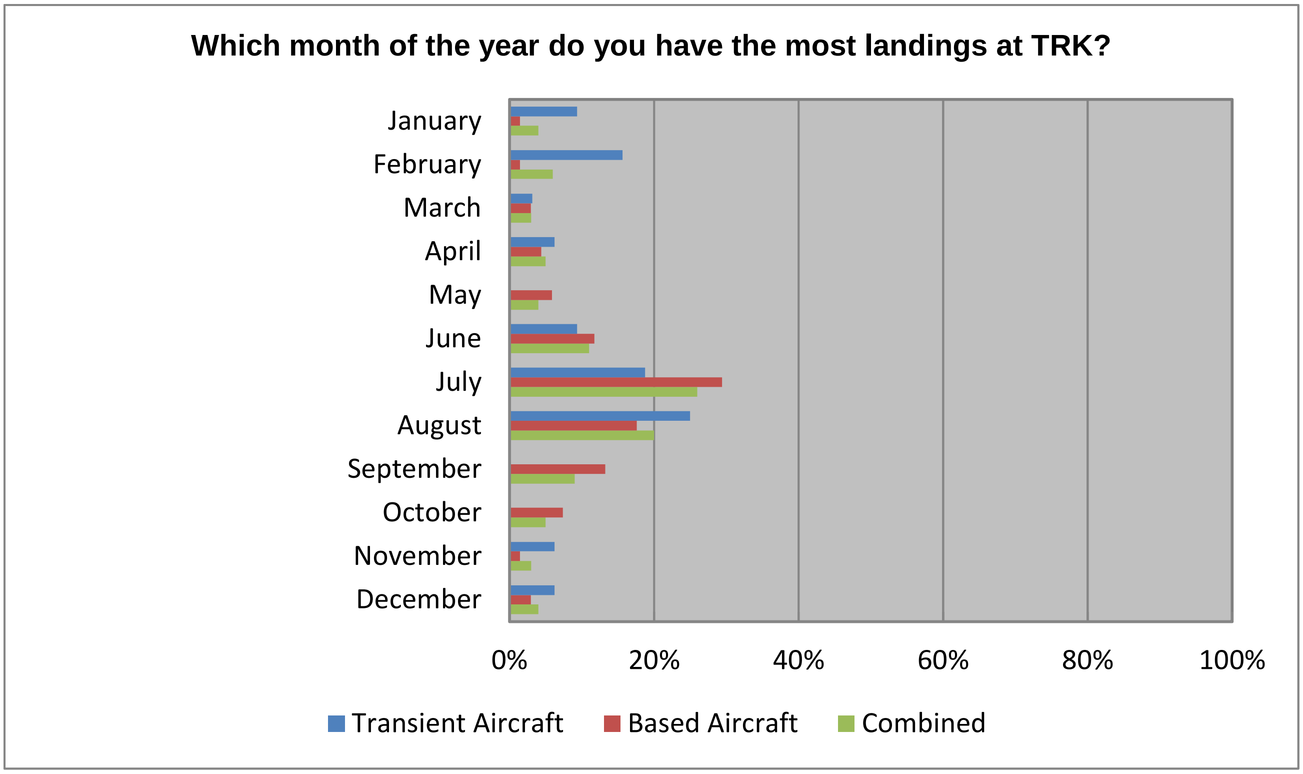

What type of aircraft storage facility to you rent/utilize at other airport(s)?
Apron
Tiedown
T-Hangar
Executive Hangar
Corporate Hangar
Community Hangar
Other
0%
20%
40%
60%
80%
100%
Based Aircraft

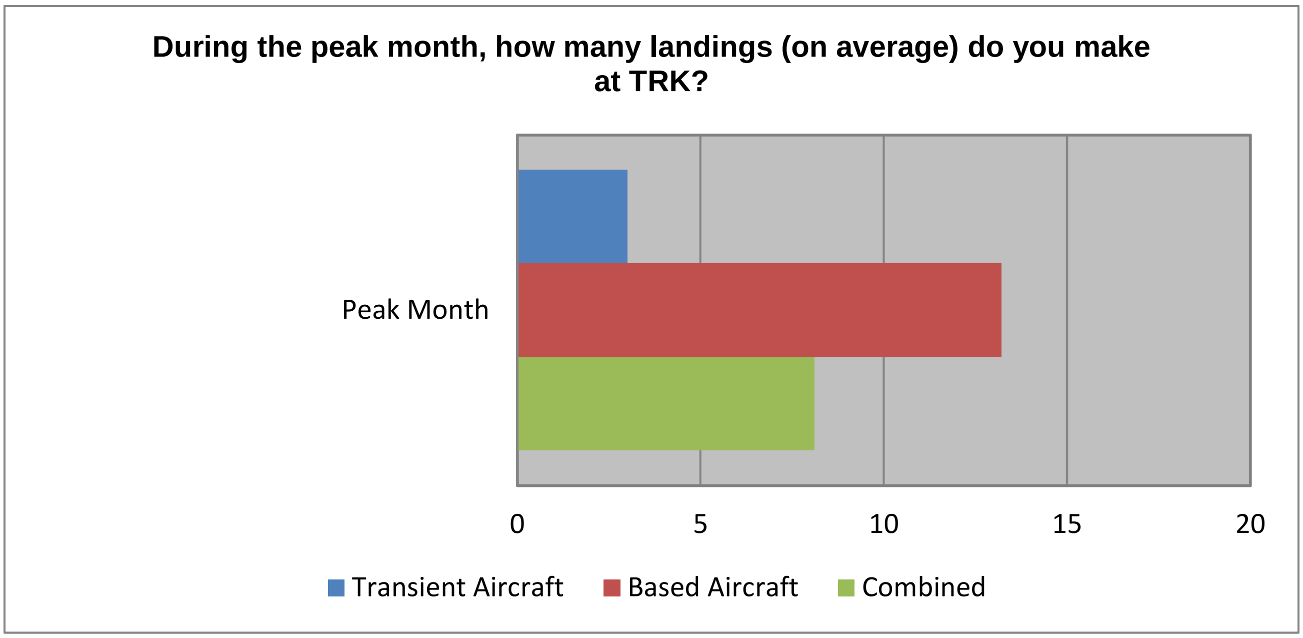

What type of aircraft storage facility do you rent at TRK?
Apron
Tiedown
T-Hangar
Executive Hangar
Other
0%
20%
40%
60%
80%
100%
Based Aircraft

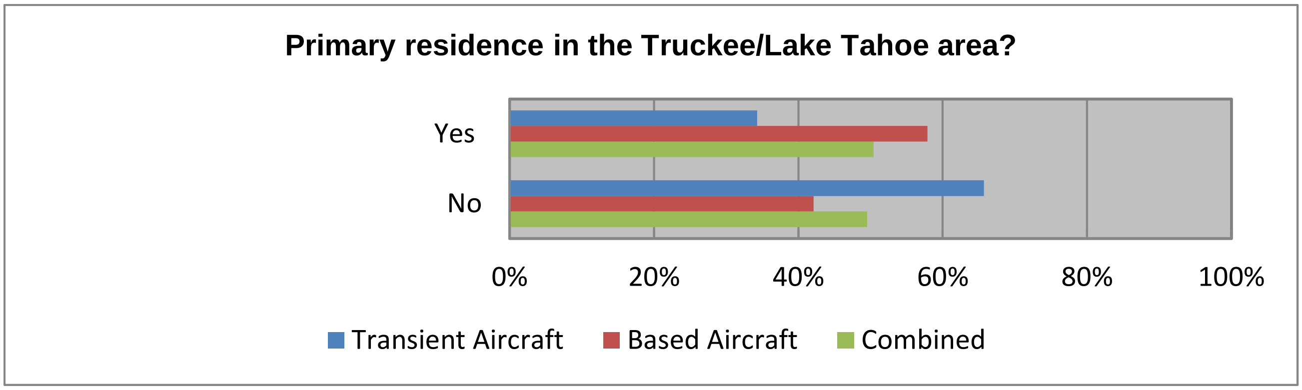

Are you on the TRK Aircraft Storage Facility Wait List for a different type of aircraft storage facility or do you desire a different type of aircraft storage facility from your current?
Yes
No
0%
20%
40%
60%
80%
100%
Based Aircraft

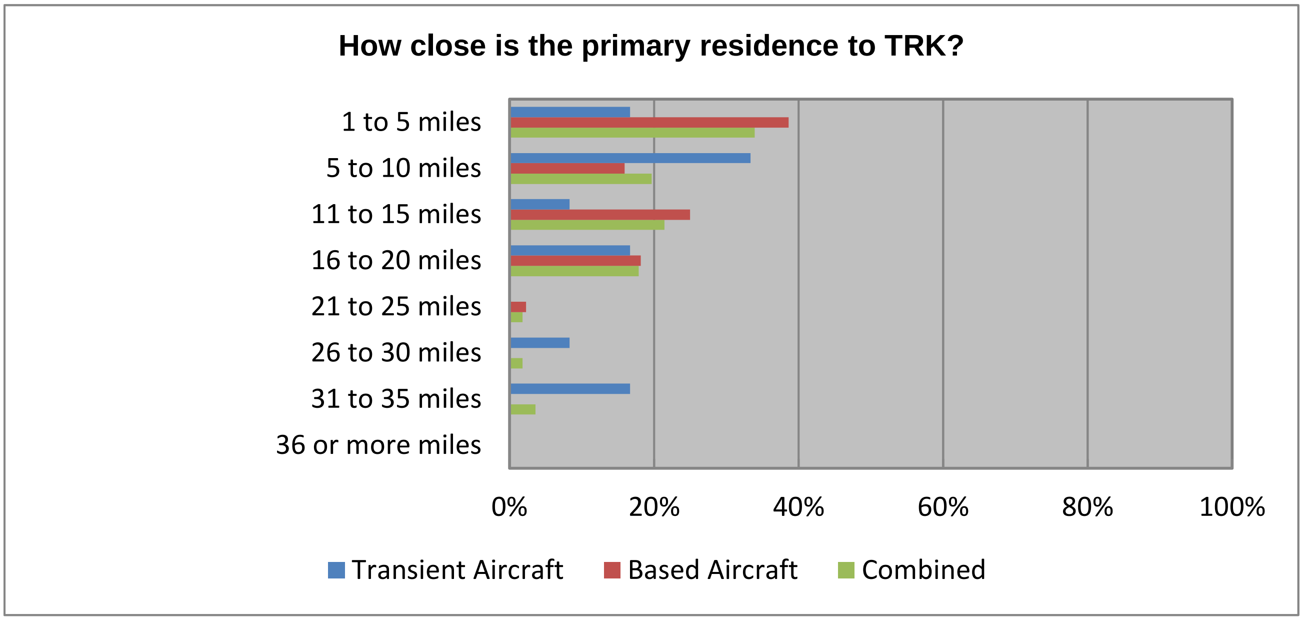

What type of aircraft storage facility would you like to rent at TRK?
Apron
Tiedown
T-Hangar
Executive Hangar
Other
0%
20%
40%
60%
80%
100%
Based Aircraft

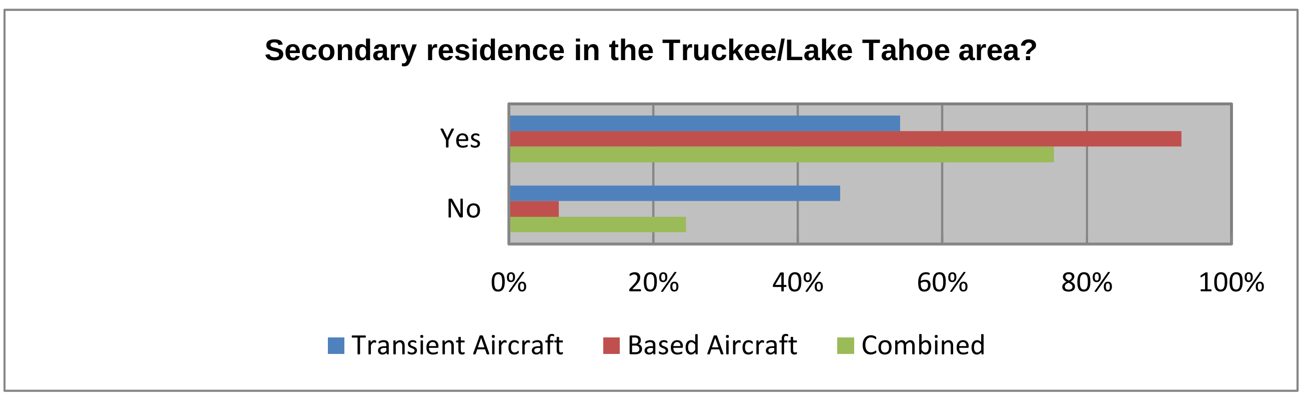

How many average landings a month do you make at TRK during winter and spring months (November to April) and summer and fall months (May to October)?
November to April
May to October
0
5
10
15
20
Transient Aircraft
Based Aircraft
Combined


Which month of the year do you have the most landings at TRK?
January
February
March
April
May
June
July
August
September
October
November
December
0%
20%
40%
60%
80%
100%
Transient Aircraft
Based Aircraft
Combined

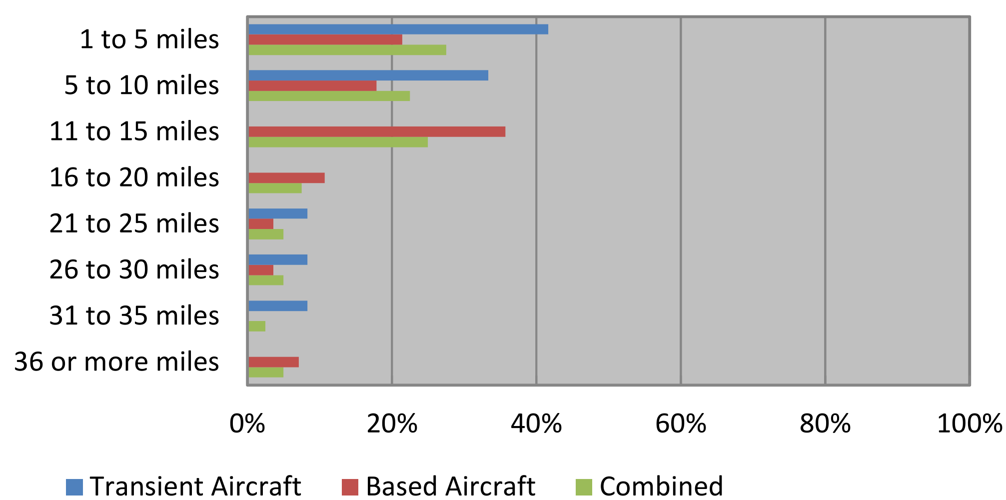

During the peak month, how many landings (on average) do you make at TRK?
Peak Month
0
5
10
15
20
Transient Aircraft
Based Aircraft
Combined


Primary residence in the Truckee/Lake Tahoe area?
Yes
No
0%
20%
40%
60%
80%
100%
Transient Aircraft
Based Aircraft
Combined

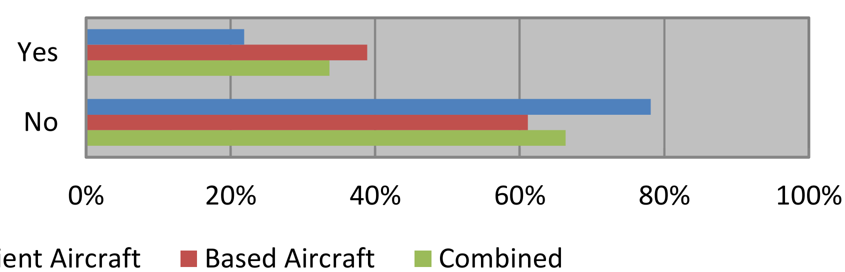

How close is the primary residence to TRK?
1 to 5 miles
5 to 10 miles
11 to 15 miles
16 to 20 miles
21 to 25 miles
26 to 30 miles
31 to 35 miles
36 or more miles
0%
20%
40%
60%
80%
100%
Transient Aircraft
Based Aircraft
Combined


Secondary residence in the Truckee/Lake Tahoe area?
Yes
No
0%
20%
40%
60%
80%
100%
Transient Aircraft
Based Aircraft
Combined

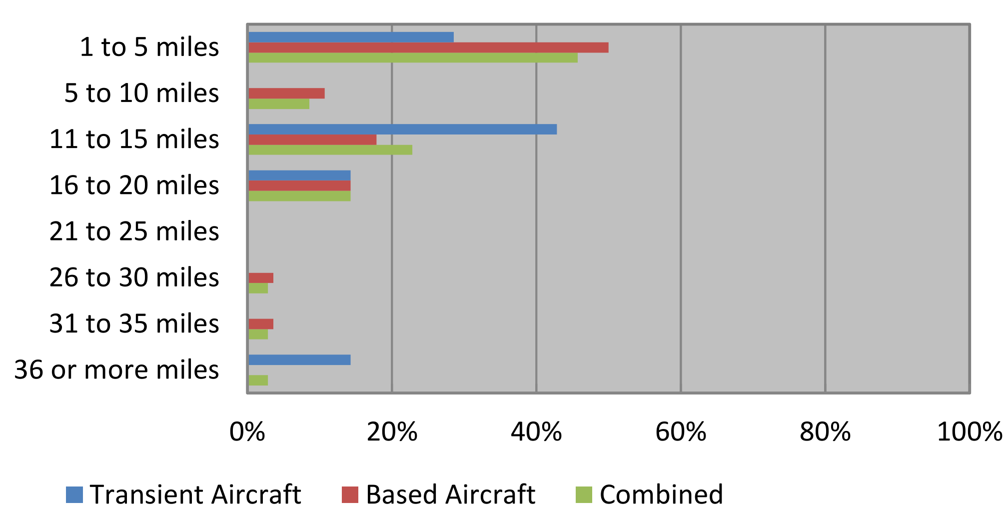
How close is the secondary residence to TRK?

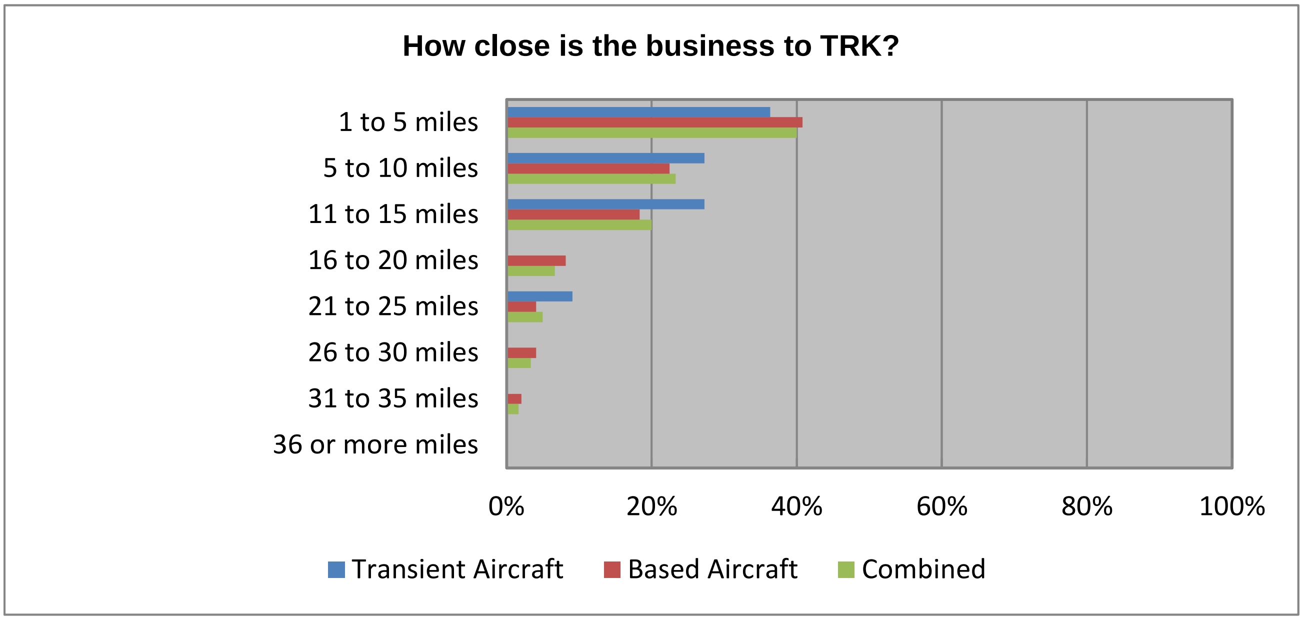


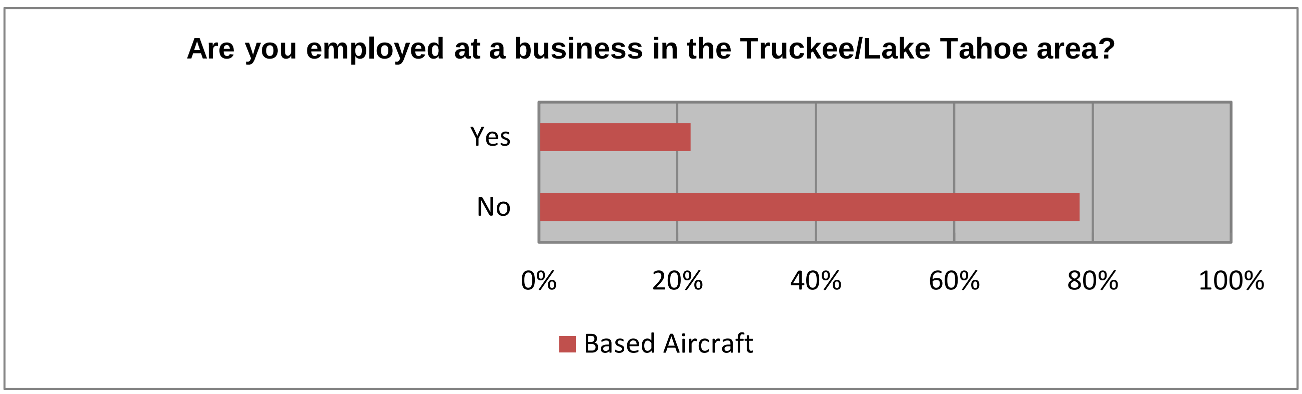
Own a business in the Truckee/Lake Tahoe area?

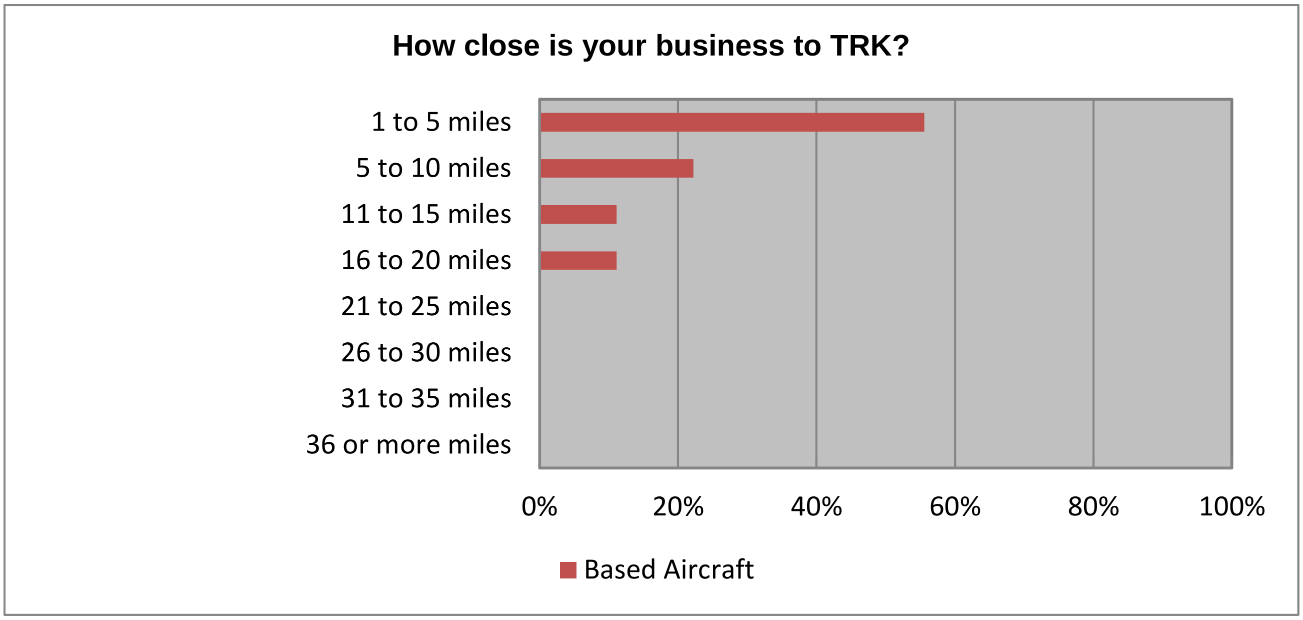


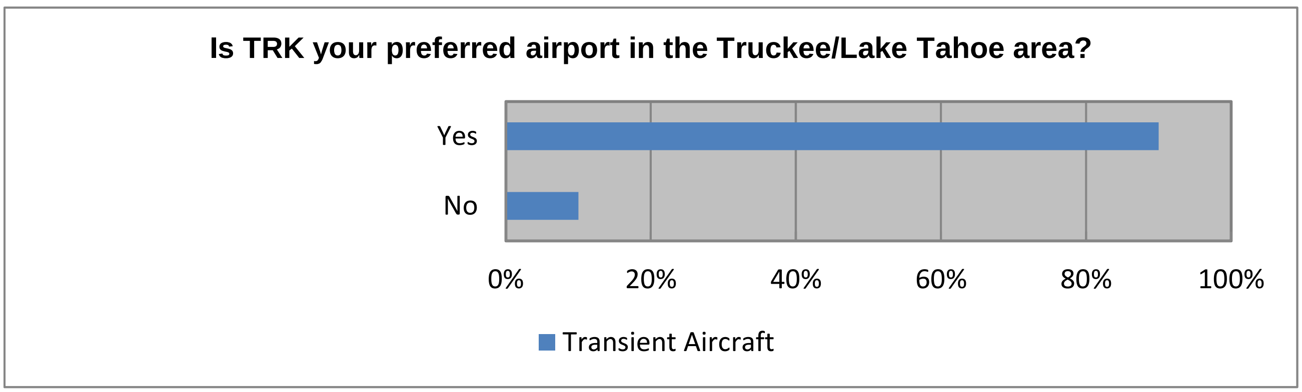
How close is the business to TRK?

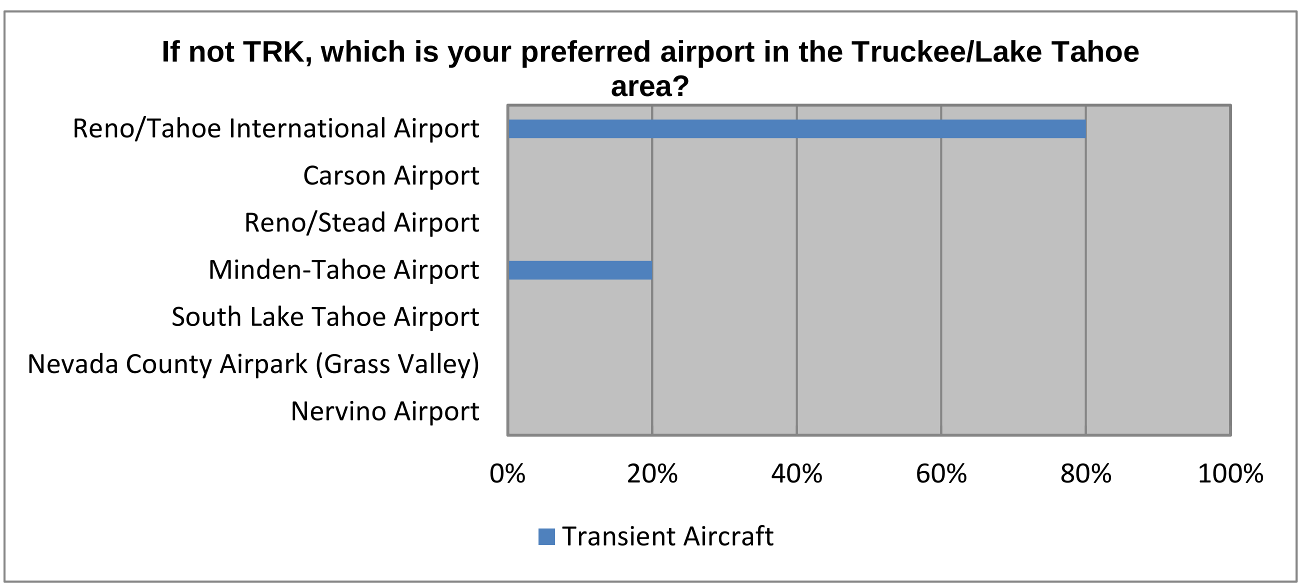


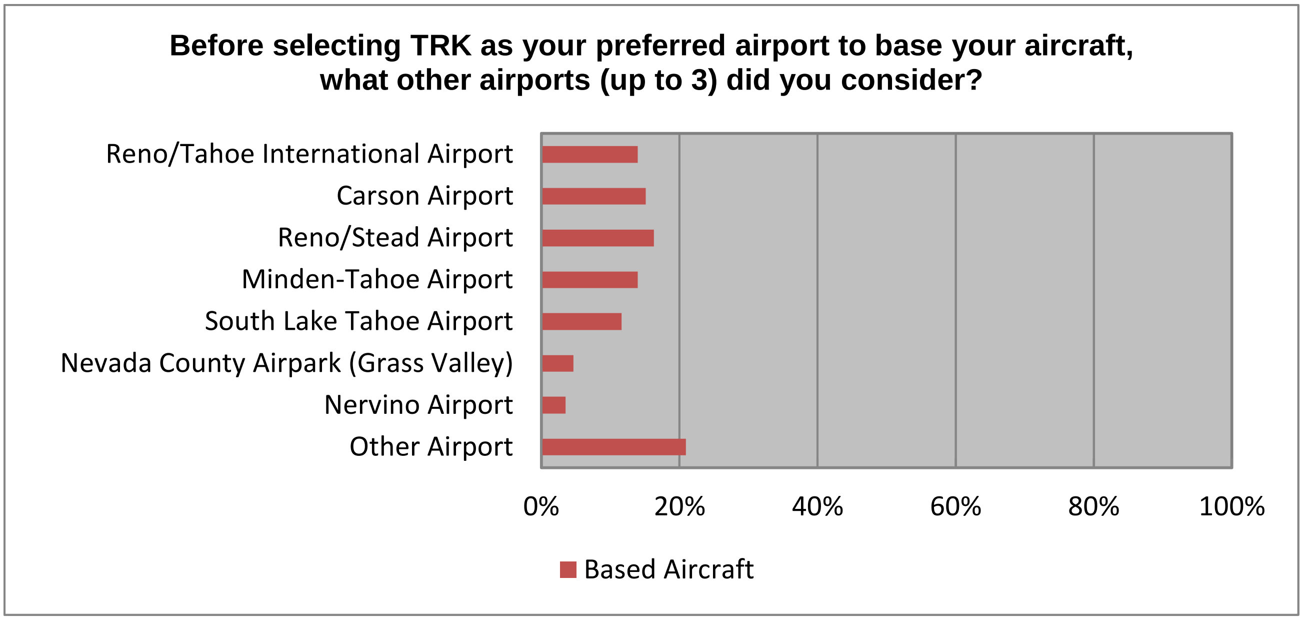

How close is the business to TRK?
1 to 5 miles
5 to 10 miles
11 to 15 miles
16 to 20 miles
21 to 25 miles
26 to 30 miles
31 to 35 miles
36 or more miles
0%
20%
40%
60%
80%
100%
Transient Aircraft
Based Aircraft
Combined

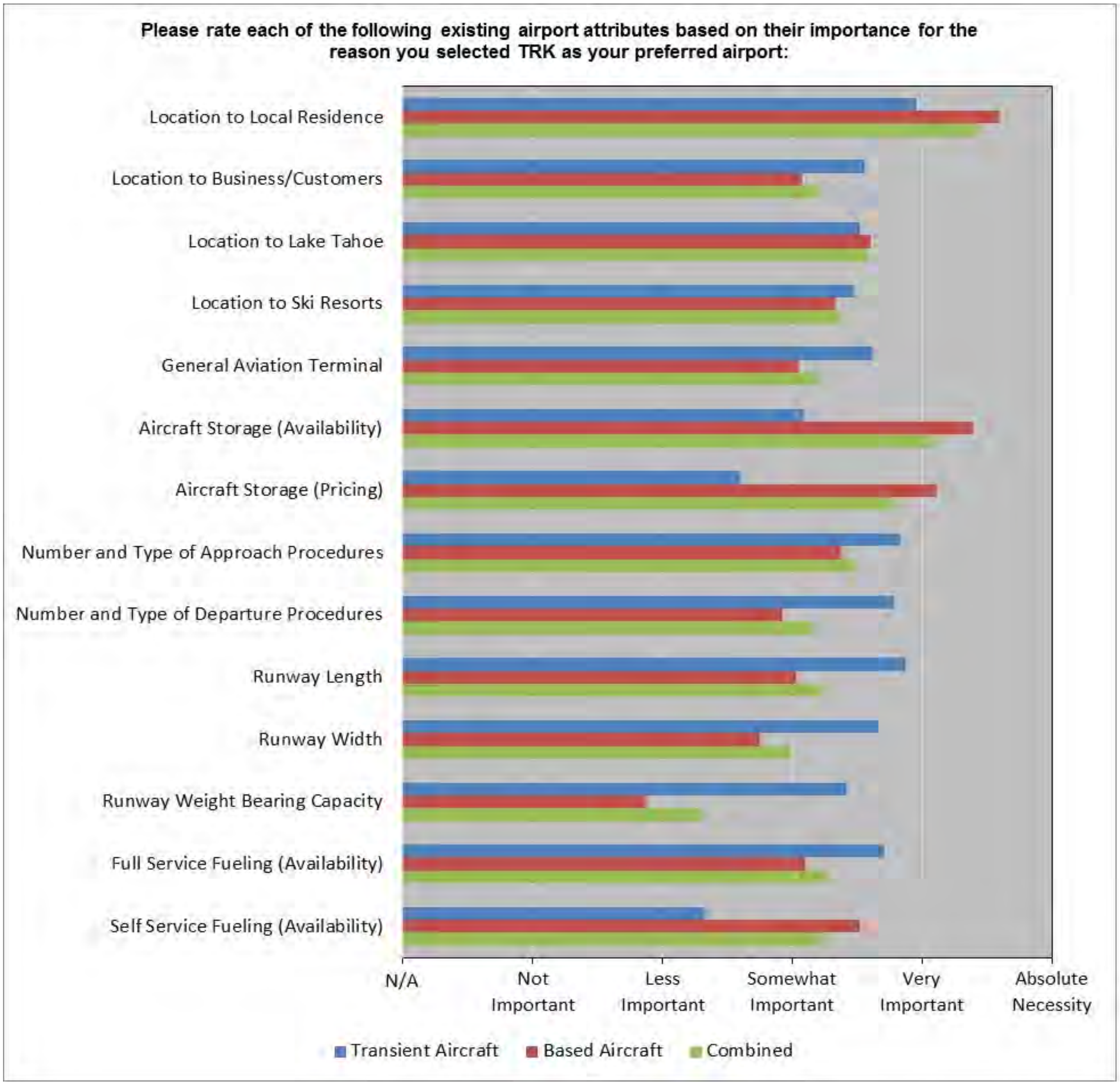

Are you employed at a business in the Truckee/Lake Tahoe area?
Yes
No
0%
20%
40%
60%
80%
100%
Based Aircraft

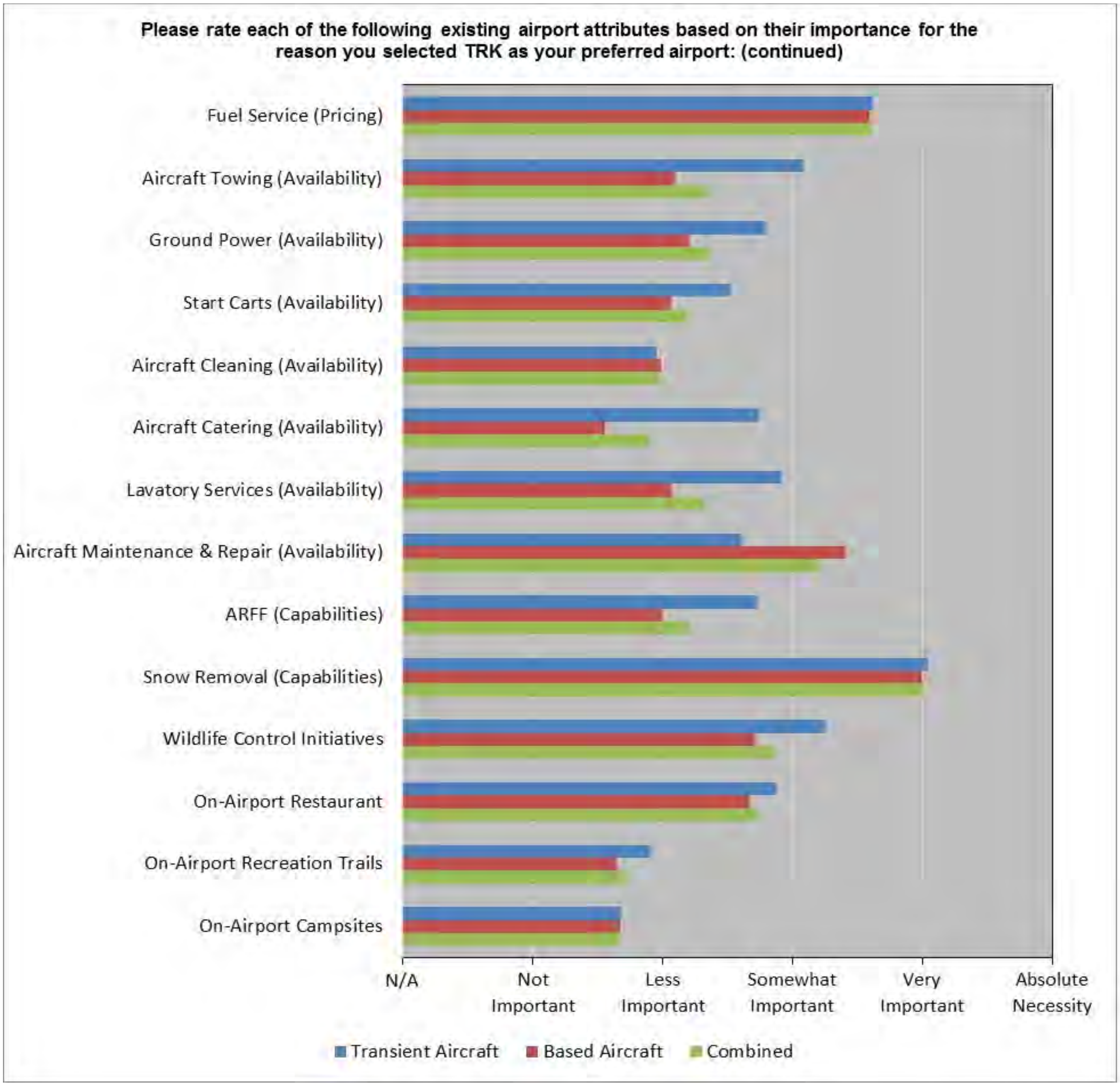

How close is your business to TRK?
1 to 5 miles
5 to 10 miles
11 to 15 miles
16 to 20 miles
21 to 25 miles
26 to 30 miles
31 to 35 miles
36 or more miles
0%
20%
40%
60%
80%
100%
Based Aircraft


Is TRK your preferred airport in the Truckee/Lake Tahoe area?
Yes
No
0%
20%
40%
60%
80%
100%
Transient Aircraft

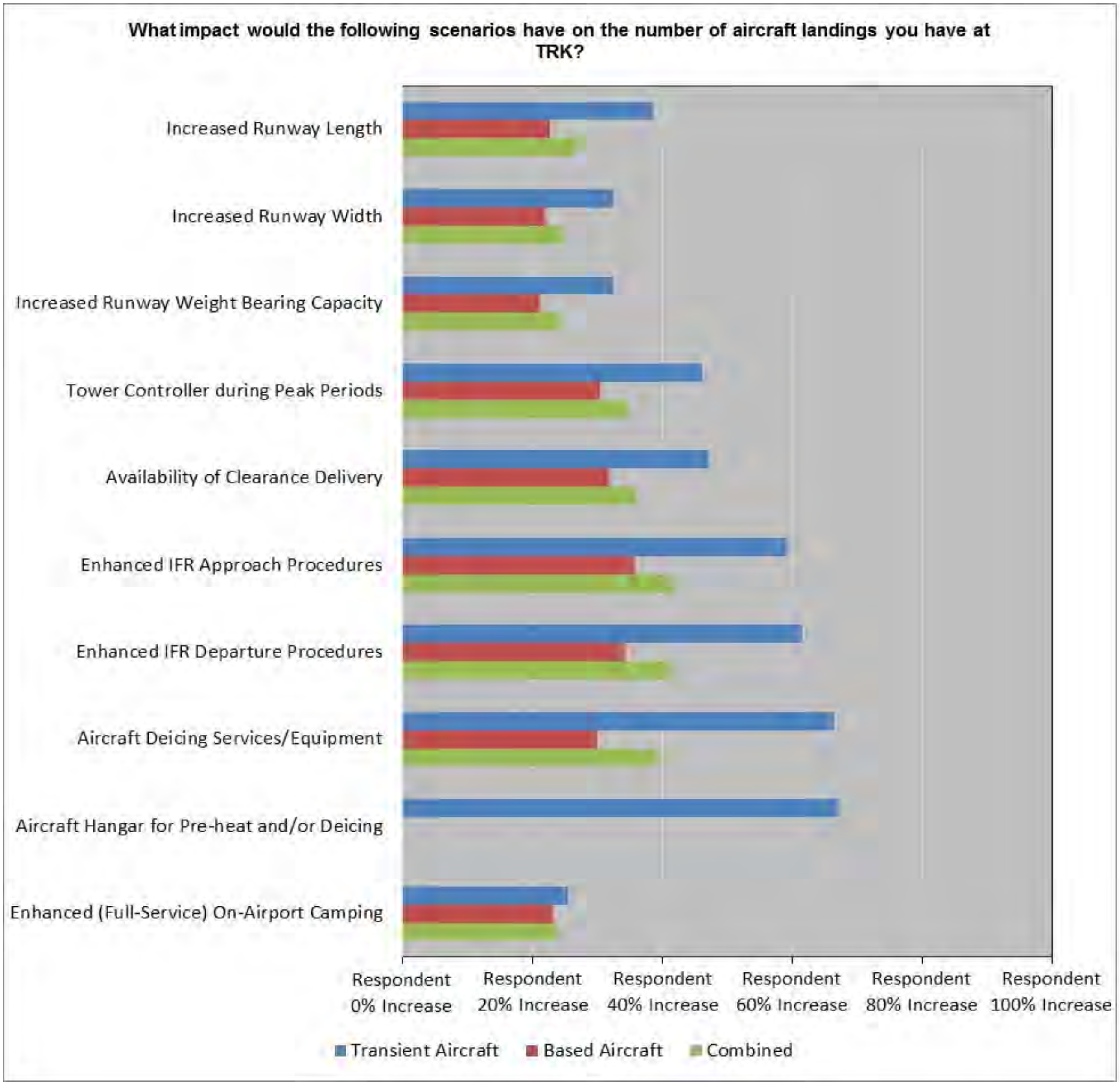

If not TRK, which is your preferred airport in the Truckee/Lake Tahoe area?
Reno/Tahoe International Airport
Carson Airport
Reno/Stead Airport
Minden-Tahoe Airport
South Lake Tahoe Airport
Nevada County Airpark (Grass Valley)
Nervino Airport
0%
20%
40%
60%
80%
100%
Transient Aircraft


Before selecting TRK as your preferred airport to base your aircraft, what other airports (up to 3) did you consider?
Reno/Tahoe International Airport
Carson Airport
Reno/Stead Airport
Minden-Tahoe Airport
South Lake Tahoe Airport
Nevada County Airpark (Grass Valley)
Nervino Airport
Other Airport
0%
20%
40%
60%
80%
100%
Based Aircraft

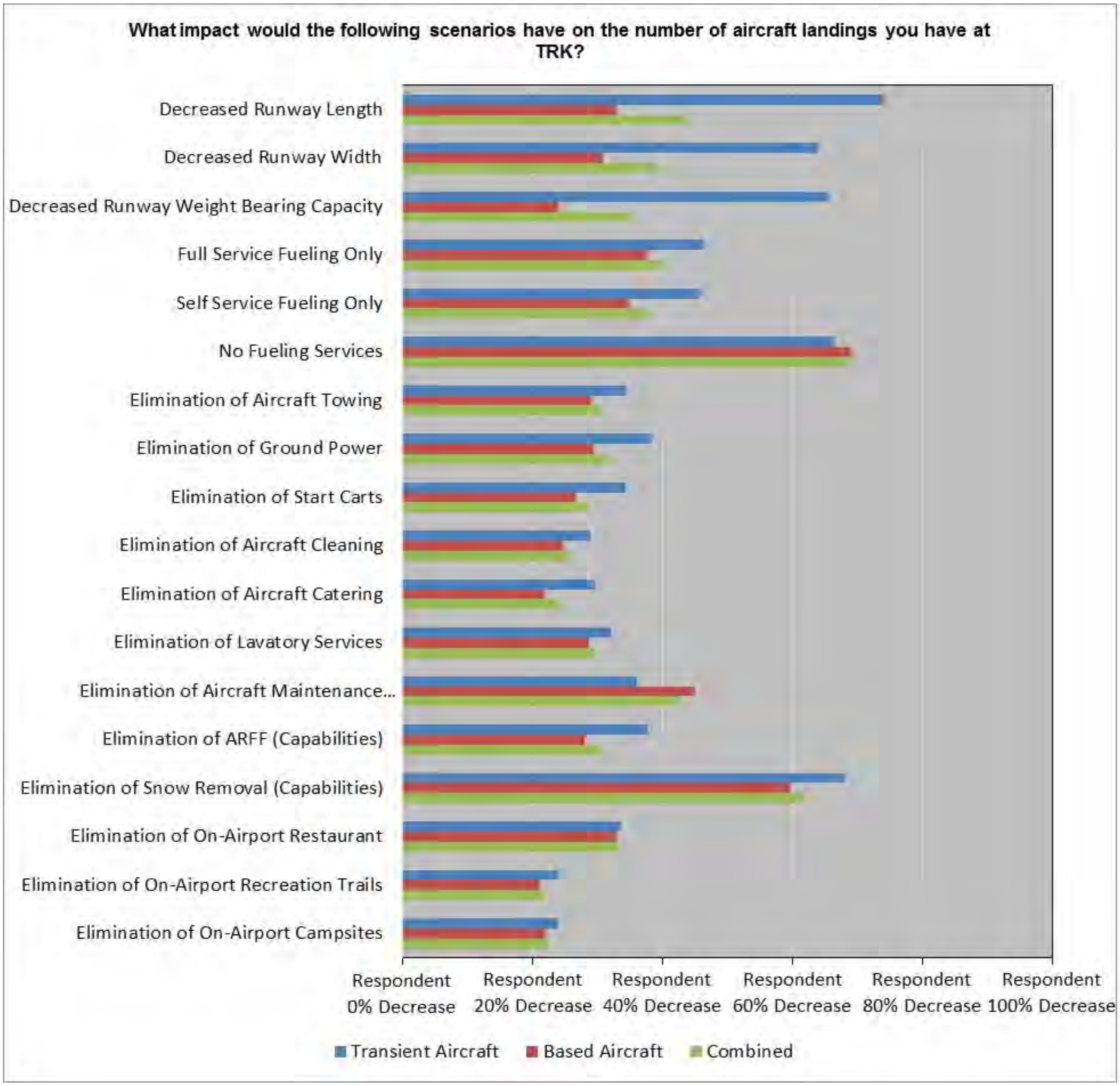

Please rate each of the following existing airport attributes based on their importance for the reason you selected TRK as your preferred airport:
Location to Local Residence
Location to Business/Customers
Location to Lake Tahoe
Location to Ski Resorts
General Aviation Terminal
Aircraft Storage (Availability)
Aircraft Storage (Pricing)
Number and Type of Approach Procedures
Number and Type of Departure Procedures
Runway Length
Runway Width
Runway Weight Bearing Capacity
Full Service Fueling (Availability)
Self Service Fueling (Availability)
N/A
Not Important
Less Important
Somewhat Important
Very Important
Absolute Necessity
Transient Aircraft
Based Aircraft
Combined

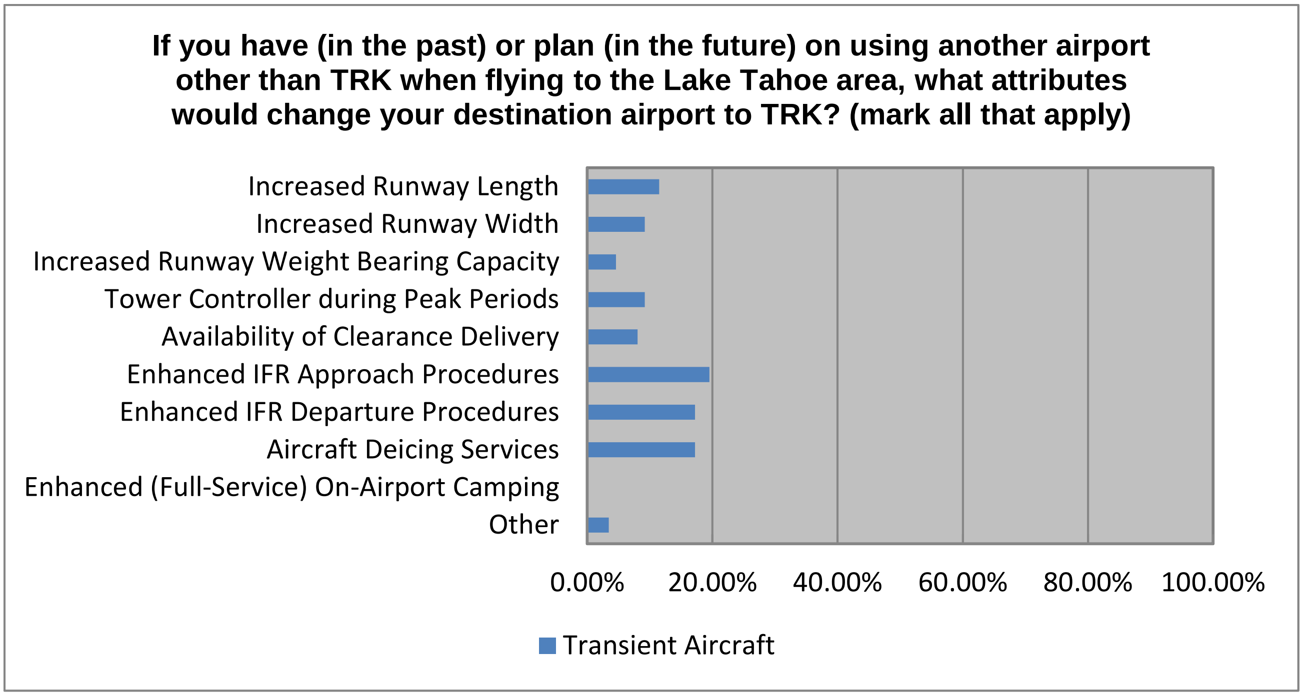


Please rate each of the following existing airport attributes based on their importance for the reason you selected TRK as your preferred airport: (continued)
Fuel Service (Pricing)
Aircraft Towing (Availability)
Ground Power (Availability)
Start Carts (Availability)
Aircraft Cleaning (Availability)
Aircraft Catering (Availability)
Lavatory Services (Availability)
Aircraft Maintenance & Repair (Availability)
ARFF (Capabilities)
Snow Removal (Capabilities)
Wildlife Control Initiatives
On-Airport Restaurant
On-Airport Recreation Trails
On-Airport Campsites
N/A
Not Important
Less Important
Somewhat Important
Very Important
Absolute Necessity
Transient Aircraft
Based Aircraft
Combined

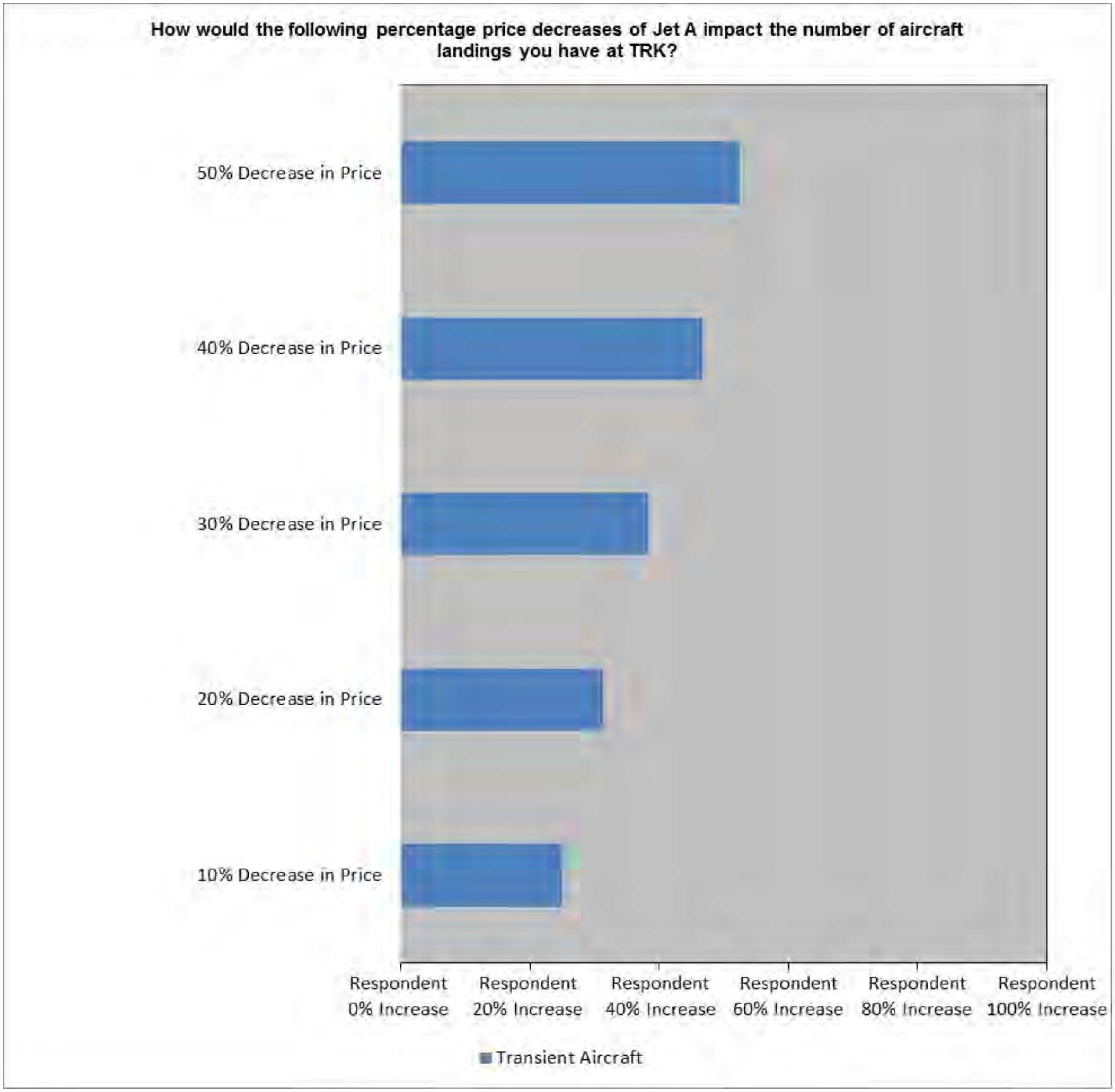


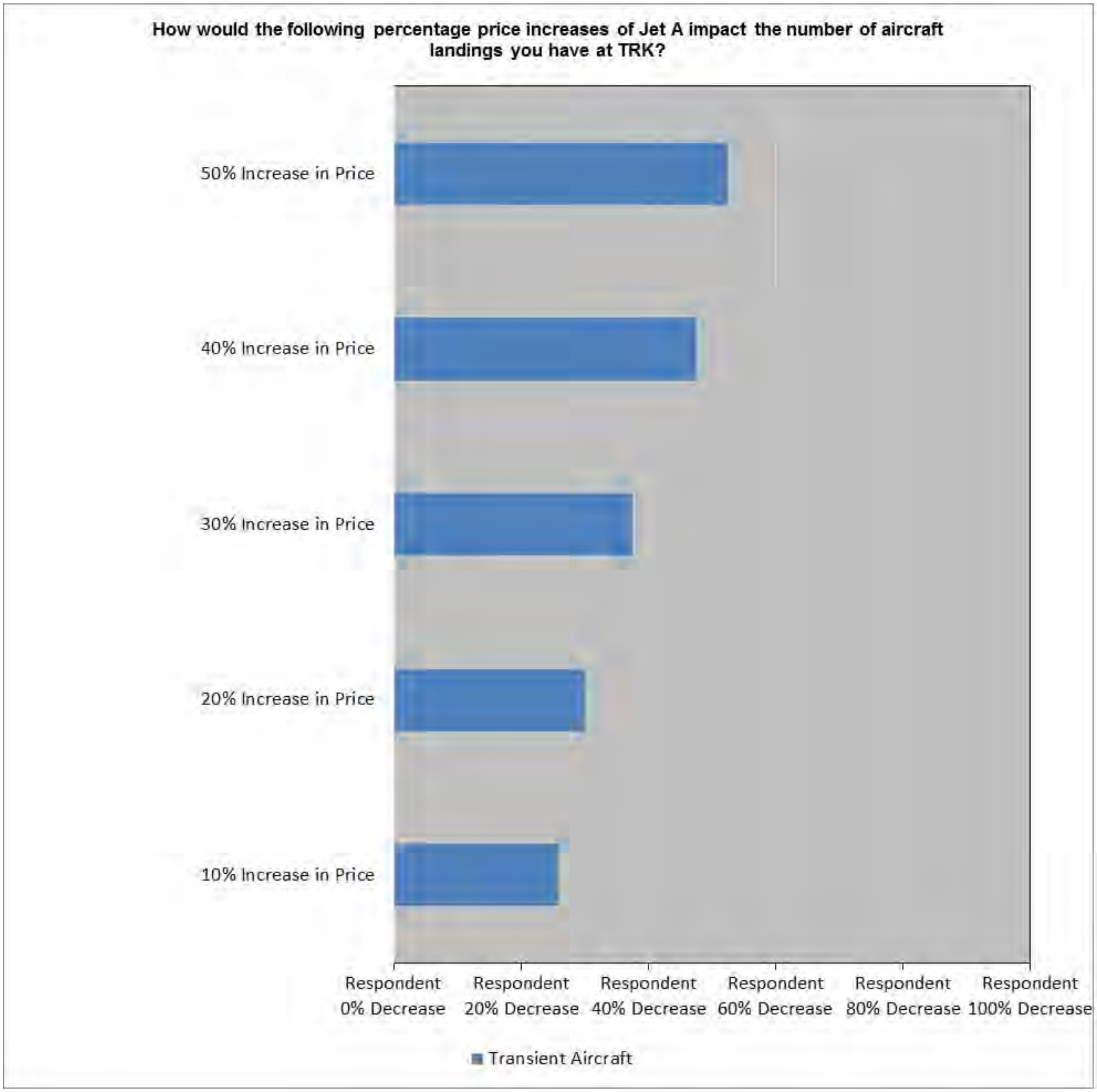
What impact would the following scenarios have on the number of aircraft landings you have at TRK?
Increased Runway Length
Increased Runway Width
Increased Runway Weight Bearing Capacity
Tower Controller during Peak Periods
Availability of Clearance Delivery
Enhanced IFR Approach Procedures
Enhanced IFR Departure Procedures
Aircraft Deicing Services/Equipment
Aircraft Hangar for Pre-heat and/or Deicing
Enhanced (Full-Service) On-Airport Camping
Respondent 0% Increase
Respondent 20% Increase
Respondent 40% Increase
Respondent 60% Increase
Respondent 80% Increase
Respondent 100% Increase
Transient Aircraft
Based Aircraft
Combined

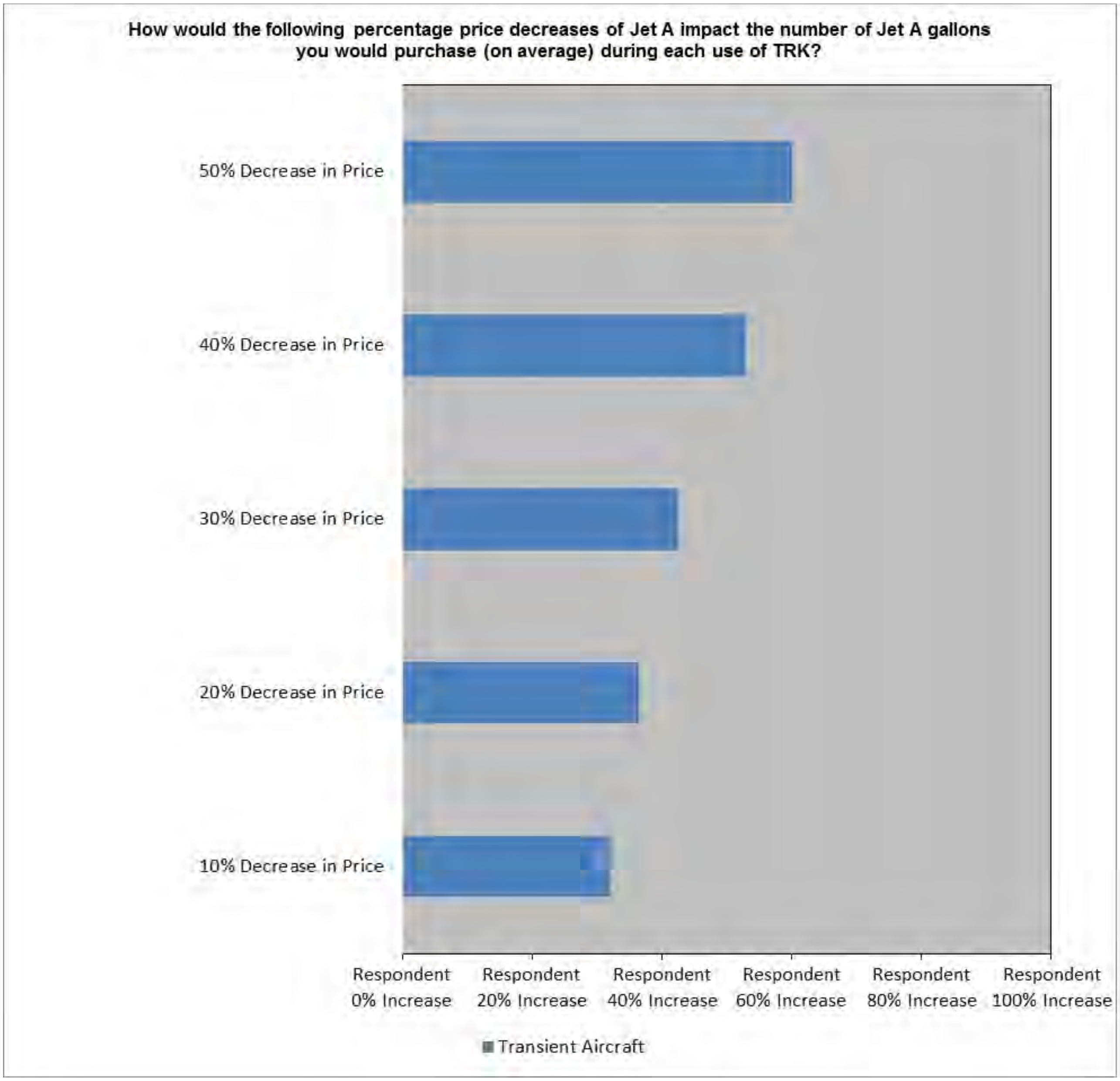

What impact would the following scenarios have on the number of aircraft landings you have at TRK?
Decreased Runway Length
Decreased Runway Width
Decreased Runway Weight Bearing Capacity
Full Service Fueling Only
Self Service Fueling Only
No Fueling Services
Elimination of Aircraft Towing
Elimination of Ground Power
Elimination of Start Carts
Elimination of Aircraft Cleaning
Elimination of Aircraft Catering
Elimination of Lavatory Services
Elimination of Aircraft Maintenance...
Elimination of ARFF (Capabilities)
Elimination of Snow Removal (Capabilities)
Elimination of On-Airport Restaurant
Elimination of On-Airport Recreation Trails
Elimination of On-Airport Campsites
Respondent 0% Decrease
Respondent 20% Decrease
Respondent 40% Decrease
Respondent 60% Decrease
Respondent 80% Decrease
Respondent 100% Decrease
Transient Aircraft
Based Aircraft
Combined

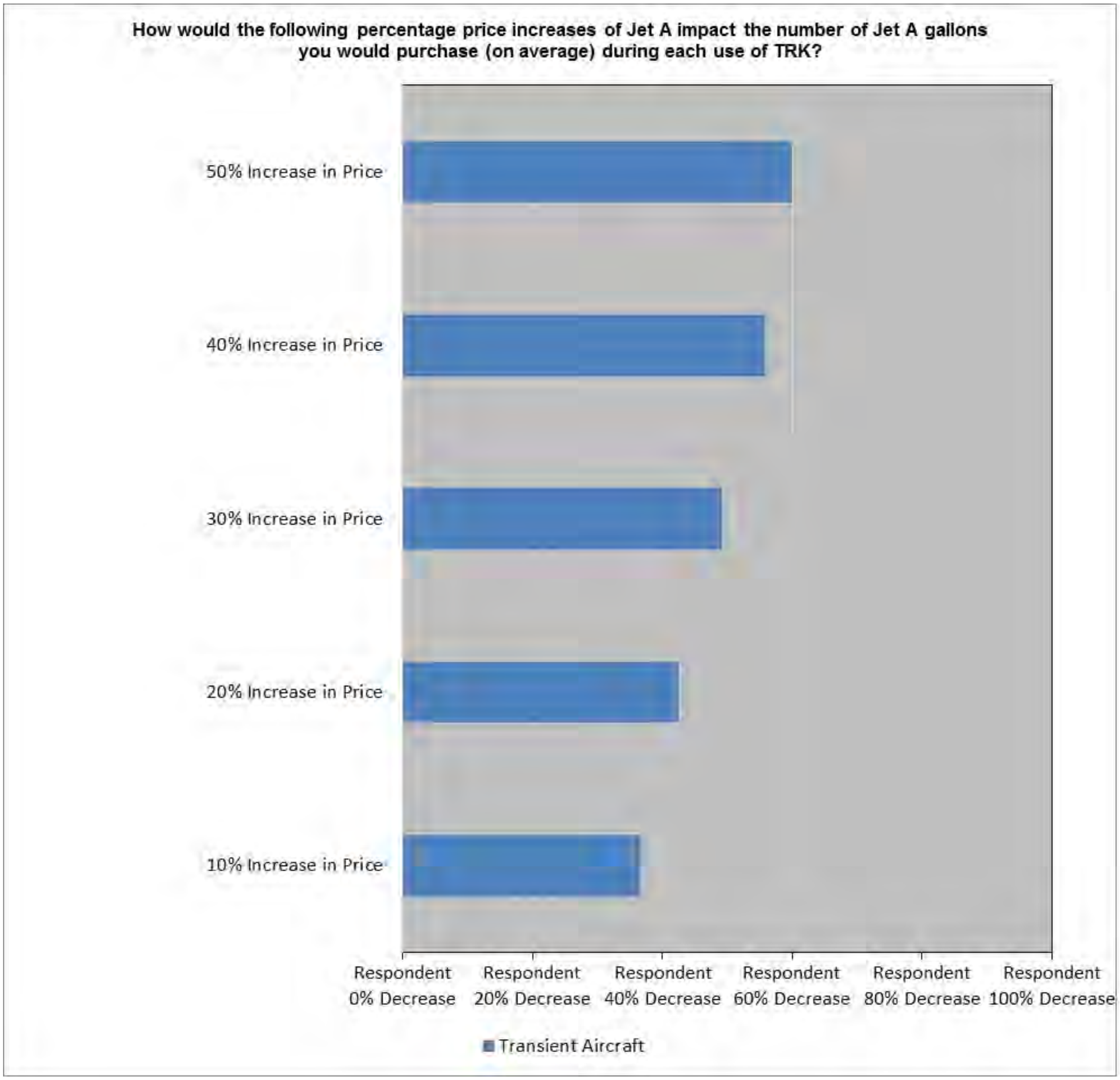


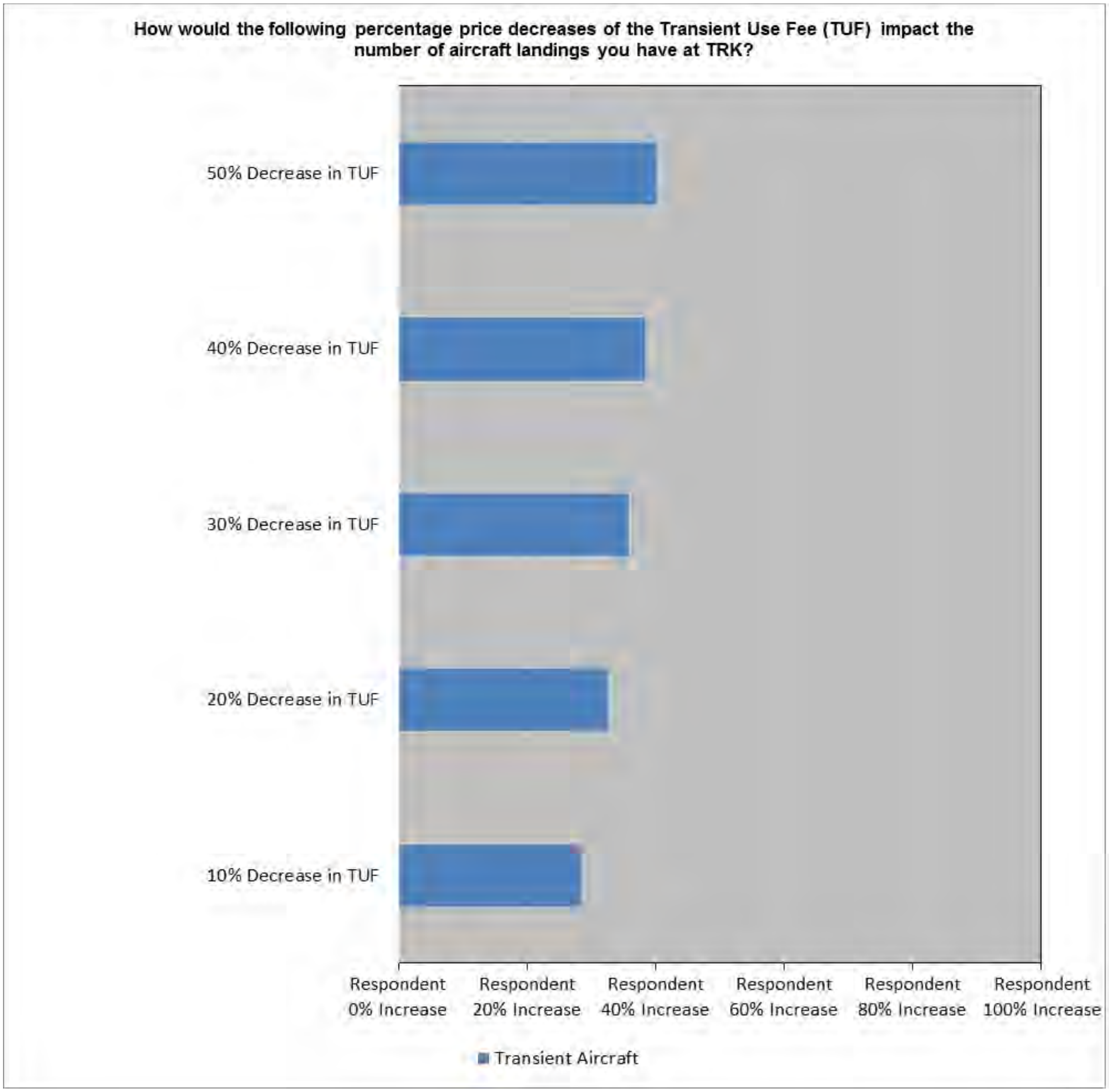
If you have (in the past) or plan (in the future) on using another airport other than TRK when flying to the Lake Tahoe area, what attributes would change your destination airport to TRK? (mark all that apply)
Increased Runway Length
Increased Runway Width
Increased Runway Weight Bearing Capacity
Tower Controller during Peak Periods
Availability of Clearance Delivery
Enhanced IFR Approach Procedures
Enhanced IFR Departure Procedures
Aircraft Deicing Services
Enhanced (Full-Service) On-Airport Camping
Other
0.00%
20.00%
40.00%
60.00%
80.00%
100.00%
Transient Aircraft

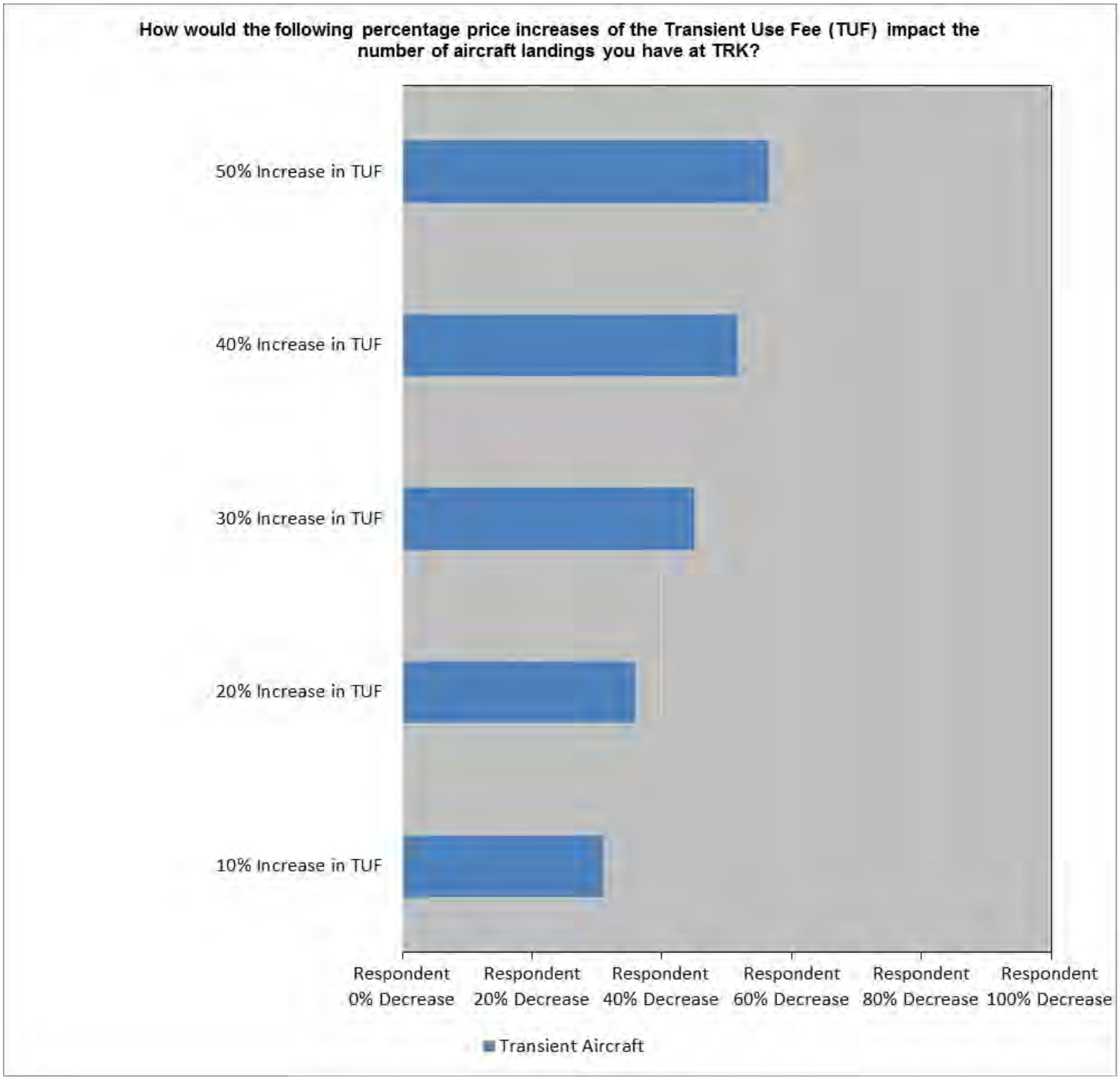

How would the following percentage price decreases of Jet A impact the number of aircraft landings you have at TRK?
50% Decrease in Price
40% Decrease in Price
30% Decrease in Price
20% Decrease in Price
10% Decrease in Price
Respondent 0% Increase
Respondent 20% Increase
Respondent 40% Increase
Respondent 60% Increase
Respondent 80% Increase
Respondent 100% Increase
Transient Aircraft


How would the following percentage price increases of Jet A impact the number of aircraft landings you have at TRK?
50% Increase in Price
40% Increase in Price
30% Increase in Price
20% Increase in Price
10% Increase in Price
Respondent 0% Decrease
Respondent 20% Decrease
Respondent 40% Decrease
Respondent 60% Decrease
Respondent 80% Decrease
Respondent 100% Decrease
Transient Aircraft


How would the following percentage price decreases of Jet A impact the number of Jet A gallons you would purchase (on average) during each use of TRK?
50% Decrease in Price
40% Decrease in Price
30% Decrease in Price
20% Decrease in Price
10% Decrease in Price
Respondent 0% Increase
Respondent 20% Increase
Respondent 40% Increase
Respondent 60% Increase
Respondent 80% Increase
Respondent 100% Increase
Transient Aircraft


How would the following percentage price increases of Jet A impact the number of Jet A gallons you would purchase (on average) during each use of TRK?
50% Increase in Price
40% Increase in Price
30% Increase in Price
20% Increase in Price
10% Increase in Price
Respondent 0% Decrease
Respondent 20% Decrease
Respondent 40% Decrease
Respondent 60% Decrease
Respondent 80% Decrease
Respondent 100% Decrease
Transient Aircraft


How would the following percentage price decreases of the Transient Use Fee (TUF) impact the number of aircraft landings you have at TRK?
50% Decrease in TUF
40% Decrease in TUF
30% Decrease in TUF
20% Decrease in TUF
10% Decrease in TUF
Respondent 0% Increase
Respondent 20% Increase
Respondent 40% Increase
Respondent 60% Increase
Respondent 80% Increase
Respondent 100% Increase
Transient Aircraft



Transient Aircraft Survey

What type of aircraft do you own/operate?

1. Piston Single Engine
2. Piston Multi Engine
3. Turboprop Single Engine
4. Turboprop Multi Engine
5. Jet (less than 12,500 pounds MTOW)
6. Jet (12,500 to 19,999 pounds MTOW)
7. Jet (20,000 to 49,999 pounds MTOW)
8. Jet (more than 50,000 MTOW)

How do you operate your aircraft?

1. Part 91
2. Part 91K

3. Part 135
4. Other

How many average landings per month do you make at TRK during winter and spring months (Nov to Apr)?

How many average landings per month do you make at TRK during summer and fall months (May to Oct)?

Which month of the year do you have the most landings at TRK?

1. January
2. February
3. March
4. April
5. May
6. June
7. July
8. August
9. September
10. October
11. November
12. December

During the peak month, how many landings (on average) do you make at TRK?

Do you, the aircraft owner, or your primary passengers own a primary residence in the Truckee/Lake Tahoe area?

1. Yes
2. No

How close is the primary residence to TRK?
1. 1 to 5 miles
2. 5 to 10 miles
3. 11 to 15 miles
4. 16 to 20 miles
5. 21 to 25 miles
6. 26 to 30 miles
7. 31 to 35 miles
8. 36 or more miles

Do you, the aircraft owner, or your primary passengers own a secondary residence in the Truckee/Lake Tahoe area?
1. Yes
2. NoHow close is the secondary residence to TRK?
1. 1 to 5 miles
2. 5 to 10 miles
3. 11 to 15 miles
4. 16 to 20 miles
5. 21 to 25 miles
6. 26 to 30 miles
7. 31 to 35 miles
8. 36 or more miles

Are you, the aircraft owner, or your primary passenger’s owners of a business in the Truckee/Lake Tahoe area?
1. Yes
2. No

How close is the business to TRK?
1. 1 to 5 miles
2. 5 to 10 miles
3. 11 to 15 miles
4. 16 to 20 miles
5. 21 to 25 miles
6. 26 to 30 miles
7. 31 to 35 miles
8. 36 or more miles

Do you, the aircraft owner, or your primary passengers do business in the Truckee/Lake Tahoe area?
1. Yes
2. No

How close is the business to TRK?
1. 1 to 5 miles
2. 5 to 10 miles
3. 11 to 15 miles
4. 16 to 20 miles
5. 21 to 25 miles
6. 26 to 30 miles
7. 31 to 35 miles
8. 36 or more miles

Is TRK your preferred airport in the Truckee/Lake Tahoe area?

1. Yes
2. No

If not TRK, which is your preferred airport in the Truckee/Lake Tahoe area?

1. Reno/Tahoe International Airport
2. Carson Airport
3. Reno/Stead Airport
4. Minden-Tahoe Airport
5. South Lake Tahoe Airport
6. Nevada County Airpark (Grass Valley)
7. Nervino Airport

What are the primary attributes of the other airports that make them a preferred airport?

Please rate each of the following existing airport attributes based on their importance for the reason you selected TRK as your preferred airport:

	Absolute Necessity	Very Important	Somewhat Important	Less Important	Not Important	N/A
Location to Local Residence	☐	☐	☐	☐	☐	☐
Location to Business/Customers	☐	☐	☐	☐	☐	☐
Location to Lake Tahoe	☐	☐	☐	☐	☐	☐
Location to Ski Resorts	☐	☐	☐	☐	☐	☐
General Aviation Terminal	☐	☐	☐	☐	☐	☐
Aircraft Storage (Availability)	☐	☐	☐	☐	☐	☐
Aircraft Storage (Pricing)	☐	☐	☐	☐	☐	☐
Number and Type of Approach Procedures	☐	☐	☐	☐	☐	☐
Number and Type of Departure Procedures	☐	☐	☐	☐	☐	☐
Runway Length	☐	☐	☐	☐	☐	☐
Runway Width	☐	☐	☐	☐	☐	☐
Runway Weight Bearing Capacity	☐	☐	☐	☐	☐	☐
Full Service Fueling (Availability)	☐	☐	☐	☐	☐	☐
Self Service Fueling (Availability)	☐	☐	☐	☐	☐	☐
Fuel Service (Pricing)	☐	☐	☐	☐	☐	☐

Aircraft Towing (Availability)	☐	☐	☐	☐	☐	☐
Ground Power (Availability)	☐	☐	☐	☐	☐	☐
Start Carts (Availability)	☐	☐	☐	☐	☐	☐
Aircraft Cleaning (Availability)	☐	☐	☐	☐	☐	☐
Aircraft Catering (Availability)	☐	☐	☐	☐	☐	☐
Lavatory Services (Availability)	☐	☐	☐	☐	☐	☐
Aircraft Maintenance & Repair (Availability)	☐	☐	☐	☐	☐	☐
ARFF (Capabilities)	☐	☐	☐	☐	☐	☐
Snow Removal (Capabilities)	☐	☐	☐	☐	☐	☐
Wildlife Control Initiatives	☐	☐	☐	☐	☐	☐
On-Airport Restaurant	☐	☐	☐	☐	☐	☐
On-Airport Recreation Trails	☐	☐	☐	☐	☐	☐
On-Airport Campsites	☐	☐	☐	☐	☐	☐

What impact would the following scenarios have on the number of aircraft landings you have at TRK?

	0% Increase	20% Increase	40% Increase	60% Increase	80% Increase	100% Increase
Increased Runway Length	☐	☐	☐	☐	☐	☐
Increased Runway Width	☐	☐	☐	☐	☐	☐
Increased Runway Weight Bearing Capacity	☐	☐	☐	☐	☐	☐
Tower Controller during Peak Periods	☐	☐	☐	☐	☐	☐
Availability of Clearance Delivery	☐	☐	☐	☐	☐	☐
Enhanced IFR Approach Procedures	☐	☐	☐	☐	☐	☐
Enhanced IFR Departure Procedures	☐	☐	☐	☐	☐	☐
Aircraft Deicing Services/Equipment	☐	☐	☐	☐	☐	☐
Aircraft Hangar for Pre-heat and/or Deicing	☐	☐	☐	☐	☐	☐
Enhanced (Full-Service) On-Airport Camping	☐	☐	☐	☐	☐	☐

What impact would the following scenarios have on the number of aircraft landings you have at TRK?

	0% Decrease	20% Decrease	40% Decrease	60% Decrease	80% Decrease	100% Decrease
Decreased Runway Length	☐	☐	☐	☐	☐	☐
Decreased Runway Width	☐	☐	☐	☐	☐	☐
Decreased Runway Weight Bearing Capacity	☐	☐	☐	☐	☐	☐
Full Service Fueling Only	☐	☐	☐	☐	☐	☐
Self Service Fueling Only	☐	☐	☐	☐	☐	☐
No Fueling Services	☐	☐	☐	☐	☐	☐
Elimination of Aircraft Towing	☐	☐	☐	☐	☐	☐
Elimination of Ground Power	☐	☐	☐	☐	☐	☐
Elimination of Start Carts	☐	☐	☐	☐	☐	☐
Elimination of Aircraft Cleaning	☐	☐	☐	☐	☐	☐
Elimination of Aircraft Catering	☐	☐	☐	☐	☐	☐
Elimination of Lavatory Services	☐	☐	☐	☐	☐	☐
Elimination of Aircraft Maintenance & Repair	☐	☐	☐	☐	☐	☐
Elimination of ARFF (Capabilities)	☐	☐	☐	☐	☐	☐
Elimination of Snow Removal (Capabilities)	☐	☐	☐	☐	☐	☐
Elimination of On-Airport Restaurant	☐	☐	☐	☐	☐	☐
Elimination of On-Airport Recreation Trails	☐	☐	☐	☐	☐	☐
Elimination of On-Airport Campsites	☐	☐	☐	☐	☐	☐

If you have (in the past) or plan (in the future) on using another airport other than TRK when flying to the Lake Tahoe area, what attributes would change your destination airport to TRK (mark all that apply).

1. Increased Runway Length
2. Increased Runway Width
3. Increased Runway Weight Bearing Capacity
4. Tower Controller during Peak Periods
5. Availability of Clearance Delivery
6. Enhanced IFR Approach Procedures
7. Enhanced IFR Departure Procedures
8. Aircraft Deicing Services
9. Enhanced (Full-Service) On-Airport Camping
10. Other

How would the following percentage price decreases of Jet A impact the number of aircraft landings you have at TRK?

	0% Increase	20% Increase	40% Increase	60% Increase	80% Increase	100% Increase
10% Decrease in Price	☐	☐	☐	☐	☐	☐
20% Decrease in Price	☐	☐	☐	☐	☐	☐
30% Decrease in Price	☐	☐	☐	☐	☐	☐
40% Decrease in Price	☐	☐	☐	☐	☐	☐
50% Decrease in Price	☐	☐	☐	☐	☐	☐

How would the following percentage price increases of Jet A impact the number of aircraft landings you have at TRK?

	0% Decrease	20% Decrease	40% Decrease	60% Decrease	80% Decrease	100% Decrease
10% Increase in Price	☐	☐	☐	☐	☐	☐
20% Increase in Price	☐	☐	☐	☐	☐	☐
30% Increase in Price	☐	☐	☐	☐	☐	☐
40% Increase in Price	☐	☐	☐	☐	☐	☐
50% Increase in Price	☐	☐	☐	☐	☐	☐

How would the following percentage price decreases of Jet A impact the number of Jet A gallons you would purchase (on average) during each use TRK?

	0% Increase	20% Increase	40% Increase	60% Increase	80% Increase	100% Increase
10% Decrease in Price	☐	☐	☐	☐	☐	☐
20% Decrease in Price	☐	☐	☐	☐	☐	☐
30% Decrease in Price	☐	☐	☐	☐	☐	☐
40% Decrease in Price	☐	☐	☐	☐	☐	☐
50% Decrease in Price	☐	☐	☐	☐	☐	☐

How would the following percentage price increases of Jet A impact the number of Jet A gallons you would purchase (on average) during each use TRK?

	0% Decrease	20% Decrease	40% Decrease	60% Decrease	80% Decrease	100% Decrease
10% Increase in Price	☐	☐	☐	☐	☐	☐
20% Increase in Price	☐	☐	☐	☐	☐	☐
30% Increase in Price	☐	☐	☐	☐	☐	☐
40% Increase in Price	☐	☐	☐	☐	☐	☐
50% Increase in Price	☐	☐	☐	☐	☐	☐

How would the following percentage price decreases of the Transient Use Fee (TUF) impact the number of aircraft landings you have at TRK?

	0% Increase	20% Increase	40% Increase	60% Increase	80% Increase	100% Increase
10% Decrease in TUF	☐	☐	☐	☐	☐	☐
20% Decrease in TUF	☐	☐	☐	☐	☐	☐
30% Decrease in TUF	☐	☐	☐	☐	☐	☐
40% Decrease in TUF	☐	☐	☐	☐	☐	☐
50% Decrease in TUF	☐	☐	☐	☐	☐	☐

How would the following percentage price increases of the Transient Use Fee (TUF) impact the number of aircraft landings you have at TRK?

	0% Decrease	20% Decrease	40% Decrease	60% Decrease	80% Decrease	100% Decrease
10% Increase in TUF	☐	☐	☐	☐	☐	☐
20% Increase in TUF	☐	☐	☐	☐	☐	☐
30% Increase in TUF	☐	☐	☐	☐	☐	☐
40% Increase in TUF	☐	☐	☐	☐	☐	☐
50% Increase in TUF	☐	☐	☐	☐	☐	☐

Based Aircraft Survey

What type of aircraft do you own/operate?
1. Piston Single Engine
2. Piston Multi Engine
3. Turboprop Single Engine
4. Turboprop Multi Engine
5. Jet (less than 12,500 pounds MTOW)
6. Jet (12,500 to 19,999 pounds MTOW)
7. Jet (20,000 to 49,999 pounds MTOW)
8. Jet (more than 50,000 MTOW)

How do you operate your aircraft?
1. Part 91
2. Part 91K
3. Part 135
4. Other

Select which one applies to you and your aircraft.
1. Aircraft is permanently based at TRK (e.g., do not have an aircraft storage facility at another airport)?
2. Aircraft is not permanently based at TRK (e.g., in addition to aircraft storage facility at TRK, have an aircraft storage facility at another airport)?
3. On TRK Aircraft Storage Facility Wait List (e.g., do not have an aircraft storage facility at TRK)

What type of aircraft storage facility to you rent/utilize at other airport(s)?
1. Apron
2. Tiedown
3. T-Hangar
4. Executive Hangar
5. Corporate Hangar
6. Community Hangar
7. Other

What type of aircraft storage facility do you rent at TRK?
1. Apron
2. Tiedown
3. T-Hangar
4. Executive Hangar
5. Other

Are you on the TRK Aircraft Storage Facility Wait List for a different type of aircraft storage facility or do you desire a different type of aircraft storage facility from your current?
1. Yes
2. No

What type of aircraft storage facility would you like to rent at TRK?
1. Apron
2. Tiedown
3. T-Hangar
4. Executive Hangar
5. Other

How many average landings per month do you make at TRK during winter and spring months (Nov to Apr)?

How many average landings per month do you make at TRK during summer and fall months (May to Oct)?

Which month of the year do you have the most landings at TRK?
1. January
2. February
3. March
4. April
5. May
6. June
7. July
8. August
9. September
10. October
11. November
12. December

During the peak month, how many landings (on average) do you make at TRK?

Is your primary residence in the Truckee/Lake Tahoe area?
1. Yes
2. No

How close is your primary residence to TRK?
1. 1 to 5 miles
2. 5 to 10 miles
3. 11 to 15 miles
4. 16 to 20 miles
5. 21 to 25 miles
6. 26 to 30 miles
7. 31 to 35 miles
8. 36 or more miles

Is your secondary residence in the Truckee/Lake Tahoe area?
1. Yes
2. No

How close is your secondary residence to TRK?
1. 1 to 5 miles
2. 5 to 10 miles
3. 11 to 15 miles
4. 16 to 20 miles
5. 21 to 25 miles
6. 26 to 30 miles
7. 31 to 35 miles
8. 36 or more miles

Do you own a business in the Truckee/Lake Tahoe area?

1. Yes
2. No

How close is your business to TRK?

1. 1 to 5 miles
2. 5 to 10 miles
3. 11 to 15 miles
4. 16 to 20 miles
5. 21 to 25 miles
6. 26 to 30 miles
7. 31 to 35 miles
8. 36 or more miles

Are you employed at a business in the Truckee/Lake Tahoe area?

1. Yes
2. No

How close is your business to TRK?

1. 1 to 5 miles
2. 5 to 10 miles
3. 11 to 15 miles
4. 16 to 20 miles
5. 21 to 25 miles
6. 26 to 30 miles
7. 31 to 35 miles
8. 36 or more miles

Do you do business in the Truckee/Lake Tahoe area?

1. Yes
2. No

How close is the business to TRK?

1. 1 to 5 miles
2. 5 to 10 miles
3. 11 to 15 miles
4. 16 to 20 miles
5. 21 to 25 miles
6. 26 to 30 miles
7. 31 to 35 miles
8. 36 or more miles

Before selecting TRK as your preferred airport to base your aircraft, what other airports (up to 3) did you consider?

1. Reno/Tahoe International Airport
2. Carson Airport
3. Reno/Stead Airport
4. Minden-Tahoe Airport
5. South Lake Tahoe Airport
6. Nevada County Airpark (Grass Valley)
7. Nervino Airport
8. Other Airport

What were the primary attributes of the other airports that made them a consideration?

Please rate each of the following existing airport attributes based on their importance for the reason you selected TRK to base your aircraft at the Airport:

	Absolute Necessity	Very Important	Somewhat Important	Less Important	Not Important	N/A
Location to Local Residence	☐	☐	☐	☐	☐	☐
Location to Business/Customers	☐	☐	☐	☐	☐	☐
Location to Lake Tahoe	☐	☐	☐	☐	☐	☐
Location to Ski Resorts	☐	☐	☐	☐	☐	☐
General Aviation Terminal	☐	☐	☐	☐	☐	☐
Aircraft Storage (Availability)	☐	☐	☐	☐	☐	☐
Aircraft Storage (Pricing)	☐	☐	☐	☐	☐	☐
Number and Type of Approach Procedures	☐	☐	☐	☐	☐	☐
Number and Type of Departure Procedures	☐	☐	☐	☐	☐	☐
Runway Length	☐	☐	☐	☐	☐	☐
Runway Width	☐	☐	☐	☐	☐	☐
Runway Weight Bearing Capacity	☐	☐	☐	☐	☐	☐
Full Service Fueling (Availability)	☐	☐	☐	☐	☐	☐
Self Service Fueling (Availability)	☐	☐	☐	☐	☐	☐
Fuel Service (Pricing)	☐	☐	☐	☐	☐	☐
Aircraft Towing (Availability)	☐	☐	☐	☐	☐	☐
Ground Power (Availability)	☐	☐	☐	☐	☐	☐
Start Carts (Availability)	☐	☐	☐	☐	☐	☐
Aircraft Cleaning (Availability)	☐	☐	☐	☐	☐	☐
Aircraft Catering (Availability)	☐	☐	☐	☐	☐	☐
Lavatory Services (Availability)	☐	☐	☐	☐	☐	☐
Aircraft Maintenance & Repair (Availability)	☐	☐	☐	☐	☐	☐

ARFF (Capabilities)	☐	☐	☐	☐	☐	☐
Snow Removal (Capabilities)	☐	☐	☐	☐	☐	☐
Wildlife Control Initiatives	☐	☐	☐	☐	☐	☐
On-Airport Restaurant	☐	☐	☐	☐	☐	☐
On-Airport Recreation Trails	☐	☐	☐	☐	☐	☐
On-Airport Campsites	☐	☐	☐	☐	☐	☐

What impact would the following scenarios have on the number of aircraft landings you have at TRK?

	0% Increase	20% Increase	40% Increase	60% Increase	80% Increase	100% Increase
Increased Runway Length	☐	☐	☐	☐	☐	☐
Increased Runway Width	☐	☐	☐	☐	☐	☐
Increased Runway Weight Bearing Capacity	☐	☐	☐	☐	☐	☐
Tower Controller during Peak Periods	☐	☐	☐	☐	☐	☐
Availability of Clearance Delivery	☐	☐	☐	☐	☐	☐
Enhanced IFR Approach Procedures	☐	☐	☐	☐	☐	☐
Enhanced IFR Departure Procedures	☐	☐	☐	☐	☐	☐
Aircraft Deicing Services	☐	☐	☐	☐	☐	☐
Enhanced (Full-Service) On-Airport Camping	☐	☐	☐	☐	☐	☐

What impact would the following scenarios have on the number of aircraft landings you have at TRK?

	0% Decrease	20% Decrease	40% Decrease	60% Decrease	80% Decrease	100% Decrease
Decreased Runway Length	☐	☐	☐	☐	☐	☐
Decreased Runway Width	☐	☐	☐	☐	☐	☐
Decreased Runway Weight Bearing Capacity	☐	☐	☐	☐	☐	☐
Full Service Fueling Only	☐	☐	☐	☐	☐	☐
Self Service Fueling Only	☐	☐	☐	☐	☐	☐
No Fueling Services	☐	☐	☐	☐	☐	☐
Elimination of Aircraft Towing	☐	☐	☐	☐	☐	☐
Elimination of Ground Power	☐	☐	☐	☐	☐	☐
Elimination of Start Carts	☐	☐	☐	☐	☐	☐
Elimination of Aircraft Cleaning	☐	☐	☐	☐	☐	☐
Elimination of Aircraft Catering	☐	☐	☐	☐	☐	☐
Elimination of Lavatory Services	☐	☐	☐	☐	☐	☐
Elimination of Aircraft Maintenance & Repair	☐	☐	☐	☐	☐	☐
Elimination of ARFF (Capabilities)	☐	☐	☐	☐	☐	☐
Elimination of Snow Removal (Capabilities)	☐	☐	☐	☐	☐	☐
Elimination of On-Airport Restaurant	☐	☐	☐	☐	☐	☐
Elimination of On-Airport Recreation Trails	☐	☐	☐	☐	☐	☐
Elimination of On-Airport Campsites	☐	☐	☐	☐	☐	☐

DEMAND DRIVERS STUDY

Appendix

Appendix D. **NON-AVIATION MARKET ASSESSMENT**

Appendix D. NON-AVIATION MARKET ASSESSMENT

Between September 28 and October 7, 2015, discussion occurred with 15 local leaders to gain an understanding of their perspective on the topics related to demand drivers of aviation at TRK. The discussions focused on the local leader's perceptions of what brings customers and constituents to the region, how they get to the area, along with perceived trends, influences and predictions for future Airport use.

Interviewees represented Chase International, Martis Camp, Oliver Real Estate, the Truckee Donner Chamber of Commerce, Tahoe Mountain Club, Town of Truckee, and Resort at Squaw Creek, Glenshire Devonshire Residents Association, Lahontan Community Association, Sugar Bowl Ski Resort, Mountain Area Preservation, Incline Village Visitors Association, North Lake Tahoe Resort Association, Carr Long Real Estate and Mountainside Partners. On-the-ground TRK operations staff were also interviewed to give their thoughts on people using the Airport. The following questions were asked:

- Who their constituency or customer base is?
- Why they visit the Truckee/Tahoe region?
- How they get to the area?
- If their constituency use the Airport?
- If their constituency use the Airport more or less than 10 years ago, what has driven that trend (internal or external to the Airport District)
- What might drive an increase or decrease in operations at TRK in the future?

The following tables present the answers from each organization (N/A signifies no answer was provided).

Figure D-1: How Would You Define Your Constituency/Customer Base?

Organization	Answer
Chase International	Real estate customers: local residents and 2nd homeowners.
Martis Camp	300 built homes with 100 under construction.
Oliver Real Estate	80 percent are 2nd home owners from the Bay Area.
Truckee Chamber	Hotel customers, visitors, 2nd homeowners
Tahoe Mountain Club	People not from Truckee Area, from Bay Area. Affluent.
Town of Truckee	Primary residents and second home owners within diverse economic sectors.
Resort at Squaw Creek	Hotel visitors, mostly from the Bay Area.
Glenshire Devonshire Residents Assoc.	80 percent are full time residents.
Lahontan Community Association	Majority are affluent 2nd homeowners (40 of 240 built are full time).
Sugar Bowl	Second homeowners and their guests.
Mountain Area Preservation	Membership base: Locals, second homeowners (30%), 50 yrs. old + up, retirees but working on engaging younger families.
Incline Village Visitors Association	Incline Village / Crystal Bay tourism businesses (non-membership based), lodging businesses, rental houses, VBRO.
Carr Long Real Estate	Young families from the Bay Area, second homeowners, wealthy.
North Lake Tahoe Resort Association	Visitors and businesses who serve visitors in North Lake Tahoe, Squaw Valley, North Star, and Donner Summit.
Mountainside Partners	90 percent second homeowners, $2M entry level price for houses. Most are from Silicon Valley, but seeing more from LA. High end cash buyers. Want and expect luxury.
TTAD Staff	• Today: vacationers, 2nd homeowners, people coming in for business (architects, engineers, etc.) • Changes: used to be more small planes, local pilots, military trainings • Today: younger crowd • Today: 50-70 year olds, corporate people

Figure D-2: What Brings Your Constituency To The Truckee-North Tahoe Area?

Organization	Answer
Chase International	Year-round recreation, ease of access (driving and flying), weather.
Martis Camp	Year-round family lifestyle.
Oliver Real Estate	Recreation and proximity to the Bay Area.
Truckee Chamber	Location and environment.
Tahoe Mountain Club	Second homes.
Town of Truckee	Truckee lifestyle.
Resort at Squaw Creek	Squaw Valley & Tahoe region.
Glenshire Devonshire Residents Assoc.	Glenshire's community, affordable housing for locals.
Lahontan Community Association	Affiliation with the golf club and Tahoe outdoor recreation at large.
Sugar Bowl	Sugar Bowl Resort.
Mountain Area Preservation	Quality of life, simplicity, access to nature.
Incline Village Visitors Association	Recreation, vacation in Lake Tahoe.
Carr Long Real Estate	Skiing.
North Lake Tahoe Resort Association	Recreation, scenic.
Mountainside Partners	Hiking, skiing, “cabin in the woods,” that is 100% luxurious. The summer experience is more popular now.
TTAD Staff	• Events, vacation, golf, business • Events: triathlons, Ironman, golf tournaments, ski races, tough mudder, Burning Man • Summer climate: more people come in summer

Figure D-3: How Does The Majority Of Your Constituency Travel To The Area?

Organization	Answer
Chase International	Driving (5-10 percent flying).
Martis Camp	40 percent fly sometimes to the Truckee Airport, 25 percent almost always.
Oliver Real Estate	Driving.
Truckee Chamber	Majority driving.
Tahoe Mountain Club	90 percent drive 10 percent fly.
Town of Truckee	Less than 5 percent fly, majority private auto.
Resort at Squaw Creek	70 percent drive from Bay Area, remainder fly into Reno.
Glenshire Devonshire Residents Assoc.	Driving.
Lahontan Community Association	Driving, but maybe around a quarter fly.
Sugar Bowl	75 percent drive, 25 percent fly.
Mountain Area Preservation	By car: from Bay Area.
Incline Village Visitors Association	By car.
Carr Long Real Estate	By car.
North Lake Tahoe Resort Association	By car.
Mountainside Partners	25 percent will use TRK and 65 percent will drive or fly to Reno. LA crowd is flying in to avoid drive to Mammoth.
TTAD Staff	• N/A

Figure D-4: Have you seen a change in the method of travel in the last 10 years? What do you think has driven the change?

Organization	Answer
Chase International	Not customer base. In general there seems to be an increase in aircraft operations.
Martis Camp	15 percent increase in use of airport, driven by completion of homes.
Oliver Real Estate	Not within customer base. General increase in flights.
Truckee Chamber	Increase in flights up from maybe a 95\5 percent split 10 years ago to 85\15 percent split today.
Tahoe Mountain Club	Maybe some increase in flying.
Town of Truckee	Yes, decreased overall flight - mostly decreased prop, some increase in jet.
Resort at Squaw Creek	No.
Glenshire Devonshire Residents Assoc.	No.
Lahontan Community Association	Yes, increased maybe 5 to 10 percent flying into TRK.
Sugar Bowl	No.
Mountain Area Preservation	No.
Incline Village Visitors Association	No.
Carr Long Real Estate	No.
North Lake Tahoe Resort Association	No. We are trying to bolster air travel to RNO and Sacramento but people still mostly drive here.
Mountainside Partners	I-80 traffic has gotten so bad over the past 5 years that people with means are looking for options to avoid this.
TTAD Staff	• N/A

Figure D-5: Does your constituency fly-in/fly-out of the Truckee Tahoe Airport?

Organization	Answer
Chase International	5 to 10 percent.
Martis Camp	Yes (25 to 40 perent).
Oliver Real Estate	Less than 10 percent.
Truckee Chamber	5-15 percent.
Tahoe Mountain Club	Yes, maybe 10 percent.
Town of Truckee	Less than 5 percent.
Resort at Squaw Creek	Very minimal, only one comes to mind.
Glenshire Devonshire Residents Assoc.	Very few pilots.
Lahontan Community Association	Yes.
Sugar Bowl	Yes.
Mountain Area Preservation	No (Surf Air as auction item at last event was a flop).
Incline Village Visitors Association	N/A.
Carr Long Real Estate	No.
North Lake Tahoe Resort Association	No, only the very wealthy set.
Mountainside Partners	25 percent will use TRK.
TTAD Staff	• N/A

Figure D-6: Have You Seen A Change In This Use Of The Airport In The Last 10 Years? What Do You Think Has Driven The Change?

Organization	Answer
Chase International	Changes external to the airport - KSL and Vail Resorts bringing in more long-haul national and international visitors.
Martis Camp	See previous.
Oliver Real Estate	Yes, increasing with luxury golf course communities, particularly around North Star, growth in luxury real estate market, and affluence of Bay Area customers.
Truckee Chamber	Surf Air and charter services, small improvements like bikes at the Airport.
Tahoe Mountain Club	Potential increase due to services like Surf Air.
Town of Truckee	Gone down, particularly in prop planes.
Resort at Squaw Creek	No.
Glenshire Devonshire Residents Assoc.	No.
Lahontan Community Association	Increase, economics.
Sugar Bowl	No.
Mountain Area Preservation	Yes. More use. More air travel, especially during the summer and holiday. Seems like there have been more events but not sure. Last 5 years I have been attended more meetings at the Airport terminal.
Incline Village Visitors Association	Yes. Airport has become more visible in the business and tourism side. Being involved in regional air service corporation (example).
Carr Long Real Estate	Yes, Martis Camp, Silicon Valley wealth impacts Truckee/Tahoe--we are an easy to access from Silicon Valley.
North Lake Tahoe Resort Association	Yes. Changes stem from wealth in the Bay Area and we have products (development and hotels, skiing, golf) that appeal to them. The rich are getting richer and that set likes the convenience of jet travel to the Truckee Airport over driving or flying to airport further away.
Mountainside Partners	Yes, absolutely more use, especially for business. Price of fuel contributes to increase in business use.
TTAD Staff	• Martis Camp, Lahonton, Ritz, businesses in Incline, Surf Air, Silicon Valley wealth--we are a direct correlation to wealth that grows in the Bay Area • Schedule: people who fly in for 2nd homes and vacation have flexible schedules so can come Thursday, leave Monday • More business use: people holding meetings at Airport, flying in for meetings for the day • Martis Camp/Lahonton has had huge impact on #'s, size and type of aircraft • Far less GA use, more corp. jet use, more expensive planes, more Cirrius' in the 100K-500K range versus $25K-100K range in the past

Figure D-7: Do You Think That There Have Been Any Changes At The Truckee Tahoe Airport That Have Caused Your Constituency To Use The Airport Facilities More?

Organization	Answer
Chase International	No.
Martis Camp	Yes.
Oliver Real Estate	Yes
Truckee Chamber	Yes.
Tahoe Mountain Club	Yes.
Town of Truckee	No.
Resort at Squaw Creek	N/A
Glenshire Devonshire Residents Assoc.	N/A
Lahontan Community Association	N/A
Sugar Bowl	N/A
Mountain Area Preservation	Yes.
Incline Village Visitors Association	N/A
Carr Long Real Estate	No. Terminal + Red Truck seem to drive visitors but can't say they are fly in people.
North Lake Tahoe Resort Association	N/A
Mountainside Partners	N/A
TTAD Staff	• N/A

Figure D-8: If Yes (To Previous Question), Please Specify Changes And Your Best Estimate Of Level Of Impact These Changes Have Caused On The Surrounding Community, If Any.

Organization	Answer
Chase International	N/A
Martis Camp	The longer runway has been a benefit, and deicing is on everyone's mind.
Oliver Real Estate	New terminal and TTAD creating public awareness of the ease of flying in and out of the Truckee Tahoe Airport.
Truckee Chamber	Time constraints, improving economy, ease of year-round flying, promotion of region, spill-over from Reno improvements, Truckee no longer in Tahoe's shadow.
Tahoe Mountain Club	Surf Air.
Town of Truckee	N/A
Resort at Squaw Creek	N/A
Glenshire Devonshire Residents Assoc.	N/A
Lahontan Community Association	N/A
Sugar Bowl	N/A
Mountain Area Preservation	The non-aviation uses planned, like Clear Capital, the free non-profit meeting room use, events at the Airport are driving use---not sure how this relates directly to flights but see more people at the Airport because of these activities and except this trend will continue.
Incline Village Visitors Association	N/A
Carr Long Real Estate	N/A
North Lake Tahoe Resort Association	N/A
Mountainside Partners	N/A
TTAD Staff	• N/A

Figure D-9: If You Think Your Constituency Uses The Airport Less Now Than In The Past, What Do You Think Has Caused This Change?

Organization	Answer
Chase International	N/A
Martis Camp	N/A
Oliver Real Estate	N/A
Truckee Chamber	N/A
Tahoe Mountain Club	N/A
Town of Truckee	Economics - a big portion of the last 10 years have been recession, cost of private plane ownership and use has gone up.
Resort at Squaw Creek	N/A
Glenshire Devonshire Residents Assoc.	N/A
Lahontan Community Association	N/A
Sugar Bowl	N/A
Mountain Area Preservation	N/A
Incline Village Visitors Association	N/A
Carr Long Real Estate	N/A
North Lake Tahoe Resort Association	Again, only the very wealthy use the Airport.
Mountainside Partners	N/A
TTAD Staff	• N/A

Figure D-10: For The Community In General (Not Just Your Constituency) What Do You Think Has Driven Demand At The Airport Over The Past 10 Years?

Organization	Answer
Chase International	Real estate development, especially during the low-interest period, new on-mountain projects at North Star & Squaw Valley.
Martis Camp	The growth in popularity of Truckee as a destination not just Tahoe - with new restaurants, tourist attractions, Truckee as a destination.
Oliver Real Estate	The recovery of the luxury real estate market starting in 2012 and the increase in wealth in the Bay Area tech industry.
Truckee Chamber	Real estate, improving economy, year-round promotion.
Tahoe Mountain Club	Real estate in the area, especially Martis Camp & Lahontan, wealthy clients fly instead of drive.
Town of Truckee	N/A
Resort at Squaw Creek	N/A
Glenshire Devonshire Residents Assoc.	High end developments like Martis Camp, Grays Crossing.
Lahontan Community Association	Economic, ease of use, proximity, fractional use flights.
Sugar Bowl	N/A
Mountain Area Preservation	Real estate, proximity to gated communities.
Incline Village Visitors Association	Income levels in the Bay Area lends to private plan services + planes in our area. Hassel of driving on I-80 might be driving people to use planes. The jet service offering are driving more flights.
Carr Long Real Estate	Martis Camp
North Lake Tahoe Resort Association	Stated earlier, wealth in the Bay spills over to jets at the local Airport. Also, the Airport has really done a good job reaching out in the community so more are aware of the services, which are very good! The staff and terminal are so professional, maybe this appeals to people and moves them to use the Airport more.
Mountainside Partners	Increase in business use. More coming for the summer now. Ritz building a beach club at Tahoe to accommodate for this luxury, growing market.
TTAD Staff	• N/A

Figure D-11: Do You Have An Opinion As To What Factors You Think Will Increase Or Decrease Use Of The Airport By Your Constituency In The Future?

Organization	Answer
Chase International	Weather (climate change), the housing market and national financial status.
Martis Camp	Deicing may decrease use because of repositioning, and more hangar space would allow for planes to be stored for a weekend.
Oliver Real Estate	As long as the Bay Area tech industry thrives, demand for the Airport will continue to rise.
Truckee Chamber	A better public transportation system once people arrive at the airport, second home owners bringing other visitors, remote workers bringing work events up.
Tahoe Mountain Club	Continued high-end development attracting more second home owners and remote-work primary homeowners using Airport for business and family.
Town of Truckee	Some high end second home development, limited to buildout of Grays Crossing and Old Greenwood within the Town of Truckee.
Resort at Squaw Creek	If commercial flights were provided to Truckee, that could affect Squaw Creek visitors.
Glenshire Devonshire Residents Assoc.	The economy, up or down, will increase or decrease traffic at the airport.
Lahontan Community Association	Economic factors.
Sugar Bowl	No.
Mountain Area Preservation	With non-aviation uses planned in the future, think there be more traffic, in the air and at the terminal--like Clear Capital. Perception is that Airport really wants to grow. There is general concern that Airport is growing too fast.
Incline Village Visitors Association	Clear Capital will have impacts on operations down the line. More activity, more traffic. Could be great partners on future events we want to bring to the area.
Carr Long Real Estate	Seems like more jets will come to Truckee in the future. More people aware of jets, of options to buy into services, how easy it is.
North Lake Tahoe Resort Association	I suspect that more people will use the Truckee Airport in the future. Tahoe will always be appealing to people, especially the wealthy. Now, home prices are so high only the very wealthy can afford them and this links to jet use, I believe. Also, it's no longer about second homeowners, these people (90% of them) are 3rd and 4th homeowners.
Mountainside Partners	Fractional products like SurfAir remind people of other options for transportation—even if they don't use SurfAir or other fractional air services, just knowing it is an options opens up alternative ways of getting to Tahoe.
TTAD Staff	• All external--high end home sales, gentrification of Truckee, events

DEMAND DRIVERS STUDY

Mead & Hunt

DEMAND DRIVERS STUDY

Mead & Hunt

Appendix F

Aircraft Dimensions

MANUFACTURER	AIRCRAFT MODEL	WING SPAN	LENGTH	TAIL HEIGHT	AIRCRAFT FIT
BEECHCRAFT	C33 DEBONAIR	21.8	25.5	8.25	FITS
GULFSTREAM	AA1 YANKEE	24.41	19.25	6.66	FITS
GULFSTREAM	AA1C LYNX	24.41	19.16	7.5	FITS
GULFSTREAM	AA1 C, T-CAT	24.41	19.16	7.5	FITS
GULFSTREAM	TR-2AA1B	24.41	19.16	7.5	FITS
GULFSTREAM	AA1B TRAINER	24.41	19.16	7.5	FITS
GULFSTREAM	AA1A TRAINER	24.41	19.16	7.5	FITS
MOONEY	M-18 MITE	26.16	17.58	6.16	FITS
BELLANCA	8GCBC SCOUT	26.2	22.8	8.7	FITS
WING DERRIN	D-1	29.06	23	8	FITS
PIPER	PA16 CLIPPER	29.16	20.08	6.16	FITS
SWIFT	GC-1B	29.25	20.75	6.08	FITS
PIPER	PA22-160 TRI-PACER	29.25	20.41	8.25	FITS
PIPER	PA22-150 TRI-PACER	29.25	20.33	8.25	FITS
PIPER	PA22-135 TRI-PACER	29.25	20.33	8.25	FITS
PIPER	PA20-135 PACER	29.25	20.33	6.08	FITS
PIPER	PA20-125 PACER	29.25	20.33	6.08	FITS
MAULE	M-4 180C ASTRO ROCKET	29.66	22.5	6.16	FITS
MAULE	M-4 220C STRATA ROCKET	29.66	22	6.16	FITS
MAULE	M-4 210C ROCKET	29.66	22	6.16	FITS
MAULE	M-4, M-4C JETASEN	29.66	22	6.16	FITS
PIPER	PA28-200R, RB ARROW	30	24.16	8	FITS
PIPER	PA28-180R, RB ARROW	30	24.16	8	FITS
BEECHCRAFT	SKIPPER	30	24	7	FITS
PIPER	PA28D-180 E, F, G	30	23.41	7.25	FITS
PIPER	PA28B, C CHEROKEE	30	23.25	7.25	FITS
PIPER	PA28C-160 CHEROKEE	30	23.25	7.25	FITS
PIPER	PA28C-150 CHEROKEE	30	23.25	7.25	FITS
PIPER	PA28-14 CHEROKEE CRU	30	23.25	7.25	FITS
PIPER	PA28B, C, D, E	30	23.25	7.25	FITS
PIPER	PA28-4 HIGH GROSS	30	23.25	7.25	FITS
PIPER	PA28 LOW GROSS	30	23.25	7.25	FITS
VARGA	MODEL 2180	30	21.16	7	FITS
VARGA	2150A KACHINA	30	21.16	7	FITS
MOONEY	M-10 CABET	30	20.66	7.66	FITS
AIRCOUPE-AL	A-2	30	20.25	5.1	FITS
AIRCOUPE-AL	F-1	30	20.1	6.25	FITS
AIRCOUPE-AL	415-G	30	20.1	6.25	FITS
MOONEY	A2-A CABET	30	20	6.25	FITS
PIPER	PA22-108 COLT	30	20	6.25	FITS
ROCKWELL	MODEL 200	30.41	24.41	8.41	FITS
ROCKWELL	200 B	30.41	24.33	8.5	FITS
ROCKWELL	200 D	30.5	24.33	7.33	FITS
MAULE	M-5 235C	30.83	23.5	6.33	FITS

MANUFACTURER	AIRCRAFT MODEL	WING SPAN	LENGTH	TAIL HEIGHT	AIRCRAFT FIT
MAULE	M-5 220C LUNAR ROCKET	30.83	23.16	6.33	FITS
MAULE	M-5 210 LUNAR ROCKET	30.83	22.75	6.33	FITS
BELLANCA	ARIES T-250	31.3	26.2	8.6	FITS
GULFSTREAM	AA5 TRAVELER	31.41	22	8	FITS
GULFSTREAM	AA5B TIGER	31.5	22	7.58	FITS
GULFSTREAM	AA5B CHEETAH	31.5	22	7.5	FITS
RALLYE	235 GT	31.91	23.75	9.16	FITS
RALLYE	100 GT	31.91	23.75	9.16	FITS
RALLYE	150 ST	31.91	23.75	9.16	FITS
RALLYE	100 SM/100 T	31.91	23.08	9.16	FITS
PIPER	PA28-200R ARROW II	32	24.5	8	FITS
PIPER	PA28-235 PATHFINDER	32	24.08	7.41	FITS
PIPER	PA28-235 CHARGER	32	24.08	7.66	FITS
PIPER	PA28-180 CHALLENGER	32	24	7.66	FITS
PIPER	PA-235B CHEROKEE	32	23.66	7.25	FITS
PIPER	PA28-235 C, D, E, F	32	23.58	7.25	FITS
BELLANCA	8KCAB-180 DECATHION	32	22.9	7.7	FITS
BELLANCA	8KCAB-150 DECATHION	32	22.9	7.7	FITS
GULFSTREAM	112A	32.16	24.83	8.41	FITS
GULFSTREAM	MODEL 112	32.16	24.83	8.41	FITS
BEECHCRAFT	SUPER III MUSKETEER	32.6	25.1	8.2	FITS
BEECHCRAFT	CUSTOM III MUSKETEER	32.6	25.1	8.2	FITS
BEECHCRAFT	A23 A23A MUSKETEER	32.6	25.1	8.2	FITS
BEECHCRAFT	23 MUSKETEER	32.6	25.1	8.2	FITS
BEECHCRAFT	A23-19 SPORT III MUSKETR	32.6	25.1	8.2	FITS
PIPER	PA32-300B, C, D, E	32.66	27.58	7.75	FITS
PIPER	PA32-260	32.66	27.58	8.16	FITS
PIPER	PA32-260 C, D, E	32.66	27.58	7.75	FITS
CESSNA	150E, F, G	32.66	23.75	8.45	FITS
CESSNA	MODEL 140	32.66	20.75	6.25	FITS
CESSNA	MODEL 120	32.66	20.75	6.25	FITS
BEECHCRAFT	33 DEBONAIR	32.7	25.5	8.25	FITS
BEECHCRAFT	C24 SIERRA 200	32.75	25.75	8.1	FITS
BEECHCRAFT	C23 SUNDOWNER	32.75	25.75	8.25	FITS
BEECHCRAFT	B19 SPORT 150	32.75	25.75	8.25	FITS
BEECHCRAFT	B24 SIERRA 200	32.75	25.7	8.25	FITS
BEECHCRAFT	A24R SIERRA RG	32.75	25.7	8.25	FITS
BEECHCRAFT	G33 BONANZA	32.75	25.5	8.25	FITS
BEECHCRAFT	F&E 33C BONANZA CONV.	32.75	25.5	8.25	FITS
BEECHCRAFT	J35 BONANZA	32.75	25.1	6.5	FITS
BEECHCRAFT	H35 BONANZA	32.75	25.1	6.5	FITS
BEECHCRAFT	E.F.G. 35 BONANZA	32.75	25.1	6.5	FITS
BEECHCRAFT	C.D. 35 BONANZA	32.75	25.1	6.5	FITS
BEECHCRAFT	AB 35 BONANZA	32.75	25.1	6.5	FITS

MANUFACTURER	AIRCRAFT MODEL	WING SPAN	LENGTH	TAIL HEIGHT	AIRCRAFT FIT
BEECHCRAFT	35 BONANZA	32.75	25.1	6.5	FITS
GULFSTREAM	114A GRAN TURISMO	32.75	25.08	8.41	FITS
GULFSTREAM	MODEL 114	32.75	25.08	8.41	FITS
GULFSTREAM	MODEL 114	32.75	25.08	8.41	FITS
CESSNA	150 FLOAT	32.75	24.1	9.1	FITS
CESSNA	A150L AEROBAT	32.75	23.75	8	FITS
BEECHCRAFT	E33A BONANZA CONV TAIL	32.8	25.5	8.25	FITS
BEECHCRAFT	F&E BONANZA CONV TAIL	32.8	25.5	8.25	FITS
BEECHCRAFT	C33A DEBONAIR	32.8	25.5	8.25	FITS
BEECHCRAFT	AB33 DEBONAIR	32.8	25.5	8.25	FITS
PIPER	PA32RT-300T TURBO LANCE	32.83	29	9.5	FITS
PIPER	PA32R, RT II-300 LANCE	32.83	28.66	9.5	FITS
PIPER	PA32-300	32.83	27.66	8.16	FITS
CESSNA	150L	33.16	23.75	8	FITS
CESSNA	150M, A150M AEROBAT	33.2	23.9	8.5	FITS
NAVON	B	33.25	27.25	8.41	FITS
NAVON	A	33.25	27.25	8.41	FITS
CESSNA	150, A152	33.25	24.1	8.5	FITS
CESSNA	140A	33.25	20.75	6.25	FITS
CESSNA	150A, B, C	33.33	21.1	6.11	FITS
CHAMPION	7GCAA	33.41	22.66	6.66	FITS
CHAMPION	7ECA	33.41	22.25	6.58	FITS
BELLANCA	7 ECA CITABRIA	33.45	22.7	7.7	FITS
BELLANCA	7KCAB CITABRIA	33.45	22.7	7.7	FITS
CHAMPION	7KCAB CITRIA	33.45	22.66	6.83	FITS
BEECHCRAFT	A36 TC BONANZA	33.5	27.5	8.5	FITS
BEECHCRAFT	A36 BONANZA	33.5	27.5	8.5	FITS
BEECHCRAFT	F33A	33.5	26.7	8.25	FITS
BEECHCRAFT	V35B BONANZA	33.5	26.5	7.65	FITS
BEECHCRAFT	36 BONANZA	33.5	26.4	8.5	FITS
BEECHCRAFT	V35A & B-TC BONANZA	33.5	26.4	6.5	FITS
BEECHCRAFT	V35A BONANZA	33.5	26.4	6.5	FITS
BEECHCRAFT	V35 TC BONANZA	33.5	26.4	6.5	FITS
BEECHCRAFT	V35 BONANZA	33.5	26.4	6.5	FITS
BEECHCRAFT	S35 BONANZA	33.5	26.4	6.5	FITS
BEECHCRAFT	N.P. BONANZA	33.5	25.2	6.5	FITS
BEECHCRAFT	K.M. BONANZA	33.5	25.1	6.5	FITS
BELLANCA	7GCAA CITABRIE	33.5	22.7	7.7	FITS
CESSNA	MODEL 150	33.66	21	6.1	FITS
STINSON	108-3	34	25.16	7.41	FITS
STINSON	108-1	34	25.16	7.41	FITS
LAKE	C-VI AMPHIBIAN	34	23.5	8.08	FITS
LAKE	C-I AMPHIBIAN	34	23.5	8.08	FITS
PIPER	PA38 TOMAHAWK	34	23.08	9.08	FITS

MANUFACTURER	AIRCRAFT MODEL	WING SPAN	LENGTH	TAIL HEIGHT	AIRCRAFT FIT
BELLANCA	17-31 ATC TURBO 300 LY	34.2	26.3	7.3	FITS
BELLANCA	17-31 A	34.2	26.3	7.3	FITS
BELLANCA	17-30A	34.2	26.3	7.3	FITS
BELLANCA	17-30A 300 CONT.	34.2	26.3	7.3	FITS
BELLANCA	17-31 TC SUPER VIKING	34.2	23.6	7.3	FITS
BELLANCA	17-30-300 VIKING CONT.	34.2	23.6	7.5	FITS
BELLANCA	14-19-3A. 260 A.B.C.	34.2	23.5	6.5	FITS
BELLANCA	14-19 CRUISEMASTER	34.2	23	6.2	FITS
BELLANCA	14-19-2 CRUISEMASTER	34.2	22.75	6.2	FITS
BELLANCA	14-13 CRUISEMASTER SR	34.2	21.2	6.2	FITS
CHAMPION	7GCAB CITRIA	34.25	22.58	6.58	FITS
NAVON	G, G-1 RANGER	34.41	27.41	8.41	FITS
CHAMPION	7GCB SKYTRAC	34.5	22.75	6.1	FITS
BELLANCA	7GCBC CITABRIE	34.5	22.7	7.7	FITS
BELLANCA	7GCBC CITABRIE W/FLOAT	34.5	22.7	9.66	FITS
LUSCOMBE	8E	34.58	19.66	6.08	FITS
LUSCOMBE	8A	34.58	19.66	6.08	FITS
NAVON	H RANGER MASTER	34.75	27.41	8.5	FITS
ROCKWELL	A-9B QUAIL	34.75	23.5	7.58	FITS
MOONEY	M-22 PRESSURIZED	35	26.08	9.16	FITS
PIPER	PA28-201T TURBO DAKOTA	35	25	7.58	FITS
ROCKWELL	100-180 LARK	35	24.75	10.08	FITS
MOONEY	M-20G STATESMAN	35	24.25	8.33	FITS
ROCKWELL	A9, B1 AG COMMANDER	35	24	8	FITS
PIPER	PA28-181 ARCHER II	35	23.81	7.41	FITS
PIPER	PA28-161 WARRIOR	35	23.81	7.33	FITS
PIPER	PA28-151 WARRIOR	35	23.66	7.25	FITS
ROCKWELL	A-9A SPARROW	35	23.5	9.33	FITS
MOONEY	M-20C RANGER	35	23.25	8.33	FITS
MOONEY	M-20E CHAPARREL	35	23.16	8.33	FITS
ROCKWELL	100 DARTER	35	22.5	9.33	FITS
ROCKWELL	MODEL 100	35	22.5	9.33	FITS
AERONCA	7 CCM	35	21.5	8.75	FITS
AERONCA	7DC CHAMP	35	21.5	8.75	FITS
LUSCOMBE	8F	35	20	6.25	FITS
BELLANCA	7ACA CHAMPION	35.1	21.9	7	FITS
CHAMPION	7EC TRAVELER	35.1	21.5	7	FITS
PIPER	PA11	35.16	22.33	6.66	FITS
PIPER	J3 CUB	35.16	22.33	6.66	FITS
PIPER	PA18-150 SUPER CUB FL	35.25	23.75	10.25	FITS
PIPER	PA18-135 SUPER CUB	35.25	22.41	6.58	FITS
PIPER	PA18-125 SUPER CUB	35.25	22.41	6.58	FITS
PIPER	PA18-95 SUPER CUB	35.25	22.41	6.58	FITS
PIPER	PA12 SUPER CRUISER	35.33	22.75	6.75	FITS

MANUFACTURER	AIRCRAFT MODEL	WING SPAN	LENGTH	TAIL HEIGHT	AIRCRAFT FIT
PIPER	PA18-150 SUPER CUB	35.33	22.5	6.66	FITS
PIPER	PA14 CRUISER	35.33	12.08	6.33	FITS
PIPER	PA28R, RT, 201 TURB ARRO	35.41	27.33	8.33	FITS
PIPER	PA28R-201 ARROW III	35.41	27	8.33	FITS
CHAMPION	7GCAB CITRIA FLOATS	35.41	22.58	6.66	FITS
CHAMPION	402 TWIN LANCER	35.41	22.25	10	FITS
CESSNA	177RG CARDINAL	35.5	27.25	8.58	FITS
CESSNA	177A CARDINAL	35.58	27	9.1	FITS
GULFSTREAM	112TC, A ALPINE	35.58	25.08	8.41	FITS
GULFSTREAM	112B	35.58	25.08	8.41	FITS
PIPER	PA28-236 DAKOTA	35.58	24.66	7.16	FITS
GULFSTREAM	G164A-300 AG CAT	35.66	24.33	10.75	FITS
GULFSTREAM	G164A-275 AG CAT	35.66	24.33	10.75	FITS
GULFSTREAM	G164A-245 AG CAT	35.66	24.33	10.75	FITS
GULFSTREAM	G164A-220 AG CAT	35.66	24.33	10.75	FITS
CESSNA	310 B	35.75	26	10.5	FITS
CESSNA	TU TURBO 206E & F	35.83	28.75	9.58	FITS
CESSNA	TU 206 E & F SKI	35.83	28.66	9.66	FITS
CESSNA	U206 E SKI SUPER SKYWGN	35.83	28.66	9.66	FITS
CESSNA	R182 II RG TURBO SKYLANE	35.83	28.66	8.9	FITS
CESSNA	R182 RG SKYLANE	35.83	28.66	8.9	FITS
CESSNA	T-182Q II TURBO SKYLANE	35.83	28.41	9.25	FITS
CESSNA	TU TURBO 206G	35.83	28.25	9.33	FITS
CESSNA	U206 F & G	35.83	28.25	9.33	FITS
CESSNA	U206 F SKI	35.83	28	9.66	FITS
CESSNA	182Q II >81	35.83	28	9.25	FITS
CESSNA	182Q II >81	35.83	28	9.25	FITS
CESSNA	A185F SKI	35.83	27.83	7.75	FITS
CESSNA	180 SKI	35.83	27.83	7.75	FITS
CESSNA	172 RG II CUTLESS	35.83	27.45	8.83	FITS
CESSNA	R172 K, HAWK XP	35.83	27.45	8.83	FITS
CESSNA	172 M FLOAT 74-76	35.83	27	9.9	FITS
CESSNA	A185F SKYWAGON	35.83	25.66	7.75	FITS
CESSNA	180 J, K, LAND	35.83	25.66	7.75	FITS
CESSNA	172 SKYHAWK	35.9	26.9	8.83	FITS
GULFSTREAM	G164A-450 AG CAT	35.91	24.33	11	FITS
CESSNA	310 CD FUEL INJ.	36	29.45	9.75	FITS
CESSNA	172C	36	26.45	8.5	FITS
CESSNA	182 A, B, C, D	36	26	8.41	FITS
CESSNA	MODEL 182	36	26	8.41	FITS
CESSNA	180 A - F	36	26	7.45	FITS
CESSNA	MODEL 180	36	26	7.45	FITS
CESSNA	180 G, H	36	25.66	7.5	FITS
PIPER	PA24-400 COMANCHE	36	25.66	7.08	FITS

MANUFACTURER	AIRCRAFT MODEL	WING SPAN	LENGTH	TAIL HEIGHT	AIRCRAFT FIT
PIPER	PA24-C260 COMANCHE	36	25.66	7.08	FITS
LANCAIR	COLUMBIA 400	36	25.5	9	FITS
CESSNA	185E SKYWAGON	36	25.5	7.5	FITS
PIPER	PA24-260, B260	36	25.25	7.25	FITS
PIPER	PA39 C,R TWIN COMANCHE	36	25.16	8.16	FITS
PIPER	PA30B TWIN COMANCHE	36	25.16	7.25	FITS
PIPER	PA30C TWIN COMANCHE	36	25.08	8.16	FITS
CESSNA	MODEL 175	36	25	8.5	FITS
CESSNA	172A	36	25	8.45	FITS
CESSNA	170A, B	36	25	6.5	FITS
PIPER	PA24-180 COMANCHE	36	24.75	7.25	FITS
PIPER	PA24-250, COMANCHE	36	24.08	7.25	FITS
TAYLORCRAFT	F-21	36	22.25	6.5	FITS
TAYLORCRAFT	F-19 SPORTSMAN 100	36	22.08	6.5	FITS
AERONCA	11 CC SUPER CHIEF	36	20.7	8.75	FITS
MOONEY	231 M20K TURBO	36.08	25.41	8.33	FITS
MOONEY	20J, 201	36.08	24.66	8.33	FITS
CESSNA	310 A	36.1	27.1	10.45	FITS
AERONCA	11AC CHIEF	36.1	20.33	8.75	FITS
PIPER	PA32R-301T TURBO SARA.	36.16	28.33	8.5	FITS
PIPER	PA32-301 TURBO SARATOG	36.16	28.16	8.16	FITS
PIPER	PA32R-301 SARATOGA	36.16	27.66	8.5	FITS
PIPER	PA32-301 SARATOGA	36.16	27.66	8.16	FITS
PIPER	PA25-150 PAWNEE	36.16	27.58	7.16	FITS
CESSNA	172 I SKYHAWK	36.16	26.9	8.9	FITS
PIPER	PA25-235C, D PAWNEE	36.16	24.66	7.16	FITS
PIPER	PA25-260C, D PAWNEE	36.16	24.58	7.16	FITS
CESSNA	182 J, K, L, M	36.2	28.41	8.1	FITS
CESSNA	182N SKYLANE	36.2	28.1	8.75	FITS
CESSNA	182 E, F, G, H	36.2	27.33	9	FITS
CESSNA	195B	36.2	27.25	7.2	FITS
CESSNA	195A	36.2	27.25	7.2	FITS
CESSNA	MODEL 195	36.2	27.25	7.2	FITS
CESSNA	MODEL 190	36.2	27.25	7.2	FITS
CESSNA	172D, E, F, G, H	36.2	26.5	8.9	FITS
CESSNA	A185E SKYWAGON	36.2	25.5	7.75	FITS
CESSNA	P206 SUPER SKY LANE	36.5	28.2	9.66	FITS
CESSNA	210 B, C TWO TEN	36.5	27.25	9.58	FITS
CESSNA	210 A TWO TEN	36.5	27.25	9.58	FITS
CESSNA	205A	36.5	27.25	9.58	FITS
CESSNA	U206 B, C & E SKYWAGON	36.58	28.66	9.58	FITS
CESSNA	210 D & E CENTURION	36.58	28.33	9.75	FITS
CESSNA	TP 206A - E	36.58	28.25	9.66	FITS
CESSNA	P206 A - E	36.58	28.25	9.66	FITS

MANUFACTURER	AIRCRAFT MODEL	WING SPAN	LENGTH	TAIL HEIGHT	AIRCRAFT FIT
CESSNA	T210F TURBO CENTURION	36.58	28	9.75	FITS
CESSNA	210 F CENTURION	36.58	28	9.75	FITS
CESSNA	U206A	36.58	27.75	9.75	FITS
CESSNA	TU 206 A, B & C	36.58	27.66	9.75	FITS
CESSNA	206, U206 SUPER WAGON	36.58	17.75	9.75	FITS
PIPER	PA39 C, R TURBO TWN COM	36.66	25.16	8.16	FITS
PIPER	PA30C TURBO TWIN COMAN	36.66	25.16	8.16	FITS
PIPER	PA-30B TURBO TWIN COM.	36.66	25.16	7.25	FITS
GULFSTREAM	GA7 COUGAR TWIN	36.75	29.58	10.33	FITS
CESSNA	320D, E & F SKYNIGHT TRBO	36.75	29.5	10.33	FITS
CESSNA	320 A, B, C SKYNIGHT	36.75	29.5	10.25	FITS
CESSNA	T 310 Q II TURBO	36.75	29.5	10.33	FITS
CESSNA	310 Q	36.75	29.5	10.33	FITS
CESSNA	320 SKYKNIGHT	36.75	29.45	10.25	FITS
CESSNA	310 FG FUEL INJ.	36.75	29.45	9.75	FITS
CESSNA	T 310 P II TURBO	36.75	29.25	10.33	FITS
CESSNA	310 P	36.75	29.2	10.33	FITS
CESSNA	210G, H, & J CENTURION	36.75	28.25	9.66	FITS
CESSNA	T210K TURBO CENTURION	36.75	28.25	9.66	FITS
CESSNA	T210G, H, J TURBO CENTUR.	36.75	28.25	9.58	FITS
CESSNA	P210N II PRESSURIZED	36.75	28.2	9.66	FITS
CESSNA	210 K, M & N	36.75	28.2	9.66	FITS
CESSNA	T210 L & M TURBO	36.75	28.2	9.45	FITS
CESSNA	T210N TURBO CENTURION	36.75	28.2	9.66	FITS
CESSNA	310 IJ FUEL INJ.	36.9	29.5	9.9	FITS
CESSNA	310 KLN FUEL INJ.	36.9	29.45	9.9	FITS
PIPER	PA-23B AZTEC	37.08	27.58	10.2	FITS
PIPER	PA23-325 APACHE	37.08	27.58	10.25	FITS
PIPER	PA23-160G, H APACHE	37.08	27.33	9.5	FITS
PIPER	PA23-150 APACHE	37.08	27.33	9.5	FITS
BEECHCRAFT	B95A, D95A TRAVEL AIR	37.1	25.25	9.5	FITS
BEECHCRAFT	E95 TRAVEL AIR	37.1	25.1	9.5	FITS
PIPER	PA-23C, D TURBO AZTEC	37.16	30.16	10.25	FITS
PIPER	PA-23C AZTEC	37.16	30.16	10.25	FITS
CESSNA	310 H FUEL INJ.	37.45	29.45	9.75	FITS
AERONCA	15 AC SEDAN	37.5	25.25	10.25	FITS
BEECHCRAFT	A55 BARON	37.7	26.5	9.6	FITS
BEECHCRAFT	55 BARON	37.7	25.6	9.5	FITS
BEECHCRAFT	58 P BARON	37.75	30	9.2	FITS
BEECHCRAFT	95, B95 TRAVEL AIR	37.75	25.25	9.5	FITS
BEECHCRAFT	58 TC BARON 325	37.8	29.9	9.2	FITS
BEECHCRAFT	58 BARON	37.8	29.9	9.5	FITS
BEECHCRAFT	A56TC BARON	37.8	29	9.25	FITS
BEECHCRAFT	E50 BARON	37.8	29	9.2	FITS

MANUFACTURER	AIRCRAFT MODEL	WING SPAN	LENGTH	TAIL HEIGHT	AIRCRAFT FIT
BEECHCRAFT	56TC BARON	37.8	28.25	9.6	FITS
BEECHCRAFT	C55 D55 BARON	37.8	28.25	9.6	FITS
BEECHCRAFT	B55 BARON	37.8	27	9.7	FITS
BEECHCRAFT	B55 BARON 73 AND UP	37.87	28	9.6	FITS
CESSNA	T337 D SKYMASTER TURBO	38	29.83	9.33	FITS
CESSNA	T337 C SKYMASTER TURBO	38	29.83	9.33	FITS
CESSNA	336 SKYMASTER FIXED GE	38	29.58	9.33	FITS
CESSNA	T337 B SKYMASTER TURBO	38	29.1	9.33	FITS
BEECHCRAFT	76 DUCHESS	38	29	9.5	FITS
PIPER	PA36-375 BRAVE	38	27.5	7.5	FITS
LAKE	LA-4 AMPHIBIAN	38	24.91	9.33	FITS
LAKE	LA-4 SEAPLANE	38	24.91	8.41	FITS
LAKE	LA-4 TURBO LAKE	38	24.91	9.33	FITS
LAKE	LA-4 200 BUCCANEER	38	24.91	9.33	FITS
CESSNA	T337 G-PII, HP SKYMASTER	38.2	29.83	9.2	FITS
CESSNA	T337 H-II TURBO	38.2	29.83	9.2	FITS
CESSNA	T337 E&F SKYMASTR TURBO	38.2	29.83	9.33	FITS
CESSNA	337 G, H II SKYMASTER	38.2	29.75	9.2	FITS
CESSNA	337 F SKYMASTER	38.2	29.75	9.33	FITS
CESSNA	337 E SKYMASTER	38.2	29.75	9.33	FITS
CESSNA	337 D SKYMASTER	38.2	29.75	9.33	FITS
CESSNA	337 C SKYMASTER	38.2	29.75	9.33	FITS
CESSNA	337 B SKYMASTER	38.2	29.75	9.33	FITS
CESSNA	337 A SKYMASTER	38.2	29.75	9.33	FITS
PIPER	PA44-180T TURBO SEMINOL	38.58	27.58	8.5	FITS
PIPER	PA44-180 SEMINOLE	38.58	27.58	8.5	FITS
PIPER	PA36-300 BRAVE	38.81	26.81	7.5	FITS
PIPER	PA34-220T SENECA III	38.91	28.58	9.91	FITS
PIPER	PA34-220TC, R TURBO SEN.	38.91	28.58	9.91	FITS
PIPER	PA34-220TC, R SENECA	38.91	28.5	9.91	FITS
PIPER	PA34-200C, R SENECA	38.91	28.5	9.91	FITS
PIPER	PA36-285 BRAVE	39	27.33	7.41	FITS
PILATUS	PC 9	33.41	33.33	10.66	FITS
PILATUS	PC 7 TURBO TRAINER	34.08	32.08	10.5	FITS
PIPER	PA-601A AEROSTAR	34.16	34.83	12.08	FITS
PIPER	PA-23F TURBO AZTEC	34.33	31.16	10.08	FITS
PIPER	PA-23F AZTEC	34.33	31.16	10.08	FITS
CESSNA	T207 TURBO STATIONAIR	35.83	32.2	9.58	FITS
CESSNA	207 SKY WAGON	35.83	32.2	9.58	FITS
CESSNA	TU 206C,D,E & F II STATION.	35.83	28.5	13.9	FITS
CESSNA	U206E & F FLOAT STATION.	35.83	28.5	13.9	FITS
CESSNA	U206 F& E STATIONAIR 6	35.83	28.5	13.9	FITS
CESSNA	A185F AMPHIBIAN	35.83	27.5	12.66	FITS
CESSNA	180K-78 AMP & FLOAT	35.83	27.5	12.66	FITS

MANUFACTURER	AIRCRAFT MODEL	WING SPAN	LENGTH	TAIL HEIGHT	AIRCRAFT FIT
CESSNA	A185F FLOAT	35.83	27	12.2	FITS
CESSNA	R172 SKYHAWK XP FLOATS	35.83	26.83	12.45	FITS
GULFSTREAM	G164A-600 AG CAT	35.91	24.33	11.83	FITS
CESSNA	172 N-P HAWK 100 FLOAT	35.93	26.66	11.9	FITS
PIPER	PA-602P AEROSTAR	36.5	34.75	12.08	FITS
CESSNA	U206C & D FLOAT STATION.	36.58	28.5	13.9	FITS
CESSNA	U206D SKYWAGON	36.58	28.5	13.9	FITS
CESSNA	310 R II	36.9	31.9	10.7	FITS
CESSNA	T 310 R II TURBO	36.9	32	10.7	FITS
ROCKWELL	P51 MUSTANG	37	32.25	13.7	FITS
PIPER	PA-23E TURBO AZTEC	37.16	31.16	10.25	FITS
PIPER	PA-23D, E AZTEC	37.16	31.16	10.25	FITS
CESSNA	340A II PRESSURIZE TURBO	38.1	34.33	12.6	FITS
CESSNA	MODEL 340	38.1	34.33	12.5	FITS
CESSNA	325 II	38.1	34.33	12.55	FITS
CESSNA	T303 CRUSADER	38.83	30.45	13.33	FITS
MITSUBISHI	SOLITAIRE MU-2B-40	39.16	33.25	12.91	FITS
MITSUBISHI	MU-2M, MU-2P	39.16	33.25	12.91	FITS
MITSUBISHI	MU-2K	39.16	33.25	12.91	FITS
MITSUBISHI	MU-2F	39.16	33.25	12.91	FITS
MITSUBISHI	MU-2B, MU-2D	39.16	33.25	13	FITS
MITSUBISHI	MU-2L, MU-2N	39.16	29.41	13.66	FITS
MITSUBISHI	MU-2J	39.16	19.41	13.66	FITS
BEECHCRAFT	B60 DUKE PRESSURIZED	39.3	33.8	12.3	FITS
BEECHCRAFT	A60 DUKE PRESSURIZED	39.3	33.8	12.3	FITS
BEECHCRAFT	60 DUKE PRESSURIZED	39.3	33.8	12.3	FITS
CESSNA	421 A & B	39.75	33.7	11.33	FITS
CESSNA	401-A & B TURBO	39.75	33.7	11.6	FITS
CESSNA	421 PRESSURIZED TR P	39.75	33.5	11.33	FITS
CESSNA	411A	39.75	33.5	11.33	FITS
CESSNA	402A TURBO	39.9	35.7	11.6	FITS
CESSNA	MODEL 414	39.9	33.75	11.7	FITS
CESSNA	A188 A, B, AG WAGON	40.33	26.25	7.33	FITS
PIPER	PA31-330 NAVAJO	40.5	32.5	13	FITS
PIPER	PA31 PRESS. NAVAJO	40.58	34.41	13.25	FITS
PIPER	PA31T-500 CHEYENNE I	40.66	34.66	12.75	FITS
PIPER	PA31-350 CHIEFTAIN	40.66	34.58	13	FITS
PIPER	PA31-325 NAVAJO	40.66	32.58	13.75	FITS
PIPER	PA31-310 TURBO NAVAJO	40.66	32.58	13	FITS
CESSNA	A188 AG TRUCK RESTRICT	40.75	26.25	8	FITS
CESSNA	A188 AG WAGON	40.75	25.9	8.2	FITS
CESSNA	188 AG PICKUP 73-75	40.75	25.25	7.83	FITS
CESSNA	188 AG PICKUP -1972	40.75	25.25	7.75	FITS
CESSNA	T188C AG HUSKY	41.66	26.5	8.2	FITS

MANUFACTURER	AIRCRAFT MODEL	WING SPAN	LENGTH	TAIL HEIGHT	AIRCRAFT FIT
CESSNA	A188 AG TRUCK RESTRICT	41.66	26.25	8	FITS
CESSNA	A188B AG TRUCK	41.66	25.9	8.2	FITS
CESSNA	T50 UC78 AT17 BAMBOO	42	33	9.5	FITS
GULFSTREAM	G164C-600 AG CAT	42.25	30	11.41	FITS
GULFSTREAM	G164B-600 AG CAT	42.25	25.58	11	FITS
GULFSTREAM	G164B-450 AG CAT	42.25	25.58	11	FITS
PIPER	PA31T-620 CHEYENNE II	42.66	34.66	12.75	FITS
PIPER	PA46-310P MALIBU	43	28.83	11.33	FITS
PIPER	PA46-350P MALIBU MIRA	43	28.33	11.33	FITS
CESSNA	425 CORSAIR	44.1	35.88	12.6	FITS
AYRES-THRUSH	S-2D AG COMMANDER	44.25	29.25	8.75	FITS
AYRES-THRUSH	S-2R-600/PZL	44.3	29.25	9.2	FITS
AYRES-THRUSH	S-2R-800/THRUSH	44.3	29.25	9.2	FITS
AYRES-THRUSH	S-2R-T34-TURBO	44.5	33	9.2	FITS
AYRES-THRUSH	S-2R-1820/51031.5	44.5	31.5	9.7	FITS
BEECHCRAFT	C50 TWIN BONANZA	45.2	31.5	11.5	FITS
BEECHCRAFT	50 TWIN BONANZA	45.2	31.5	11.5	FITS
BEAGLE	B206-S TURBO CHG TWIN	45.75	33.75	11.3	FITS
BEECHCRAFT	HJ 50 TWIN BONANZA SUP	45.75	31.5	11.5	FITS
BEECHCRAFT	E.F.G. 50 TWIN BONANZA	45.75	31.5	11.5	FITS
MOONEY	M-20F EXECUTIVE	24	36.08	8.33	FITS
GATES LEAR	25B, C	35.5	47.5	12.5	FITS
GATES LEAR	24F	35.5	43.25	12.25	FITS
GATES LEAR	24E	35.5	43.25	12.25	FITS
GATES LEAR	24C	35.5	42.25	12.5	FITS
GATES LEAR	25G	35.58	47.58	12.25	FITS
GATES LEAR	25D, F	35.58	47.58	12.25	FITS
GATES LEAR	25B	35.58	47.5	12.25	FITS
GATES LEAR	25C	35.58	47.5	12.25	FITS
GATES LEAR	24D	35.58	43.25	12.25	FITS
GATES LEAR	24 TWIN JET	35.58	43.25	12.5	FITS
GATES LEAR	23 TWIN JET	35.58	43.16	12	FITS
CESSNA	U206G II STATIONAIR 6	35.83	29.83	14.2	FITS
CESSNA	U206G FLOAT STATIONAIR	35.83	29.83	14.2	FITS
CESSNA	TU 206G II STATIONAIR	35.83	29.66	14.16	FITS
CESSNA	U206G II STATIONAIR 6	35.83	29.66	14.2	FITS
CESSNA	U206G STATIONAIR 6 F	35.83	29.66	14.1	FITS
GATES LEAR	MODEL 36	36.5	48.66	12.25	FITS
MITSUBISHI	MARQUISE MU-2B-60	39.16	39.41	13.66	FITS
MITSUBISHI	MU-2G	39.16	39.41	13.66	FITS
GATES LEAR	MODEL 35A	39.41	48.58	12.25	FITS
GATES LEAR	MODEL 36A	39.5	48.66	12.25	FITS
CESSNA	402B BUS LINER	39.9	36.1	11.7	FITS
CESSNA	421C GOLDEN EAGLE III	41.1	36.5	11.5	FITS

MANUFACTURER	AIRCRAFT MODEL	WING SPAN	LENGTH	TAIL HEIGHT	AIRCRAFT FIT
CESSNA	421B GOLDEN EAGLE	41.75	36.1	11.5	FITS
ROCKWELL	MODEL 700	42.41	38.16	13.33	FITS
PIPER	PA31T-620 CHEYENNE II	42.66	36.81	12.81	FITS
FALCON	MODEL 10	42.83	45.5	15.2	FITS
ISRAEL	CJ 1121B COMMODORE JET	43.25	50.41	15.75	FITS
ISRAEL	1121 JET COMMANDER	43.25	50.41	15.75	FITS
MITSUBISHI	MU-300 DIAMOND I	43.41	48.33	13.75	FITS
BEECHCRAFT	MODEL 400	43.5	48.8	13.8	FITS
BEECHCRAFT	DIAMOND IA	43.5	48.8	13.8	FITS
BEECHCRAFT	400A	43.5	48.5	13.8	FITS
GATES LEAR	MODEL 55	43.75	55.1	14.66	FITS
GATES LEAR	MODEL 31	43.75	48.66	12.25	FITS
GATES LEAR	MODEL 35	43.75	48.58	12.25	FITS
GATES LEAR	29 LONGHORN	43.75	47.58	12.25	FITS
GATES LEAR	28 LONGHORN	43.75	47.58	12.25	FITS
CESSNA	CITATION 550	43.9	43.5	14.33	FITS
GULFSTREAM	680W TURBO II PROP JET	44	43	14.5	FITS
GULFSTREAM	681 HAWK TURBO COMM.	44.08	43	14.5	FITS
GULFSTREAM	MODEL 560	44.08	35.41	14.41	FITS
GULFSTREAM	MODEL 520	44.08	35.41	14.41	FITS
GULFSTREAM	680 SUPER	44.08	35.08	14.41	FITS
GULFSTREAM	560A	44.08	35.08	14.41	FITS
CESSNA	414A CHANCELLOR	44.1	36.33	11.5	FITS
CESSNA	402C BUS LINER II	44.1	36.33	11.45	FITS
SABERLINER	SABRE 40A	44.33	43.75	16	FITS
SABERLINER	NA265"40" SABERLINER 8	44.33	43.75	16	FITS
SABERLINER	SABRE 75A	44.41	47.16	17.25	FITS
SABERLINER	SABRE 75	44.41	47.16	17.25	FITS
ISRAEL	1124 WESTWIND I	44.66	52.25	15.75	FITS
ISRAEL	CJ 1123	44.66	52.25	15.75	FITS
SABERLINER	SABRE 60	44.66	46.91	16	FITS
ISRAEL	WESTWIND II	44.83	52.25	15.75	FITS
BEECHCRAFT	A90 KING AIR	45.1	35.5	14.75	FITS
BEECHCRAFT	90 KING AIR	45.1	35.5	14.75	FITS
PILATUS	PC XIII	45.25	45.83	13.58	FITS
CESSNA	CITATION JET	45.25	42.7	13.75	FITS
BEECHCRAFT	100 KING AIR	45.8	39.75	15.4	FITS
SWEARINGEN	MERLIN II, B	45.83	40.08	14.33	FITS
SWEARINGEN	MERLIN II, A	45.83	40.08	14.33	FITS
BEECHCRAFT	B99 AIRLINER	46.00	44.75	14.25	FITS
BEECHCRAFT	99A AIRLINER	46.00	44.75	14.25	FITS
BEECHCRAFT	99. AIRLINER & EXEC.	46.00	44.75	14.25	FITS
BEECHCRAFT	B100 KING AIR	46.00	40	15.5	FITS
BEECHCRAFT	A100 KING AIR	46.00	40	15.5	FITS

MANUFACTURER	AIRCRAFT MODEL	WING SPAN	LENGTH	TAIL HEIGHT	AIRCRAFT FIT
BEECHCRAFT	F90 KING AIR	46.00	39.8	15.1	FITS
BEECHCRAFT	A65 QUEEN AIR	46.00	35.5	14.25	FITS
BEECHCRAFT	65 QUEEN AIR	46.00	33.25	14.1	FITS
EXCALIBUR	800 CONV. TWIN BEACH	46.00	31.41	11.25	FITS
SWEARINGEN	METRO II	46.25	59.33	16.66	FITS
SWEARINGEN	MERLIN IV, A	46.25	59.33	16.66	FITS
SWEARINGEN	MERLIN III, C	46.25	42.16	16.83	FITS
SWEARINGEN	MERLIN III, B	46.25	42.16	16.83	FITS
SWEARINGEN	MERLIN III, A	46.25	42.16	16.83	FITS
CESSNA	404 TITAN AMBASSADOR	46.33	39.5	13.25	FITS
GULFSTREAM	685 PRESSURIZED	46.58	43	14.91	FITS
GULFSTREAM	690B I, II JET PROP	46.66	44.33	14.91	FITS
BRITISH AER	HS125-700A	47.00	50.75	17.6	FITS
BRITISH AER	BH-125-600	47.00	50.5	17.25	FITS
BRITISH AER	BH-125-400A	47.00	47.45	16.5	FITS
BRITISH AER	DH-125-3A-RA	47.00	47.45	16.5	FITS
CESSNA	CITATION I	47.10	43.5	14.33	FITS
PIPER	PA24-1000 CHEYENNE IV	47.66	43.41	16.41	FITS
PIPER	PA24-720 CHEYENNE III	47.66	43.41	14.75	FITS
BEECHCRAFT	E18 SUPER TWIN BEECH	47.75	33.1	9.25	FITS
BEECHCRAFT	D18 SUPER TWIN BEECH	47.75	33.1	9.25	FITS
GULFSTREAM	720 ALTI CRUISER	49	35.08	14.41	FITS
GULFSTREAM	680E	49	35.08	14.41	FITS
GULFSTREAM	560E	49	35.08	14.41	FITS
GULFSTREAM	MODEL 500	49	35.08	14.41	FITS
GULFSTREAM	500S SHRIKE COMMANDER	49.08	36.83	14.5	FITS
GULFSTREAM	680 FLP COURSER	49.25	41.5	14.5	FITS
CESSNA	441 CONQUEST	49.33	39	13.2	FITS
GULFSTREAM	680F	49.41	35.08	14.41	FITS
GULFSTREAM	560F	49.41	35.08	14.41	FITS
GULFSTREAM	500B	49.41	35.08	14.75	FITS
GULFSTREAM	500A	49.41	35.08	14.41	FITS
GULFSTREAM	680T PROP JET	49.5	41.25	14.5	FITS
GULFSTREAM	680 FLP PRESS. GRAND	49.5	41.25	14.75	FITS
GULFSTREAM	680 FLP GRAND	49.5	41.25	14.5	FITS
BEECHCRAFT	G18 SUPER TWIN BEECH	49.5	35.25	9.5	FITS
CESSNA	406 CARAVAN	49.7	39	13.25	FITS
BEECHCRAFT	H18 SUPER TWIN BEECH	49.75	35.25	9.3	FITS
GULFSTREAM	500U	49.91	35.08	14.5	FITS
EMBRAER	EMB-110P1 BANREIRANTE	50.25	49.5	16.16	FITS
BEECHCRAFT	B90 KING AIR	50.25	36.5	14.75	FITS
BEECHCRAFT	E90 KING AIR	50.25	35.5	14.25	FITS
BEECHCRAFT	C90 KING AIR	50.25	35.5	14.25	FITS
BEECHCRAFT	88 QUEEN AIR	50.25	35.5	14.25	FITS

MANUFACTURER	AIRCRAFT MODEL	WING SPAN	LENGTH	TAIL HEIGHT	AIRCRAFT FIT
BEECHCRAFT	B80 QUEEN AIR	50.25	35.5	14.75	FITS
BEECHCRAFT	A80 QUEEN AIR	50.25	35.5	14.25	FITS
BEECHCRAFT	70 QUEEN AIR	50.3	35.5	14.25	FITS
SABERLINER	SABRE 65	50.41	46.91	16	FITS
CESSNA	CITATION II	51.7	47.2	14.85	FITS
GULFSTREAM	100 JET PROP	52.08	42.91	14.91	FITS
GULFSTREAM	980 JET PROP	52.08	42.91	14.91	FITS
GULFSTREAM	840 JET PROP	52.08	42.91	14.91	FITS
PILATUS	PC 61, B2-H4	52.08	35.75	10.5	FITS
CESSNA	208 B CARAVAN I	52.2	41.75	14.2	FITS
CESSNA	208 CARAVAN I AMPHI.	52.2	38.9	14.2	FITS
CESSNA	208 CARAVAN I	52.2	37.58	14.83	FITS
CESSNA	MODEL 560	52.25	48.85	15	FITS
FALCON	C20	53.5	56.25	17.66	FITS
FALCON	D20	53.5	56.25	17.66	FITS
CESSNA	CITATION III 650-560	53.5	55.5	17.25	FITS
BEECHCRAFT	1900 KING AIR EXEC.	54.5	57.8	15	FITS
BEECHCRAFT	STAR SHIP I	54.5	46.1	13	FITS
BEECHCRAFT	300 SUPER KING AIR	54.5	43.8	15	FITS
BEECHCRAFT	B200C	54.5	43.8	14	FITS
BEECHCRAFT	B200 SUPER KING AIR	54.5	43.75	15	FITS
SWEARINGEN	MERLIN IV, C	57	59.33	16.66	FITS
BEECHCRAFT	B300/350 SUPER KING	58	46.75	14.5	FITS
CESSNA	CITATION IV	59	58.75	17.33	FITS
CANADAIR CH	CL600 & 601	61.85	68.5	20.7	REQUIRES PULL-IN PARKING
FALCON	MODEL 900	63.41	66.33	24.75	REQUIRES PULL-IN PARKING
FALCON	MODEL 2000	63.41	63.1	22.9	REQUIRES PULL-IN PARKING
FALCON	MODEL 50	63.41	60.75	22.9	REQUIRES PULL-IN PARKING
DE HAVILLAN	DHC 6-300 TWIN OTTER S	65	51.75	19.5	FITS
DE HAVILLAN	DHC 6-300 TWIN OTTER S	65	51.75	18.58	FITS
DE HAVILLAN	DHC 6-200 TWIN OTTER	65	51.75	18.58	FITS
GULFSTREAM	G II	68.83	79.91	24.5	REQUIRES PULL-IN PARKING
GULFSTREAM	G IV	77.83	88.33	24.83	REQUIRES PULL-IN PARKING
GULFSTREAM	G III	77.83	83.08	24.33	REQUIRES PULL-IN PARKING
GULFSTREAM	G I	78.33	63.75	23.33	REQUIRES PULL-IN PARKING
BOMBARDIER	BD-700 GLOBAL EXPRESS	94	99.33	25.42	REQUIRES PULL-IN PARKING
GULFSTREAM	V	98.5	96.42	25.84	REQUIRES PULL-IN PARKING
GULFSTREAM	G650	99.59	99.75	25.67	REQUIRES PULL-IN PARKING

Appendix G

Aircraft Not Served

2015 Aircraft Not Served by Existing Hangar Inventory

Make	Model	MTOW	ID	TU #	Wing Span	Length	Height	FIT	2015 Ops	% of Total
Quest	Kodiak	7255	KODI	2	45	33.4	15.4	SU Ex, H3	30	1.57%
Piper	Cheyenne 4	12050	PAY4	2	47.8	43.4	16.5	SU Ex, H3	4	0.21%
Beechcraft	Premier I	12500	PRM1	3	44.6	46	15.4	SU Ex, H3	29	1.52%
Fairchild	Merlin III	12500	SW3	3	46.3	42.2	16.1	SU Ex, H3	2	0.10%
Cessna	Citation CJ3	12750	C25B	3	53.4	50.2	15.2	SU Ex, H3	180	9.45%
Cessna	Citation CJ4	17110	C25C	3	50.1	53.4	15.4	SU Ex, H3	8	0.42%
Saberliner	Saberline	17450	SBR1	3	44.5	43.9	16	SU Ex, H3	1	0.05%
Embraer	Phenom 300	17526	E55P	3	52.2	51.4	19.9	SU Ex, H3	213	11.18%
Dassault	Falcon 10	18700	FA10	3	42.11	45.5	15.2	SU Ex, H3	4	0.21%
Cessna	Citation Excel	18700	C56X	3	56.1	51.9	17.1	SU Ex, H3	376	19.74%
Cessna	Ciation 650	22000	C650	4	53.6	55.6	17.3	SU Ex, H3	8	0.42%
Isreal AI	Westwind	23000	WW24	4	44.1	52.3	15.1	SU Ex, H3	11	0.58%
Gulfstream	G100 Astra	24650	ASTR	4	78.33	63.75	23.33	SU Ex, H3	33	1.73%
Hawker	700 - 900 series	24800	H25B	4	47	50.9	17.7	SU Ex, H3	129	6.77%
Hawker	1000	25000	H25C	4	47	50.8	17.6	SU Ex, H3	5	0.26%
Gulfstream	G150	26100	G150	4	55.7	56.9	18.5	SU Ex, H3	24	1.26%
Dassault	Falcon 20	28660	FA20	4	53.6	56.3	17.6	SU Ex, H3	2	0.10%
Cessna	Sovereign	30000	C680	4	63.2	63.6	20.4	SU Ex, H3	98	5.14%
Cessna	Citation X	34500	C750	4	63.11	72.2	18.11	SU Ex, H3	150	7.87%
Gulfstream	Galaxy	34800	GALX	4	58.1	62.3	21.5	SU Ex, H3	36	1.89%
Dassault	Falcon 2000	35000	F2TH	4	63.4	66.3	24.8	SU Ex, H3	49	2.57%
Hawker	4000	37500	HA4T	4	61.9	69.2	19.7	SU Ex, H3	6	0.31%
Bombardier	Challenger 300	38500	CL30	4	63.1	68.9	20	SU Ex, H3	152	7.98%
Dassault	Falcon 50	38800	FA50	4	61.11	60.1	22.8	SU Ex, H3	18	0.94%
Gulfstream	G280	39600	G280	4	63	66.1	24.4	SU Ex, H3	7	0.37%
Bombardier	Challenger 350	40600	CL35	4	69	68.8	20	SU Ex, H3	4	0.21%
Embraer	Legacy	41887	E135	4	65.9	86.5	22.2	SU Ex, H3	10	0.52%
Bombardier	Challenger 600	44600	CL60	4	64.4	68.5	20.8	SU Ex, H3	83	4.36%
Dassault	Falcon 900	45000	F900	4	63.4	66.3	24.8	SU Ex, H3	43	2.26%
Gulfstream	G3	58,500	GLF3	5	77.1	83.1	24.5	H3	4	0.21%
Gulfstream	G4, G450 et al	66,000	GLF4	5	77.1	89.4	25.2	H3	121	6.35%
Gulfstream	G5, 550, et al	75,300	GLF5	5	93.6	96.5	25.1	H3	26	1.36%
Bombardier	Global 5000	78,600	GL5T	5	94	99.5	25.8	H3	8	0.42%
Bombardier	Global Express	79,000	GLEX	5	94	96.9	25.8	H3	31	1.63%
							TU2	TU3	TU4	TU5

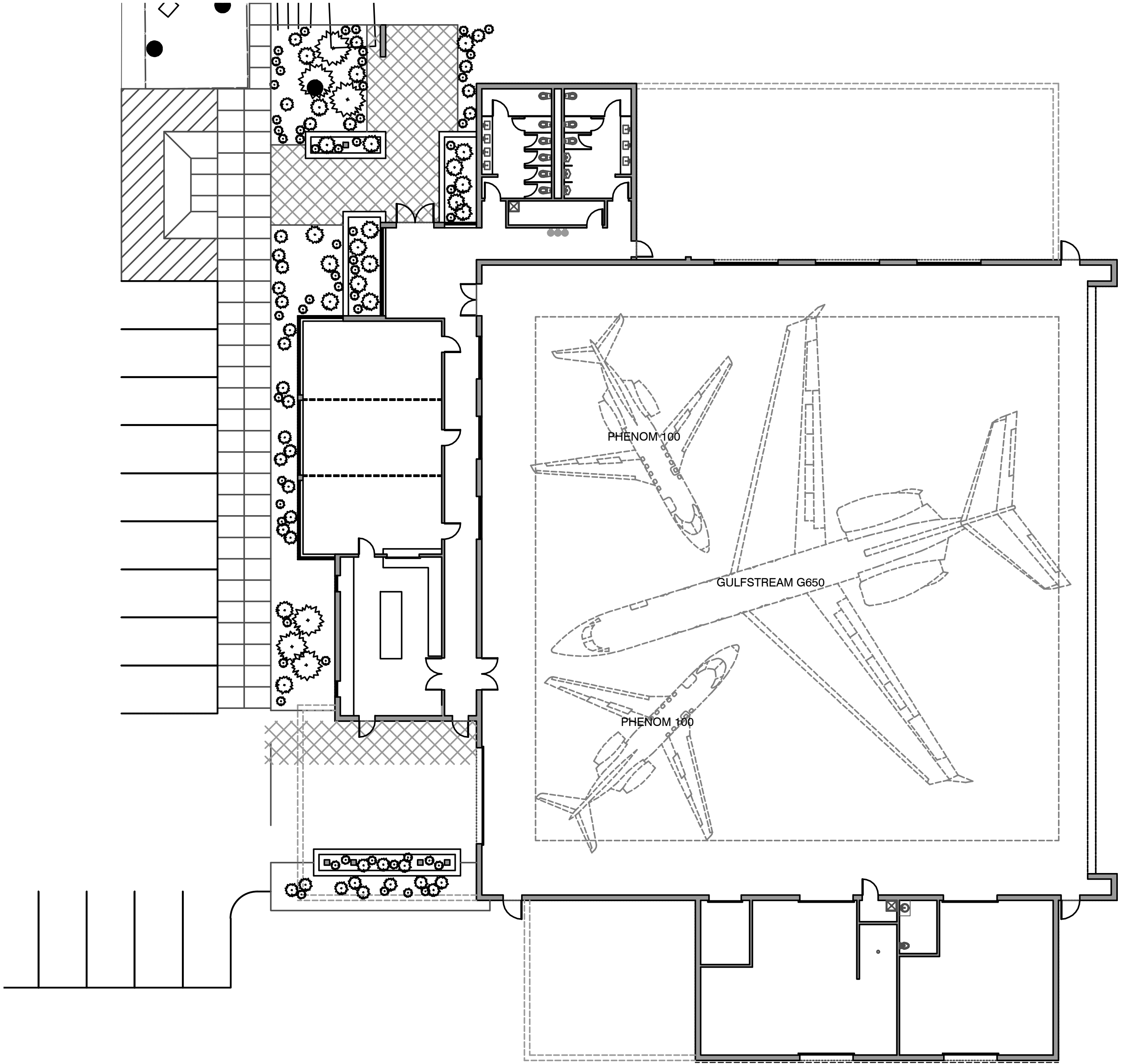
2015 Operations are based on model ops, 22,795 total. Turboprop & Jet categories for 2015 = 9167 ops. This table shows aircraft not served by current hangar offerings. 1,905 operations were made by those aircraft. % of total column is ops / 1905.

Current hangar inventory fits 79% of Turboprop & Jet Airframe operators (2015). The remaining 21% or 1,905 would fit:		
	SU Exec	**Hangar 3**
All by #	1715	1905
All by %	90%	100%
# of airframes	29	34
% of airframes	85%	100%

Hangar Dimensions: Current & Future			
Hangar	Width	Height	Depth
A9	58'	15'	55'
H1	59'	14'	58'
Su Exec*	80'	26'	75'
H3*	120'	28'	120'
*Super Exec and Hangar 3 are concenptual			

Appendix H

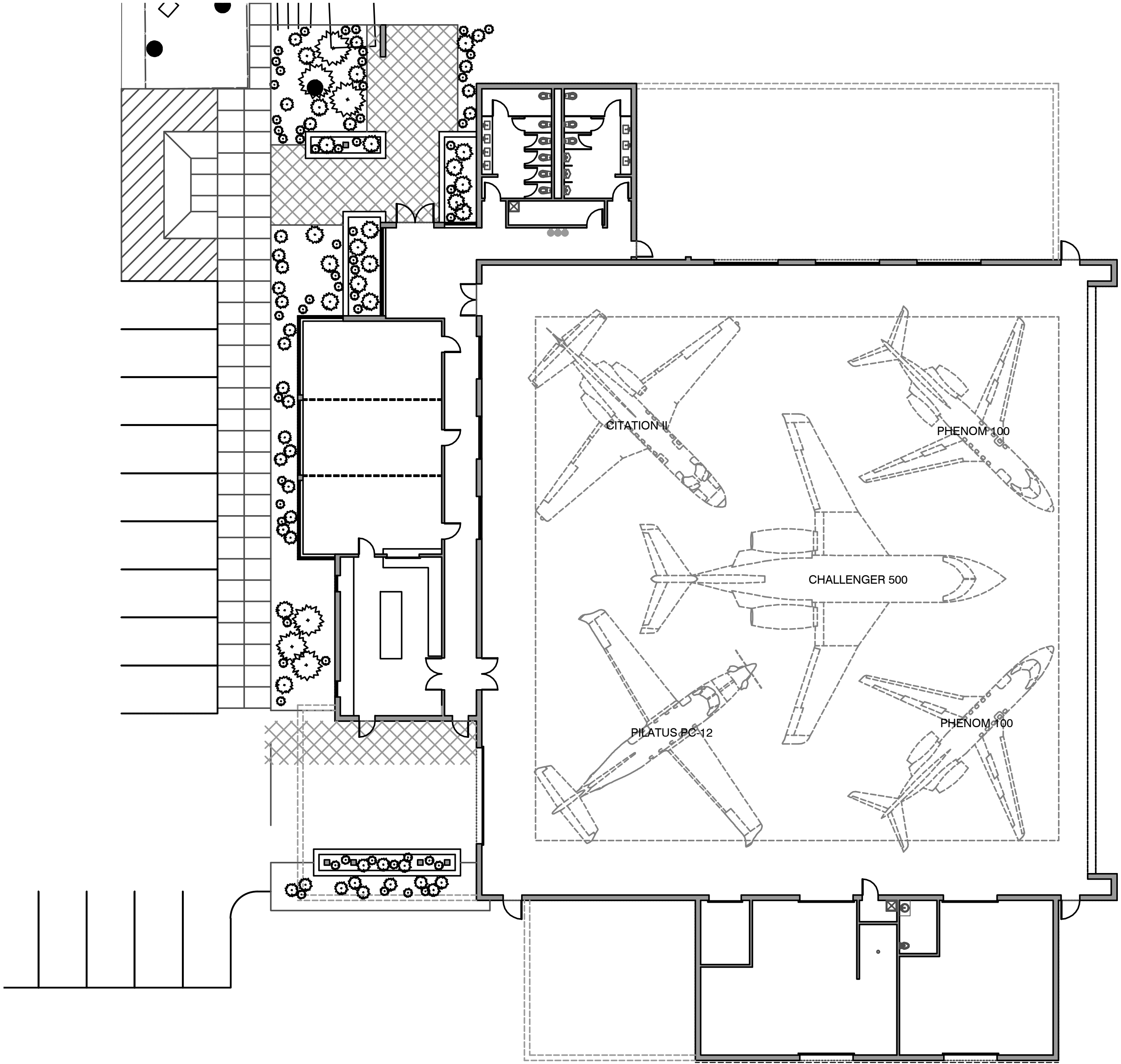
Aircraft Layout



TRUCKEE TAHOE AIRPORT DISTRICT
MULTI-PURPOSE HANGAR/COMMUNITY ROOM
02-12-2015

3 AIRCRAFT LAYOUT

Mead & Hunt



TRUCKEE TAHOE AIRPORT DISTRICT
MULTI-PURPOSE HANGAR/COMMUNITY ROOM
02-12-2015

5 AIRCRAFT LAYOUT

0 4' 8'

N

Mead & Hunt

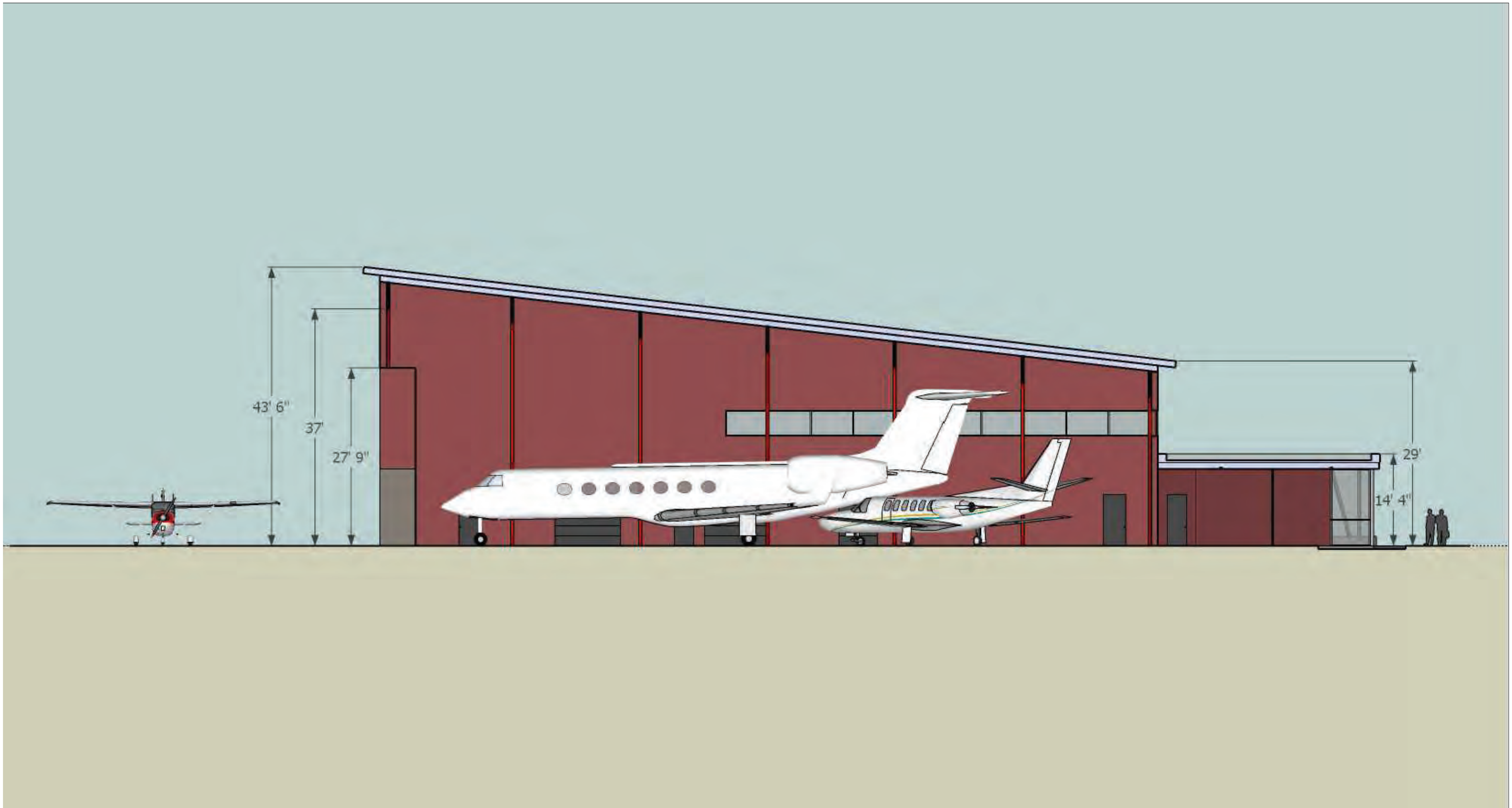
Appendix I

Hangar Bay Clearances

TRUCKEE TAHOE AIRPORT DISTRICT
MULTI-PURPOSE HANGAR/COMMUNITY ROOM
02-12-2015

SECTION - OPTION A1

Mead & Hunt



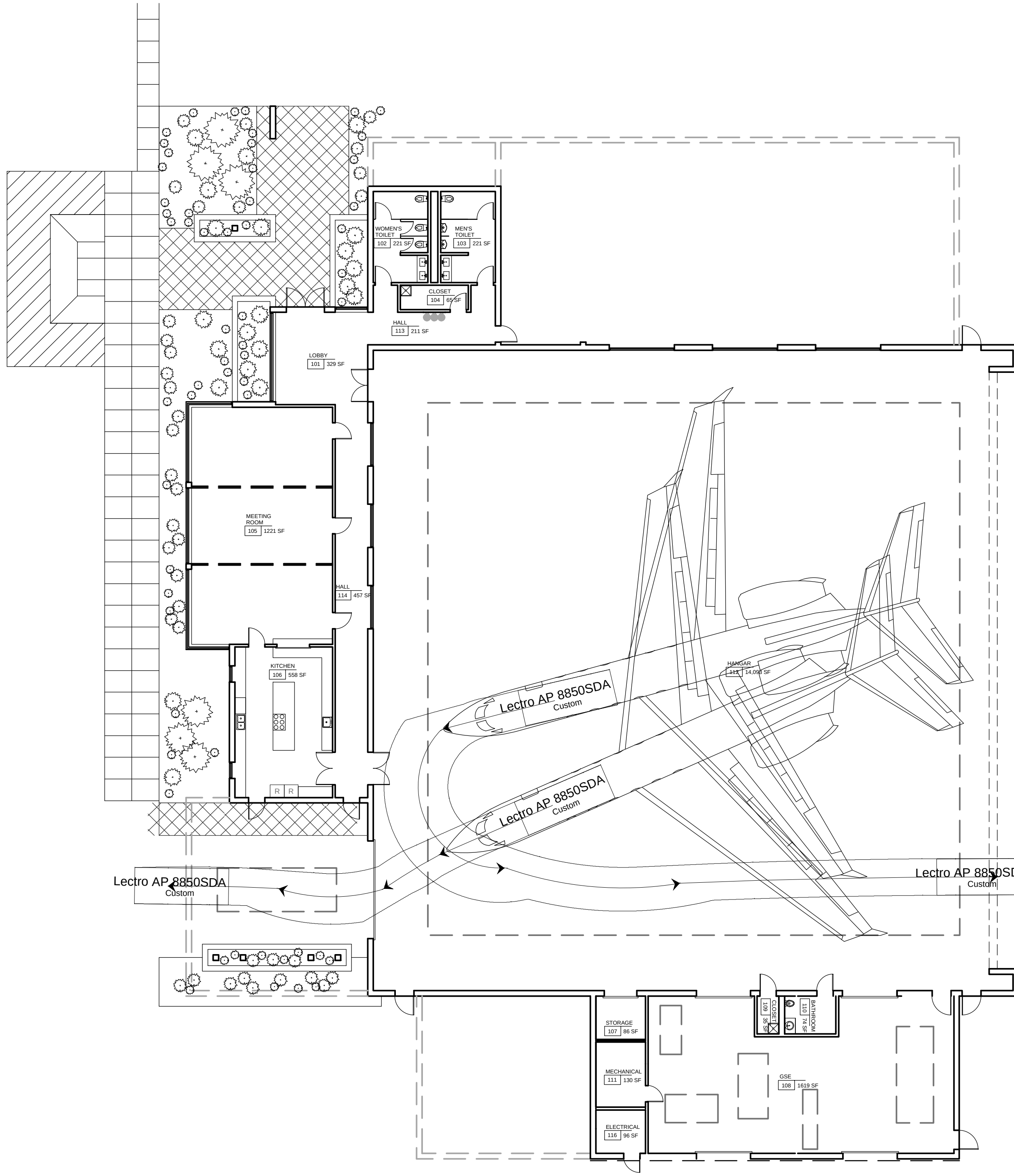
TRUCKEE TAHOE AIRPORT DISTRICT
MULTI-PURPOSE HANGAR/COMMUNITY ROOM
02-12-2015

SECTION - OPTION A2

Mead & Hunt

Appendix J

Tug Path



TRUCKEE TAHOE AIRPORT DISTRICT

MULTI-PURPOSE HANGAR/COMMUNITY ROOM

02-12-2015

TUG PATH EXIT DIAGRAM

0 4' 8'

Mead & Hunt

Appendix K

Aircraft Compatibility

Aircraft Compatibility by Hangar

AIRCRAFT/HANGAR COMPATABILITY					
TU CATEGORY	AIRCRAFT TYPE	HANGAR #A-9	HANGAR #1	HANGAR #3	Legend
2	CONQUEST 425	X	X	X	MOST COMMON
2	CARAVAN	X	X	X	FREQUENT
2	CONQUEST 441	X	X	X	LESS FREQUENT
2	CESSNA CJ 1 525	X	X	X	LESS COMMON
2	CESSNA CJ 2 525A	X	X	X	
2	CITATION JET	X	X	X	
2	CITATION	X	X	X	
2	CITATION 1 500	X	X	X	
2	CITATION MUSTANG 510	X	X	X	
2	PIPER CHEYENNE PA31T	X		X	
2	KING AIR 90	X		X	
2	KING AIR 100	X		X	
2	KING AIR 200	X	X	X	
2	LEAR 23	X	X	X	
2	MITSUBISHI MU-2B	X	X	X	
2	PIAGIO P-180	X	X	X	
2	PILATUS PC-12	X	X	X	
2	PREMIER 1A	X		X	
2	SWEARINGER MERLIN	X		X	
2	TURBINE COMMANDER	X		X	
3	BEECHJET 400	X		X	
3	CESSNA CJ3 525B	X		X	
3	CITATION BRAVO	X		X	

3/24/2014

Aircraft Compatibility by Hangar

TU CATEGORY	AIRCRAFT TYPE	HANGAR #A-9	HANGAR #1	HANGAR #3
3	CITATION ENCORE	X		X
3	CITATION II 550	X		X
3	CITATION ULTRA	X		X
3	CITATION 5 560	X		X
3	FALCON 10	X		X
3	HAWKER 400XP	X		X
3	KING AIR 300	X	X	X
3	KING AIR 350	X	X	X
3	LEAR 24	X	X	X
3	LEAR 25,28,29	X	X	X
3	LEAR 31	X	X	X
3	LEAR 35,36	X	X	X
3	PHENOM 300			X
3	PHENOM 350			X
3	PREMIER II 390	X		X
3	SABRELINER			X
4	CITATION III 650			X
4	CITATION EXCEL 560XL			X
4	CITATION VI 650			X
4	CITATION VII 680			X
4	CITATION X 750			X
4	CHALLENGER 300			X
4	CHALLENGER 600			X
4	CHALLENGER 601			X
4	CHALLENGER 604			X

Legend
MOST COMMON
FREQUENT
LESS FREQUENT
LESS COMMON

3/24/2014

Aircraft Compatibility by Hangar

TU CATEGORY	AIRCRAFT TYPE	HANGAR #A-9	HANGAR #1	HANGAR #3
4	FALCON 20F			X
4	FALCON 50			X
4	FALCON 900			X
4	FALCON 2000			X
4	FALCON 2000EX			X
4	GULFSTREAM G100			X
4	GULFSTREAM G150			X
4	GULFSTREAM 200			X
4	GULFSTREAM 280			X
4	HAWKER 125			X
4	HAWKER 125-800			X
4	HAWKER 750			X
4	HAWKER 800			X
4	HAWKER 850XP, 900XP			X
4	HAWKER 1000			X
4	HAWKER 4000			X
4	HAWKER HORIZON			X
4	LEAR 40,	X	X	X
4	LEAR 45	X	X	X
4	LEAR 55	X	X	X
4	LEAR 60	X	X	X
5	WESTWIND	X		X
5	GLOBAL EXPRESS			X
5	GUFLSTREAM 350			X
5	GULFSTREAM 450			X

Legend
MOST COMMON
FREQUENT
LESS FREQUENT
LESS COMMON

3/24/2014

Aircraft Compatibility by Hangar

TU CATEGORY	AIRCRAFT TYPE	HANGAR #A-9	HANGAR #1	HANGAR #3
5	GULFSTREAM 500			X
5	GULFSTREAM 550			X
5	GULFSTREAM G II			X
5	GULFSTREAM G III			X
5	GULFSTREAM G IV			X
5	GULFSTREAM G IV SP			X
5	GULFSTREAM G V			X
5	GULFSTREAM G 650			X

Legend
MOST COMMON
FREQUENT
LESS FREQUENT
LESS COMMON

Appendix L

ALUCP

Mead & Hunt, Inc.
M & H Architecture, Inc.
133 Aviation Boulevard, Suite 100
Santa Rosa, California 95403
707-526-5010
meadhunt.com

October 30, 2014

Kevin Smith
General Manager
Truckee-Tahoe Airport District
10356 Truckee Tahoe Airport Rd.
Truckee, CA 96161

Subject: Hangar Construction Review

Dear Mr. Smith:

Truckee-Tahoe Airport (Airport) is proposing to construct a hangar that would primarily serve aviation use, but will also be used for occasional community events. Because the hangar will include non-aviation uses, and was not a proposed facility identified in the prior Airport Master Plan, the Truckee-Tahoe Airport Land Use Commission (ALUC) will need to review the facility. The purpose of the review will be to determine whether the facility is consistent with the policies outlined in the 2004 Truckee-Tahoe Airport Land Use Compatibility Plan (ALUCP).

This letter outlines the review process and some of the land use compatibility factors that the ALUC would need to consider in making a consistency determination regarding the hangar and its occasional use as a community facility.

Preliminary Site Details

Currently, the preferred sites are located lateral to the runway (see attached Figure). Site 1 and Site 3 fall in Zone B2, and Site 2 is located in Zone A. According to the ALUCP, the following restrictions apply to each Zone:

Zone	Locations	Maximum Densities / Intensities			Required Open Land [3]	Additional Criteria	
		Residential (du/ac) [1]	Other Uses (people/ac) [2]			Prohibited Uses [4]	Other Development Conditions [5]
			Avg. [6]	Single Acre [7]			
A	Runway Protection Zone and within Building Restriction Line	0	0	0	All Remaining	• All structures except ones with location set by aeronautical function • Assemblages of people • Objects exceeding FAR Part 77 height limits • Storage of hazardous materials • Hazards to flight [8]	• Mostly on existing or future airport property or other public lands • Avigation easement dedication on remainder
B2	Adjacent to Runway	0.05 (average parcel size ≥20.0 ac.)	100	200	No Requirement	• Children's schools, day care centers, libraries • Hospitals, nursing homes • Buildings with >2 habitable floors above ground • Highly noise-sensitive uses (e.g., outdoor theaters) • Aboveground bulk storage of hazardous materials [9] • Critical community infrastructure facilities [10] • Hazards to flight [8]	• Locate structures maximum distance from runway • Minimum NLR of 25 dB in residences (including mobile homes) and office buildings [11] • Airspace review required for objects >35 feet tall [12] • Avigation easement dedication

1 Residential development must not contain more than the indicated number of dwelling units (excluding secondary units) per gross acre. Clustering of units is encouraged. See Policy 4.2.5 for limitations. Gross acreage includes the property at issue plus a share of adjacent roads and any adjacent, permanently dedicated, open lands. Mixed-use development in which residential uses are proposed to be located in conjunction with nonresidential uses in the same or adjoining buildings on the same site shall be treated as nonresidential development. See Policy 3.1.3(d).
2 Usage intensity calculations shall include all people (e.g., employees, customers/visitors, etc.) who may be on the property at a single point in time, whether indoors or outside.
3 Open land requirements are intended to be applied with respect to an entire zone. This is typically accomplished as part of a community general plan or a specific plan, but may also apply to large (10 acres or more) development projects. See Policy 4.2.4 for definition of open land.
4 The uses listed here are ones which are explicitly prohibited regardless of whether they meet the intensity criteria. In addition to these explicitly prohibited uses, other uses will normally not be permitted in the respective compatibility zones because they do not meet the usage intensity criteria.
5 As part of certain real estate transactions involving residential property within any compatibility zone (that is, anywhere within an airport influence area), information regarding airport proximity and the existence of aircraft overflights must be disclosed. This requirement is set by state law. See Policy 4.4.2 for details. Easement dedication requirements indicated for specific compatibility zones apply only to new development.
6 The total number of people permitted on a project site at any time, except rare special events, must not exceed the indicated usage intensity times the gross acreage of the site. Rare special events are ones (such as an air show at the airport) for which a facility is not designed and normally not used and for which extra safety precautions can be taken as appropriate.
7 Clustering of nonresidential development is permitted. However, no single acre of a project site shall exceed the indicated number of people per acre. See Policy 4.2.5 for details.
8 Hazards to flight include physical (e.g., tall objects), visual, and electronic forms of interference with the safety of aircraft operations. Land use development that may cause the attraction of birds to increase is also prohibited. See Policy 4.3.7 for details.
9 Storage of aviation fuel and other aviation-related flammable materials on the airport is exempted from this criterion. Storage of up to 6,000 gallons of nonaviation flammable materials is also exempted. See Policy 4.2.3(c) for details.
10 Critical community facilities include power plants, electrical substations, and public communications facilities. See Policy 4.2.3(d) for details.
11 NLR = Noise Level Reduction, the outside-to-inside sound level attenuation that the structure provides. See Policy 4.1.6 for details.
12 Objects up to 35 feet in height are permitted. However, the Federal Aviation Administration may require marking and lighting of certain objects. See Policy 4.3.6 for details.

It was previously believed that Site 2 was located within Zone B2, but further analysis revealed it is located just inside Zone A. The new administration building is also located in Zone A. Site 2 (within Zone A) would be problematic because this area prohibits all assemblages of people. Sites 1 and 3 within Zone B2 would limit people to 200 per acre. All other criteria will most likely be met by the facility in either site.

Site 2 being located within Zone A does not automatically disqualify this site; however, it does make Sites 1 and 3 more attractive from a land use compatibility standpoint. Also, since site analysis is in preliminary stages, there is a possibility the exact location of the hangar could be moved away from the runway and into Zone B2.

Review Process

The hangar facility would likely receive a determination of consistency from the ALUC if the parameters of the facility fall within the guidelines of the ALUCP, as detailed in the table above. However, it has already been determined the facility may host events with over 200 people. Any congregation of people is normally unacceptable in Zone A and events with over 200 people in a one-acre area would violate the ALUCP policies for maximum intensities within ALUC Zone B2.

There is a provision within the ALUCP that allows for review of facilities that do not fall within compatibility criteria. The ALUC can override its own plan, and find the facility to be consistent on the basis of “Other Special Conditions” criteria (Policy 3.3.6 – see below).

If this fails, there is an option for the Airport Board to override the ALUC, with a 4/5 vote; however, this could prove to be politically sensitive. This is not the preferred avenue of approval at this time.

Special consideration approval by the ALUC will require a detailed site plan with a precise estimation of proposed uses and intensities. This is not an open ended exception – the maximum number of people, number of occasions, and types of events should be specifically known and described in detail in the proposal. The proposal should address if there will be any activity or congregation of people outside of the facility and potentially closer to the runway.

Current Airport Land Use Compatibility Plan

Policy and compatibility zones in the adopted ALUCP are based on projected aircraft activity, and the runway configuration from the 1996 Airport Master Plan. The 1996 Plan predicts aviation activity to be greater than what is forecasted today, and shows an additional two runways at the Airport. These factors drive the size and shape of compatibility zones.

The Airport recently updated their Master Plan which was conditionally accepted by the Airport Board, pending environmental documentation. The approval of the new Master Plan is not expected until spring of 2015. An update of the ALUCP to take into account the new Master Plan will eventually occur, but this is not expected before the hangar is designed and sited. Therefore, the ALUC will use the 2002 ALUCP that is based on the 1996 Master Plan for policies on hangar approval.

This is significant because zones in the 2002 ALUCP are based on a runway configuration that is no longer being planned for. The new Master Plan is proposing no additional runways, fewer operations forecasted, and hopes to shift some activity to Runway 2-20. The new Master Plan is also not proposing a future increase in the Airport reference code, as the 1996 Plan does. These factors may reduce the size of zones lateral to the runway in the future ALUCP, but there is no guarantee of this. Nevertheless, it may help to argue these points in the proposal for this hangar to the ALUC, especially if the need for a special conditions exception becomes evident.

Regardless of what changes to the ALUCP may ultimately be forthcoming, a site for the proposed hangar with its community use function that is not on the front line facing the runway is likely to be viewed more favorably by the ALUC than a location closer to the runway. This factor clearly favors Sites 1 and 3 over Site 2. Further, outdoor community activities on the pavement adjacent to the hangar would be particularly constrained, if not precluded entirely, at Site 2.

Strategy

- Engage the public / stakeholders early and determine who will be using this facility for events.
- Determine a maximum number of public events in a year and the maximum amount of people that will be expected at each.
- Inform ALUC staff of the intentions of this facility early in programming for the facility. Keep regular communication with ALUC staff during the design and siting of the hangar.
- Highlight that the 2014 Master Plan proposes reducing the runway reference code, critical areas, and forecasted operations from the 1996 Master Plan. Zones lateral the runway could potentially be reduced in the next iteration of the ALUCP.
- As a concession, one idea is to propose closing Runway 11-29 during large gatherings. This would only be for a few hours at a time, a few times a year, and increase the safety at either Site 1, 2, or 3.

Policy 3.3.6:

Other Special Conditions: The compatibility criteria set forth in this plan are intended to be applicable to all locations within the Truckee Tahoe Airport influence area. However, it is recognized that there may be specific situations where a normally incompatible use can be considered compatible because of terrain, specific location, or other extraordinary factors or circumstances related to the site.

(a) After due consideration of all the factors involved in such situations, the Commission may find a normally incompatible use to be acceptable.

(b) In reaching such a decision, the Commission shall make specific findings as to why the exception is being made and that the land use will not create a safety hazard to people on the ground or aircraft in flight nor result in excessive noise exposure for the proposed use. Findings also shall be made as to the nature of the extraordinary circumstances that warrant the policy exception.

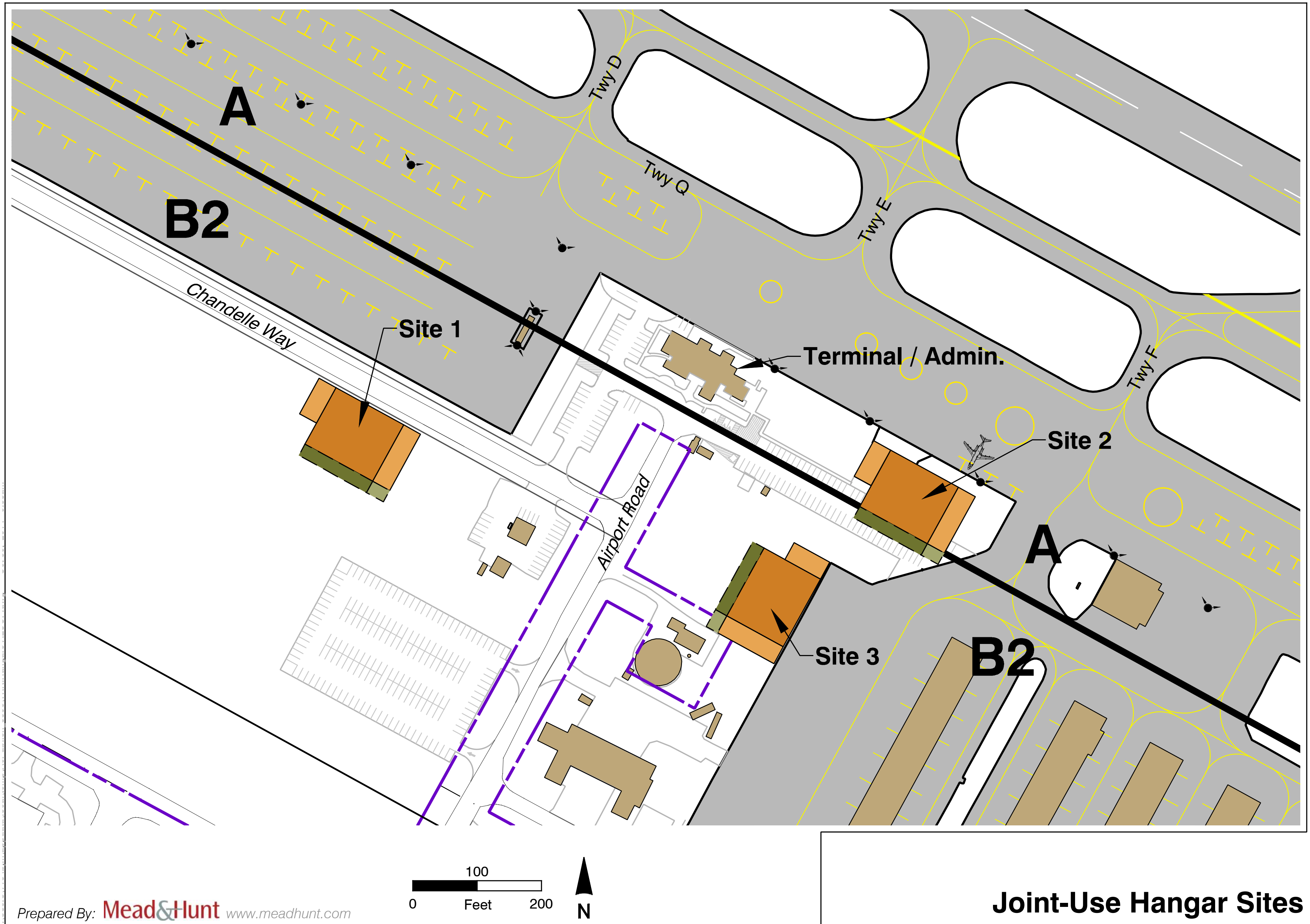
(c) The burden for demonstrating that special conditions apply to a particular development proposal rests with the project proponent and /or the referring agency, not with the ALUC.

(d) The granting of a special conditions exception shall be considered site specific and shall not be generalized to include other sites.

Sincerely,

MEAD & HUNT, Inc.

Bradley Musinski, AICP



Prepared By: Mead&Hunt www.meadhunt.com

Joint-Use Hangar Sites

Truckee-Tahoe Airport

Appendix M

Financial Feasibility

Truckee Tahoe Airport District
Hangar 3 Feasibility Analysis
Results & Assumptions (40 Year)
5/15/2016

Results thru 2056

	Option 1	Option 2	Option 3
Operating Revenues			
Hangar Rental	13,839,700	13,839,700	13,839,700
De-Icing	2,283,100	2,283,100	3,424,600
Community Component	-	-	-
Other Revenue	-	-	-
Total Operating Revenues	16,122,800	16,122,800	17,264,300
Operating Expenditures			
Hangar	6,287,100	6,287,100	6,393,400
De-Icing	342,400	342,400	342,500
Community Component	-	220,300	2,760,600
Other Expenditures	-	-	-
Total Operating Expenditures	6,629,500	6,849,800	9,496,500
Net Operating Cash Flow	9,493,300	9,273,000	7,767,800
Development Cost			
Hangar	3,134,000	3,864,000	4,397,000
GSE Space	-	-	538,000
Community Component	-	1,344,000	3,223,000
Total Development Cost	3,134,000	5,208,000	8,158,000
Net Cash Flow	6,359,300	4,065,000	(390,200)
Base Year Results			
Total Operating Revenues	232,200	232,200	248,600
Total Operating Expenditures	(95,500)	(98,700)	(136,800)
Net Operating Cash Flow	136,700	133,500	111,800
Financial Results			
Break Even Period	2036	2045	2055+
Years to Break Even	20	29	40+
Community Component	-	1,564,300	5,983,600
IRR % w/ Community Component	5.61%	2.66%	-0.21%
IRR % w/o Community Component	5.61%	4.37%	3.59%

Assumptions

Operations

	1	2	3
Hangar Rental Revenue			
Hangar Rental Events/Day	1.00	1.00	1.00
Hangar Rental Average Rate/Day	$500	$500	$500
De-Icing Revenue & COGS			
De-Icing Events/Year	30	30	30
De-Icing Rate	$1,000	$1,000	$1,500
De-Icing COGS	15%	15%	10%
Staffing, Utilities, Maintenance			
Utilities & Janitorial/Year - Hangar	12,100	12,100	13,800
Utilities & Janitorial/Year - Community Component	-	-	10,900
Staffing/Year - Hangar	60,000	60,000	54,000
Staffing/Year - Community Component	-	-	21,000
Repairs, Maintenance, Refurbishment/Year - Hangar	10,800	10,800	16,500
Repairs, Maintenance, Refurbishment/Year - Community Component	-	2,900	4,500
Escalation Factor	3.00%	3.00%	3.00%

Development

	1	2	3
Development Cost			
Hangar	3,134,000	3,864,000	4,397,000
GSE Space	-	-	538,000
Community Component	-	1,344,000	3,223,000
Total Development Cost (including contingency)	3,134,000	5,208,000	8,158,000
Incremental Development Cost			
Hangar	-	730,000	533,000
GSE Space	-	-	538,000
Community Component	-	1,344,000	1,879,000
Total Development Cost (including contingency)	-	2,074,000	2,950,000
Cumulative Incremental Development Cost			
Hangar	-	730,000	1,263,000
GSE Space	-	-	538,000
Community Component	-	1,344,000	3,223,000
Total Development Cost (including contingency)	-	2,074,000	5,024,000
Building Size			
Hangar	14,400	14,400	14,400
GSE Space	-	-	2,050
Community Component	-	-	3,630
Total Building Size	14,400	14,400	20,080
Development Cost / Square Foot			
Hangar	218	268	305
GSE Space	-	-	262
Community Component	-	-	888
Total Development Cost / Square Foot	218	362	406

Truckee Tahoe Airport District
Hangar 3 Feasibility Analysis
Operation Expenditure Assumptions (Annual)
5/15/2016

	Option 1	Option 2	Option 3
Summary			
Hangar & GSE			
Utilities, Janitorial and Other Operational Cost	12,100	12,100	13,800
Staffing Cost	60,000	60,000	54,000
Repair & Maintenance Reserve	10,800	10,800	16,500
Total Operating Expenditures	82,900	82,900	84,300
Community Contribution			
Utilities, Janitorial and Other Operational Cost	-	-	10,900
Staffing Cost	-	-	21,000
Repair & Maintenance Reserve	-	2,900	4,500
Total Operating Expenditures	-	2,900	36,400
Total			
Utilities, Janitorial and Other Operational Cost	12,100	12,100	24,700
Staffing Cost	60,000	60,000	75,000
Repair & Maintenance Reserve	10,800	13,700	21,000
Total Operating Expenditures	82,900	85,800	120,700

Detail

Utilities, Janitorial and Other Operational Cost

	Option 1	Option 2	Option 3
Utilities, Janitorial, Operational Cost/Sq.Ft./Month			
Hangar & GSE	$0.07	$0.07	$0.07
Community Contribution	$0.00	$0.00	$0.25
Building Size (Aviation/Community Component)			
Aviation Space	14,400	14,400	16,450
Community Contribution	-	-	3,630
Total	14,400	14,400	20,080
Utilities & Janitorial Cost/Month			
Aviation Space	1,008	1,008	1,152
Community Contribution	-	-	908
Total	1,008	1,008	2,059
Utilities & Janitorial Cost/Year			
Aviation Space	12,100	12,100	13,800
Community Contribution	-	-	10,900
Total	12,100	12,100	24,700

Staffing Cost

	Option 1	Option 2	Option 3
Staffing Cost/Year			
Fully Loaded FTE	60,000	60,000	60,000
Estimated FTEs	100%	100%	125%
Total Staffing Cost/Year	60,000	60,000	75,000
Staffing Allocation			
Aviation	100.000%	100.000%	72.000%
Community Contribution	0.000%	0.000%	28.000%
Staffing Cost Allocation/Year			
Aviation	60,000	60,000	54,000
Community Contribution	-	-	21,000
Total Staffing Cost/Year	60,000	60,000	75,000

Repair & Maintenance Reserve

	Option 1	Option 2	Option 3
Repairs/Maintenance/Refurbishment Reserve/Sq.Ft./Year			
Aviation Space	0.75	0.75	1.00
Community Contribution	-	0.20	1.25
Building Size (Aviation/Community Component)			
Aviation Space	14,400	14,400	16,450
Community Contribution	-	-	3,630
Total	14,400	14,400	20,080
Repairs/Maintenance/Refurbishment Reserve/Year			
Aviation Space	10,800	10,800	16,500
Community Contribution	-	2,900	4,500
Total	10,800	13,700	21,000

assumes cost related to operation beyond 7pm-7am and event specific cost will be covered by fee based charges

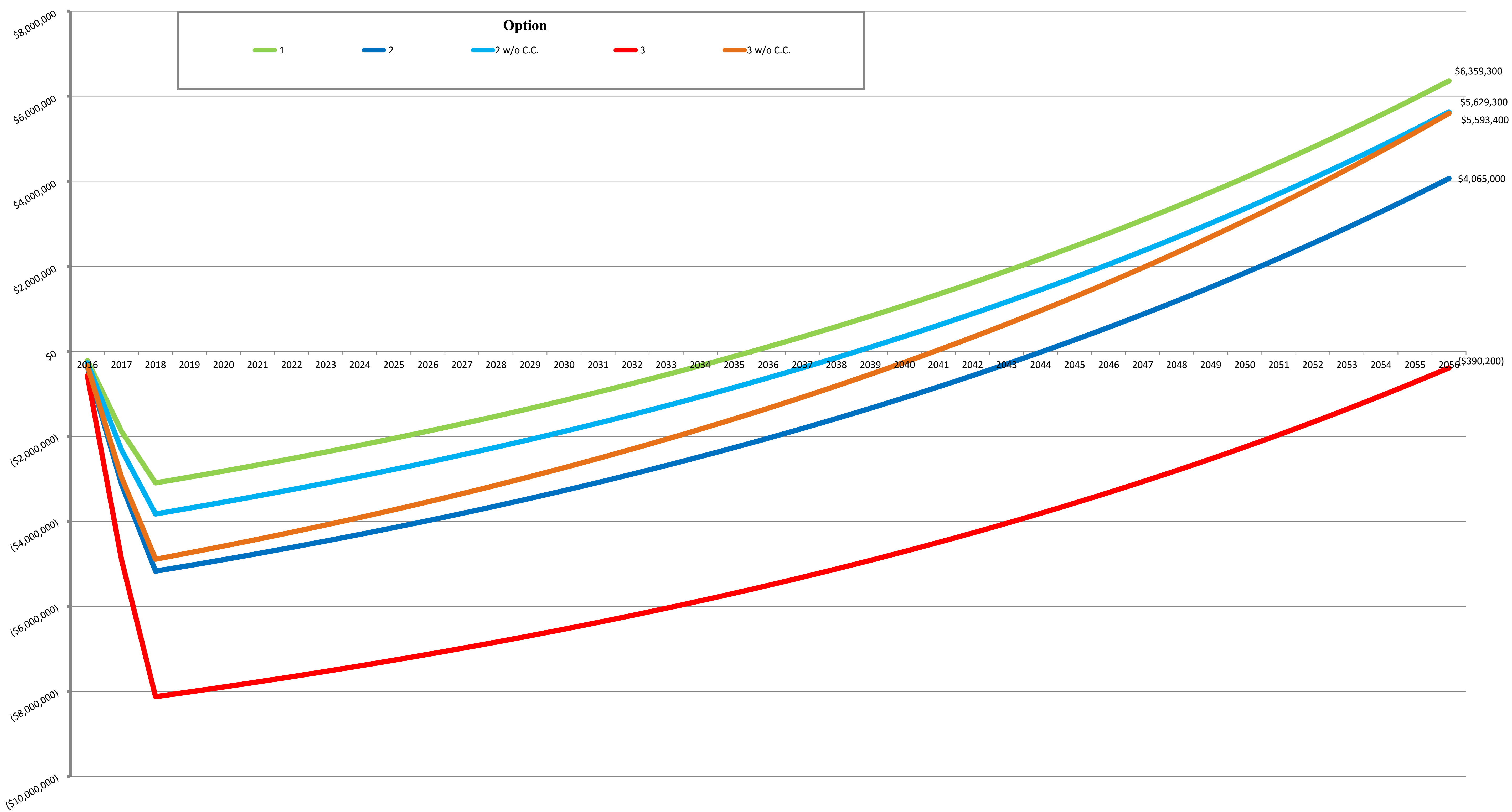
Truckee Tahoe Airport District
Hangar 3 Project Options - Opinion of Probable Cost
5/15/2016

Option	Square Feet	Description	Functions/Components	Added Cost	Estimated Project Costs	Hangar	GSE	Aviation	Community Component	Total
0		Do nothing	0							0
0A	3,333	Refit A9 with Infrared Heaters, re-insolate, floor drains	Small to medium sized aircraft warming, Events up to 222 people with portable toilets		150,000		150,000	150,000		150,000
0B	3,433	0A with Restrooms	Add Restrooms for 200 people (M: 1WC, 2UR - F: 3WC) to the side of A9	208,000	358,000		358,000	358,000		358,000
0C	0	Deicing Truck & Site Improvements	Deicing & anti-icing of planes		467,000		467,000	467,000		467,000
0D		Refit A9 & A10 for Maintenance and Hangar 1for Overnights and Events	Offices and bathroom at A9 (also add fire suppression), new door and heating for Hangar 1		934,000		934,000	934,000		934,000
1	14,400	Basic GA Hangar	Small-large aircraft warming (1-2 Hours) and over-nighting, Events capable with portable toilets, 1 internal toilet & office, Very Basic Looks		3,134,000	3,134,000	-	3,134,000	-	3,134,000
			+ Mono-pitch roof with overhangs	507,000		-	-	-	507,000	507,000
			+ Additional architectural enhancements	135,000		-	-	-	135,000	135,000
			+ Roof & gutter snow melt system	23,000		-	-	-	23,000	23,000
			+ Clerestory windows	30,000		-	-	-	30,000	30,000
			+ Mega-door	217,000		217,000	-	217,000		217,000
			+ Hydronic in-floor heat with boiler	66,000		-	-	-	66,000	66,000
			+ Insulated metal wall panels	238,000		-	-	-	238,000	238,000
			+ Interior walls to 8'	23,000		-	-	-	23,000	23,000
			+ Sidewalks, enhanced landscaping	39,000		-	-	-	39,000	39,000
			+ 20' of heated ramp	149,000		149,000	-	149,000		149,000
			+ Roof & wall blocking for metal panels	60,000		-	-	-	60,000	60,000
			+ Overhead coiling doors	37,000		37,000	-	37,000		37,000
			+ Board formed concrete wainscoting	72,000		-	-	-	72,000	72,000
			+ Electrical high bay lighting	176,000		176,000	-	176,000		176,000
			+ Additional permitting	36,000		18,000	-	18,000	18,000	36,000
			+ Duration (additional 3 months of General Conditions)	266,000		133,000	-	133,000	133,000	266,000
2	14,400	Truckee Hangar Design	=	2,074,000	5,208,000	3,864,000	-	3,864,000	1,344,000	5,208,000
			+ Backup generator	60,000		60,000	-	60,000		60,000
			+ Epoxy flooring	136,000		136,000	-	136,000		136,000
			+ Aircraft rectifier	48,000		-	48,000	48,000		48,000
			+ Basic expected aircraft services (Lav dump, air, water, ice, washer/dryer), and storage for those services	490,000		-	490,000	490,000		490,000
			+ Restrooms for 200 people (M: 1WC, 2UR - F: 3WC)	304,000		-	-	-	304,000	304,000
			+ More community component and upgraded services for events	1,382,000		-		-	1,382,000	1,382,000
			+ Upgrade kitchen area to commercial	102,000		-	-	-	102,000	102,000
			+ Upgrade restrooms 600 people. (M: 3WC, 2UR - F: 6WC)	91,000		-	-	-	91,000	91,000
			+ Add de-icing system capable of melting 3" of snow in 20 minutes.	337,000		337,000	-	337,000		337,000
3	20,080	Multi-Purpose Hangar with Commercial Kitchen & Rapid Snow/Ice melt	=	2,950,000	8,158,000	4,397,000	538,000	4,935,000	3,223,000	8,158,000

Notes:

1 GA Hangar includes minimal 120'x120' hangar structure with sectional sliding doors
2 Modified hangar includes clerestory windows, 3 panel vertical lift fabric door.
3 Cost and Extent of IR system still under review
4 Cost of Deicing pad based on another airport, adjusted for scale and location only. No design has yet been conducted.

Truckee Tahoe Airport District
Hangar 3 Feasibility Analysis
Projected Net Cash Flow
5/15/2016



Truckee Tahoe Airport District
Hangar 3 Feasibility Analysis
Cash Flow Summary - Option 1
5/15/2016

	0 2016	1 2017	2 2018	3 2019	4 2020	5 2021	6 2022	7 2023	8 2024	9 2025	10 2026	11-20 2027-2036	21-30 2037-2046	31-40 2047-2056	Total
Operating Cash Flow															
Operating Revenues															
Hangar Rental	-	-	47,700	199,400	205,400	211,600	217,900	224,500	231,200	238,100	245,300	2,895,900	3,892,100	5,230,600	13,839,700
De-Icing	-	-	15,900	32,800	33,800	34,800	35,800	36,900	38,000	39,100	40,300	476,100	639,700	859,900	2,283,100
Community Component	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other Revenue	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Operating Revenues	-	-	63,600	232,200	239,200	246,400	253,700	261,400	269,200	277,200	285,600	3,372,000	4,531,800	6,090,500	16,122,800
Operating Expenditures															
Hangar	-	-	22,000	90,600	93,300	96,100	99,000	102,000	105,000	108,200	111,400	1,315,500	1,767,900	2,376,100	6,287,100
De-Icing	-	-	2,400	4,900	5,100	5,200	5,400	5,500	5,700	5,900	6,000	71,300	96,000	129,000	342,400
Community Component	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other Expenditures	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Operating Expenditures	-	-	24,400	95,500	98,400	101,300	104,400	107,500	110,700	114,100	117,400	1,386,800	1,863,900	2,505,100	6,629,500
Net Operating Cash Flow	-	-	39,200	136,700	140,800	145,100	149,300	153,900	158,500	163,100	168,200	1,985,200	2,667,900	3,585,400	9,493,300
Development Cost															
Development Cost															
Hangar	219,400	1,661,000	1,253,600	-	-	-	-	-	-	-	-	-	-	-	3,134,000
GSE Space	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Community Component	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Development Cost	219,400	1,661,000	1,253,600	-	-	-	-	-	-	-	-	-	-	-	3,134,000
Net Cash Flow	(219,400)	(1,661,000)	(1,214,400)	136,700	140,800	145,100	149,300	153,900	158,500	163,100	168,200	1,985,200	2,667,900	3,585,400	6,359,300
Cumulative Net Cash Flow	(219,400)	(1,880,400)	(3,094,800)	(2,958,100)	(2,817,300)	(2,672,200)	(2,522,900)	(2,369,000)	(2,210,500)	(2,047,400)	(1,879,200)	106,000	2,773,900	6,359,300	
w/o Community Contribution															
Net Cash Flow (above)	(219,400)	(1,661,000)	(1,214,400)	136,700	140,800	145,100	149,300	153,900	158,500	163,100	168,200	1,985,200	2,667,900	3,585,400	6,359,300
Community Component - Operating Expenditures	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Community Component - Development Cost	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Community Component - Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Net Cash Flow	(219,400)	(1,661,000)	(1,214,400)	136,700	140,800	145,100	149,300	153,900	158,500	163,100	168,200	1,985,200	2,667,900	3,585,400	6,359,300
Cumulative Net Cash Flow	(219,400)	(1,880,400)	(3,094,800)	(2,958,100)	(2,817,300)	(2,672,200)	(2,522,900)	(2,369,000)	(2,210,500)	(2,047,400)	(1,879,200)	106,000	2,773,900	6,359,300	

Truckee Tahoe Airport District
Hangar 3 Feasibility Analysis
Cash Flow Summary - Option 1
5/15/2016

	0 2016	1 2017	2 2018	3 2019	4 2020	5 2021	6 2022	7 2023	8 2024	9 2025	10 2026	11-20 2027-2036	21-30 2037-2046	31-40 2047-2056	Total
Hangar Rental Revenue															
Hangar Rental Average Rate/Day	500.00	500.00	500.00	500.00	500.00	500.00	500.00	500.00	500.00	500.00	500.00	500.00	500.00	500.00	
Hangar Rental Events/Day	-	-	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Hangar Rental Events/Year	-	-	90.00	365.00	365.00	365.00	365.00	365.00	365.00	365.00	365.00	3,650.00	3,650.00	3,650.00	
Hangar Rental Revenue before Escalation	-	-	45,000	182,500	182,500	182,500	182,500	182,500	182,500	182,500	182,500	1,825,000	1,825,000	1,825,000	
Escalation Factor	100.00%	103.00%	106.09%	109.27%	112.55%	115.93%	119.41%	122.99%	126.68%	130.48%	134.39%	158.68%	213.27%	286.61%	
Hangar Rental Revenue	-	-	47,700	199,400	205,400	211,600	217,900	224,500	231,200	238,100	245,300	2,895,900	3,892,100	5,230,600	13,839,700
De-Icing															
De-Icing Rate/Event	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	
De-Icing Event/Year	-	-	15	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00	300.00	300.00	300.00	
De-Icing Revenue before Escalation	-	-	15,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	300,000	300,000	300,000	
Escalation Factor	100.00%	103.00%	106.09%	109.27%	112.55%	115.93%	119.41%	122.99%	126.68%	130.48%	134.39%	158.70%	213.23%	286.63%	
De-Icing Revenue	-	-	15,900	32,800	33,800	34,800	35,800	36,900	38,000	39,100	40,300	476,100	639,700	859,900	2,283,100
De-Icing COGS Percentage	15.00%	15.00%	15.00%	15.00%	15.00%	15.00%	15.00%	15.00%	15.00%	15.00%	15.00%	15.00%	15.00%	15.00%	
De-Icing COGS	-	-	2,400	4,900	5,100	5,200	5,400	5,500	5,700	5,900	6,000	71,300	96,000	129,000	342,400
Hangar Staffing, Utilities & Maintenance															
Hangar & GSE Square Feet	14,400	14,400	14,400	14,400	14,400	14,400	14,400	14,400	14,400	14,400	14,400	14,400	14,400	14,400	
Utilities & Janitorial/Year - Hangar	12,100	12,100	12,100	12,100	12,100	12,100	12,100	12,100	12,100	12,100	12,100	12,100	12,100	12,100	
Staffing/Year - Hangar	60,000	60,000	60,000	60,000	60,000	60,000	60,000	60,000	60,000	60,000	60,000	60,000	60,000	60,000	
Repairs, Maintenance, Refurbishment/Year - Hangar	10,800	10,800	10,800	10,800	10,800	10,800	10,800	10,800	10,800	10,800	10,800	10,800	10,800	10,800	
	82,900	82,900	82,900	82,900	82,900	82,900	82,900	82,900	82,900	82,900	82,900	82,900	82,900	82,900	
Months	-	-	3	12	12	12	12	12	12	12	12	120	120	120	
Staffing, Utilities & Maintenance - Hangar before Esca	-	-	20,725	82,900	82,900	82,900	82,900	82,900	82,900	82,900	82,900	829,000	829,000	829,000	
Escalation Factor	100.00%	103.00%	106.09%	109.27%	112.55%	115.93%	119.41%	122.99%	126.68%	130.48%	134.39%	158.69%	213.26%	286.62%	
Hangar Staffing, Utilities & Maintenance	-	-	22,000	90,600	93,300	96,100	99,000	102,000	105,000	108,200	111,400	1,315,500	1,767,900	2,376,100	6,287,100
Community Component Staffing, Utilities & Maintenance															
Community Component Square Feet	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Utilities & Janitorial/Year - Community Component	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Staffing/Year - Community Component	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Repairs, Maintenance, Refurbishment/Year - Commun	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Months	-	-	3	12	12	12	12	12	12	12	12	120	120	120	
Staffing, Utilities & Maintenance - Community Compo	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Escalation Factor	100.00%	103.00%	106.09%	109.27%	112.55%	115.93%	119.41%	122.99%	126.68%	130.48%	134.39%	158.69%	213.26%	286.62%	
Community Component Staffing, Utilities & Maintena	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Truckee Tahoe Airport District
Hangar 3 Feasibility Analysis
Sensitivity Tables - Option 1
5/15/2016

Average Hangar Rate to Hangar Rentals/Day Sensitivity - Annual Hangar Revenue before Escalation

Hangar Rentals / Day	Average Hangar Rate: $500	$525	$550	$575	$600	$625	$650	$675	$700
0.80	146,000	153,300	160,600	167,900	175,200	182,500	189,800	197,100	204,400
0.90	164,300	172,500	180,700	188,900	197,100	205,300	213,500	221,700	230,000
1.00	182,500	191,600	200,800	209,900	219,000	228,100	237,300	246,400	255,500
1.10	200,800	210,800	220,800	230,900	240,900	250,900	261,000	271,000	281,100
1.20	219,000	230,000	240,900	251,900	262,800	273,800	284,700	295,700	306,600
1.30	237,300	249,100	261,000	272,800	284,700	296,600	308,400	320,300	332,200
1.40	255,500	268,300	281,100	293,800	306,600	319,400	332,200	344,900	357,700
1.50	273,800	287,400	301,100	314,800	328,500	342,200	355,900	369,600	383,300

Average De-Icing Rate to De-Icing Event/Year Sensitivity - Annual De-Icing Revenue before Escalation

De-Icing Events / Year	Average De-Icing Rate: $800	$850	$900	$950	$1,000	$1,050	$1,100	$1,150	$1,200
20	16,000	17,000	18,000	19,000	20,000	21,000	22,000	23,000	24,000
25	20,000	21,300	22,500	23,800	25,000	26,300	27,500	28,800	30,000
30	24,000	25,500	27,000	28,500	30,000	31,500	33,000	34,500	36,000
35	28,000	29,800	31,500	33,300	35,000	36,800	38,500	40,300	42,000
40	32,000	34,000	36,000	38,000	40,000	42,000	44,000	46,000	48,000
45	36,000	38,300	40,500	42,800	45,000	47,300	49,500	51,800	54,000
50	40,000	42,500	45,000	47,500	50,000	52,500	55,000	57,500	60,000
55	44,000	46,800	49,500	52,300	55,000	57,800	60,500	63,300	66,000

Average Hangar Rate to Hangar Rentals/Day Sensitivity - Net Cash Flow thru 2056

Hangar Rentals / Day	Average Hangar Rate: $500	$525	$550	$575	$600	$625	$650	$675	$700
0.80	3,591,400	4,144,900	4,698,400	5,252,000	5,805,700	6,359,300	6,912,700	7,466,600	8,020,200
0.90	4,975,400	5,598,300	6,220,900	6,843,900	7,466,600	8,089,400	8,711,800	9,334,700	9,957,700
1.00	6,359,300	7,051,300	7,743,400	8,435,200	9,127,100	9,819,500	10,511,000	11,203,200	11,895,600
1.10	7,743,400	8,504,200	9,265,500	10,027,000	10,787,800	11,549,200	12,310,500	13,071,600	13,832,500
1.20	9,127,100	9,957,700	10,787,800	11,618,200	12,448,900	13,279,400	14,109,400	14,939,700	15,770,300
1.30	10,511,000	11,410,900	12,310,500	13,210,400	14,109,400	15,009,200	15,908,400	16,808,400	17,707,800
1.40	11,895,600	12,863,800	13,832,500	14,801,600	15,770,300	16,739,100	17,707,800	18,676,800	19,645,200
1.50	13,279,400	14,317,100	15,354,900	16,393,000	17,430,900	18,469,300	19,506,900	20,544,900	21,583,200

Average De-Icing Rate to De-Icing Event/Year Sensitivity - Net Cash Flow thru 2056

De-Icing Events / Year	Average De-Icing Rate: $800	$850	$900	$950	$1,000	$1,050	$1,100	$1,150	$1,200
20	5,453,400	5,518,300	5,582,700	5,647,900	5,712,100	5,776,700	5,842,100	5,906,500	5,971,400
25	5,712,100	5,792,900	5,873,800	5,955,100	6,035,700	6,116,700	6,197,500	6,278,100	6,359,300
30	5,971,400	6,068,200	6,165,300	6,262,000	6,359,300	6,456,500	6,553,300	6,650,100	6,747,100
35	6,230,200	6,342,800	6,456,500	6,569,700	6,682,300	6,795,800	6,909,100	7,022,600	7,135,300
40	6,488,100	6,617,700	6,747,100	6,876,800	7,006,000	7,135,300	7,264,600	7,394,300	7,523,100
45	6,747,100	6,893,000	7,038,500	7,184,400	7,329,400	7,475,000	7,620,900	7,766,400	7,911,300
50	7,006,000	7,167,700	7,329,400	7,491,000	7,652,500	7,814,700	7,976,500	8,138,400	8,299,800
55	7,264,600	7,442,700	7,620,900	7,798,200	7,976,500	8,154,600	8,332,000	8,510,000	8,687,900

Average Hangar Rate to Hangar Rentals/Day Sensitivity - IRR%

Hangar Rentals / Day	Average Hangar Rate: $500	$525	$550	$575	$600	$625	$650	$675	$700
0.80	3.63%	4.06%	4.47%	4.86%	5.24%	5.61%	5.97%	6.31%	6.65%
0.90	4.67%	5.10%	5.52%	5.92%	6.31%	6.69%	7.06%	7.42%	7.77%
1.00	5.61%	6.05%	6.48%	6.90%	7.30%	7.69%	8.07%	8.44%	8.81%
1.10	6.48%	6.94%	7.38%	7.80%	8.22%	8.63%	9.03%	9.42%	9.80%
1.20	7.30%	7.77%	8.22%	8.67%	9.10%	9.52%	9.94%	10.35%	10.75%
1.30	8.07%	8.56%	9.03%	9.49%	9.94%	10.38%	10.82%	11.24%	11.67%
1.40	8.81%	9.31%	9.80%	10.28%	10.75%	11.21%	11.67%	12.11%	12.56%
1.50	9.52%	10.04%	10.55%	11.05%	11.54%	12.02%	12.49%	12.96%	13.42%

Average De-Icing Rate to De-Icing Event/Year Sensitivity - IRR%

De-Icing Events / Year	Average De-Icing Rate: $800	$850	$900	$950	$1,000	$1,050	$1,100	$1,150	$1,200
20	5.00%	5.04%	5.09%	5.13%	5.18%	5.22%	5.27%	5.31%	5.35%
25	5.18%	5.23%	5.29%	5.34%	5.40%	5.45%	5.50%	5.56%	5.61%
30	5.35%	5.42%	5.48%	5.55%	5.61%	5.67%	5.74%	5.80%	5.86%
35	5.53%	5.60%	5.67%	5.75%	5.82%	5.89%	5.97%	6.04%	6.11%
40	5.70%	5.78%	5.86%	5.95%	6.03%	6.11%	6.19%	6.27%	6.35%
45	5.86%	5.96%	6.05%	6.14%	6.23%	6.32%	6.41%	6.50%	6.59%
50	6.03%	6.13%	6.23%	6.33%	6.43%	6.53%	6.63%	6.73%	6.83%
55	6.19%	6.30%	6.41%	6.52%	6.63%	6.74%	6.84%	6.95%	7.06%

Average Hangar Rate to Hangar Rentals/Day Sensitivity - Payback Period

Hangar Rentals / Day: 20	Average Hangar Rate: $500	$525	$550	$575	$600	$625	$650	$675	$700
0.80	25	24	23	22	21	20	19	19	18
0.90	22	21	20	19	19	18	17	17	16
1.00	20	19	18	17	17	16	16	15	15
1.10	18	17	17	16	15	15	14	14	13
1.20	17	16	15	15	14	14	13	13	12
1.30	16	15	14	14	13	13	12	12	12
1.40	15	14	13	13	12	12	12	11	11
1.50	14	13	13	12	12	11	11	11	10

Average De-Icing Rate to De-Icing Event/Year Sensitivity - Payback Period

De-Icing Events / Year: 20	Average De-Icing Rate: $800	$850	$900	$950	$1,000	$1,050	$1,100	$1,150	$1,200
20	21	21	21	21	21	21	21	21	21
25	21	21	21	21	21	20	20	20	20
30	21	20	20	20	20	20	20	20	19
35	20	20	20	20	20	19	19	19	19
40	20	20	19	19	19	19	19	19	18
45	19	19	19	19	19	19	18	18	18
50	19	19	19	19	18	18	18	18	18
55	19	19	18	18	18	18	18	17	17

Average Hangar Rate to Hangar Rentals/Day Sensitivity - IRR% before Community Component Impact

Hangar Rentals / Day	Average Hangar Rate: $500	$525	$550	$575	$600	$625	$650	$675	$700
0.80	3.63%	4.06%	4.47%	4.86%	5.24%	5.61%	5.97%	6.31%	6.65%
0.90	4.67%	5.10%	5.52%	5.92%	6.31%	6.69%	7.06%	7.42%	7.77%
1.00	5.61%	6.05%	6.48%	6.90%	7.30%	7.69%	8.07%	8.44%	8.81%
1.10	6.48%	6.94%	7.38%	7.80%	8.22%	8.63%	9.03%	9.42%	9.80%
1.20	7.30%	7.77%	8.22%	8.67%	9.10%	9.52%	9.94%	10.35%	10.75%
1.30	8.07%	8.56%	9.03%	9.49%	9.94%	10.38%	10.82%	11.24%	11.67%
1.40	8.81%	9.31%	9.80%	10.28%	10.75%	11.21%	11.67%	12.11%	12.56%
1.50	9.52%	10.04%	10.55%	11.05%	11.54%	12.02%	12.49%	12.96%	13.42%

Average De-Icing Rate to De-Icing Event/Year Sensitivity - IRR% before Community Component Impact

De-Icing Events / Year	Average De-Icing Rate: $800	$850	$900	$950	$1,000	$1,050	$1,100	$1,150	$1,200
20	5.00%	5.04%	5.09%	5.13%	5.18%	5.22%	5.27%	5.31%	5.35%
25	5.18%	5.23%	5.29%	5.34%	5.40%	5.45%	5.50%	5.56%	5.61%
30	5.35%	5.42%	5.48%	5.55%	5.61%	5.67%	5.74%	5.80%	5.86%
35	5.53%	5.60%	5.67%	5.75%	5.82%	5.89%	5.97%	6.04%	6.11%
40	5.70%	5.78%	5.86%	5.95%	6.03%	6.11%	6.19%	6.27%	6.35%
45	5.86%	5.96%	6.05%	6.14%	6.23%	6.32%	6.41%	6.50%	6.59%
50	6.03%	6.13%	6.23%	6.33%	6.43%	6.53%	6.63%	6.73%	6.83%
55	6.19%	6.30%	6.41%	6.52%	6.63%	6.74%	6.84%	6.95%	7.06%

Escalation Impact

	Escalation Rate (combination of Inflation and Utilization): 1.00%	1.50%	2.00%	2.50%	3.00%	3.50%	4.00%	4.50%	5.00%
Net Cash Flo	2,825,800	3,539,100	4,353,800	5,288,100	6,359,300	7,589,500	9,003,900	10,631,600	12,505,600
IRR%	3.40%	3.96%	4.51%	5.06%	5.61%	6.16%	6.72%	7.27%	7.82%
Payback	24	23	22	21	20	19	19	18	17
IRR%	3.40%	3.96%	4.51%	5.06%	5.61%	6.16%	6.72%	7.27%	7.82%

Truckee Tahoe Airport District
Hangar 3 Feasibility Analysis
Cash Flow Summary - Option 2
5/15/2016

	0 2016	1 2017	2 2018	3 2019	4 2020	5 2021	6 2022	7 2023	8 2024	9 2025	10 2026	11-20 2027-2036	21-30 2037-2046	31-40 2047-2056	Total
Operating Cash Flow															
Operating Revenues															
Hangar Rental	-	-	47,700	199,400	205,400	211,600	217,900	224,500	231,200	238,100	245,300	2,895,900	3,892,100	5,230,600	13,839,700
De-Icing	-	-	15,900	32,800	33,800	34,800	35,800	36,900	38,000	39,100	40,300	476,100	639,700	859,900	2,283,100
Community Component	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other Revenue	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Operating Revenues	-	-	63,600	232,200	239,200	246,400	253,700	261,400	269,200	277,200	285,600	3,372,000	4,531,800	6,090,500	16,122,800
Operating Expenditures															
Hangar	-	-	22,000	90,600	93,300	96,100	99,000	102,000	105,000	108,200	111,400	1,315,500	1,767,900	2,376,100	6,287,100
De-Icing	-	-	2,400	4,900	5,100	5,200	5,400	5,500	5,700	5,900	6,000	71,300	96,000	129,000	342,400
Community Component	-	-	800	3,200	3,300	3,400	3,500	3,600	3,700	3,800	3,900	46,000	61,800	83,300	220,300
Other Expenditures	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Operating Expenditures	-	-	25,200	98,700	101,700	104,700	107,900	111,100	114,400	117,900	121,300	1,432,800	1,925,700	2,588,400	6,849,800
Net Operating Cash Flow	-	-	38,400	133,500	137,500	141,700	145,800	150,300	154,800	159,300	164,300	1,939,200	2,606,100	3,502,100	9,273,000
Development Cost															
Development Cost															
Hangar	270,500	2,047,900	1,545,600	-	-	-	-	-	-	-	-	-	-	-	3,864,000
GSE Space	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Community Component	94,100	712,300	537,600	-	-	-	-	-	-	-	-	-	-	-	1,344,000
Total Development Cost	364,600	2,760,200	2,083,200	-	-	-	-	-	-	-	-	-	-	-	5,208,000
Net Cash Flow	(364,600)	(2,760,200)	(2,044,800)	133,500	137,500	141,700	145,800	150,300	154,800	159,300	164,300	1,939,200	2,606,100	3,502,100	4,065,000
Cumulative Net Cash Flow	(364,600)	(3,124,800)	(5,169,600)	(5,036,100)	(4,898,600)	(4,756,900)	(4,611,100)	(4,460,800)	(4,306,000)	(4,146,700)	(3,982,400)	(2,043,200)	562,900	4,065,000	
w/o Community Contribution															
Net Cash Flow (above)	(364,600)	(2,760,200)	(2,044,800)	133,500	137,500	141,700	145,800	150,300	154,800	159,300	164,300	1,939,200	2,606,100	3,502,100	4,065,000
Community Component - Operating Expenditures	-	-	800	3,200	3,300	3,400	3,500	3,600	3,700	3,800	3,900	46,000	61,800	83,300	220,300
Community Component - Development Cost	94,100	712,300	537,600	-	-	-	-	-	-	-	-	-	-	-	1,344,000
Community Component - Total	94,100	712,300	538,400	3,200	3,300	3,400	3,500	3,600	3,700	3,800	3,900	46,000	61,800	83,300	1,564,300
Net Cash Flow	(270,500)	(2,047,900)	(1,506,400)	136,700	140,800	145,100	149,300	153,900	158,500	163,100	168,200	1,985,200	2,667,900	3,585,400	5,629,300
Cumulative Net Cash Flow	(270,500)	(2,318,400)	(3,824,800)	(3,688,100)	(3,547,300)	(3,402,200)	(3,252,900)	(3,099,000)	(2,940,500)	(2,777,400)	(2,609,200)	(624,000)	2,043,900	5,629,300	

Truckee Tahoe Airport District
Hangar 3 Feasibility Analysis
Cash Flow Summary - Option 2
5/15/2016

	0	1	2	3	4	5	6	7	8	9	10	11-20	21-30	31-40	
	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027-2036	2037-2046	2047-2056	Total
Hangar Rental Revenue															
Hangar Rental Average Rate/Day	500.00	500.00	500.00	500.00	500.00	500.00	500.00	500.00	500.00	500.00	500.00	500.00	500.00	500.00	
Hangar Rental Events/Day	-	-	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Hangar Rental Events/Year	-	-	90.00	365.00	365.00	365.00	365.00	365.00	365.00	365.00	365.00	3,650.00	3,650.00	3,650.00	
Hangar Rental Revenue before Escalation	-	-	45,000	182,500	182,500	182,500	182,500	182,500	182,500	182,500	182,500	1,825,000	1,825,000	1,825,000	
Escalation Factor	100.00%	103.00%	106.09%	109.27%	112.55%	115.93%	119.41%	122.99%	126.68%	130.48%	134.39%	158.68%	213.27%	286.61%	
Hangar Rental Revenue	-	-	47,700	199,400	205,400	211,600	217,900	224,500	231,200	238,100	245,300	2,895,900	3,892,100	5,230,600	13,839,700
De-Icing															
De-Icing Rate/Event	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	
De-Icing Event/Year	-	-	15	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00	300.00	300.00	300.00	
De-Icing Revenue before Escalation	-	-	15,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	300,000	300,000	300,000	
Escalation Factor	100.00%	103.00%	106.09%	109.27%	112.55%	115.93%	119.41%	122.99%	126.68%	130.48%	134.39%	158.70%	213.23%	286.63%	
De-Icing Revenue	-	-	15,900	32,800	33,800	34,800	35,800	36,900	38,000	39,100	40,300	476,100	639,700	859,900	2,283,100
De-Icing COGS Percentage	15.00%	15.00%	15.00%	15.00%	15.00%	15.00%	15.00%	15.00%	15.00%	15.00%	15.00%	15.00%	15.00%	15.00%	
De-Icing COGS	-	-	2,400	4,900	5,100	5,200	5,400	5,500	5,700	5,900	6,000	71,300	96,000	129,000	342,400
Hangar Staffing, Utilities & Maintenance															
Hangar & GSE Square Feet	14,400	14,400	14,400	14,400	14,400	14,400	14,400	14,400	14,400	14,400	14,400	14,400	14,400	14,400	
Utilities & Janitorial/Year - Hangar	12,100	12,100	12,100	12,100	12,100	12,100	12,100	12,100	12,100	12,100	12,100	12,100	12,100	12,100	
Staffing/Year - Hangar	60,000	60,000	60,000	60,000	60,000	60,000	60,000	60,000	60,000	60,000	60,000	60,000	60,000	60,000	
Repairs, Maintenance, Refurbishment/Year - Hangar	10,800	10,800	10,800	10,800	10,800	10,800	10,800	10,800	10,800	10,800	10,800	10,800	10,800	10,800	
	82,900	82,900	82,900	82,900	82,900	82,900	82,900	82,900	82,900	82,900	82,900	82,900	82,900	82,900	
Months	-	-	3	12	12	12	12	12	12	12	12	120	120	120	
Staffing, Utilities & Maintenance - Hangar before Esca	-	-	20,725	82,900	82,900	82,900	82,900	82,900	82,900	82,900	82,900	829,000	829,000	829,000	
Escalation Factor	100.00%	103.00%	106.09%	109.27%	112.55%	115.93%	119.41%	122.99%	126.68%	130.48%	134.39%	158.69%	213.26%	286.62%	
Hangar Staffing, Utilities & Maintenance	-	-	22,000	90,600	93,300	96,100	99,000	102,000	105,000	108,200	111,400	1,315,500	1,767,900	2,376,100	6,287,100
Community Component Staffing, Utilities & Maintenance															
Community Component Square Feet	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Utilities & Janitorial/Year - Community Component	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Staffing/Year - Community Component	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Repairs, Maintenance, Refurbishment/Year - Commun	2,900	2,900	2,900	2,900	2,900	2,900	2,900	2,900	2,900	2,900	2,900	2,900	2,900	2,900	
	2,900	2,900	2,900	2,900	2,900	2,900	2,900	2,900	2,900	2,900	2,900	2,900	2,900	2,900	
Months	-	-	3	12	12	12	12	12	12	12	12	120	120	120	
Staffing, Utilities & Maintenance - Community Compo	-	-	725	2,900	2,900	2,900	2,900	2,900	2,900	2,900	2,900	29,000	29,000	29,000	
Escalation Factor	100.00%	103.00%	106.09%	109.27%	112.55%	115.93%	119.41%	122.99%	126.68%	130.48%	134.39%	158.69%	213.26%	286.62%	
Community Component Staffing, Utilities & Maintena	-	-	800	3,200	3,300	3,400	3,500	3,600	3,700	3,800	3,900	46,000	61,800	83,300	220,300

Truckee Tahoe Airport District
Hangar 3 Feasibility Analysis
Sensitivity Tables - Option 2
5/15/2016

Average Hangar Rate to Hangar Rentals/Day Sensitivity - Annual Hangar Revenue before Escalation

Hangar Rentals / Day	$500	$525	$550	$575	$600	$625	$650	$675	$700
	Average Hangar Rate								
0.80	146,000	153,300	160,600	167,900	175,200	182,500	189,800	197,100	204,400
0.90	164,300	172,500	180,700	188,900	197,100	205,300	213,500	221,700	230,000
1.00	182,500	191,600	200,800	209,900	219,000	228,100	237,300	246,400	255,500
1.10	200,800	210,800	220,800	230,900	240,900	250,900	261,000	271,000	281,100
1.20	219,000	230,000	240,900	251,900	262,800	273,800	284,700	295,700	306,600
1.30	237,300	249,100	261,000	272,800	284,700	296,600	308,400	320,300	332,200
1.40	255,500	268,300	281,100	293,800	306,600	319,400	332,200	344,900	357,700
1.50	273,800	287,400	301,100	314,800	328,500	342,200	355,900	369,600	383,300

Average De-Icing Rate to De-Icing Event/Year Sensitivity - Annual De-Icing Revenue before Escalation

De-Icing Events / Year	$800	$850	$900	$950	$1,000	$1,050	$1,100	$1,150	$1,200
	Average De-Icing Rate								
20	16,000	17,000	18,000	19,000	20,000	21,000	22,000	23,000	24,000
25	20,000	21,300	22,500	23,800	25,000	26,300	27,500	28,800	30,000
30	24,000	25,500	27,000	28,500	30,000	31,500	33,000	34,500	36,000
35	28,000	29,800	31,500	33,300	35,000	36,800	38,500	40,300	42,000
40	32,000	34,000	36,000	38,000	40,000	42,000	44,000	46,000	48,000
45	36,000	38,300	40,500	42,800	45,000	47,300	49,500	51,800	54,000
50	40,000	42,500	45,000	47,500	50,000	52,500	55,000	57,500	60,000
55	44,000	46,800	49,500	52,300	55,000	57,800	60,500	63,300	66,000

Average Hangar Rate to Hangar Rentals/Day Sensitivity - Net Cash Flow thru 2056

Hangar Rentals / Day	$500	$525	$550	$575	$600	$625	$650	$675	$700
	Average Hangar Rate								
0.80	1,297,100	1,850,600	2,404,100	2,957,700	3,511,400	4,065,000	4,618,400	5,172,300	5,725,900
0.90	2,681,100	3,304,000	3,926,600	4,549,600	5,172,300	5,795,100	6,417,500	7,040,400	7,663,400
1.00	4,065,000	4,757,000	5,449,100	6,140,900	6,832,800	7,525,200	8,216,700	8,908,900	9,601,300
1.10	5,449,100	6,209,900	6,971,200	7,732,700	8,493,500	9,254,900	10,016,200	10,777,300	11,538,200
1.20	6,832,800	7,663,400	8,493,500	9,323,900	10,154,600	10,985,100	11,815,100	12,645,400	13,476,000
1.30	8,216,700	9,116,600	10,016,200	10,916,100	11,815,100	12,714,900	13,614,100	14,514,100	15,413,500
1.40	9,601,300	10,569,500	11,538,200	12,507,300	13,476,000	14,444,800	15,413,500	16,382,500	17,350,900
1.50	10,985,100	12,022,800	13,060,600	14,098,700	15,136,600	16,175,000	17,212,600	18,250,600	19,288,900

Average De-Icing Rate to De-Icing Event/Year Sensitivity - Net Cash Flow thru 2056

De-Icing Events / Year	$800	$850	$900	$950	$1,000	$1,050	$1,100	$1,150	$1,200
	Average De-Icing Rate								
20	3,159,100	3,224,000	3,288,400	3,353,600	3,417,800	3,482,400	3,547,800	3,612,200	3,677,100
25	3,417,800	3,498,600	3,579,500	3,660,800	3,741,400	3,822,400	3,903,200	3,983,800	4,065,000
30	3,677,100	3,773,900	3,871,000	3,967,700	4,065,000	4,162,200	4,259,000	4,355,800	4,452,800
35	3,935,900	4,048,500	4,162,200	4,275,400	4,388,000	4,501,500	4,614,800	4,728,300	4,841,000
40	4,193,800	4,323,400	4,452,800	4,582,500	4,711,700	4,841,000	4,970,300	5,100,000	5,228,800
45	4,452,800	4,598,700	4,744,200	4,890,100	5,035,100	5,180,700	5,326,600	5,472,100	5,617,000
50	4,711,700	4,873,400	5,035,100	5,196,700	5,358,200	5,520,400	5,682,200	5,844,100	6,005,500
55	4,970,300	5,148,400	5,326,600	5,503,900	5,682,200	5,860,300	6,037,700	6,215,700	6,393,600

Average Hangar Rate to Hangar Rentals/Day Sensitivity - IRR%

Hangar Rentals / Day	$500	$525	$550	$575	$600	$625	$650	$675	$700
	Average Hangar Rate								
0.80	0.97%	1.34%	1.70%	2.03%	2.35%	2.66%	2.95%	3.23%	3.51%
0.90	1.87%	2.23%	2.58%	2.91%	3.23%	3.54%	3.84%	4.12%	4.40%
1.00	2.66%	3.02%	3.37%	3.71%	4.03%	4.34%	4.64%	4.94%	5.22%
1.10	3.37%	3.74%	4.09%	4.43%	4.76%	5.08%	5.39%	5.69%	5.98%
1.20	4.03%	4.40%	4.76%	5.11%	5.44%	5.77%	6.09%	6.40%	6.70%
1.30	4.64%	5.02%	5.39%	5.74%	6.09%	6.42%	6.75%	7.07%	7.38%
1.40	5.22%	5.61%	5.98%	6.35%	6.70%	7.04%	7.38%	7.71%	8.03%
1.50	5.77%	6.17%	6.55%	6.92%	7.28%	7.64%	7.98%	8.32%	8.65%

Average De-Icing Rate to De-Icing Event/Year Sensitivity - IRR%

De-Icing Events / Year	$800	$850	$900	$950	$1,000	$1,050	$1,100	$1,150	$1,200
	Average De-Icing Rate								
20	2.15%	2.18%	2.22%	2.26%	2.30%	2.33%	2.37%	2.41%	2.44%
25	2.30%	2.34%	2.39%	2.43%	2.48%	2.52%	2.57%	2.61%	2.66%
30	2.44%	2.50%	2.55%	2.60%	2.66%	2.71%	2.76%	2.81%	2.86%
35	2.58%	2.65%	2.71%	2.77%	2.83%	2.89%	2.95%	3.01%	3.07%
40	2.72%	2.79%	2.86%	2.93%	3.00%	3.07%	3.13%	3.20%	3.26%
45	2.86%	2.94%	3.02%	3.09%	3.17%	3.24%	3.31%	3.38%	3.46%
50	3.00%	3.08%	3.17%	3.25%	3.33%	3.41%	3.49%	3.57%	3.65%
55	3.13%	3.22%	3.31%	3.40%	3.49%	3.58%	3.66%	3.75%	3.83%

Average Hangar Rate to Hangar Rentals/Day Sensitivity - Payback Period

Hangar Rentals / Day	$500	$525	$550	$575	$600	$625	$650	$675	$700
	Average Hangar Rate								
29									
0.80	36	34	32	31	30	29	28	27	26
0.90	32	30	29	28	27	26	25	24	23
1.00	29	27	26	25	24	23	22	22	21
1.10	26	25	24	23	22	21	21	20	19
1.20	24	23	22	21	20	20	19	18	18
1.30	22	21	21	20	19	18	18	17	17
1.40	21	20	19	18	18	17	17	16	16
1.50	20	19	18	17	17	16	16	15	15

Average De-Icing Rate to De-Icing Event/Year Sensitivity - Payback Period

De-Icing Events / Year	$800	$850	$900	$950	$1,000	$1,050	$1,100	$1,150	$1,200
	Average De-Icing Rate								
29									
20	31	30	30	30	30	30	30	30	29
25	30	30	30	29	29	29	29	29	29
30	29	29	29	29	29	28	28	28	28
35	29	29	28	28	28	28	28	27	27
40	28	28	28	28	27	27	27	27	26
45	28	28	27	27	27	27	26	26	26
50	27	27	27	27	26	26	26	25	25
55	27	27	26	26	26	25	25	25	25

Average Hangar Rate to Hangar Rentals/Day Sensitivity - IRR% before Community Component Impact

Hangar Rentals / Day	$500	$525	$550	$575	$600	$625	$650	$675	$700
	Average Hangar Rate								
0.80	2.54%	2.94%	3.32%	3.69%	4.03%	4.37%	4.69%	5.01%	5.31%
0.90	3.51%	3.91%	4.29%	4.66%	5.01%	5.35%	5.68%	6.01%	6.32%
1.00	4.37%	4.77%	5.16%	5.54%	5.90%	6.25%	6.59%	6.93%	7.26%
1.10	5.16%	5.57%	5.97%	6.36%	6.73%	7.09%	7.45%	7.79%	8.13%
1.20	5.90%	6.32%	6.73%	7.13%	7.51%	7.89%	8.25%	8.61%	8.97%
1.30	6.59%	7.03%	7.45%	7.86%	8.25%	8.64%	9.03%	9.40%	9.77%
1.40	7.26%	7.70%	8.13%	8.55%	8.97%	9.37%	9.77%	10.16%	10.54%
1.50	7.89%	8.34%	8.79%	9.23%	9.65%	10.07%	10.49%	10.89%	11.29%

Average De-Icing Rate to De-Icing Event/Year Sensitivity - IRR% before Community Component Impact

De-Icing Events / Year	$800	$850	$900	$950	$1,000	$1,050	$1,100	$1,150	$1,200
	Average De-Icing Rate								
20	3.81%	3.85%	3.89%	3.93%	3.97%	4.01%	4.06%	4.10%	4.14%
25	3.97%	4.03%	4.08%	4.13%	4.17%	4.22%	4.27%	4.32%	4.37%
30	4.14%	4.19%	4.25%	4.31%	4.37%	4.43%	4.49%	4.54%	4.60%
35	4.29%	4.36%	4.43%	4.50%	4.56%	4.63%	4.69%	4.76%	4.83%
40	4.45%	4.52%	4.60%	4.68%	4.75%	4.83%	4.90%	4.97%	5.04%
45	4.60%	4.69%	4.77%	4.85%	4.94%	5.02%	5.10%	5.18%	5.26%
50	4.75%	4.84%	4.94%	5.03%	5.12%	5.21%	5.30%	5.38%	5.47%
55	4.90%	5.00%	5.10%	5.20%	5.30%	5.39%	5.49%	5.59%	5.68%

Escalation Impact

	1.00%	1.50%	2.00%	2.50%	3.00%	3.50%	4.00%	4.50%	5.00%
	Escalation Rate (combination of Inflation and Utilization)								
Net Cash Flo	614,000	1,310,600	2,106,100	3,019,100	4,065,000	5,267,000	6,648,800	8,238,800	10,069,400
IRR%	0.53%	1.06%	1.59%	2.13%	2.66%	3.19%	3.72%	4.25%	4.78%
Payback	37	34	32	30	29	27	26	25	24
IRR%	2.20%	2.74%	3.29%	3.83%	4.37%	4.91%	5.46%	6.00%	6.54%

Truckee Tahoe Airport District
Hangar 3 Feasibility Analysis
Cash Flow Summary - Option 3
5/15/2016

	0 2016	1 2017	2 2018	3 2019	4 2020	5 2021	6 2022	7 2023	8 2024	9 2025	10 2026	11-20 2027-2036	21-30 2037-2046	31-40 2047-2056	Total
Operating Cash Flow															
Operating Revenues															
Hangar Rental	-	-	47,700	199,400	205,400	211,600	217,900	224,500	231,200	238,100	245,300	2,895,900	3,892,100	5,230,600	13,839,700
De-Icing	-	-	23,900	49,200	50,600	52,200	53,700	55,300	57,000	58,700	60,500	714,200	959,600	1,289,700	3,424,600
Community Component	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other Revenue	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Operating Revenues	-	-	71,600	248,600	256,000	263,800	271,600	279,800	288,200	296,800	305,800	3,610,100	4,851,700	6,520,300	17,264,300
Operating Expenditures															
Hangar	-	-	22,400	92,100	94,900	97,700	100,700	103,700	106,800	110,000	113,300	1,337,700	1,797,900	2,416,200	6,393,400
De-Icing	-	-	2,400	4,900	5,100	5,200	5,400	5,500	5,700	5,900	6,100	71,300	96,000	129,000	342,500
Community Component	-	-	9,700	39,800	41,000	42,200	43,500	44,800	46,100	47,500	48,900	577,700	776,300	1,043,100	2,760,600
Other Expenditures	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Operating Expenditures	-	-	34,500	136,800	141,000	145,100	149,600	154,000	158,600	163,400	168,300	1,986,700	2,670,200	3,588,300	9,496,500
Net Operating Cash Flow	-	-	37,100	111,800	115,000	118,700	122,000	125,800	129,600	133,400	137,500	1,623,400	2,181,500	2,932,000	7,767,800
Development Cost															
Development Cost															
Hangar	307,800	2,330,400	1,758,800	-	-	-	-	-	-	-	-	-	-	-	4,397,000
GSE Space	37,700	285,100	215,200	-	-	-	-	-	-	-	-	-	-	-	538,000
Community Component	225,600	1,708,200	1,289,200	-	-	-	-	-	-	-	-	-	-	-	3,223,000
Total Development Cost	571,100	4,323,700	3,263,200	-	-	-	-	-	-	-	-	-	-	-	8,158,000
Net Cash Flow	(571,100)	(4,323,700)	(3,226,100)	111,800	115,000	118,700	122,000	125,800	129,600	133,400	137,500	1,623,400	2,181,500	2,932,000	(390,200)
Cumulative Net Cash Flow	(571,100)	(4,894,800)	(8,120,900)	(8,009,100)	(7,894,100)	(7,775,400)	(7,653,400)	(7,527,600)	(7,398,000)	(7,264,600)	(7,127,100)	(5,503,700)	(3,322,200)	(390,200)	

	0 2016	1 2017	2 2018	3 2019	4 2020	5 2021	6 2022	7 2023	8 2024	9 2025	10 2026	11-20 2027-2036	21-30 2037-2046	31-40 2047-2056	Total
w/o Community Contribution															
Net Cash Flow (above)	(571,100)	(4,323,700)	(3,226,100)	111,800	115,000	118,700	122,000	125,800	129,600	133,400	137,500	1,623,400	2,181,500	2,932,000	(390,200)
Community Component - Operating Expenditures	-	-	9,700	39,800	41,000	42,200	43,500	44,800	46,100	47,500	48,900	577,700	776,300	1,043,100	2,760,600
Community Component - Development Cost	225,600	1,708,200	1,289,200	-	-	-	-	-	-	-	-	-	-	-	3,223,000
Community Component - Total	225,600	1,708,200	1,298,900	39,800	41,000	42,200	43,500	44,800	46,100	47,500	48,900	577,700	776,300	1,043,100	5,983,600
Net Cash Flow	(345,500)	(2,615,500)	(1,927,200)	151,600	156,000	160,900	165,500	170,600	175,700	180,900	186,400	2,201,100	2,957,800	3,975,100	5,593,400
Cumulative Net Cash Flow	(345,500)	(2,961,000)	(4,888,200)	(4,736,600)	(4,580,600)	(4,419,700)	(4,254,200)	(4,083,600)	(3,907,900)	(3,727,000)	(3,540,600)	(1,339,500)	1,618,300	5,593,400	

Truckee Tahoe Airport District
Hangar 3 Feasibility Analysis
Cash Flow Summary - Option 3
5/15/2016

	0 2016	1 2017	2 2018	3 2019	4 2020	5 2021	6 2022	7 2023	8 2024	9 2025	10 2026	11-20 2027-2036	21-30 2037-2046	31-40 2047-2056	Total
Hangar Rental Revenue															
Hangar Rental Average Rate/Day	500.00	500.00	500.00	500.00	500.00	500.00	500.00	500.00	500.00	500.00	500.00	500.00	500.00	500.00	
Hangar Rental Events/Day	-	-	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Hangar Rental Events/Year	-	-	90.00	365.00	365.00	365.00	365.00	365.00	365.00	365.00	365.00	3,650.00	3,650.00	3,650.00	
Hangar Rental Revenue before Escalation	-	-	45,000	182,500	182,500	182,500	182,500	182,500	182,500	182,500	182,500	1,825,000	1,825,000	1,825,000	
Escalation Factor	100.00%	103.00%	106.09%	109.27%	112.55%	115.93%	119.41%	122.99%	126.68%	130.48%	134.39%	158.68%	213.27%	286.61%	
Hangar Rental Revenue	-	-	47,700	199,400	205,400	211,600	217,900	224,500	231,200	238,100	245,300	2,895,900	3,892,100	5,230,600	13,839,700
De-Icing															
De-Icing Rate/Event	1,500.00	1,500.00	1,500.00	1,500.00	1,500.00	1,500.00	1,500.00	1,500.00	1,500.00	1,500.00	1,500.00	1,500.00	1,500.00	1,500.00	
De-Icing Event/Year	-	-	15	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00	300.00	300.00	300.00	
De-Icing Revenue before Escalation	-	-	22,500	45,000	45,000	45,000	45,000	45,000	45,000	45,000	45,000	450,000	450,000	450,000	
Escalation Factor	100.00%	103.00%	106.09%	109.27%	112.55%	115.93%	119.41%	122.99%	126.68%	130.48%	134.39%	158.71%	213.24%	286.60%	
De-Icing Revenue	-	-	23,900	49,200	50,600	52,200	53,700	55,300	57,000	58,700	60,500	714,200	959,600	1,289,700	3,424,600
De-Icing COGS Percentage	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	
De-Icing COGS	-	-	2,400	4,900	5,100	5,200	5,400	5,500	5,700	5,900	6,100	71,300	96,000	129,000	342,500
Hangar Staffing, Utilities & Maintenance															
Hangar & GSE Square Feet	16,450	16,450	16,450	16,450	16,450	16,450	16,450	16,450	16,450	16,450	16,450	16,450	16,450	16,450	
Utilities & Janitorial/Year - Hangar	13,800	13,800	13,800	13,800	13,800	13,800	13,800	13,800	13,800	13,800	13,800	13,800	13,800	13,800	
Staffing/Year - Hangar	54,000	54,000	54,000	54,000	54,000	54,000	54,000	54,000	54,000	54,000	54,000	54,000	54,000	54,000	
Repairs, Maintenance, Refurbishment/Year - Hangar	16,500	16,500	16,500	16,500	16,500	16,500	16,500	16,500	16,500	16,500	16,500	16,500	16,500	16,500	
	84,300	84,300	84,300	84,300	84,300	84,300	84,300	84,300	84,300	84,300	84,300	84,300	84,300	84,300	
Months	-	-	3	12	12	12	12	12	12	12	12	120	120	120	
Staffing, Utilities & Maintenance - Hangar before Esca	-	-	21,075	84,300	84,300	84,300	84,300	84,300	84,300	84,300	84,300	843,000	843,000	843,000	
Escalation Factor	100.00%	103.00%	106.09%	109.27%	112.55%	115.93%	119.41%	122.99%	126.68%	130.48%	134.39%	158.68%	213.27%	286.62%	
Hangar Staffing, Utilities & Maintenance	-	-	22,400	92,100	94,900	97,700	100,700	103,700	106,800	110,000	113,300	1,337,700	1,797,900	2,416,200	6,393,400
Community Component Staffing, Utilities & Maintenance															
Community Component Square Feet	3,630	3,630	3,630	3,630	3,630	3,630	3,630	3,630	3,630	3,630	3,630	3,630	3,630	3,630	
Utilities & Janitorial/Year - Community Component	10,900	10,900	10,900	10,900	10,900	10,900	10,900	10,900	10,900	10,900	10,900	10,900	10,900	10,900	
Staffing/Year - Community Component	21,000	21,000	21,000	21,000	21,000	21,000	21,000	21,000	21,000	21,000	21,000	21,000	21,000	21,000	
Repairs, Maintenance, Refurbishment/Year - Commun	4,500	4,500	4,500	4,500	4,500	4,500	4,500	4,500	4,500	4,500	4,500	4,500	4,500	4,500	
	36,400	36,400	36,400	36,400	36,400	36,400	36,400	36,400	36,400	36,400	36,400	36,400	36,400	36,400	
Months	-	-	3	12	12	12	12	12	12	12	12	120	120	120	
Staffing, Utilities & Maintenance - Community Compo	-	-	9,100	36,400	36,400	36,400	36,400	36,400	36,400	36,400	36,400	364,000	364,000	364,000	
Escalation Factor	100.00%	103.00%	106.09%	109.27%	112.55%	115.93%	119.41%	122.99%	126.68%	130.48%	134.39%	158.68%	213.27%	286.62%	
Community Component Staffing, Utilities & Maintena	-	-	9,700	39,800	41,000	42,200	43,500	44,800	46,100	47,500	48,900	577,700	776,300	1,043,100	2,760,600

Truckee Tahoe Airport District
Hangar 3 Feasibility Analysis
Sensitivity Tables - Option 3
5/15/2016

Average Hangar Rate to Hangar Rentals/Day Sensitivity - Annual Hangar Revenue before Escalation

Hangar Rentals / Day	$500	$525	$550	$575	$600	$625	$650	$675	$700
0.80	146,000	153,300	160,600	167,900	175,200	182,500	189,800	197,100	204,400
0.90	164,300	172,500	180,700	188,900	197,100	205,300	213,500	221,700	230,000
1.00	182,500	191,600	200,800	209,900	219,000	228,100	237,300	246,400	255,500
1.10	200,800	210,800	220,800	230,900	240,900	250,900	261,000	271,000	281,100
1.20	219,000	230,000	240,900	251,900	262,800	273,800	284,700	295,700	306,600
1.30	237,300	249,100	261,000	272,800	284,700	296,600	308,400	320,300	332,200
1.40	255,500	268,300	281,100	293,800	306,600	319,400	332,200	344,900	357,700
1.50	273,800	287,400	301,100	314,800	328,500	342,200	355,900	369,600	383,300

Column heading: Average Hangar Rate

Average De-Icing Rate to De-Icing Event/Year Sensitivity - Annual De-Icing Revenue before Escalation

De-Icing Events / Year	$1,300	$1,350	$1,400	$1,450	$1,500	$1,550	$1,600	$1,650	$1,700
20	26,000	27,000	28,000	29,000	30,000	31,000	32,000	33,000	34,000
25	32,500	33,800	35,000	36,300	37,500	38,800	40,000	41,300	42,500
30	39,000	40,500	42,000	43,500	45,000	46,500	48,000	49,500	51,000
35	45,500	47,300	49,000	50,800	52,500	54,300	56,000	57,800	59,500
40	52,000	54,000	56,000	58,000	60,000	62,000	64,000	66,000	68,000
45	58,500	60,800	63,000	65,300	67,500	69,800	72,000	74,300	76,500
50	65,000	67,500	70,000	72,500	75,000	77,500	80,000	82,500	85,000
55	71,500	74,300	77,000	79,800	82,500	85,300	88,000	90,800	93,500

Column heading: Average De-Icing Rate

Average Hangar Rate to Hangar Rentals/Day Sensitivity - Net Cash Flow thru 2056

Hangar Rentals / Day	$500	$525	$550	$575	$600	$625	$650	$675	$700
0.80	(3,158,100)	(2,604,600)	(2,051,100)	(1,497,500)	(943,800)	(390,200)	163,200	717,100	1,270,700
0.90	(1,774,100)	(1,151,200)	(528,600)	94,400	717,100	1,339,900	1,962,300	2,585,200	3,208,200
1.00	(390,200)	301,800	993,900	1,685,700	2,377,600	3,070,000	3,761,500	4,453,700	5,146,100
1.10	993,900	1,754,700	2,516,000	3,277,500	4,038,300	4,799,700	5,561,000	6,322,100	7,083,000
1.20	2,377,600	3,208,200	4,038,300	4,868,700	5,699,400	6,529,900	7,359,900	8,190,200	9,020,800
1.30	3,761,500	4,661,400	5,561,000	6,460,900	7,359,900	8,259,700	9,158,900	10,058,900	10,958,300
1.40	5,146,100	6,114,300	7,083,000	8,052,100	9,020,800	9,989,600	10,958,300	11,927,300	12,895,700
1.50	6,529,900	7,567,600	8,605,400	9,643,500	10,681,400	11,719,800	12,757,400	13,795,400	14,833,700

Column heading: Average Hangar Rate

Average De-Icing Rate to De-Icing Event/Year Sensitivity - Net Cash Flow thru 2056

De-Icing Events / Year	$1,300	$1,350	$1,400	$1,450	$1,500	$1,550	$1,600	$1,650	$1,700
20	(1,691,300)	(1,623,300)	(1,554,500)	(1,486,500)	(1,417,900)	(1,349,200)	(1,280,400)	(1,212,200)	(1,143,700)
25	(1,246,300)	(1,160,800)	(1,075,500)	(990,000)	(904,000)	(818,300)	(732,500)	(646,900)	(561,300)
30	(801,300)	(698,300)	(595,600)	(492,900)	(390,200)	(287,400)	(185,400)	(82,100)	20,300
35	(356,000)	(236,000)	(116,500)	3,500	123,500	243,200	363,300	483,500	603,000
40	88,700	225,900	363,300	500,300	636,900	773,900	910,800	1,048,200	1,185,200
45	533,900	688,600	842,400	996,200	1,150,700	1,305,000	1,459,100	1,613,200	1,767,400
50	980,000	1,150,700	1,322,300	1,493,500	1,663,900	1,835,700	2,006,800	2,178,200	2,349,400
55	1,424,600	1,613,200	1,801,600	1,990,000	2,178,200	2,366,100	2,554,800	2,743,400	2,931,600

Column heading: Average De-Icing Rate

Average Hangar Rate to Hangar Rentals/Day Sensitivity - IRR%

Hangar Rentals / Day	$500	$525	$550	$575	$600	$625	$650	$675	$700
0.80	-1.97%	-1.56%	-1.19%	-0.84%	-0.51%	-0.21%	0.08%	0.36%	0.63%
0.90	-1.01%	-0.63%	-0.28%	0.05%	0.36%	0.66%	0.94%	1.21%	1.47%
1.00	-0.21%	0.15%	0.50%	0.82%	1.12%	1.41%	1.69%	1.96%	2.22%
1.10	0.50%	0.85%	1.18%	1.50%	1.80%	2.09%	2.37%	2.64%	2.90%
1.20	1.12%	1.47%	1.80%	2.12%	2.42%	2.71%	2.99%	3.26%	3.52%
1.30	1.69%	2.04%	2.37%	2.69%	2.99%	3.28%	3.57%	3.84%	4.10%
1.40	2.22%	2.57%	2.90%	3.22%	3.52%	3.82%	4.10%	4.38%	4.65%
1.50	2.71%	3.06%	3.39%	3.71%	4.02%	4.32%	4.61%	4.89%	5.17%

Column heading: Average Hangar Rate

Average De-Icing Rate to De-Icing Event/Year Sensitivity - IRR%

De-Icing Events / Year	$1,300	$1,350	$1,400	$1,450	$1,500	$1,550	$1,600	$1,650	$1,700
20	-0.96%	-0.92%	-0.88%	-0.83%	-0.79%	-0.75%	-0.71%	-0.67%	-0.63%
25	-0.69%	-0.64%	-0.59%	-0.54%	-0.49%	-0.44%	-0.40%	-0.35%	-0.30%
30	-0.43%	-0.38%	-0.32%	-0.26%	-0.21%	-0.15%	-0.10%	-0.04%	0.01%
35	-0.19%	-0.12%	-0.06%	0.00%	0.06%	0.13%	0.19%	0.25%	0.31%
40	0.05%	0.12%	0.19%	0.25%	0.32%	0.39%	0.46%	0.52%	0.59%
45	0.27%	0.35%	0.42%	0.50%	0.57%	0.64%	0.71%	0.78%	0.85%
50	0.49%	0.57%	0.65%	0.73%	0.81%	0.89%	0.96%	1.04%	1.11%
55	0.70%	0.78%	0.87%	0.95%	1.04%	1.12%	1.20%	1.28%	1.36%

Column heading: Average De-Icing Rate

Average Hangar Rate to Hangar Rentals/Day Sensitivity - Payback Period

Hangar Rentals / Day	$500	$525	$550	$575	$600	$625	$650	$675	$700
0.80	40+	40+	40+	40+	40+	40+	40	39	37
0.90	40+	40+	40+	40	39	37	36	34	33
1.00	40+	40	38	36	35	34	32	31	30
1.10	38	36	35	33	32	31	30	29	28
1.20	35	33	32	31	29	28	27	26	26
1.30	32	31	30	28	27	26	25	25	24
1.40	30	29	28	27	26	25	24	23	22
1.50	28	27	26	25	24	23	22	22	21

Column heading: Average Hangar Rate

Average De-Icing Rate to De-Icing Event/Year Sensitivity - Payback Period

De-Icing Events / Year	$1,300	$1,350	$1,400	$1,450	$1,500	$1,550	$1,600	$1,650	$1,700
20	40+	40+	40+	40+	40+	40+	40+	40+	40+
25	40+	40+	40+	40+	40+	40+	40+	40+	40+
30	40+	40+	40+	40+	40+	40+	40+	40+	40
35	40+	40+	40+	40	40	40	40	39	39
40	40	40	40	39	39	38	38	38	37
45	39	39	38	38	38	37	37	36	36
50	38	38	37	37	36	36	36	35	35
55	37	36	36	36	35	35	35	34	34

Column heading: Average De-Icing Rate

Average Hangar Rate to Hangar Rentals/Day Sensitivity - IRR% before Community Component Impact

Hangar Rentals / Day	$500	$525	$550	$575	$600	$625	$650	$675	$700
0.80	2.05%	2.38%	2.70%	3.01%	3.31%	3.59%	3.87%	4.14%	4.40%
0.90	2.86%	3.20%	3.52%	3.84%	4.14%	4.43%	4.72%	5.00%	5.27%
1.00	3.59%	3.94%	4.27%	4.59%	4.90%	5.21%	5.50%	5.79%	6.06%
1.10	4.27%	4.62%	4.97%	5.29%	5.61%	5.93%	6.23%	6.53%	6.81%
1.20	4.90%	5.27%	5.61%	5.95%	6.28%	6.61%	6.92%	7.23%	7.53%
1.30	5.50%	5.87%	6.23%	6.58%	6.92%	7.25%	7.58%	7.89%	8.21%
1.40	6.06%	6.45%	6.81%	7.18%	7.53%	7.87%	8.21%	8.54%	8.86%
1.50	6.61%	7.00%	7.38%	7.75%	8.11%	8.47%	8.81%	9.16%	9.49%

Column heading: Average Hangar Rate

Average De-Icing Rate to De-Icing Event/Year Sensitivity - IRR% before Community Component Impact

De-Icing Events / Year	$1,300	$1,350	$1,400	$1,450	$1,500	$1,550	$1,600	$1,650	$1,700
20	2.90%	2.94%	2.98%	3.02%	3.05%	3.09%	3.13%	3.16%	3.20%
25	3.15%	3.19%	3.24%	3.28%	3.33%	3.37%	3.42%	3.46%	3.51%
30	3.38%	3.44%	3.49%	3.54%	3.59%	3.65%	3.70%	3.75%	3.80%
35	3.61%	3.67%	3.73%	3.79%	3.85%	3.91%	3.97%	4.03%	4.09%
40	3.84%	3.90%	3.97%	4.04%	4.10%	4.17%	4.24%	4.30%	4.37%
45	4.05%	4.13%	4.20%	4.28%	4.35%	4.42%	4.49%	4.57%	4.64%
50	4.27%	4.35%	4.43%	4.51%	4.59%	4.67%	4.74%	4.82%	4.90%
55	4.48%	4.57%	4.65%	4.74%	4.82%	4.91%	4.99%	5.07%	5.16%

Column heading: Average De-Icing Rate

Escalation Impact

Escalation Rate (combination of Inflation and Utilization)	1.00%	1.50%	2.00%	2.50%	3.00%	3.50%	4.00%	4.50%	5.00%
Net Cash Flo	(3,279,200)	(2,695,800)	(2,030,000)	(1,266,900)	(390,200)	616,300	1,771,900	3,103,200	4,635,600
IRR%	-2.25%	-1.74%	-1.23%	-0.72%	-0.21%	0.30%	0.82%	1.33%	1.84%
Payback	40+	40+	40+	40+	40+	39	37	35	33
IRR%	1.45%	1.98%	2.52%	3.06%	3.59%	4.13%	4.67%	5.21%	5.75%

Appendix N

Potential Traffic Impacts

Truckee Tahoe Airport District
Hangar 3 - Potential Operations Impact Analysis Modeling
4/4/2016

Potential Operations Impact Analysis		**Model Baseline**
Nights per Year		365.00
Less: Community Events	subtract	(12.00)
Nights Available		353.00
Planes per Night	multiply	2.75
Plane Nights Available		970.75
Projected Occupancy Rate	multiply	70%
Plane Nights Projected Occupancy		679.53
Plane Nights Current Users	subtract	(539.90)
Plane Nights Available		139.63
Average Nights per Hangar Event	divide	1.50
Hangar Events Available		93.08
% New Trips due to Available Hangar Space	multiply	40%
Potential New Trips due to Available Hangar Space		37.23
Arrivals/Departures per Trip	multiply	2.00
Potential Annual New Operations due to Available Hangar Space		74.47

Potential Traffic Impact Ratios - Total Operations		
Potential Annual New Operations due to Available Hangar Space		74.47
Days per Year	divide	365.00
Potential New Operations per Day due to Available Hangar Space		0.20
Potential Annual New Operations due to Available Hangar Space		74.47
Total Operations - 2015	divide	27,613.00
Potential Impact on Total Operations		0.27%

Potential Traffic Impact Ratios - Turbo Prop & Jet Operations	2015 Mix	Potential Impact
Potential New Turbo Prop Operations	62.79%	46.76
Potential New Jet Operations	37.21%	27.71
Potential New Turbo Prop & Jet Operations	100.00%	74.47
Potential New Turbo Prop & Jet Operations		74.47
Turbo Prop & Jet Operations - 2015	divide	9,167.00
Potential Impact on Turbo Prop & Jet Operations		0.81%

Assumptions	
Community Events per Year	12.00
Average Planes in Hangar/Night	2.75
Projected Occupancy Rate	70.00%
Big 5 Take Rate	90.00%
Existing Overnights Take Rate	40.00%
Pass Holder Take Rate	30.00%
Average Nights per Hangar Event	1.50
% New Trips due to Available Hangar Space	40.00%

Truckee Tahoe Airport District
Hangar 3 - Potential Operations Impact Analysis Modeling
4/4/2016

		Scenario		
Potential Operations Impact Analysis		Proforma Baseline	Model Baseline	High-Impact
Nights per Year		365.00	365.00	365.00
Less: Community Events	subtract	(12.00)	(12.00)	(12.00)
Nights Available		353.00	353.00	353.00
Planes per Night	multiply	2.50	2.75	3.00
Plane Nights Available		882.50	970.75	1,059.00
Projected Occupancy Rate	multiply	60%	70%	80%
Plane Nights Projected Occupancy		529.50	679.53	847.20
Plane Nights Current Users	subtract	(705.40)	(539.90)	(393.90)
Plane Nights Available		-	139.63	453.30
Average Nights per Hangar Event	divide	1.75	1.50	1.25
Hangar Events Available		-	93.08	362.64
% New Trips due to Available Hangar Space	multiply	30%	40%	50%
Potential New Trips due to Available Hangar Space		-	37.23	181.32
Arrivals/Departures per Trip	multiply	2.00	2.00	2.00
Potential Annual New Operations due to Available Hangar Space		-	74.47	362.64
Potential Traffic Impact Ratios - Total Operations				
Potential Annual New Operations due to Available Hangar Space		-	74.47	362.64
Days per Year		365.00	365.00	365.00
Potential New Operations per Day due to Available Hangar Space		-	0.20	0.99
Potential Annual New Operations due to Available Hangar Space		-	74.47	362.64
Total Operations - 2015		27,613.00	27,613.00	27,613.00
Potential Impact on Total Operations		0.00%	0.27%	1.31%
Potential Traffic Impact Ratios - Turbo Prop & Jet Operations				
Potential New Turbo Prop Operations	62.79%	-	46.76	227.70
Potential New Jet Operations	37.21%	-	27.71	134.94
Potential New Turbo Prop & Jet Operations	100.00%	-	74.47	362.64
Potential New Turbo Prop & Jet Operations		-	74.47	362.64
Turbo Prop & Jet Operations - 2015		9,167.00	9,167.00	9,167.00
Potential Impact on Turbo Prop & Jet Operations		0.00%	0.81%	3.96%

Assumptions			
Community Events per Year	12.00	12.00	12.00
Average Planes in Hangar/Night	2.50	2.75	3.00
Projected Occupancy Rate	60.00%	70.00%	80.00%
Big 5 Take Rate	95.00%	90.00%	85.00%
Existing Overnights Take Rate	50.00%	40.00%	30.00%
Pass Holder Take Rate	40.00%	30.00%	20.00%
Average Nights per Hangar Event	1.75	1.50	1.25
% New Trips due to Available Hangar Space	30.00%	40.00%	50.00%

Truckee Tahoe Airport District
Hangar 3 - Potential Operations Impact Analysis Modeling
4/4/2016

Hangar Night Demand - Current Operations

	Scenario		
	A	B	C
Big 5 Overnights - 2015	132.00	132.00	132.00
Big 5 Take Rate	95.00%	90.00%	85.00%
Estimated Big 5 Hangar Nights	125.40	118.80	112.20
Other Overnights - 2015	614.00	614.00	614.00
Existing Overnights Take Rate	50.00%	40.00%	30.00%
Estimated Other Overnights Hangar Nights	307.00	245.60	184.20
Estimated Pass Trips	390.00	390.00	390.00
Pass Holder Take Rate	40.00%	30.00%	20.00%
Estimated Pass Hangar Events	156.00	117.00	78.00
Average Nights per Hangar Event	1.75	1.50	1.25
Estimated Pass Hangar Nights	273.00	175.50	97.50
Hangar Night Demand - Current Operations	705.40	539.90	393.90

Overnights - 2015

	Type				
BIG 5 Overnights - 2015	2	3	4	5	Total
Net Jets		12	45	4	61
Flex Jet			17		17
Flight Options		14	3		17
Jet Suite	12	3			15
Wheels Up	1	19	2		22
Total BIG 5 Overnights - 2015	13	48	67	4	132
Other Overnights - 2015	228	132	208	46	614
Total Overnights - 2015	241	180	275	50	746

2015 Passes

	Type				
	2	3	4	5	Total
Monthly					
Sold 2015	17	3	-	2	22
Estimated Trips/Pass	3	3	3	3	3
Estimated Trips	51	9	-	6	66
Semi-Annual					
Sold 2015	17	1			18
Estimated Trips/Pass	9	9	9	9	9
Estimated Trips	153	9	-	-	162
Annual					
Sold 2015	8	1	-	-	9
Estimated Trips/Pass	18	18	18	18	18
Estimated Trips	144	18	-	-	162
Total Estimated Pass Trips	348	36	-	6	390

Truckee Tahoe Airport District
Hangar 3 - Potential Operations Impact Analysis Modeling
4/4/2016

Hangar 3 - Potential Operations Impact Analysis Modeling		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Potential Operations Impact Analysis														
Nights per Year		31.00	28.00	31.00	30.00	31.00	30.00	31.00	31.00	30.00	31.00	30.00	31.00	365.00
Less: Community Events	subtract	(1.00)	(1.00)	(1.00)	(1.00)	(1.00)	(1.00)	(1.00)	(1.00)	(1.00)	(1.00)	(1.00)	(1.00)	(12.00)
Nights Available		30.00	27.00	30.00	29.00	30.00	29.00	30.00	30.00	29.00	30.00	29.00	30.00	353.00
Planes per Night	multiply	2.75	2.75	2.75	2.75	2.75	2.75	2.75	2.75	2.75	2.75	2.75	2.75	
Plane Nights Available		82.50	74.25	82.50	79.75	82.50	79.75	82.50	82.50	79.75	82.50	79.75	82.50	970.75
Projected Occupancy Rate	multiply	95.00%	44.57%	44.57%	44.57%	44.57%	95.00%	95.00%	95.00%	95.00%	44.57%	44.57%	95.00%	70.00%
Plane Nights Projected Occupancy		78.38	33.09	36.77	35.55	36.77	75.76	78.38	78.38	75.76	36.77	35.55	78.38	679.53
Plane Nights Current Users	subtract	(42.05)	(30.63)	(34.93)	(22.32)	(29.80)	(50.18)	(90.29)	(80.28)	(60.84)	(33.51)	(25.44)	(39.64)	(539.90)
Plane Nights Available		36.32	2.47	1.85	13.22	6.97	25.58	(11.91)	(1.90)	14.92	3.26	10.10	38.74	139.63
Average Nights per Hangar Event	divide	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	
Hangar Events Available		24.22	1.65	1.23	8.82	4.65	17.06	(7.94)	(1.27)	9.95	2.17	6.74	25.83	93.08
% New Trips due to Available Hangar Space	multiply	40%	40%	40%	40%	40%	40%	40%	40%	40%	40%	40%	40%	
Potential New Trips due to Available Hangar Space		9.69	0.66	0.49	3.53	1.86	6.82	(3.18)	(0.51)	3.98	0.87	2.69	10.33	37.23
Arrivals/Departures per Trip	multiply	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	
Potential Annual New Operations due to Available Hangar Space		19.37	1.32	0.98	7.05	3.72	13.64	(6.35)	(1.01)	7.96	1.74	5.39	20.66	74.47
Potential Traffic Impact Ratios - Total Operations														
Potential Annual New Operations due to Available Hangar Space		19.37	1.32	0.98	7.05	3.72	13.64	(6.35)	(1.01)	7.96	1.74	5.39	20.66	74.47
Days per Year	divide	31.00	28.00	31.00	30.00	31.00	30.00	31.00	31.00	30.00	31.00	30.00	31.00	365.00
Potential New Operations per Day due to Available Hangar Space		0.62	0.05	0.03	0.24	0.12	0.45	(0.20)	(0.03)	0.27	0.06	0.18	0.67	0.20
Potential Annual New Operations due to Available Hangar Space		19.37	1.32	0.98	7.05	3.72	13.64	(6.35)	(1.01)	7.96	1.74	5.39	20.66	74.47
Total Operations - 2015	divide	1,541.00	1,065.00	1,352.00	1,132.00	1,341.00	3,002.00	5,214.00	4,726.00	3,603.00	1,904.00	1,438.00	1,295.00	27,613.00
Potential Impact on Total Operations		1.26%	0.12%	0.07%	0.62%	0.28%	0.45%	-0.12%	-0.02%	0.22%	0.09%	0.37%	1.60%	0.27%
Potential Traffic Impact Ratios - Turbo Prop & Jet Operations														
Potential New Turbo Prop Operations	62.79%	12.16	0.83	0.62	4.43	2.33	8.57	(3.99)	(0.64)	5.00	1.09	3.38	12.97	46.76
Potential New Jet Operations	37.21%	7.21	0.49	0.37	2.62	1.38	5.08	(2.36)	(0.38)	2.96	0.65	2.00	7.69	27.71
Potential New Turbo Prop & Jet Operations	100.00%	19.37	1.32	0.98	7.05	3.72	13.64	(6.35)	(1.01)	7.96	1.74	5.39	20.66	74.47
Potential New Turbo Prop & Jet Operations		19.37	1.32	0.98	7.05	3.72	13.64	(6.35)	(1.01)	7.96	1.74	5.39	20.66	74.47
Turbo Prop & Jet Operations - 2015		714	520	593	379	506	852	1,533	1,363	1,033	569	432	673	9,167
Potential Impact on Turbo Prop & Jet Operations		2.71%	0.25%	0.17%	1.86%	0.73%	1.60%	-0.41%	-0.07%	0.77%	0.31%	1.25%	3.07%	0.81%
Turbo Prop & Jet Operations Detail - 2015														
Turbo Prop		424	348	402	284	350	545	861	789	624	360	318	451	5,756
Jet < 12,499 lbs		101	47	67	34	41	86	172	112	131	54	29	50	924
Jet 12,499-19,999 lbs		94	69	64	42	59	109	247	215	160	100	48	83	1,290
Jet 20,000-49,999 lbs		65	38	41	19	50	98	195	198	110	52	33	71	970
Jet > 50,000 lbs		30	18	19	-	6	14	58	49	8	3	4	18	227
Total Powered Aircraft		714	520	593	379	506	852	1,533	1,363	1,033	569	432	673	9,167
Share		7.79%	5.67%	6.47%	4.13%	5.52%	9.29%	16.72%	14.87%	11.27%	6.21%	4.71%	7.34%	100.00%
Rank		5	9	7	12	10	4	1	2	3	8	11	6	
Plane Nights Current Users														
Plane Nights Current Users		539.90	539.90	539.90	539.90	539.90	539.90	539.90	539.90	539.90	539.90	539.90	539.90	
Share		7.79%	5.67%	6.47%	4.13%	5.52%	9.29%	16.72%	14.87%	11.27%	6.21%	4.71%	7.34%	
Plane Nights Current Users		42.05	30.63	34.93	22.32	29.80	50.18	90.29	80.28	60.84	33.51	25.44	39.64	539.90
Projected Occupancy Rate														
Occupancy Busiest 6 Months		95.00%					95.00%	95.00%	95.00%	95.00%			95.00%	47.90%
Occupancy Other Months			44.57%	44.57%	44.57%	44.57%					44.57%	44.57%		22.10%
Projected Occupancy Rate		95.00%	44.57%	44.57%	44.57%	44.57%	95.00%	95.00%	95.00%	95.00%	44.57%	44.57%	95.00%	70.00%

Truckee Tahoe Airport District
Hangar 3 - Potential Operations Impact Analysis Modeling
Sensitivity Tables
4/4/2016

Potential Increased Operations / Year

Average Planes/Night to Occupancy Rate - Potential Increased Operations / Year

Average Planes in Hangar/Night

Projected Occupancy Rate	2.00	2.25	2.50	2.75	3.00	3.25	3.50
40.00%	-	-	-	-	-	-	-
50.00%	-	-	-	-	-	18	42
60.00%	-	-	-	23	51	79	107
70.00%	-	9	42	74	107	140	173
80.00%	13	51	89	126	164	202	239
90.00%	51	93	136	178	220	263	305
100.00%	89	136	183	230	277	324	371

Average Planes/Night to New Trips Ratio - Potential Increased Operations / Year

Average Planes in Hangar/Night

% New Trips due to Available Hangar Space	2.00	2.25	2.50	2.75	3.00	3.25	3.50
0.00%	-	-	-	-	-	-	-
10.00%	-	2	10	19	27	35	43
20.00%	-	4	21	37	54	70	87
30.00%	-	6	31	56	81	105	130
40.00%	-	9	42	74	107	140	173
50.00%	-	11	52	93	134	175	217
60.00%	-	13	62	112	161	211	260
70.00%	-	15	73	130	188	246	303
80.00%	-	17	83	149	215	281	347
90.00%	-	19	93	168	242	316	390
100.00%	-	21	104	186	269	351	433

Occupancy Rate to New Trips Ratio - Potential Increased Operations / Year

Projected Occupancy Rate

% New Trips due to Available Hangar Space	40.00%	50.00%	60.00%	70.00%	80.00%	90.00%	100.00%
0.00%	-	-	-	-	-	-	-
10.00%	-	-	6	19	32	45	57
20.00%	-	-	11	37	63	89	115
30.00%	-	-	17	56	95	134	172
40.00%	-	-	23	74	126	178	230
50.00%	-	-	28	93	158	223	287
60.00%	-	-	34	112	189	267	345
70.00%	-	-	40	130	221	312	402
80.00%	-	-	45	149	252	356	460
90.00%	-	-	51	168	284	401	517
100.00%	-	-	57	186	316	445	574

Average Planes/Existing User Take Rate - Potential Increased Operations / Year

Average Planes in Hangar/Night

Existing Overnights Take Rate	2.00	2.25	2.50	2.75	3.00	3.25	3.50
0.00%	107	140	173	205	238	271	304
10.00%	74	107	140	173	206	239	272
20.00%	41	74	107	140	173	206	239
30.00%	8	41	74	107	140	173	206
40.00%	-	9	42	74	107	140	173
50.00%	-	-	9	42	75	108	141
60.00%	-	-	-	9	42	75	108
70.00%	-	-	-	-	9	42	75
80.00%	-	-	-	-	-	9	42
90.00%	-	-	-	-	-	-	10
100.00%	-	-	-	-	-	-	-

Potential Increased Operations / Day

Average Planes/Night to Occupancy Rate - Potential Increased Operations / Day

Average Planes in Hangar/Night

Projected Occupancy Rate	2.00	2.25	2.50	2.75	3.00	3.25	3.50
40.00%	-	-	-	-	-	-	-
50.00%	-	-	-	-	-	0.05	0.11
60.00%	-	-	-	0.06	0.14	0.22	0.29
70.00%	-	0.02	0.11	0.20	0.29	0.38	0.47
80.00%	0.04	0.14	0.24	0.35	0.45	0.55	0.66
90.00%	0.14	0.26	0.37	0.49	0.60	0.72	0.84
100.00%	0.24	0.37	0.50	0.63	0.76	0.89	1.02

Average Planes/Night to New Trips Ratio - Potential Increased Operations / Day

Average Planes in Hangar/Night

% New Trips due to Available Hangar Space	2.00	2.25	2.50	2.75	3.00	3.25	3.50
0.00%	-	-	-	-	-	-	-
10.00%	-	0.01	0.03	0.05	0.07	0.10	0.12
20.00%	-	0.01	0.06	0.10	0.15	0.19	0.24
30.00%	-	0.02	0.09	0.15	0.22	0.29	0.36
40.00%	-	0.02	0.11	0.20	0.29	0.38	0.47
50.00%	-	0.03	0.14	0.26	0.37	0.48	0.59
60.00%	-	0.04	0.17	0.31	0.44	0.58	0.71
70.00%	-	0.04	0.20	0.36	0.51	0.67	0.83
80.00%	-	0.05	0.23	0.41	0.59	0.77	0.95
90.00%	-	0.05	0.26	0.46	0.66	0.87	1.07
100.00%	-	0.06	0.28	0.51	0.74	0.96	1.19

Occupancy Rate to New Trips Ratio - Potential Increased Operations / Day

Projected Occupancy Rate

% New Trips due to Available Hangar Space	40.00%	50.00%	60.00%	70.00%	80.00%	90.00%	100.00%
0.00%	-	-	-	-	-	-	-
10.00%	-	-	0.02	0.05	0.09	0.12	0.16
20.00%	-	-	0.03	0.10	0.17	0.24	0.31
30.00%	-	-	0.05	0.15	0.26	0.37	0.47
40.00%	-	-	0.06	0.20	0.35	0.49	0.63
50.00%	-	-	0.08	0.26	0.43	0.61	0.79
60.00%	-	-	0.09	0.31	0.52	0.73	0.94
70.00%	-	-	0.11	0.36	0.61	0.85	1.10
80.00%	-	-	0.12	0.41	0.69	0.98	1.26
90.00%	-	-	0.14	0.46	0.78	1.10	1.42
100.00%	-	-	0.16	0.51	0.86	1.22	1.57

Average Planes/Existing User Take Rate - Potential Increased Operations / Day

Average Planes in Hangar/Night

Existing Overnights Take Rate	2.00	2.25	2.50	2.75	3.00	3.25	3.50
0.00%	0.29	0.38	0.47	0.56	0.65	0.74	0.83
10.00%	0.20	0.29	0.38	0.47	0.56	0.65	0.74
20.00%	0.11	0.20	0.29	0.38	0.47	0.56	0.65
30.00%	0.02	0.11	0.20	0.29	0.38	0.47	0.56
40.00%	-	0.02	0.11	0.20	0.29	0.38	0.47
50.00%	-	-	0.02	0.11	0.20	0.29	0.39
60.00%	-	-	-	0.02	0.11	0.21	0.30
70.00%	-	-	-	-	0.03	0.12	0.21
80.00%	-	-	-	-	-	0.03	0.12
90.00%	-	-	-	-	-	-	0.03
100.00%	-	-	-	-	-	-	-

Potential Increased Operations Rate

Average Planes/Night to Occupancy Rate - Potential Increased Operation Rate

Average Planes in Hangar/Night

Projected Occupancy Rate	2.00	2.25	2.50	2.75	3.00	3.25	3.50
40.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
50.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.07%	0.15%
60.00%	0.00%	0.00%	0.00%	0.08%	0.18%	0.29%	0.39%
70.00%	0.00%	0.03%	0.15%	0.27%	0.39%	0.51%	0.63%
80.00%	0.05%	0.18%	0.32%	0.46%	0.59%	0.73%	0.87%
90.00%	0.18%	0.34%	0.49%	0.64%	0.80%	0.95%	1.10%
100.00%	0.32%	0.49%	0.66%	0.83%	1.00%	1.17%	1.34%

Average Planes/Night to New Trips Ratio - Potential Increased Operation Rate

Average Planes in Hangar/Night

% New Trips due to Available Hangar Space	2.00	2.25	2.50	2.75	3.00	3.25	3.50
0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
10.00%	0.00%	0.01%	0.04%	0.07%	0.10%	0.13%	0.16%
20.00%	0.00%	0.02%	0.08%	0.13%	0.19%	0.25%	0.31%
30.00%	0.00%	0.02%	0.11%	0.20%	0.29%	0.38%	0.47%
40.00%	0.00%	0.03%	0.15%	0.27%	0.39%	0.51%	0.63%
50.00%	0.00%	0.04%	0.19%	0.34%	0.49%	0.64%	0.78%
60.00%	0.00%	0.05%	0.23%	0.40%	0.58%	0.76%	0.94%
70.00%	0.00%	0.05%	0.26%	0.47%	0.68%	0.89%	1.10%
80.00%	0.00%	0.06%	0.30%	0.54%	0.78%	1.02%	1.26%
90.00%	0.00%	0.07%	0.34%	0.61%	0.88%	1.14%	1.41%
100.00%	0.00%	0.08%	0.38%	0.67%	0.97%	1.27%	1.57%

Occupancy Rate to New Trips Ratio - Potential Increased Operation Rate

Projected Occupancy Rate

% New Trips due to Available Hangar Space	40.00%	50.00%	60.00%	70.00%	80.00%	90.00%	100.00%
0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
10.00%	0.00%	0.00%	0.02%	0.07%	0.11%	0.16%	0.21%
20.00%	0.00%	0.00%	0.04%	0.13%	0.23%	0.32%	0.42%
30.00%	0.00%	0.00%	0.06%	0.20%	0.34%	0.48%	0.62%
40.00%	0.00%	0.00%	0.08%	0.27%	0.46%	0.64%	0.83%
50.00%	0.00%	0.00%	0.10%	0.34%	0.57%	0.81%	1.04%
60.00%	0.00%	0.00%	0.12%	0.40%	0.69%	0.97%	1.25%
70.00%	0.00%	0.00%	0.14%	0.47%	0.80%	1.13%	1.46%
80.00%	0.00%	0.00%	0.16%	0.54%	0.91%	1.29%	1.66%
90.00%	0.00%	0.00%	0.18%	0.61%	1.03%	1.45%	1.87%
100.00%	0.00%	0.00%	0.21%	0.67%	1.14%	1.61%	2.08%

Average Planes/Existing User Take Rate - Potential Increased Operation Rate

Average Planes in Hangar/Night

Existing Overnights Take Rate	2.00	2.25	2.50	2.75	3.00	3.25	3.50
0.00%	0.39%	0.51%	0.62%	0.74%	0.86%	0.98%	1.10%
10.00%	0.27%	0.39%	0.51%	0.63%	0.74%	0.86%	0.98%
20.00%	0.15%	0.27%	0.39%	0.51%	0.63%	0.75%	0.86%
30.00%	0.03%	0.15%	0.27%	0.39%	0.51%	0.63%	0.75%
40.00%	0.00%	0.03%	0.15%	0.27%	0.39%	0.51%	0.63%
50.00%	0.00%	0.00%	0.03%	0.15%	0.27%	0.39%	0.51%
60.00%	0.00%	0.00%	0.00%	0.03%	0.15%	0.27%	0.39%
70.00%	0.00%	0.00%	0.00%	0.00%	0.03%	0.15%	0.27%
80.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.03%	0.15%
90.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.03%
100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

Appendix O

Hangar 3 Policy

TRUCKEE TAHOE AIRPORT DISTRICT
POLICY INSTRUCTION

PI NUMBER 506 (Hangar 3 - addendum)
Formerly PI 645

Effective: August 19, 1982
Revised: March 26, 2014
Addendum drafts:
February 27, 2015
July 30, 2015

SUBJECT:
Proposed Hangar 3 (H3) Multiuse Facility Policies, Procedures and Guidelines.

PURPOSE:
To establish policy instructions to equitably maximize efficiency of both Aviation and Community use of the proposed H3 Multiuse facilities.

GENERAL:
The initial attempt at this policy draft will be in a rough format conducive to facilitate both Ad-Hoc committee and staff review and discussion. Many questions will still need to be considered and some may not be answered until the proposed facility design has been chosen and all available facility options are known and fee schedules are determined. This addendum has been built on the foundation of the District's current A-9 hangar use practices, which have been effectively balancing community and aviation use for years.
*Staff should be included in early discussions for their insight into real world community and aviation use of the proposed H3 facility.

1) ASSUMPTIONS
At the time of authoring this addendum draft, the Airport Board of Directors has been presented with three architectural design plan options for a multiuse H3 facility. All three options would facilitate community use of larger group sizes (Terminal Building meeting rooms can hold groups of no more than 101 people), and/or aircraft hangar storage and heating/deicing capabilities for aircraft up to KTRK's largest visiting aircraft, namely the Gulfstream G550 and the Global Express business jets. The 3 hangar options are as follows:

Option 1 - A basic hangar that can house small to large sized aircraft including business jets with warming and de-icing abilities. As an event space, it can host up to 222 people, but would require portable toilets. Estimated Price: $3M

Option 2 - A hangar that can still house small to large aircraft including business jets and perform warming functions, but also adds a more aesthetically pleasing finish for community events, in-floor heating and restrooms for 200 people. Estimated Price: $6M

Option 3 - A hangar that builds on the above features and adds restroom facilities for up to 600 people, more community meeting space, a commercial kitchen area and exterior canopies. Estimated Price: $9M

A) Depending on the option(s) chosen, the proposed H3 building is to be a structure housing a large hangar, with considerations for such additional items as: a separate public gathering and meeting room, a kitchen, public restrooms, a staff/staging office area and equipment storage space. The option of a public meeting room outside of the hangar would ideally be capable of holding groups of up to at least 150 people, (a moveable wall, would be suggested to facilitate simultaneous smaller group events when Terminal Building rooms are booked). Storage capacity for both aviation and public use equipment would also be ideal, for such equipment as aircraft tugs, traffic cones, event signage, tables, chairs, a stage, etc...
B) The hangar portion of the structure would have dimensions of approximately 120' x 120' (+/- 14,400sf)
C) The hangar door dimensions will be approximately 104' wide and 28' high.
D) A hangar with these dimensions will be able to house a single aircraft up to the size of a Gulfstream G550 (100'W 100'L 26'T) or Bombardier Global Express (94'W 100'L 26'T), or multiple smaller aircraft in a gang hangar configuration. District field operation safety protocol requires a minimum 2' clearance on each wing, 2' clearance fore and aft of the fuselage and 1' clearance on tail height for maneuvering operations.
E) The hangar will be capable of deicing aircraft via LNG infrared emitters and/or radiant floor heat.
F) H3 Building "day to day" operations considerations will need to be made for: Point of Sale options, Flight Planning, Pilot Lounge, catering, storage, hangar event audio and visual systems.
G) All reservations for both Community Event (meeting rooms and hangar space) and Aviation Use of hangar space would be made on a reservation system "First Come, First Serve Basis", giving priority to Non-Profit Community events over aeronautical use. In support of this directive from the Board, Community events are typically planned and organized months in advance.

2) DISTRICT MANAGEMENT OF H3 FACILITY

TTAD community outreach programs have demonstrated that there is both a community "Regional Need" for large indoor meeting space for events and programs, as well as a strong aeronautical demand. Due to the substantial initial expense of the facility, along with ongoing operational expenses such as utilities, building maintenance, insurance etc..., efforts should be made to monetize services when and where appropriate. The Truckee Tahoe Airport District has had a long history of efficiently and effectively balancing both the aviation and community use needs of our Terminal Building meeting rooms as well as Hangar-1 and A-9. We expect that this history will provide for a smooth operational transition to running the H3 facility.

3) USE OF THE HANGAR 3 FACILITIES / PRIORITY OF USE

The H3 project would be funded by a combination of the District's property tax dollars and commercially generated business revenues, with no grant assistance from the FAA. H3 would be a multiuse facility, (**Community Non-profit Events and monetized Aeronautical use),** with a mandate from the Board of Directors to prioritize community use over aeronautical use and related to community event. All use of District facilities requires a group to provide proof of insurance with the District named as additionally insured.

* A consideration: The Terminal Building Board Rooms and even lounge and restaurant areas are being used on an almost daily basis by non-profits at no cost. It is assumed that facilities in H3 will be just as busy if not more so. On occasion, especially for non-profits that book rooms a full year in advance, we will get NO-SHOWS with no cancellation call for board meeting rooms. We may want to consider requiring a deposit or even a nominal $25.00 "Administrative Fee" for ALL Terminal and future H3 facility use to ensure that there is a "bit of skin in the game" and a perceived value for the facility.

A) **H3 Meeting Rooms - Community Non-Profit Use (If we build these)**

Non-profit organizations wishing to reserve an H3 meeting room or hangar space could download an application form from TTAD's website and contact the District Clerk and/or a future H3 facilities coordinator to make a reservation, (the same as is currently done for the Terminal Building meeting room reservations). H3 reservations would require that application form be turned into the District Clerk in-person to confirm a reservation. We do not currently require proof of Non-Profit status. A $100 cleaning deposit when appropriate, (when food is being served) and/or the kitchen is being used is required. Use of an H3 kitchen if built may need to require a bigger deposit.

Current Terminal Building Board Room Non-Profit calendar booking schedules are viewable on the TTAD website to allow online viewing capabilities of the meeting room reservation calendars. We could ideally do the same with the H3 bookings, both for aeronautical and community events. Plans for on-site TV monitors (at the meeting rooms), displaying daily room use schedules, like organizational names and meeting times are in discussion for all District meeting facilities.

Current Terminal Building Meeting Room Rules would still apply: The District does not provide additional services, related to room setup and clean up, or provide meeting supplies such as flip charts, pens, pencils, paper, equipment, or storage of a group's equipment. No items may be attached to the walls in the meeting rooms unless the area is designated for such purposes. All groups are responsible for their own setup and takedowns of tables and chairs. (Due to IT and broadcasting requirements, tables with audio equipment cannot be moved or altered without prior approval from the General Manager and assistance from District staff). The Area must be returned to its original arrangement. Any trash or debris shall be deposited in the recycling or trash receptacles. Groups will be held responsible for any damage, cleanup or rearranging incurred or required. Failure to comply with these provisions may result in the revocation of the group's ability to use District facilities in the future.

B) **H3 Meeting Rooms - For Profit District Co-sponsored and/or Aeronautical Organizational Use**

Published airport policy on "For Profit" organization's states the following: "The District Community Rooms and Café / Lounge Area may be reserved for public use by governmental and public benefit non-profit organizations with prior District written approval. Other organizations are eligible to use these facilities for a fee if the event is either co-sponsored with the Truckee Tahoe Airport District and/or is an Aviation related business. For these groups, reservation rates are listed below. All other commercial or for-profit use is currently not permitted. In an attempt to monetize and cover H3 building expenses the Board may want to consider allowing other than Non-Profit community use of the H3 facility for a fee. Current published Terminal Building Meeting Room fees for co-sponsored District or Aviation related events are as follows. The following rates are for business groups not affiliated with a non-profit. Community Room A, 160/hr, $500/day; Community Room B, $100/hr, $400/day; Full Community Room, $200/hr, $600/day. It is assumed that H3 meeting facility charges would be the same.

C) **H3 Hangar Space Community Event Use**

Community non-profit use of the H3 building hangar: reservations will be taken up to 6 months in advance in a rolling calendar format for groups of 101 or more, or for smaller groups (when the Terminal Building meeting rooms are booked), and/or when they need the larger hangar space, ie a youth sports team. No repetitive bookings would be allowed for H3 hangar space.

1) Reservations, with a completed application, and proof of insurance and non-profit status must be made a minimum of 48 hours in advance.

2) A $250. deposit would be required for each community event reservation in the H3 complex. The $250 would be refunded less a $25 administrative fee if the event takes place. The deposit would be forfeited if there is a No Call/No Show or last minute cancellation.

3) Larger events would obviously require adequate advanced notice for adjustments in District staffing requirements.

4) Depending on the final H3 building specifications, groups reserving the hangar for larger functions, (too big to be held in the Terminal Building facilities), may need to order port-a-potties for their event based on County Health Department requirements.

D) **H3 Kitchen Facility** - Both Community events and Commercial Aviation activities could benefit from access to some variation of a commercial grade kitchen in the H3 building. The level of equipment for this kitchen is up for discussion*. It is a commonly known complaint that the kitchen facility at the new Truckee Rec Center is inadequate for some of the larger community events that they host such as the Truckee Rotary Annual Crab Feed and Rotary Bingo nights that attract 400-600 people.

* The kitchen and/or H3 facility would need to include a commercial dishwasher and even a washing machine and dryer. These pieces of equipment could be used for community events and by aeronautical customers as well.

E) **Janitorial / Cleaning Services** - Additional expense will be incurred for regular cleaning services and large event clean ups. The finished hangar floor will need additional district floor cleaning/maintenance equipment. Storage space for janitorial supplies will all need to be considered.

4) AVIATION USE OF THE H3 HANGAR

Airside operations have also demonstrated a strong aeronautical need for availability of a larger aircraft storage hangar and for deicing capabilities. The proposed hangar could house either a large TUF 5 aircraft (District's "Transient Use Fee" schedule), or several smaller TUF 1-4 sized aircraft.

A) **Reservations:** (Important)

Aircraft use hangar reservations, up to 1 month in advance in a rolling calendar format with full payment due at time of reservation for every day reserved. Reservations would be made on a first come, first serve basis. If a community event is already scheduled in the hangar, the hangar will not be available during that scheduled event(s) or community use, unless the event would be finished and the hangar cleared before 4:30pm while Operations staff is still available to reposition the aircraft. If a short notice (less than 30 days) community event request is received by the District, District staff will do everything practical to accommodate the event or community use request as well as the aircraft reservation. The aircraft will be parked on the ramp during the event and then moved into H3 as soon as airport staffing levels will accommodate the move (typically 2+ airport staff members and/or air crew).

1) **Cancellations:** Aircraft hangar reservation cancellations must be made a minimum of 72 hours in advance. A cancellation made with at least a 72 hour notice results in a refund of the full hangar fee paid, less a 10% administration fee. Cancellations with less than a 72hr notice would result in a full forfeiture of the hangar fee.

B) **Aircraft H3 Rental Rates** **(rates are suggested)**

MTOW in lbs.	**Plane Size Example**	**Overnight** Heated to 50deg.	**Hourly** Heated to 50 deg.	**TUF** in add. to H3 fee
< 5,500	C210 / Mooney	**$150.00**	**$75.00**	$0.00
5,501-8,499	C340 / TBM	**$300.00**	**$100.00**	$25.00
8,500-12,499	PC12/ BE20 / E50P	**$400.00**	**$150.00**	$75.00
12,500-19,999	CJ3 / FLC10 / Lear 25	**$600.00**	**$200.00**	$150.00
20,000-49,000	C560XL / CL60 / Lear 60	**$1,000.00**	**$300.00**	$300.00
> 50,000	GLEX / GLF5	**$1,500.00**	**$500.00**	$500.00
Helicopters		**TBD**	**TBD**	TBD

1) All rates include 1 tug in and 1 tug out.
2) Helicopters could use the hangar but would be required to supply their own trailer or wheels.
3) Helicopter rates, (TBD) would also be based on published (MTOW) max takeoff weight ratings.
4) Overnight and/or Hourly rates DO NOT INCLUDE the airport's TU fee
5) Overnight and/or hourly rates for HIGHER TEMPERARTURE heating requests of the hangar, (to a requested specified temperature), will be determined with future engineering calculations of LNG consumption and BTU requirements to bring the hangar volume of airspace to an assigned temperature.
6) When H3 is being used in a gang hangar configuration and a specific aircraft has requested additional facility heating over 50 degrees, the requesting aircraft would pay, but all other stored aircraft would not be assessed with additional fees.

C) **H3 Ground Service Equipment (GSE)**

Additional ground service equipment will need to be purchased to facilitate unique, larger and indoor service requirements of aircraft using the H3 hangar. District Fee Schedules for H3 services will need to be determined.

5) MISCELLANEOUS H3 REQUIREMENTS

The nature of bigger special events and multiple and larger aircraft using the proposed H3 hangar facility will require some unique and additional considerations for the District.

1) **Meeting Room & Special Event Equipment** - H3 specific community event equipment will need to be purchased. This list of items would facilitate meetings, classrooms and special events and would include items such as: chairs, and tables for the meeting room, (additional chairs for larger hangar events 400-600, would need to be rented by the space user) that, lecterns, an audio visual system including drop down screens for meeting room and/or the hangar, white boards, etc...

2) **New Staff Position** - A new District staffing position will most likely be need to be created to oversee the H3 facility and would be under the management of the Director of Operations and Maintenance. This person would ideally be a seasoned internal hire and in charge of all aspects of the facility use management. Duties would include overseeing aeronautical and community reservations, act as the District community event contact representative, manage event set up and break downs, manage aircraft tugging and gang hangar organization, manage building security and maintenance, etc... When not involved directly with H3 facility duties management, this new team member position would work District Operations as needed.

3) **Tug:** A Lektro AP8850 with a weight carrying capacity of 120,000#'s would be needed to move larger TUF 5 aircraft in and out of the H3 hangar. Initial bids on this tug have come in at +/- $87,000. Our current Lektro tug a AP8800 cannot handle a larger TUF 5 aircraft and has a current trade-in / resale value of +/- $50,000.

4) **Ground Power Unit (GPU):** Our current GPU, a diesel powered AeroSpecialties model is not suited for larger aircraft power requirements and/or indoor use. Phred is currently researching pricing quotes for a 220V electric GPU for the proposed H3 facility.

Unicom and/or Operations staff constantly deal with charter outfits asking for recommendations of local catering companies, calling for confirmation that a catered order has been delivered, or flight crews needing assistance bringing their order to the aircraft. All that along with providing the refrigeration space is food for thought if we can in some way monetize the Airport's services with catered food orders on either a per order flat rate charge or percentage.

6) PASSENGER BOARDING or DISEMBARKING IN THE HANGAR

Situations will arise where passengers will want to board or disembark inside the hangar. This may occur for a number of reasons, i.e., bad weather, celebrity or dignitary privacy, waiting for transportation etc... It would be up to the flight crew to ensure that the passengers are seated during tug movement of the aircraft. Operations staff will need to take charge and direct where a vehicle should park inside the hangar (as during rain events) and direct passengers to eliminate the possibility of contact with other aircrafts props, wing edges, static wicks etc... One idea would be to use line control retract-a-strap stations and/or traffic safety cones and candles. Signage and staff would need to insure that passenger vehicles are not left idling inside the hangar.

7) VEHICLE PARKING

The proposed H3 building plan would include the addition of approximately 38 new adjacent parking spaces including ADA compliant stalls, in addition to those already at the Terminal Building. The current District Parking Rate Fee Schedule would apply to vehicles left overnight. $7.00/night with a maximum of 7 nights. Longer periods would require the purchase of a parking permit and relocation to the long term lot. During large Hangar events, the Jet Ramp area could serve as an alternate or overflow parking. Care would need to be exercised that vehicles do not park in front of the hangar doors as to restrict movement of aircraft in or out of the hangar.

8) HOURS OF OPERATIONS

H3 Building facility “normal public” business hours would be the same as the current District operating hours. 7am - 9pm.

*Special events would necessitate reviewing staff scheduling on an individual basis.

A) **Meeting Rooms / Kitchen Facility: 7am - 9pm**

B) **Hangar**

1) Community use : 7am - 9pm
2) Aviation use: 7am - 5pm
    a) Aviation use requires a tug operator and the addition of at least 1 staff to act as a wing walker. Ideally, you would have 2 wing walkers. Often staffing levels do not allow for 3 employees to be available at a tugging event, so aircraft crew member(s) can act as wing walker(s). Tugging theoretically would have to start no later than 4:30pm so that an employee scheduled for a 5:00pm clock out could do so without the District having to pay overtime.

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