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Skydive Truckee Lake Tahoe

This staff report outlines a request to provide commercial aeronautical services at KTRK

Hardy Bullock

Director of Aviation & Community Services



BACKGROUND

What is it?

How is it regulated?

Who promotes it?

Where does it occur?

Who does it?

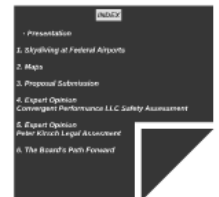
**Skydiving
Federal
Airports**

MAPS

**Proposal
Submission**

**Expert
Opinion**

**The Path
Forward**



Acknowledgments

Staff, on behalf of the Truckee Tahoe Airport District, acknowledges a few important points related to commercial operations at KTRK

***** Goal *****

Provide all the relevant information to the Board for decision making purposes in a balanced and informed format.

1. Operations from the airport have an impact on the community. This skydiving operation may create annoyance, primarily from aircraft climb-out noise. **Mitigation measures will be discussed thru the operating permit process.**
2. Staff will work, within the Operating Permit process, to mitigate annoyance and balance the operational needs with our communities needs, **BUT** annoyance is subjective, the District may get complaints regarding skydiving or the jump plane.
3. The District works to provide the safest, aeronautical environment while recognizing its role as an airport sponsor, operator, and supporter of Federal Regulation and Sponsorship Assurances.
4. Skydiving is an industry wide challenge for airports of all size. It is the goal of the District to offer opportunities for aeronautical businesses equally, in a non-discriminatory fashion while making decisions locally for the benefit of the District constituents as a whole.
5. **Skydiving has inherent risk. As with all aeronautical activity there is a risk of accidents, injuries, death, and property loss. Staff acknowledges these concerns as foundational to all discussions.**



You Tube

BACKGROUND

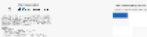
What is it?



How is it regulated?



Who promotes it?



Where does it occur?

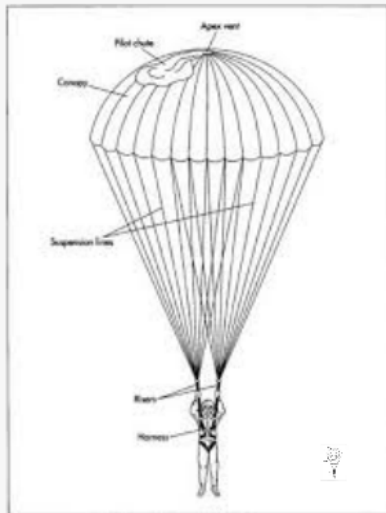


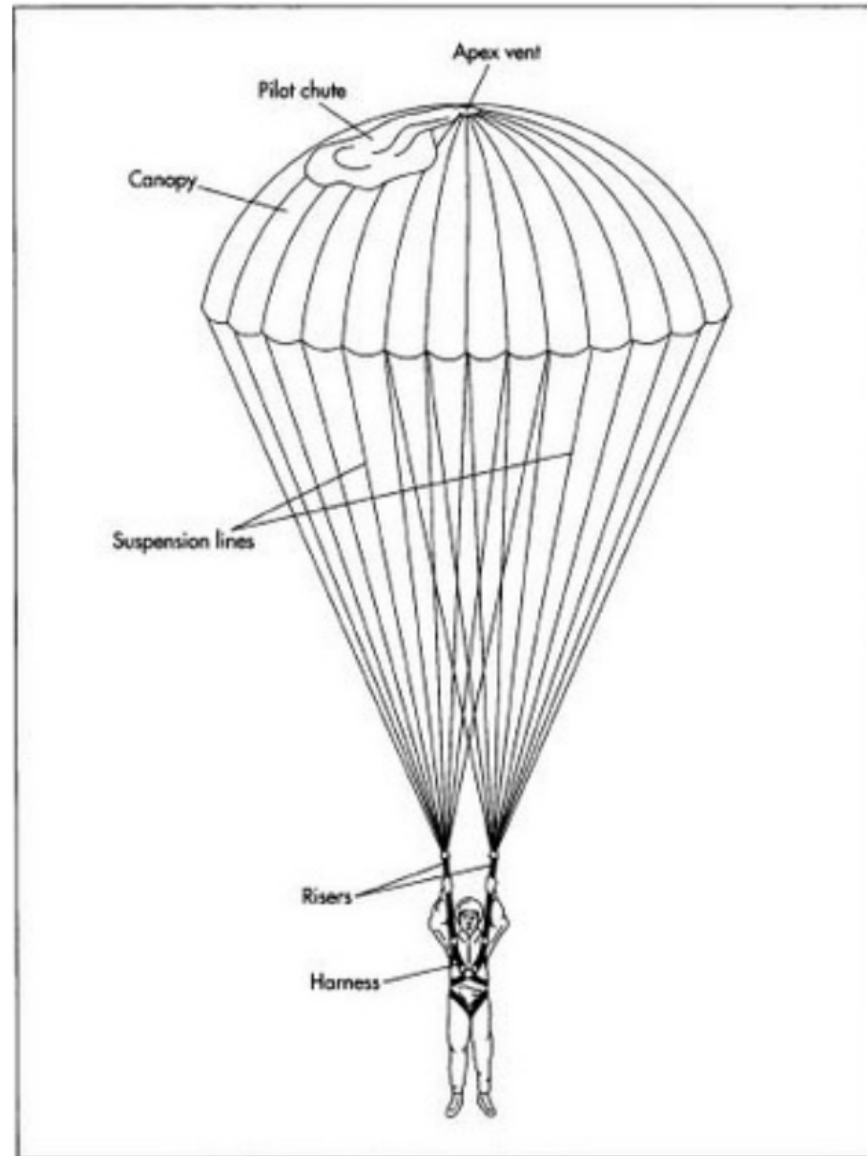
Who does it?



What is it

- Skydiving is jumping from an aircraft at a moderate or high altitude and deploying a parachute to create drag or lift for descent to the ground.
- Parachutes typically come in two shapes (round and square) and may be of multiple varieties, including ram-air parachutes that provide greater control over speed and direction.
- Commercial skydiving services are provided for compensation or hire, including training, equipment and air transportation.





Types of Skydiving

PROPOSED AT KTRK

From Aircraft



PROPOSED JUMP PLANE CESSNA 206

SOLO

Skydiving is a certified, experienced jumper by themselves.



PROPOSED AT KTRK

TANDEM

Skydiving is a team, usually a student and instructor.



PROPOSED AT KTRK

Types of Skydiving Continued

B.A.S.E Jumping

Bridge - Antennae - Span - Earth

NOT PROPOSED AT KTRK



Wing Suiting

PROPOSED AT KTRK



OTHER TYPES

Formation
Freeflying
Canopy
Formation
Canopy Piloting
Skysurfing
Freestyle
Freefall Style &
Accuracy
Landing

Where does Skydiving occur?

Dropzone.com

- 323 dropzones in the U.S.
- 49 states in the U.S. have a dropzone
- 25 dropzones are located in CA

United States Parachute Association

- 323 dropzones in the U.S.
- 50 states in the U.S. have a dropzone
- 21 dropzones are located in CA and are certified members of USPA

All operations depart a public or private airport. Unknown number co-locate dropzone on airport proper (inside fence).

Who Skydives

United States Parachute Association

Age

16-30 - 26%
31-39 - 25%
40-49 - 19%
50-59 - 14%
60+ - 10%
Unreported - 6%

Total Jumps

1-25 - 18%
26-500 - 44%
500+ - 35%
Unreported - 3%

USPA Members by Gender

USPA Members 2014



Year▼	Male	Female	N/R	TOTAL
2014	86%	13%	1%	36,770

Incidents and Accidents

USPA members reported 3,535 reserve rides in 2014.

USPA members reported 729 injuries in 2014.

There were 24 skydiving fatalities in the U.S. in 2014.

**USPA estimates 3.2 million skydives in the U.S. in 2014.*

How is skydiving regulated

- Skydiving is subject to 14 C.F.R. Part 105 (Parachute Operations). Pursuant to Part 105, FAA approval is required for skydiving over or into congested areas and open-air assemblies of people and in designated airspace such as an airport.
- The FAA regulate aspects of skydiving and rely on the self-regulation of the participants through the guidelines and recommendations published by USPA.
- The FAA's main responsibility is to provide for the safety of air traffic, as well as persons and property on the ground. The FAA regulates skydiving by certificating pilots, mechanics, air traffic controllers and parachute riggers and by requiring approval data for aircraft and parachutes.
- The FAA and USPA rely on self-regulation from within the skydiving community for most training and operational requirements.
- Pursuant to 14 C.F.R. Part 105, skydiving over or onto an airport requires approval of airport management (KTRK).

Who promotes skydiving



The United States Parachute Association (USPA) is a non-profit individual membership organization dedicated to promoting the safe enjoyment of skydiving. USPA partners with its affiliated schools, clubs and centers ("drop zones") to provide properly trained and rated instructors using recognized training programs and following the skydiving community's basic standards of safety. USPA currently boasts a membership of nearly 37,000. These members, along with first-time jump students, make roughly 3.2 million jumps per year at more than 240 USPA-affiliated drop zones nationwide.

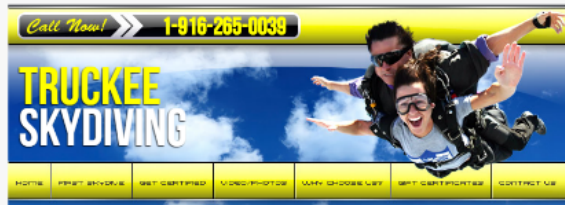
Our Mission

USPA's mission is to:

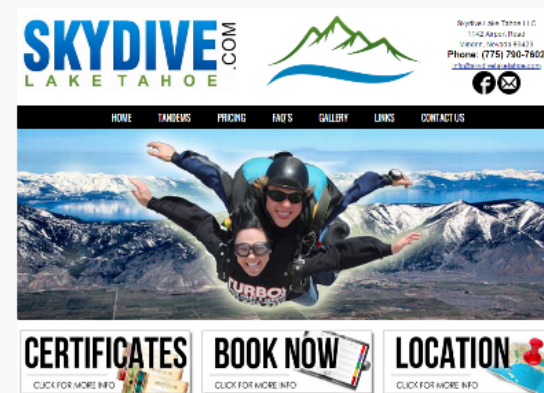
- Encourage unity among all persons interested in skydiving.
- Promote safety in all skydiving activities in the U.S.
- Sanction skydiving competitions.
- Document state, national and world skydiving records set by U.S. citizens.
- Cooperate with all government agencies connected with aeronautical activities

Who promotes skydiving continued

Commercial Operators Promote Skydiving



Truckee Skydiving Adventures is regarded as the number one choice for skydiving in the state of California. Call us and see what special skydiving adventures we have for you.



Skydiving at a Federal-Enlisted Airport

[illegible]

Skydiving at a Federal Entitled Airport

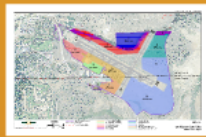
"Airport sponsors who receive a grant from the Federal Aviation Administration for an airport project are obligated to agree to a number of assurances. One of those assurances provides that the airport sponsor will make the airport available for public use on reasonable conditions and without undue discrimination. The intent of this assurance is to ensure that aeronautical users will have reasonable access to the airport." **GRANT ASSURANCE #22**

Kaplan Kirsch and Rockwell LLP ACRP Report 23

Skydiving is recognized by the FAA to be an aeronautical activity. Consequently, commercial skydiving operators and skydivers are entitled to protection under the Airport Sponsor Assurances. The FAA has issued the following decisions on the regulation of commercial skydiving by airport operators:

1. An airport sponsor's prohibition against establishment of an on-airport drop zone is unreasonable where FAA finds that it is safe to conduct on-airport parachute activities. Final Decision, Bodin v. County of Santa Clara, FAA Docket No. 16-11-06 (2013).
2. An airport sponsor may prohibit access to the airport where the skydiving operator has a record of multiple infractions of minimum standards and potential violations of federal regulations. Director's Determination, Johnson v. Yazoo County, FAA Docket No. 16-04-06 (2006).
3. Denial of access to the airport through imposition of unobtainable insurance requirements constitutes an unreasonable denial of access by an airport sponsor. Director's Determination, Skydive Sacramento v. City of Lincoln, FAA Docket No. 16-09-09 (2011).

MAPS



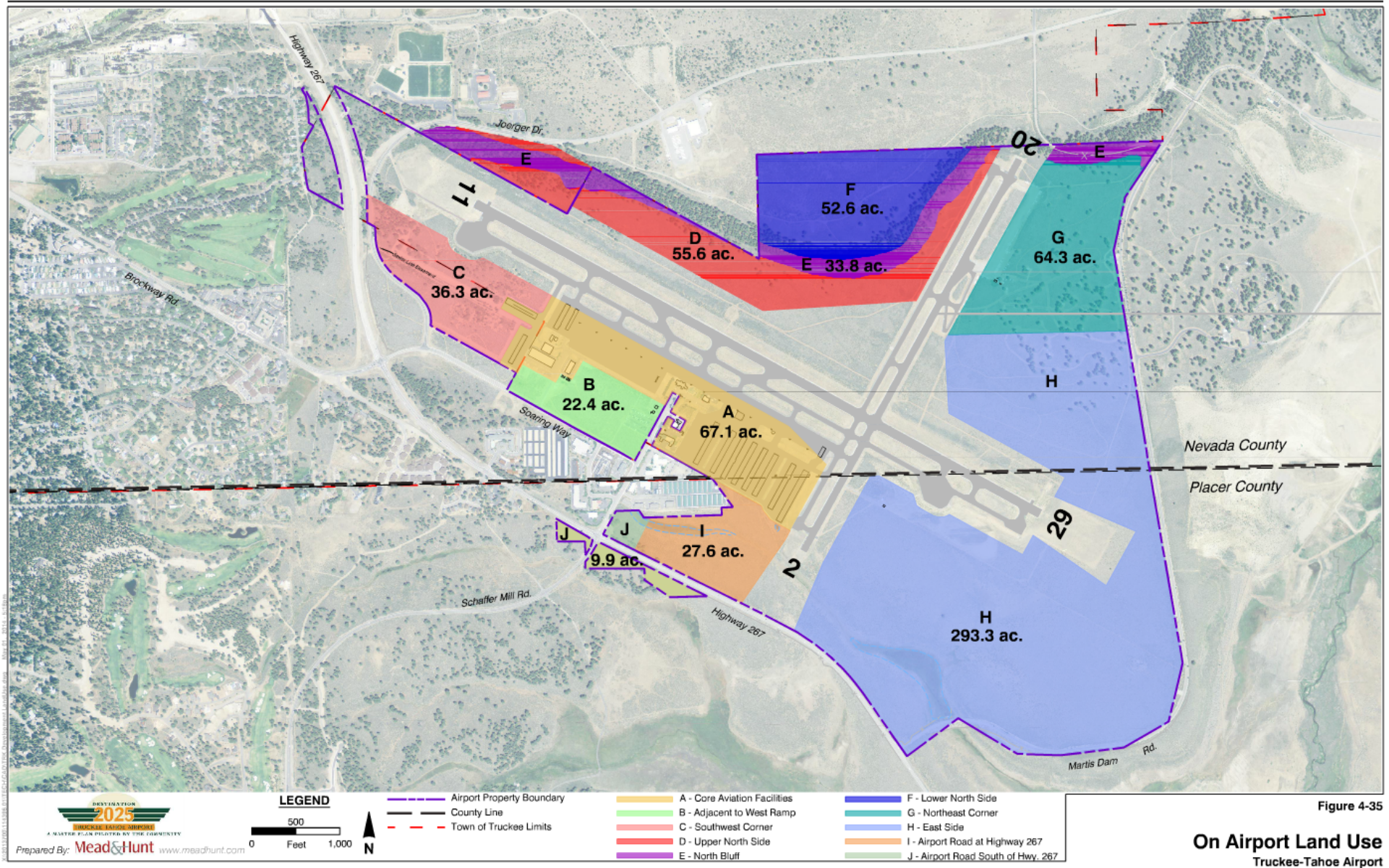


Figure 4-35

On Airport Land Use Truckee-Tahoe Airport

Glideport Area



Campsites



Roads



Boundary



Electrical Transformer for
FAA Visual Approach Slope Indicators

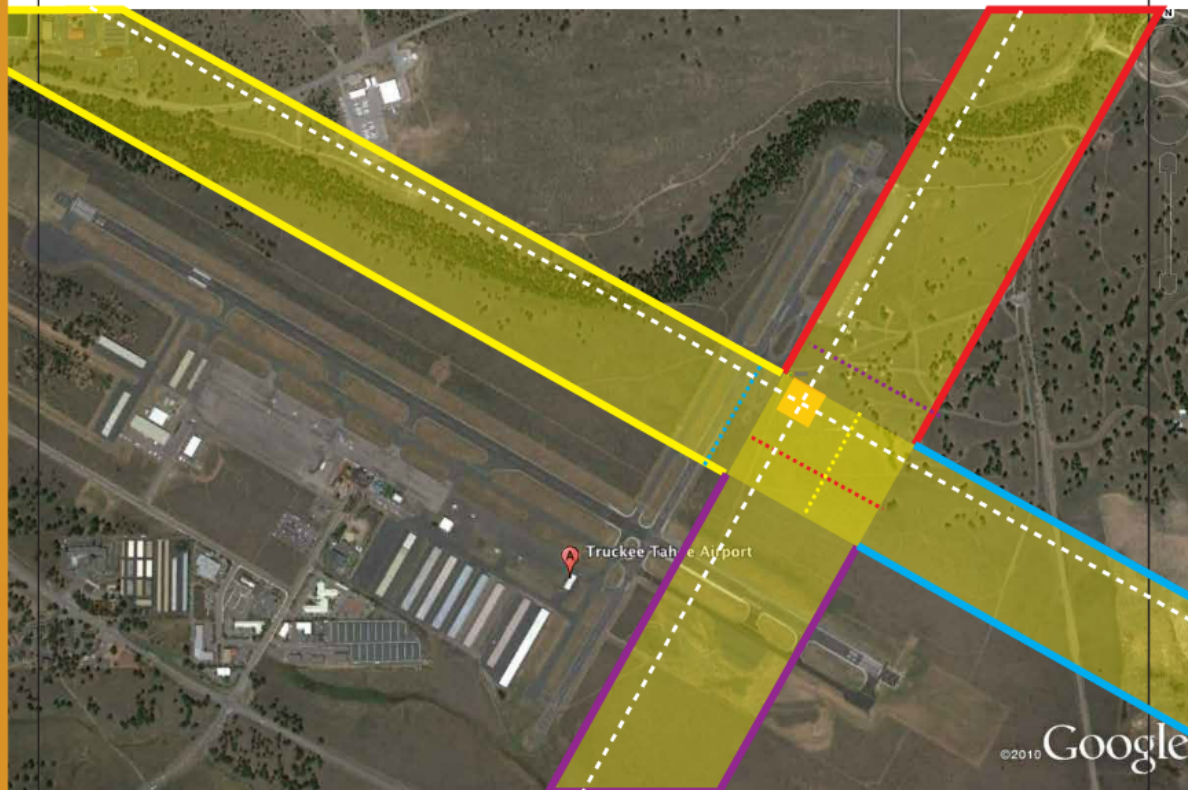









Operations Layout



- Office Areas: 40ft by 10ft each
- Spectator Viewing Area with boundary
- Drop Zone/ Parachute Landing Area: 300ft by 300ft
- Parking Area: 100ft by 40ft
- Plane Loading/ Boarding Area: 20ft by 20ft
- Restrooms: 10ft by 10ft

Parachute Corridors



-  Drop Zone/ Parachute Landing Area: 300ft by 300ft
-  North Wind Corridor ends at red dotted line
-  South Wind Corridor ends at purple dotted line
-  West Wind Corridor ends at yellow dotted line
-  East Wind Corridor ends at blue dotted line
-  All Parachute Corridors
-  Jump Runs

Proposal Submission

Proposal Submission

1. May 9th, 2014
Mike Swenson, Julie Thew, Jennifer Thew discuss timeline at Truckee Lake Tahoe. Submission and discussion.

2. May-June, 2014
Policy404 / 402 consultation by Staff. Construction of Policy404.1.

3. July 1, 2014
Policy404.1 Approval by Board of Directors.

5. July 2, 2014 - February 2, 2015
Agency / Staff / Mike Swenson - Northern Dialogue regarding policy submission requirements, specifically asking

Proposal Submission Continued

6. March 1, 2015
KTS&C and Mike Swenson agree to independent safety assessment guidelines from Convergent Performance LLC.

7. March 16, 2015
Snow Truckee Inc. submits comments regarding safety.

8. April 2, 2015
Convergent Performance LLC completes Safety Assessment. Submit/Construct Phase. Snow Truckee official response submitted to final assessment.

9. May 1, 2015
Swenson submits timeline at Truckee Lake Tahoe Safety Management Plan with request to Convergent Performance Safety Assessment.

8. May 15, 2015 Staff reviews entire timeline at Truckee Lake Tahoe Proposal. Staff concludes **Proposal meets basic requirements of PT 506.1.**

Proposal Submission

1. May 05, 2014

Mike Swanson, Julia Drew, Jennifer Drew d.b.a. Skydive at Truckee Lake Tahoe. Submission and discussion.

3. May-June, 2014

Policy#504 / #502 consultation by Staff. Construction of Policy#504.1

4. July 1, 2014

Policy#504.1 Approval by Board of Directors.

5. July 2, 2014 - February 3, 2015

Attorney / Staff / Mike Swanson - Written dialogue regarding policy, submission requirements specifically safety.

Proposal Submission Continued

6. March 1, 2015

KTRK and Mike Swanson agree to independent safety assessment guidance from Convergent Performances LLC

7. March 18, 2015

Soar Truckee Inc. submits comments regarding safety.

8. April 3, 2015

Convergent Performance LLC completes Safety Assessment. Bullock/Swanson Review. Soar Truckee official response submitted to final assessment.

8. May 1, 2015

Swanson submits Skydive at Truckee Lake Tahoe Safety Management Plan with response to Convergent Performances Safety Assessment.

9. May 15, 2015 Staff reviews entire Skydive at Truckee Lake Tahoe Proposal. Staff concludes **Proposal meets basic requirements of PI 504.1.**

Expert Opinion

Continental Airworthiness, LLC - Revised Lead Study Summary

Issue: Landing Gear Assembly (LGA) - Revised Lead Study Summary

1. Landing Gear Assembly (LGA) - Revised Lead Study Summary
2. Landing Gear Assembly (LGA) - Revised Lead Study Summary
3. Landing Gear Assembly (LGA) - Revised Lead Study Summary
4. Landing Gear Assembly (LGA) - Revised Lead Study Summary
5. Landing Gear Assembly (LGA) - Revised Lead Study Summary

Reference is made to the report by the Landing Gear Assembly (LGA) - Revised Lead Study Summary, dated May 14, 2014, which was submitted to the FAA by Continental Airworthiness, LLC.

The report contains information regarding the LGA and the associated safety issues. The report also includes a list of recommendations for the FAA to consider.

1. The FAA should consider the recommendations of the LGA - Revised Lead Study Summary.
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Continental Airworthiness, LLC - Revised Lead Study Summary

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5. The FAA should consider the recommendations of the LGA - Revised Lead Study Summary.

Initial Safety Assessment by Doug Downey March 1, 2015 to ORIGINAL SKYDIVE PROPOSAL

1. Incomplete procedures
2. Proposed dropzone needs clarification
3. Incomplete airspace deconfliction plan
4. Absence of written safety protocol
5. Absence of risk management program strategy

Secondary Safety Assessment by Doug Downey May 1, 2015 to SAFETY AND RISK MANAGEMENT PLAN SKYDIVE TRUCKEE LAKE TAHOE (risk management / safety plan directly addressing the above listed deficiencies)

Subject matter experts agree that skydiving operations can take place utilizing best management practices that include:

1. Established lines of communication between STI and STLT and the Airport
2. Strict adherence to the airspace deconfliction plan
3. Continuous monitoring of operator compliance
4. Understanding of the Truckee Tahoe Airport Aviation Ecosystem by all users



Summary of Peter Kirsch Memo May 14, 2016

- 1. Grant Assurance #22 identifies skydiving as an aeronautical use.***
- 2. Limitations based on certain times of the day and week to avoid the times of busiest operation and greatest threat of interference with fixed-wing aircraft is acceptable.***
- 3. A ban on skydiving is authorized if the airport proves significant fixed wing delays will occur.***
- 4. To avoid conflict the Airport may limit skydiving to specified airfield locations, pattern use, or runway use.***
- 5. Airports shall use "Acceptable Minimum Standards to Establish Guidelines".***
- 6. Safety Management Systems can be required by Airport.***

The Path Forward

The Board's Path Forward

Board of Directors
The Board of Directors is responsible for the overall strategic direction and performance of the company. It is composed of representatives of the shareholders and the company's management.

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Board of Directors



John Smith, Chairman of the Board



John Smith, Chairman of the Board



John Smith

The Boards Path Forward

OPTION 1

Accept the commercial proposal as complete and authorize staff to enter negotiations with Skydive at Truckee Lake Tahoe for a Commercial Operating Permit and ground Lease.

OPTION 2

Deny the proposal on grounds the Board determines appropriate. (Pending Board Discussion).

OPTION 3

Continue discussion as action item on June Board agenda pending additional information from the applicant or staff.

OPTION 4

Conditionally deny the proposal pending additional information from the applicant with deadline.



Board Discussion



Peter Kirsch, Kaplan Kirsch & Rockwell



Doug Downey, Covergent Performances LLC



District Staff

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2. Maps

3. Proposal Submission

4. Expert Opinion

Convergent Performance LLC Safety Assessment

5. Expert Opinion

Peter Kirsch Legal Assessment

6. The Board's Path Forward



Skydive Truckee Lake Tahoe

This staff report outlines a request to provide commercial aeronautical services at KTRK

Hardy Bullock
Director of Aviation & Community Services



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How is it regulated?

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PRESENTATION

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6. Expert Opinion
7. Prior Kitch Legal Assessment
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Application Documents for TRK Skydiving Operations

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<i>Business Plan</i>	<i>Page 20</i>
<i>Mike Swanson Resume</i>	<i>Page 27</i>
<i>Email response 2/23/15</i>	<i>Page 29</i>
<i>Diagrams of proposed Drop Zone location</i>	<i>Page 31</i>
<i>Airspace used during parachute descents</i>	<i>Page 32</i>
<i>Email response 2/20/15</i>	<i>Page 34</i>
<i>SMS disagreement letter from Mr. Durden</i>	<i>Page 36</i>
<i>Skydivers Information Manual</i>	<i>Page 38</i>



Introduction:

Skydiving operations can be run on a large or small scale. In the case of operations at Truckee Tahoe Airport it would be small-scale. The starting needs of a Skydiving Operation of this scale, although comparable in layout to those of a larger 12-month operation, are much simpler and the standard operating procedures will reflect both a lack of complexity and emphasize minimal impact on existing airport operations.

The main service provided will be Tandem Skydives with a Video provided of the entire experience. We will also offer lift tickets to experienced Skydivers who have a minimum USPA C-License. USPA C-License requirements are attached. The schedule of fees and charges cannot be detailed until an agreement with the Airport has been achieved.

This 7-day a week Skydive Operation will operate within normal flying hours. We will operate as a group member of the United States Parachute Association (USPA), which is the FAA recognized governing body of Skydiving. The USPA is an organization with over 36,000 Members, and over 220 Group Members worldwide. USPA members accumulate over 3 million skydives per year and it is recognized worldwide as the leader in industry safety standards surrounding skydiving and all of the disciplines involved.

With regards to all parachuting activity, a strict adherence to rules and regulations set out by the USPA in the Skydivers Information Manual (SIM) and the Federal Aviation Administration FARs will be mandated. This intolerance for any deviations from proven protocol will ensure optimal safety of the operation. The following FARs outline the FAA requirements for Skydivers, Pilots and Parachute Riggers and all operations and credentials of staff will comply with this.

Part 61—Certification: Pilots, Flight Instructors and Ground Instructors: This section establishes the qualifications and requirements for certificates and ratings, along with the privileges and limitations.

Part 65—Certification: Airmen, other than Flight Crew members and Parachute Riggers, receive certification through this regulation.

Part 91—General Operating and Flight Rules:

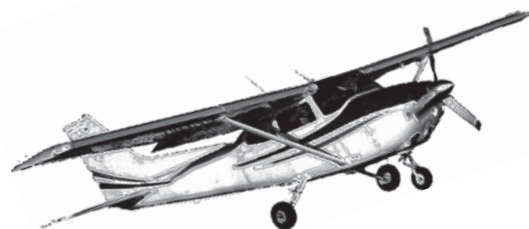
Flight operations for Skydiving Operations are conducted under Part 91.

Part 105—Parachute Operations:

This section prescribes the rules governing Parachute Operations.

Part 119—Certification; Air Carriers and Commercial Operators:

This section covers requirements for certification and operation of commercial operators; Section 119.1(e)(6) exempts Parachute Operations when flown within 25 miles of the airport.



Definitions:

Spring, 2015

AAD: Automatic Activation Device means a self-contained mechanical or electro-mechanical device that is attached to the interior of the reserve parachute container, which automatically initiates parachute deployment of the reserve parachute at a pre-set altitude, time, percentage of terminal velocity, or combination thereof.

Approved Parachute: Means a parachute manufactured under a type certificate or a Technical Standard Order (C-23 series), or a personnel-carrying U.S. military parachute (other than a high altitude, high speed, or ejection type) identified by a Navy Air Facility, an Army Air Field, and Air Force-Navy drawing number, an Army Air Field order number, or any other military designation or specification number.

Chief Instructor: Person in charge of day to day operations.

Direct supervision: Means that a Certificated Rigger personally observes a non-certificated person packing a main parachute to the extent necessary to ensure that it is being done properly, and takes responsibility for that packing.

Drop Zone/ Landing area: Drop Zone means any pre-determined area upon which parachutists or objects land after making an intentional parachute jump or drop. The center-point target of a Drop Zone is expressed in nautical miles from the nearest VOR facility when 30 nautical miles or less; or from the nearest airport, town, or city depicted on the appropriate Coast and Geodetic Survey World Aeronautical Chart or Sectional Aeronautical Chart, when the nearest VOR facility is more than 30 nautical miles from the Drop Zone.

FAA Certified Parachute Rigger: A person who is trained and licensed by the FAA to pack, maintain or repair parachutes. A rigger is required to understand fabrics, hardware, webbing, regulations, sewing, packing, and other aspects related to the building, packing, repair, and maintenance of parachutes.

Foreign Parachutist: Means a parachutist who is neither a U.S. citizen nor a resident alien and is participating in Parachute Operations within the United States using parachute equipment not manufactured in the United States.

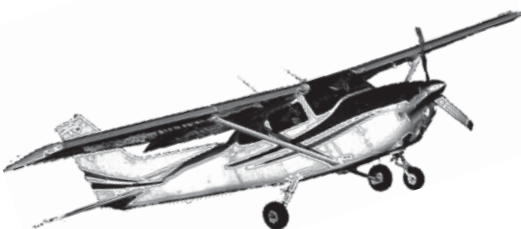
Load: Flight with passengers who intend to make a Skydive.

The Loading Area: This is the area to which the aircraft taxis and stops on a mark, and where boarding will occur for all passengers. The loading area is clearly marked with cones that establish a "do not cross" line and a defined safe path by which to walk to the door and board the plane.

Main parachute: Means a parachute worn as the primary parachute used or intended to be used in conjunction with a reserve parachute.

Manifest: Front desk office area for greeting and checking in Experienced Skydivers, Tandem Students and their associated spectators on immediate arrival to the Skydive at Truckee Lake Tahoe business location.

Manifestor: Office Manager; The person in charge of running the Manifest.



Definitions Continued:

Spring, 2015

Packing area: Open space for packing parachutes.

Parachute jump: Means a parachute operation that involves the descent of one or more persons to the surface from an aircraft in flight when a [sic] aircraft is used or intended to be used during all or part of that descent.

Parachute Operation: Means the performance of all activity for the purpose of, or in support of, a parachute jump or a parachute drop. This parachute operation can involve, but is not limited to, the following persons: Parachutist, Parachutist in Command and Passenger in Tandem Parachute Operations, Drop Zone or Owner or Operator, Jump Master, Certificated Parachute Rigger, or Pilot.

Parachute packer: Person under a FAA Certified Riggers supervision in charge of packing parachutes.

Parachutist/ Skydiver: Means a person who intends to exit an aircraft while in flight using a single-harness, dual parachute system to descend to the surface.

Physical Passenger Manifest: A list of passengers on a given flight to altitude for a Skydive. Both on paper and on the computer and contains the relevant date, load number, individuals involved and their roles.

Reserve packing card: A card that details the location, date and name and license number of the Certified Rigger who packed the reserve parachute.

Safety Briefing: Instruction given by instructor or safety officer regarding safety procedures relating to the airport and parachuting activity.

Spectator Viewing Area: This is a designated area separate from the landing area that is situated such that visitors can safely view the parachutes landing with no chance of interfering with any Skydivng or aircraft activity.

Tandem Instructor : Is the Parachutist in Command and means the person responsible for the operation and safety of a Tandem Parachute Operation.

Tandem Student: Passenger parachutist means a person who boards an aircraft, acting as other than the Parachutist in Command of a Tandem Parachute Operation, with the intent of exiting [sic] the aircraft while in-flight using the forward harness of a dual harness tandem parachute system to descend to the surface.

USPA – United States Parachute Association: A non-profit individual membership organization dedicated to promoting the safe enjoyment of skydiving. USPA partners with its affiliated schools, clubs and centers ("Drop Zones") to provide properly trained and rated instructors using recognized training programs and following the skydiving community's basic standards of safety.

Videographer: Skydiving professional who accompanies the Tandem Skydive and films the experience both in freefall and on the ground.



Business Area layout:

Spring, 2015

With a startup estimate of 20 Tandem Students per week over a 6 month functioning period one can comfortably add one spectator (non-jumper) to each Tandem Student, and thus count on 160 lay persons per month to be associated with daily operations of Skydive at Truckee Lake Tahoe. With these numbers and projected increases over the first 3 years, the office and setup space will not require a large space to efficiently run the business.

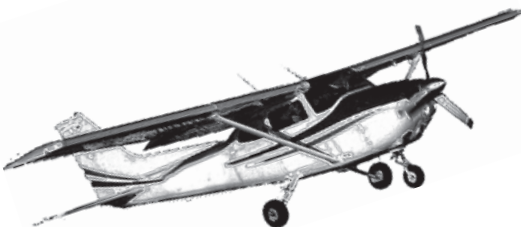
It will be our chief priority to ensure the safety of all activities of this endeavor, be they airborne or otherwise. A strict adherence to the USPA requirements in the Skydivers Information Manual (SIM) and the Federal Aviation Administration FARs pertaining to Skydiving Operations will not be deviated from.

The credentials of the staff and their conduct will comply with and exceed these regulations.

The Office Layout :

- All Customers will arrive at a **Front Desk Office area** where they will be greeted and checked in. Experienced Skydivers, Tandem Students and their associated spectators will immediately be provided with the information needed in order to comfortably and safely carry out their goals for their visit to Skydive at Truckee Lake Tahoe. This area is typically known as the "Manifest" and it is where an office assistant, known as a 'manifestor', is setup to greet and inform the guests of the safety procedures associated with their experience.
- Adjacent to Manifest will be another office area, which will be the **Skydive School area**. This area will be equipped with an audio visual station for viewing the mandatory safety videos, as well as a viewing station for participants to view their skydive videos. Here all Skydivers will be informed of the safety procedures outlined within the pre-jump informative process that Skydive at Truckee Lake Tahoe will carry out. There will be a clear and large aerial photo of the Truckee Tahoe Airport that the parachutists will regularly use to identify landmarks of the area and all pertinent landing patterns and emergency procedures. There will be chairs for seating and there will be informed personnel nearby to answer any and all questions.
- There will also be a separate area designated the **Parachute Packing area**. This will be an open space for packing parachutes. This area will be spacious and the tools required for efficient and safe parachute packing will be provided (packing weights, rubber bands, "pull-up cords" etc...). An FAA Certified Master Parachute Rigger will be made easily reachable for any and all customers requiring any attention to their own parachuting equipment. Any and all gear provided to customers will be provided only with considerable briefing and will have been inspected thoroughly and FAA Certified Riggers, within 6 months without exception, will have approved all components.
- Next to the office areas there will be a **restroom**.

See attached Appendices for diagram of the Skydive Center facilities proposed layout.



Business Area layout:

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Outside Layout areas:

- **Drop Zone/ Landing Area:** The Drop Zone or Parachute landing area will be a square, open area of land about 300 ft by 300 ft. This will be strategically located, based on flight patterns of other aircraft and glider planes using the airport and the runways. Our proposed layout shows such an area, and gives tremendously more distance from obstacles than is required by USPA regulations of 50m radial distance.
- **Spectator Viewing Area:** This is a designated area separate from the landing area that is situated such that visitors can safely view the parachutes landing with no chance of interfering with any Skydiving or aircraft activity.
- **The Loading or Boarding Area:**
This is the area to which the aircraft taxis and stops on a mark, and where boarding will occur for all passengers. The loading area is clearly marked with cones that establish a "do not cross" line and a defined safe path by which to walk to the door and board the plane.

See attached Appendices for diagram of the Skydive Center facilities proposed layout.

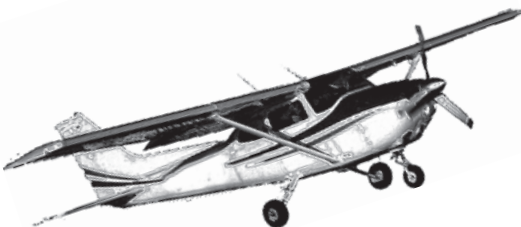
Area Functions:**Manifest:**

The function of Manifest is firstly to thoroughly process each Tandem Student and experienced Skydiver. Each skydive participant will be given a Waiver of Liability Agreement to read and will be required to sign all parts in order to proceed further. The Manifestor will check that the waiver has been completed accurately. This Waiver of Liability is used at Skydiving Centers across the country. It is a document that gives the Tandem Students and experienced Skydiver detailed description of the inherent risks involved with making a Tandem Skydive or any form of Skydive. It serves as a hold harmless agreement with the named businesses and contact persons in the event of an accident. Here the Truckee Tahoe Airport will be clearly named. The Skydive at Truckee Lake Tahoe business will carry a \$1M commercial general liability premises insurance. The policy comes with a \$2M aggregate and names the airport and sponsor.

In the event that an experienced Skydiver is new to Skydive at Truckee Lake Tahoe, the manifestor will introduce him/ her to the Chief Instructor or another qualified instructor and they will go through a thorough safety briefing at the Skydive School area. Their gear will go through a safety check that will ensure they have the following:

- An approved parachute system with an active AAD (automatic activation device),
- A reserve packing card which proves their reserve parachute has been packed and inspected by an FAA certified master rigger within 6 months and adheres to any and all requirements set in place by the FAA, USPA or by Skydive at Truckee Lake Tahoe from this date forward.
- A Skydive at Truckee Lake Tahoe employee will examine their equipment to vouch for the fact that no visible safety issues associated with their gear exist.
- Their skydiver's log book and USPA membership card are in good standing and up to date.

It will be only after all of these steps have been completed and confirmed that a Skydiver be allowed to manifest on a load. In the event that the experienced Skydiver is a foreign jumper, they will be required to comply with the regulations set out by the FAR Sec. 105.49 without exception.



Business Area layout

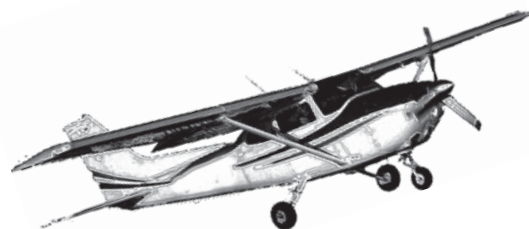
Area Functions Continued:

Manifest continued: Next, the manifestor will manifest the Tandem Students, Tandem Instructors and Videographers and any experienced Skydiver onto the planes physical passenger manifest. This ensures all parties are accounted for at all times on the aircraft and until safe return to the Skydive at Truckee Lake Tahoe base of operations. The manifestor will then inform the Pilot directly of his next loads manifest and a skydiver will hand the physical manifest to the Pilot upon boarding the plane as an extra check. The manifestor will schedule a time for the load to board based on the current availability of the plane, Pilot, Tandem Instructors, gear and all components, including tandem instruction timing. An announcement will be made within the Skydive at Truckee Lake Tahoe business areas allocating the load number and amount of time until boarding.

The manifestors role also includes communication of any important information with the Pilot, on the ground and after take off, before or after skydivers have left the plane. The Manifest desk or area will be home to an aircraft to ground radio used for communication. The Pilot will be informed of his or her exact manifest for each load and what type of skydivers will be present on each load. The manifestor will always be on the ground available for information and communication throughout the day. The manifestor will also be in contact with each Tandem Student after their Tandem experience is complete when they return to the office to pick up and watch their video.

As an extra layer of assurance, a manifestor's duty includes watching and confirming the safe landing of each person by counting canopy numbers and watching and noting their exact landing location. This is the duty of the Chief Instructor on any Tandem load and is also common practice among skydivers to help to ensure the safety of their fellow jumpers at all times.

Manifest is the hub of the Skydiving Operation and will be the first and last point of contact for the Tandem Students and their spectators. Skydive at Truckee Lake Tahoe Manifest will ensure that, and be accountable for, all patrons and associated visitors having a safe and pleasant visit to the Skydiving business and the Truckee Tahoe Airport.



Area Functions Continued:

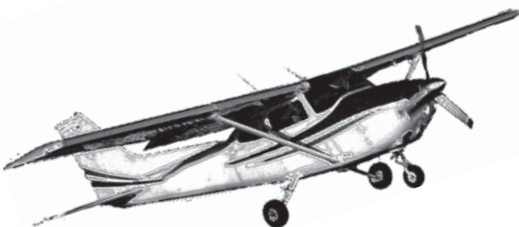
The function of the Skydive School area:

The manifestor will introduce the Tandem Students to their Instructors and Videographers and they will accompany their instructor to the Skydive School area. Here the Tandem Students will be geared up and educated on the details and requirements for their Tandem Skydive during their Tandem Instructional Course. After their course the Tandem Students will be geared up and ready for boarding the plane. They will wait in the Skydive School area while they wait for their load. They will never be without direct supervision of their instructor, and will not be allowed near the plane boarding area without being accompanied by their instructor at all times. When it is time to board, their instructor will physically guide the Tandem Student. During the tandem course they will have been shown how to walk towards the plane and how to enter the plane.

At the Skydive School area all experienced Skydivers new to the Truckee Tahoe airport will also be educated on the safety procedures and landing requirements of the Skydive at Truckee Lake Tahoe Drop Zone. This safety briefing will include details of the Truckee Tahoe Airport and facilities, Aircraft procedures and after landing procedures. An aerial photo of the Truckee Tahoe Airport will be used as a visual reference during the safety briefings to show the designated landing area and the areas of the airport to be avoided due to any hazards including the active runway areas. This is standard procedure at any Drop Zone and experienced Skydivers, Tandem Instructors and Videographers all have the skills and experience to adhere to specified landing areas and procedures and are very practiced at avoiding hazardous airspace associated with active runways. The aerial photo will show the location of all Airport businesses and buildings from an aerial perspective. Knowledgeable personnel will brief any and all jumpers, and will be readily available to answer questions.

Function of the Parachute Packing area:

Here the Tandem main parachutes will be re-packed after the jump by a Certified Rigger, the Tandem Instructor himself or a qualified packer under direct supervision of a Certified Rigger. Experienced Skydivers will also use this area to pack their main parachutes and make any gear adjustments or improvements that they may need. The packing area will be simple and function oriented.



Skydiving Procedures:

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The aircraft used to fly skydivers to their exit altitude is a Cessna 206 with a 3 bladed prop. This aircraft will not be owned by the skydiving business. All operations will comply with the Fly Quiet Procedures set out by Truckee Tahoe Airport for VFR aircraft and will be carried out with minimizing noise in the area as a chief priority.

Procedures will be as such:

1. Skydivers proceed to the loading area.
2. Load organizer performs a safety check on all gear.
3. Pilot signals "ready to load" to the load organizer.
4. Aircraft boarding occurs.
5. All passengers fasten their seatbelts and secure their helmet straps. Instructors secure the two lower lateral straps from their Tandem Students to their own harness. All additional gear that can't be worn during take off will be secured to a seatbelt. Helmets will remain worn and gear secured during taxi, take off, and the climb to 1000 ft. AGL.
6. Pilot makes radio call advising take off and departure direction.
7. Aircraft takes off.
8. Pilot makes radio call to local traffic on Unicom advising climbing pattern over Boca reservoir and that there will be skydiving over the airport in 25 minutes.
9. Aircraft reaches 1000ft.
10. Jumpers unbuckle their seatbelts and helmets can be removed for the remaining climb to altitude.
11. Pilot will make radio call to the controlling ATC advising that he is climbing with jumpers and the advise of the intended jump altitudes.
12. ATC responds and communications are established.
13. ATC will provide a squawk code to the pilot.
14. 5 minutes before reaching each intended jump altitude, the pilot will make a radio call to ATC advising of the timing, altitude and location of the jump.
15. Immediately thereafter, Pilot makes a radio call on Unicom advising of the timing, altitude and location of the upcoming jump.
16. Pilot confirms clear air space.
17. Pilot will advise load organizer of time remaining until exit.
18. Load organizer advises jumpers of time remaining until exit.
19. Tandem Instructors attach the two shoulder attachment points and tighten the lower lateral attachment points.
20. Pilot turns the aircraft on to final run-in and signals the load organizer "2 minutes"
21. Pilot makes a radio call to ATC advising "2 minutes until skydivers away above Truckee Tahoe Airport".
22. Pilot makes a radio call to Unicom advising "2 minutes until skydivers away above Truckee Tahoe Airport".
23. Pilot confirms clear air space.
24. Jumpers exit.
25. Pilot makes a radio call to Unicom announces "Jumpers away over Truckee Tahoe Airport."
26. Tandem Skydivers will open parachutes at 5000 ft. AGL.
27. Experienced Skydivers will open parachutes no lower than 2500 ft. AGL.
28. Skydivers land.
29. The manifestor counts all parachutes and confirms it matches the jumper of jumpers on the manifest sheet.
30. Pilot makes a radio call to Unicom advising "All Skydivers on the ground."
31. Skydivers walk back to Skydive at Truckee Lake Tahoe base of operations.



Additional Skydiving Procedures:

- The standard exit altitude will be 11,500 ft. AGL.
- The winds, exit altitude and the landing area are used to calculate the exact exit point of each jump.
- The attached diagram illustrate the proposed landing area..
- Canopies (parachutes) will be open between 2500 ft. - 5000 ft. AGL.
- Skydivers will not cross any runway below 500 ft. AGL, thus Skydive Operations will be of no factor to departing and arriving aircraft.
- The Pilot will descend over Boca and enter normal traffic pattern from Boca.
- Every two flights the plane will need to refuel at the fuel farm.
- Tandem Instructors will open their main parachute at 5000 ft. A.G.L.
- Experienced Skydivers will open above 2500ft. A.G.L.
- All Skydivers will land following the same in-to-the-wind landing pattern.
- Once landed, the Tandem Instructor will un-harness the student and gather his parachute and all gear.
- The Tandem Instructor remains in control of the student until back at the base of operations.

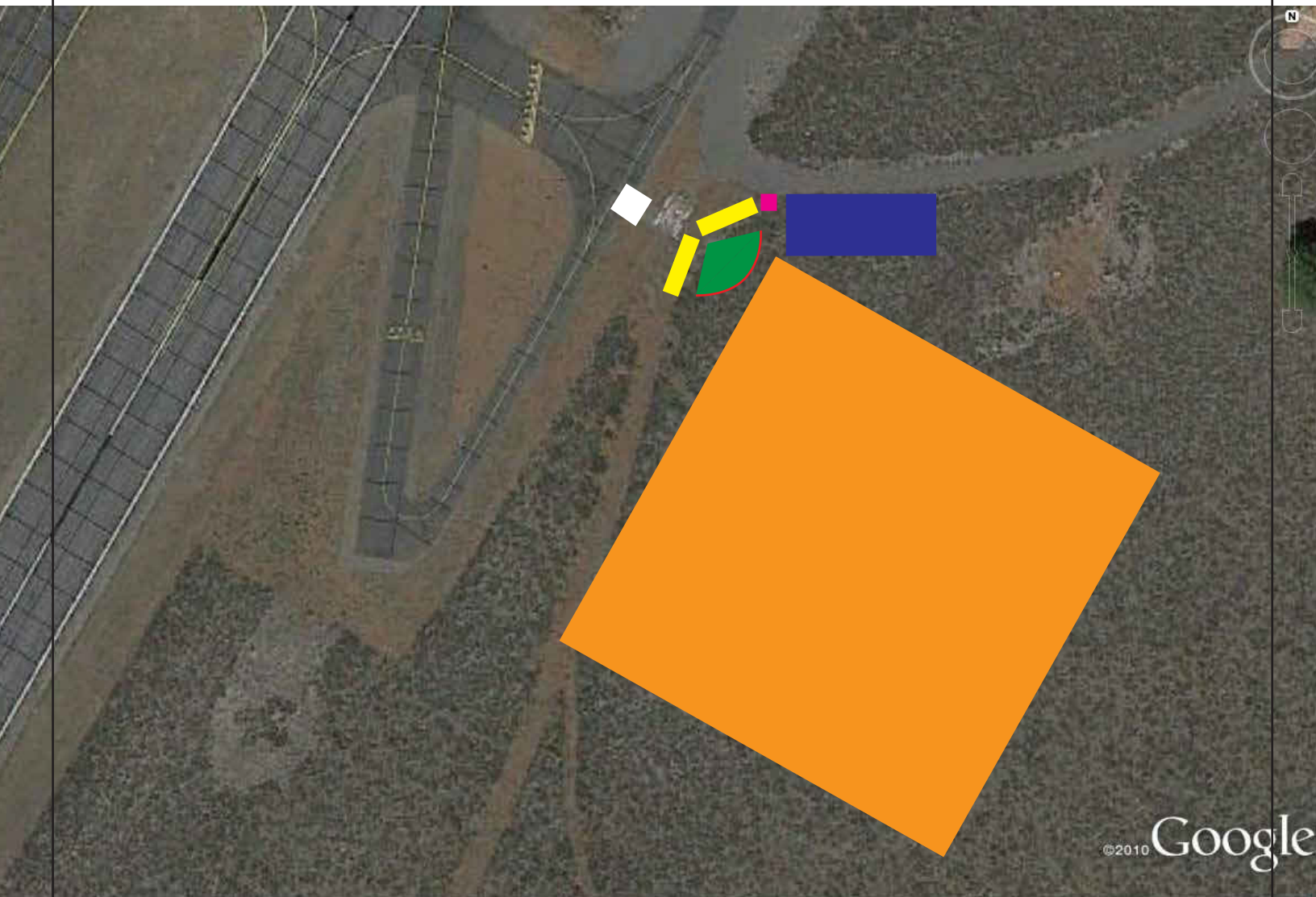









In Conclusion:

Our goal is to create a mutually beneficial relationship with Truckee Tahoe Airport and it's partners. We understand that there are several entities operating on the airport, including the glider operation. We have closely considered their needs in creating this analysis and proposal. We are open-minded to adapting to the strategy that is acceptable and beneficial to all, and we look forward to working with everyone based at the airport. We welcome feedback and will work with each of the airport's partners to accommodate their specific needs and promote seamless aviation at Truckee Tahoe Airport.



Operations Layout



-  Office Areas: 40ft by 10ft each
-  Spectator Viewing Area with boundary 
-  Drop Zone/ Parachute Landing Area: 300ft by 300ft
-  Parking Area: 100ft by 40ft
-  Plane Loading/ Boarding Area: 20ft by 20ft
-  Restrooms: 10ft by 10ft

References:

United States Parachute Association Skydiver Information Manual (USPA SIM):

.pdf provided for ease of reference.

Federal Aviation Regulations (FARs):

PART 61, 65, 91,105 (attached for ease of reference) & Part 119.

Fly Quiet Procedures of Truckee Tahoe Airport :

attached for ease of reference.



Sec. 105.3 Definitions

For the purposes of this part-

Approved parachute means a parachute manufactured under a type certificate or a Technical Standard Order (C-23 series), or a personnel-carrying U.S. military parachute (other than a high altitude, high speed, or ejection type) identified by a Navy Air Facility, an Army Air Field, and Air Force-Navy drawing number, an Army Air Field order number, or any other military designation or specification number.

Automatic Activation Device means a self-contained mechanical or electro-mechanical device that is attached to the interior of the reserve parachute container, which automatically initiates parachute deployment of the reserve parachute at a pre-set altitude, time, percentage of terminal velocity, or combination thereof.

Direct Supervision means that a certificated rigger personally observes a non-certificated person packing a main parachute to the extent necessary to ensure that it is being done properly, and takes responsibility for that packing.

Drop Zone means any pre-determined area upon which parachutists or objects land after making an intentional parachute jump or drop. The center-point target of a drop zone is expressed in nautical miles from the nearest VOR facility when 30 nautical miles or less; or from the nearest airport, town, or city depicted on the appropriate Coast and Geodetic Survey World Aeronautical Chart or Sectional Aeronautical Chart, when the nearest VOR facility is more than 30 nautical miles from the drop zone.

Foreign parachutist means a parachutist who is neither a U.S. citizen or a resident alien and is participating in parachute operations within the United States using parachute equipment not manufactured in the United States.

Freefall means the portion of a parachute jump or drop between aircraft exit and parachute deployment in which the parachute is activated manually by the parachutist at the parachutist's discretion or automatically, or, in the case of an object, is activated automatically.

Main parachute means a parachute worn as the primary parachute used or intended to be used in conjunction with a reserve parachute.

Object means any item other than a person that descends to the surface from an aircraft in flight when a parachute is used or is intended to be used during all or part of the descent.

Parachute drop means the descent of an object to the surface from an aircraft in flight when a parachute is used or intended to be used during all or part of that descent.

Parachute jump means a parachute operation that involves the descent of one or more persons to the surface from an aircraft in flight when a [sic] aircraft is used or intended to be used during all or part of that descent.

Parachute operation means the performance of all activity for the purpose of, or in support of, a parachute jump or a parachute drop. This parachute operation can involve, but is not limited to, the following persons: parachutist, parachutist in command and passenger in tandem parachute operations, drop zone or owner or operator, jump master, certificated parachute rigger, or pilot.

Parachutist means a person who intends to exit an aircraft while in flight using a single-harness, dual parachute system to descend to the surface.

Parachutist in command means the person responsible for the operation and safety of a tandem parachute operation.

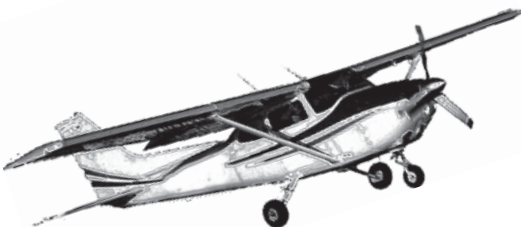
Passenger parachutist means a person who boards an aircraft, acting as other than the parachutist in command of a tandem parachute operation, with the intent of exiting [sic] the aircraft while in-flight using the forward harness of a dual harness tandem parachute system to descend to the surface.

Pilot chute means a small parachute used to initiate and/or accelerate deployment of a main or reserve parachute.

Ram-air parachute means a parachute with a canopy consisting of an upper and lower surface that is inflated by ram air entering through specially designed openings in the front of the canopy to form a gliding airfoil.

Reserve parachute means an approved parachute worn for emergency use to be activated only upon failure of the main parachute or in any other emergency where use of the main parachute is impractical or use of the main parachute would increase risk.

Single-harness, dual parachute system means the combination of a main parachute, approved reserve parachute, and approved single-person harness and dual-parachute container. This parachute system may have an operational automatic activation device installed.



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Sec. 105.3 Definitions Continued

Tandem parachute operation means a parachute operation in which more than one person simultaneously uses the same tandem parachute system while descending to the surface from an aircraft in flight.

Tandem parachute system means the combination of a main parachute, approved reserve parachute, and approved harness and dual parachute container, and a separate approved forward harness for a passenger parachutist. This parachute system must have an operational automatic activation device installed.

Sec. 105.5 General

No person may conduct a parachute operation, and no pilot in command of an aircraft may allow a parachute operation to be conducted from an aircraft, if that operation creates a hazard to air traffic or to persons or property on the surface.

Sec. 105.7 Use of alcohol and drugs

No person may conduct a parachute operation, and no pilot in command of an aircraft may allow a person to conduct a parachute operation from that aircraft, if that person is or appears to be under the influence of-(a) Alcohol, or (b) Any drug that affects that person's faculties in any way contrary to safety.

Sec. 105.9 Inspections

The Administrator may inspect any parachute operation to which this part applies (including inspections at the site where the parachute operation is being conducted) to determine compliance with the regulations of this part.

Sec. 105.13 Radio equipment and use requirements

(a) Except when otherwise authorized by air traffic control-

(1) No person may conduct a parachute operation, and no pilot in command of an aircraft may allow a parachute operation to be conducted from that aircraft, in or into controlled airspace unless, during that flight-

(i) The aircraft is equipped with a functioning two-way radio communication system appropriate to the air traffic control facilities being used; and (ii) Radio communications have been established between the aircraft and the air traffic control facility having jurisdiction over the affected airspace of the first intended exit altitude at least 5 minutes before the parachute operation begins. The pilot in command must establish radio communications to receive information regarding air traffic activity in the vicinity of the parachute operation.

(2) The pilot in command of an aircraft used for any parachute operation in or into controlled airspace must, during each flight-

(i) Continuously monitor the appropriate frequency of the aircraft's radio communications system from the time radio communications are first established between the aircraft and air traffic control, until the pilot advises air traffic control that the parachute operation has ended for that flight.

(ii) Advise air traffic control when the last parachutist or object leaves the aircraft.

(b) Parachute operations must be aborted if, prior to receipt of a required air traffic control authorization, or during any parachute operation in or into controlled airspace, the required radio communications system is or becomes inoperative.

Sec. 105.15 Information required and notice of cancellation or postponement of a parachute operation

(a) Each person requesting an authorization under Secs. 105.21(b) and 105.25(a)(2) of this part and each person submitting a notification under Sec. 105.25(a)(3) of this part must provide the following information (on an individual or group basis):

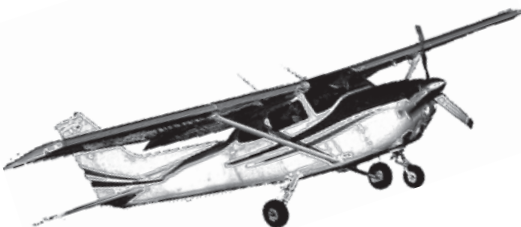
(1) The date and time the parachute operation will begin.

(2) The radius of the drop zone around the target expressed in nautical miles.

(3) The location of the center of the drop zone in relation to-

(i) The nearest VOR facility in terms of the VOR radial on which it is located and its distance in nautical miles from the VOR facility when that facility is 30 nautical miles or less from the drop zone target; or(ii) the nearest airport, town, or city depicted on the appropriate Coast and Geodetic Survey World Aeronautical Chart or Sectional Aeronautical Chart, when the nearest VOR facility is more than 30 nautical miles from the drop zone target.

(4) Each altitude above mean sea level at which the aircraft will be operated when parachutists or objects exit [sic] the aircraft.(5) The duration of the intended parachute operation.(6) The name, address, and telephone number of the person who requests the authorization or gives notice of the parachute operation.(7) The registration number of the aircraft to be used.(8) The name of the air traffic control facility with jurisdiction of the airspace at the first intended exit altitude to be used for the parachute operation.



(b) Each holder of a certificate of authorization issued under Secs. 105.21(b) and 105.25(b) of this part must present that certificate for inspection upon the request of the Administrator or any Federal, State, or local official. (c) Each person requesting an authorization under Secs. 105.21(b) and 105.25(a)(2) of this part and each person submitting a notice under Sec. 105.25(a)(3) of this part must promptly notify the air traffic control facility having jurisdiction over the affected airspace if the proposed or scheduled parachute operation is canceled or postponed.

Sec. 105.17 Flight visibility and clearance from cloud requirements

No person may conduct a parachute operation, and no pilot in command of an aircraft may allow a parachute operation to be conducted from that aircraft-(a) Into or through a cloud, or (b) When the flight visibility or the distance from any cloud is less than that prescribed in the following table:

Sec. 105.19 Parachute operations between sunset and sunrise

(a) No person may conduct a parachute operation, and no pilot in command of an aircraft may allow a person to conduct a parachute operation from an aircraft between sunset and sunrise, unless the person or object descending from the aircraft displays a light that is visible for at least 3 statute miles.(b) The light required by paragraph (a) of this section must be displayed from the time that the person or object is under a properly functioning open parachute until that person or object reaches the surface.

Sec. 105.21 Parachute operations over or into a congested area or an open-air assembly of persons

(a) No person may conduct a parachute operation, and no pilot in command of an aircraft may allow a parachute operation to be conducted from that aircraft, over or into a congested area of a city, town, or or settlement, or an open-air assembly of persons unless a certificate of authorization for that parachute operation has been issued under this section. However, a parachutist may drift over a congested area or an open-air assembly of persons with a fully deployed and properly functioning parachute if that parachutist is at a sufficient altitude to avoid creating a hazard to persons or property on the surface.

(b) An application for a certificate of authorization issued under this section must-

(1) Be made in the form and manner prescribed by the Administrator, and (2) Contain the information required in Sec. 105.15(a) of this part.

(c) Each holder of, and each person named as a participant in a certificate of authorization issued under this section must comply with all requirements contained in the certificate of authorization. (d) Each holder of a certificate of authorization issued under this section must present that certificate for inspection upon the request of the Administrator, or any Federal, State, or local official.

Sec. 105.23 Parachute operations over or onto airports

No person may conduct a parachute operation, and no pilot in command of an aircraft may allow a parachute operation to be conducted from that aircraft, over or onto any airport unless- (a) For airports with an operating control tower:

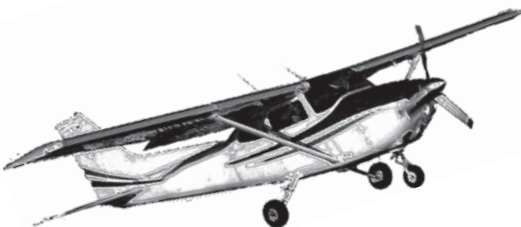
(1) Prior approval has been obtained from the management of the airport to conduct parachute operations over or on that airport. (2) Approval has been obtained from the control tower to conduct parachute operations over or onto that airport. (3) Two-way radio communications are maintained between the pilot of the aircraft involved in the parachute operation and the control tower of the airport over or onto which the parachute operation is being conducted.

(b) For airports without an operating control tower, prior approval has been obtained from the management of the airport to conduct parachute operations over or on that airport. (c) A parachutist may drift over that airport with a fully deployed and properly functioning parachute if the parachutist is at least 2,000 feet above that airport's traffic pattern, and avoids creating a hazard to air traffic or to persons and property on the ground.

Sec. 105.25 Parachute operations in designated airspace

(a) No person may conduct a parachute operation, and no pilot in command of an aircraft may allow a parachute operation to be conducted from that aircraft-

(1) Over or within a restricted area or prohibited area unless the controlling agency of the area concerned has authorized that parachute operation; (2) Within or into a Class A, B, C, D airspace area without, or in violation of the requirements of, an air traffic control authorization issued under this section; (3) Except as provided in paragraph (c) and (d) of this section, within or into Class E or G airspace area unless the air traffic control facility having jurisdiction over the airspace at the first intended exit altitude is notified of the parachute operation no earlier than 24 hours before or no later than 1 hour before the parachute operation begins.



(b) Each request for a parachute operation authorization or notification required under this section must be submitted to the air traffic control facility having jurisdiction over the airspace at the first intended exit altitude and must include the information prescribed by Sec. 105.15(a) of this part.(c) For the purposes of paragraph (a)(3) of this section, air traffic control facilities may accept a written notification from an organization that conducts parachute operations and lists the scheduled series of parachute operations to be conducted over a stated period of time not longer than 12 calendar months. The notification must contain the information prescribed by Sec. 105.15(a) of this part, identify the responsible persons associated with that parachute operation, and be submitted at least 15 days, but not more than 30 days, before the parachute operation begins. The FAA may revoke the acceptance of the notification for any failure of the organization conducting the parachute operations to comply with its requirements.(d) Paragraph (a)(3) of this section does not apply to a parachute operation conducted by a member of an Armed Force within a restricted area that extends upward from the surface when that area is under the control of an Armed Force.

Sec. 105.41 Applicability

This subpart prescribed rules governing parachute equipment used in civil parachute operations.

Sec. 105.43 Use of single-harness, dual-parachute systems

No person may conduct a parachute operation using a single-harness, dual-parachute system, and no pilot in command of an aircraft may allow any person to conduct a parachute operation from that aircraft using a single-harness, dual-parachute system, unless that system has at least one main parachute, one approved reserve parachute, and one approved single person harness and container that are packed as follows:(a) The main parachute must have been packed within 180 days before the date of its use by a certificated parachute rigger, the person making the next jump with that parachute, or a non-certificated person under the direct supervision of a certificated parachute rigger.(b) The reserve parachute must have been packed by a certificated parachute rigger-

(1) Within 180 days before the date of its use, if its canopy, shroud, and harness are composed exclusively of nylon, rayon, or similar synthetic fiber or material that is substantially resistant to damage from mold, mildew, and other fungi, and other rotting agents propagated in a moist environment; or (2) Within 60 days before the date of its use, if it is composed of any amount of silk, pongee, or other natural fiber, or material not specified in paragraph (b)(1) of this section.

(c) If installed, the automatic activation device must be maintained in accordance with manufacturer instructions for that automatic activation device.

Sec. 105.45 Use of tandem parachute systems

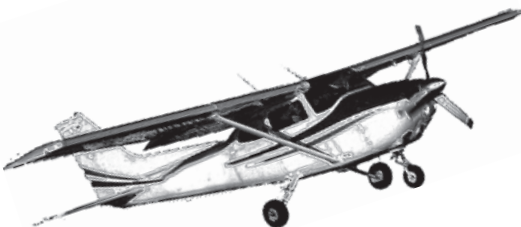
(a) No person may conduct a parachute operation using a tandem parachute system, and no pilot in command of an aircraft may allow any person to conduct a parachute operation from that aircraft using a tandem parachute system, unless-

(1) One of the parachutists using the tandem parachute system is the parachutist in command, and meets the following requirements:

(i) Has a minimum of 3 years of experience in parachuting, and must provide documentation that the parachutist-(ii) Has completed a minimum of 500 freefall parachute jumps using a ram-air parachute, and (iii) Holds a master parachute license issued by an organization recognized by the FAA, and (iv) Has successfully completed a tandem instructor course given by the manufacturer of the tandem parachute system used in the parachute operation or a course acceptable to the Administrator. (v) Has been certified by the appropriate parachute manufacturer or tandem course provider as being properly trained on the use of the specific tandem parachute system to be used.

(2) The person acting as parachutist in command:

(i) Has briefed the passenger parachutist before boarding the aircraft. The briefing must include the procedures to be used in case of an emergency with the aircraft or after exiting the aircraft, while preparing to exit and exiting the aircraft, freefall, operating the parachute after freefall, landing approach, and landing. (ii) Uses the harness position prescribed by the manufacturer of the tandem parachute equipment.



(b) No person may make a parachute jump with a tandem parachute system unless-

(1) The main parachute has been packed by a certificated parachute rigger, the parachutist in command making the next jump with that parachute, or a person under the direct supervision of a certificated parachute rigger. (2) The reserve parachute has been packed by a certificated parachute rigger in accordance with Sec. 105.43(b) of this part.

(3) The tandem parachute system contains an operational automatic activation device for the reserve parachute, approved by the manufacturer of that tandem parachute system. The device must-

(i) Have been maintained in accordance with manufacturer instructions, and (ii) Be armed during each tandem parachute operation.

(4) The passenger parachutist is provided with a manual main parachute activation device and instructed on the use of that device, if required by the owner/operator. (5) The main parachute is equipped with a single-point release system. (6) The reserve parachute meets Technical Standard Order C23 specifications.

Sec. 105.47 Use of static lines

(a) Except as provided in paragraph (c) of this section, no person may conduct a parachute operation using a static line attached to the aircraft and the main parachute unless an assist device, described and attached as follows, is used to aid the pilot chute in performing its function, or, if no pilot chute is used, to aid in the direct deployment of the main parachute canopy. The assist device must--

(1) Be long enough to allow the main parachute container to open before a load is placed on the device. (2) Have a static load strength of-

(i) At least 28 pounds but not more than 160 pounds if it is used to aid the pilot chute in performing its function; or

(ii) At least 56 pounds but not more than 320 pounds if it is used to aid in the direct deployment of the main parachute canopy; and

(3) Be attached as follows:

(i) At one end, to the static line above the static-line pins or, if static-line pins are not used, above the static-line ties to the parachute cone. (ii) At the other end, to the pilot chute apex, bridle cord, or bridle loop, or, if no pilot chute is used, to the main parachute canopy.

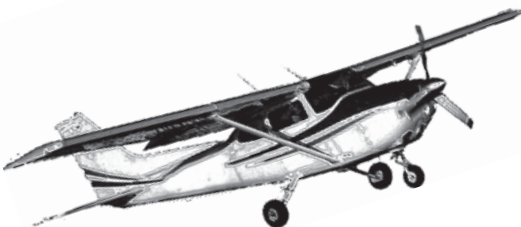
(b) No person may attach an assist device required by paragraph (a) of this section to any main parachute unless that person is a certificated parachute rigger or that person makes the next parachute jump with that parachute. (c) An assist device is not required for parachute operations using direct-deployed, ram-air parachutes.

Sec. 105.49 Foreign parachutists and equipment

(a) No person may conduct a parachute operation, and no pilot in command of an aircraft may allow a parachute operation to be conducted from that aircraft with an unapproved foreign parachute system unless-

(1) The parachute system is worn by a foreign parachutist who is the owner of that system. (2) The parachute system is of a single-harness dual parachute type. (3) The parachute system meets the civil aviation authority requirements of the foreign parachutist's country. (4) All foreign non-approved parachutes deployed by a foreign parachutist during a parachute operation conducted under this section shall be packed as follows-

(i) The main parachute must be packed by the foreign parachutist making the next parachute jump with that parachute, a certificated parachute rigger, or any other person acceptable to the Administrator. (ii) The reserve parachute must be packed in accordance with the foreign parachutist's civil aviation authority requirements, by a certificated parachute rigger, or any other person acceptable to the Administrator.



Truckee Tahoe Airport Fly Quiet Procedures vfr

- Use best angle (Vx) for first 500 feet . . . then best rate (Vy) to achieve maximum altitude. Intersection departures are discouraged.
- Avoid shallow climbs and gain as much altitude as safely possible before leaving the airport environment.
- Avoid flight over residential areas. Arrivals and departures over highways are preferred.
- Pattern altitude: 7,000 light aircraft.
- Curfew: There is a voluntary curfew on arrivals and departures between 10:30 p.m. and 6:30 a.m.

Full SIM .pdf provided with SOPs.

USPA C-License requirements below for ease of reference:

Experienced Jumper C License requirements (From the USPA SIM):

Persons holding a USPA C license are able to exercise all privileges of a B-license holder, are eligible for the USPA Instructor rating (except USPA Tandem Instructor), participate in certain demonstration jumps, may ride as passenger on USPA Tandem Instructor training and rating renewal jumps, and must have:

- a. Met all current requirements for or hold a USPA B license
- b. Completed 200 jumps, including accumulating at least 60 minutes of controlled freefall time
- c. Landed within two meters of target center on 25 jumps
- d. Aerial performance requirements, either:
 - (1) during freefall, perform in sequence within 18 seconds—a backloop, front loop, left 360-degree turn, right 360-degree turn, right barrel roll and left barrel roll
 - (2) completed at least two points on an 8-way or larger random skydive
- e. Passed the USPA written C license exam conducted by a current USPA I, I/E, S&TA, or USPA Board member.



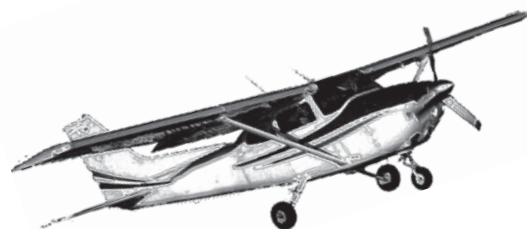
Spring, 2015

Michael Swanson, Julia Drew, Jennifer Drew

With a lifetime of experience in the skydiving world, at the innovative and leading edge of various areas of the sport, as well as years of experience from the ground up, Michael Swanson is one of the most qualified people one could find to start a skydiving business. Mr. Swanson's dedication to the skill development and overall safety of his fellow skydivers has been invaluable to all the various Skydiving Operations he has worked at, for and with over the years. From the small club style centers to the biggest in the world, Mr. Swanson has seen and been part of their growth, everyday success and continued development. Because of his years of actual experience, his attention to the elements of safety within the sport is highly attuned and comes as a natural part of his involvement. When the space for a Skydiving Operation in the North Tahoe Truckee area became apparent, he naturally pursued the idea, spearheading the path to the start of Skydive at Truckee Lake Tahoe. This Skydiving Operation is backed by years of experience and involvement in all aspects of a Skydiving business.

North Lake Tahoe Truckee area is a huge destination location, with millions of visitors per year to the area. Lake Tahoe is an iconic national treasure and very few lakes worldwide rival Tahoe's combination of size, depth and spectacular mountain beauty in the surrounding area. During the spring, summer and fall months, visitors come to enjoy the perfect temperatures for all of the lake activities and outdoor camping and sporting activities available in the region. This is where a Skydive Operation fits perfectly, enhancing without competing, to the extreme, yet accessible experiences available to Tahoe's plethora of visitors. Since not every visitor is an extreme athlete, or an avid outdoor sports person, but is likely attracted by the exceptional beauty of the Tahoe area, a chance to be part of the naturally extreme culture inherent in the Tahoe area would be a welcomed experience. Going up in an airplane over the area is of course already a great experience and having the added edge of freefalling over the vastness of the lake and mountains is an experience one would treasure for an eternity.

A Tandem skydive would open the opportunity for involvement in this extreme experience and intense natural beauty of the Lake and surrounding area to all who visit the area. This type of Skydive is accessible to all types of Tahoe area visitors, so long as they are 18 and older! Tandem Skydiving offers a freefall Skydive experience without having to go through a long training process. It offers the thrill of skydiving while being safely harnessed to a nationally certified instructor who takes care of everything, allowing the passenger to enjoy the experience fully without worrying about the technical sides of the sport.



Spring, 2015

Description of Services Provided:

This 7-day a week Skydive Operation will operate between normal flying hours. We will run the business as a group member of the United States Parachute Association (USPA), which is the FAA recognized governing body of Skydiving. The USPA is an organization with over 36,000 Members, and over 220 Group Members worldwide. USPA members accumulate over 3 million skydives per year and it is recognized worldwide as the leader in industry safety standards surrounding skydiving and all of the disciplines involved.

The service provided by Skydive at Truckee Lake Tahoe will include Tandem Skydives and Video services as well as lift service for experienced Skydivers holding a minimum of a USPA C-License. We will also provide parachute packing services, skydiving coaching and sell skydiving related equipment and supplies.

This is a sport not currently available in the North Tahoe, Truckee region and there is no current market competition for Tandem Skydiving and Skydiving in general in the area. Skydive at Truckee Lake Tahoe will add a new and exciting prospect for visitors and residents alike and fill the gap between those extreme sports persons and the everyday person just looking for some excitement and a unique experience. Tandem Skydiving particularly is something for everyone. There is also a small community of experienced Skydivers who are already residents in the area and a number of them have expressed their desire and support of Skydive at Truckee Lake Tahoe business. Some of these residents are high profile in the area, and their influence is far reaching in the local community. Skydive at Truckee Lake Tahoe will likely prove invaluable to the general improvement of relations between the Truckee Airport and the local residents.

As already mentioned, the location of the Drop Zone near to the impressive Lake Tahoe and surrounding mountains is an ideal setting for a Skydive Operation. Skydive at Truckee Lake Tahoe will be owned and run by a group of highly skilled and experienced individuals, all of whom have years of experience in running all areas of a highly efficient Skydiving Operation. Skydive at Truckee Lake Tahoe will provide a location for a unique, fun and visually exhilarating experience to its' customers and enhance their enjoyment and experience of the Tahoe Truckee area in general. This business will add to the tourist activities available in the region in a unique and awe inspiring manner.



Spring, 2015

Market Analysis:

The regional economy is heavily based on tourism and a Skydiving Operation would certainly enhance this industry. Our target market will consist mostly of the Tahoe area visitors, as this area consists of 49% to 65% second homeowners and attracts millions of tourists yearly. Typically holidaymakers are looking for something out of the ordinary to enhance their vacation experience and even have fantastic stories, photos and videos to take home with them. A Tandem experience at Skydive at Truckee Lake Tahoe will provide this service to our customers. Anyone 18 years and older, who meets the weight requirements may make a Tandem Skydive. Our draw will be from the entire Tahoe Truckee region, but not limited to this area, as the Reno area also draws a demographic that will lend itself to our customer base. We will be the only skydive business in the North Lake Tahoe area with the closest being an hour and a half away.

Reno/Sparks has over 425,000 residents and over 5 million visitors per year. Skydiving not only draws from the demographic that already visits the North Tahoe area, but it also draws people who might not be athletic, "outdoorsy" people, but are looking for a unique and exciting experience. Becoming an international destination Drop Zone is not a far-reaching goal.

The benefits to the airport include: Increased fuel sales (starting at 200 gals per week), rent income from hanger and possible lease of land for facilities. Most importantly it will increase the number of take offs and landings the airport can report, influencing the level of State and Federal funding. A skydiving business at this location will increase these numbers by 17% at a starting minimum. This operation will also increase the number of locals that will use the airport and through their positive experience local support for the airport is likely to increase. As currently only 14% of the public uses the airport for flight operations, any increase in this number would really help the airport gain more support. It is also likely that any Skydive participants will use the facilities and businesses already located at the airport for things like food and drinks and also become more aware of all of the other businesses located on the Airport. Skydive at Truckee Lake Tahoe will be yet another positive draw for visitors and locals to use and become familiar with the Airport.



Spring, 2015

Competitive Analysis:

The closest competition is in Minden NV. At 50 miles away and 1 hr 22 min drive. Our target customer will be drawn from a different area. The next closest Skydiving Operation is an hour and a half away. At over 95 miles away this is also a different market than we will be drawing from, and thus will not affect our customer base.

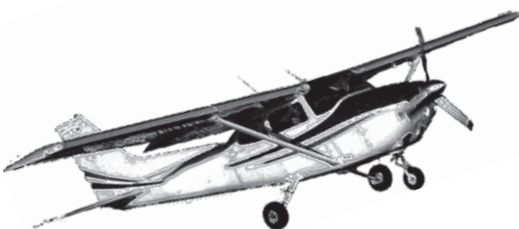
At the helm of Skydive at Truckee Lake Tahoe is one of the most experienced and qualified Skydivers in the world. His expertise in the Skydiving arena has been groomed over a lifetime of involvement in Skydiving businesses from small to large and from every angle of the business. Mr. Swanson is one of the most qualified people one could find to start a skydiving business, which gives the business a competitive edge from the start.

The location of the Airport in the tourist center of North Lake Tahoe region, and the proximity to the interstate, along with quality airport facilities, huge safe landing areas, and spectacular views makes Truckee Tahoe Airport a prime location for a Skydiving Operation.

With the region having 4 seasons, we will limit operations to starting during the late spring, through summer and into early fall. This is our biggest limiting factor, as we rely on the weather for duration of operation.

Regulations: Skydive at Truckee Lake Tahoe will be regulated by the Federal Aviation Regulations pertaining to running a Drop Zone and all of the regulations within that pertain to the gear, aircraft and trained personnel who will work at the Skydive Operation. Attached here to is the FAR sec. 105. Skydive at Truckee Lake Tahoe will also be a group member of the nationally governing body of Skydiving, the United States Parachute Association, and will abide by their rules and regulations governing all of Skydiving in the United States. These regulations can be found in detail in the Skydivers Information Manual, available online at USPA.org and attached here.

Until an agreement with the airport is reached, exact pricing for services cannot be established, however, it is anticipated to be competitive with skydiving operations within about a 500-mile radius.



Spring, 2015

Operations and Management:

The Skydiving Operation would be owned, managed and operated by Michael Swanson, Jennifer Drew and Julia Drew. Combined, all three have decades of experience in all aspects of a skydiving venture. All 3 are current residents of Truckee, California. These 3 will be the only fulltime staff members. All operators have no history of Bankruptcies or FAA violations. We will use sub-contractors for most of the day-to-day operations. Although the scale of the business is hard to project, we are planning to start with 2-4 Tandem Instructors and 1 Professional Parachute packer. The aircraft rental and pilot will also be sub-contracted.

Michael Swanson contact: PO Box 178, Truckee, CA 96160, Phone: 530-414-0371. Mr Swanson is a 3rd generation skydiver. His father has run a Skydive club for the past 36 years. Mike made his first skydive in 1989 and has accumulated more than 20,000 Skydives over the past 21 years as a professional skydiver. He is a 4 time National Champion and, as a representative of the United States, is also a 3 time World Champion of Freefly Skydiving. He is a private pilot and has been a member of the Red Bull Air Force Skydiving/BASE Jumping team for the past 10 years. Over the past 21 years his extensive experience and expertise has been well utilized in an organizational and instructional capacity in many of the largest drop zones in the world. He also owned and ran specialized Freefly Skydiving Schools in Florida, New Jersey and Southern California from 1998 to 2009.

Julia Drew contact: 15394 Donner Pass Rd, Truckee, 96161, Phone: 530-448-4549. Julia began her skydiving career in 1996. Having devoted her life to the sport for several years, she has accumulated a vast amount of experience in the many aspects involved in a skydiving operation. She earned her USPA Instructor rating, has worked closely with the US Skydiving team, and managed operations at one of the worlds busiest Skydiving Operations. Her academic background is in Business Administration.

Jennifer Drew contact: PO Box 178, Truckee, CA 96160, Phone: 951-609-5647. Jennifer has been involved in Skydiving operations for 16 years and has worked in many different areas of the sport over this time. She has helped run the Manifest / office operations of some of the worlds biggest Skydiving Operations around the country, she started and ran a Gear Supply store and has helped organize and run a number of location skydiving competitions over the years. She is a Graphic Designer by trade.



Spring, 2015

Business Departments:

General Operations: will be run by the 3 Owners of Skydive at Truckee Lake Tahoe.

-**Manager:** Michael Swanson will be the Manager of Skydive at Truckee Lake Tahoe.

The manager will oversee all operations and ensure that business is being run as desired.

-**Manifestor:** The office managers. Julia Drew and Jennifer Drew: The manifestors job is multifaceted.

The manifestor is the first point of contact for customers and will thoroughly process each Tandem Student and experienced Skydiver. This is a detailed process of completing the waiver of liability, checking identification information and assuring everyone gets the safety and procedural briefings necessary. The manifestor is responsible for manifesting the Tandem Students, Tandem Instructors and Videographers and any experienced Skydiver onto the planes physical passenger manifest. The manifestor is also responsible for communication, of any important and necessary information, with the Pilot, on the ground and after take off, before or after skydivers have exited the plane. Manifest is the hub of the Skydiving Operation and will be the first and last point of contact for all skydivers.

Tandem Experience: this department will be sub-contracted.

-**2 to 4 Tandem Instructors:** Sub-contracted, certified individuals who will be responsible for the Tandem Students Tandem experience.

Multimedia Department: this department will be sub-contracted.

-**2 Videographers:** Sub-contracted, skilled professional Skydivers, who have dedicated their careers in multimedia to Skydiving. They will exit the plane with the Tandem and video the entire journey, from time of gear up to landing.

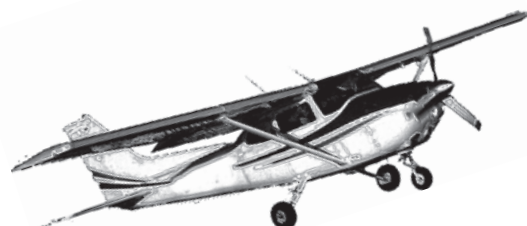
Aircraft Department: this department will be sub-contracted.

-**Pilot:** Sub-contracted FAA certified Commercial Pilot, will be responsible for each load flown with jumpers.

Parachute Rigging Department: this department will be sub-contracted.

-**Parachute Rigger:** Sub-contracted FAA Certified Parachute Rigger will be responsible for gear maintenance and overseeing sub-contracted parachute packers.

-**Parachute packer:** Sub-contracted parachute packer responsible for packing of the main parachute of a Tandem or Sport rig.



Spring, 2015

Income and Expense Projections

As a start-up business, Skydive at Truckee Lake Tahoe will be run with a low overhead. This is possible in the Skydiving business without sacrificing quality and safety issues as the same personnel will be used within a specific business structure. Skydive at Truckee Lake Tahoe will sub-contract the various departments associated with running the center, including tandem gear, necessary aircraft and pilots.

Start-Up costs:

Office space trailer: \$10,000

Office set-up cost: \$3000

Unforeseen start-up costs: \$7000

Yearly Expenses:

Hanger rent: \$4800 yr

Waste and portable toilet: \$2400

Misc. expenses: \$2800

Projected Income:

500 tandems @ retail \$275= \$137,500

Projected Expenses:

Average estimated cost per Tandem: 500 @ \$150 = \$75,000

This includes subcontractors pay; plane, tandem rig, instructors, pilot.

Projected Tandem Profits: \$62,500

Projected Videography Profits: \$25 x 250 jumps: \$6,250

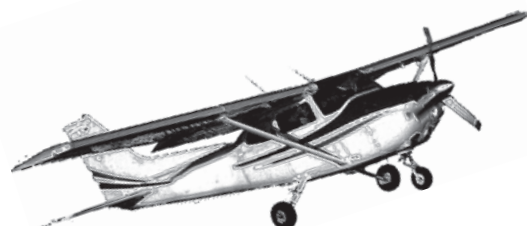
Gross Profits: \$68,750

Yearly Expenses: \$10,000

Total Profit: \$58,750

Less Start-up costs: \$20,000

Our goal is to increase these numbers by 50% within the first 3 years and double them by the end of our 5th year in business.



Skydiving Competition:

4 time United States Nationals Champion Freely Skydiving
3 time World Champion Freely Skydiving

BASE Competition:

2nd place in the Pro BASE World Cup Infjorden, Norway
4th place in the Pro BASE World Cup, Istanbul, Turkey
3rd place Overall in the Pro BASE World Cup Tour

6 Freely World Record Events Organizer and Participant:

2003 to 2012: Current Record stands at 138 way Head Down Formation

Out of these Record's, 2 were awarded one of the Most Memorable Records of The Year awards by the National Aeronautical Association. These were in 2004, 42 way Record, and in 2007, 69 way Record.

Wingsuit Formation World Record Events Participant: 2008 and 2009

Experience as a Professional Aerial Videographer , Performer and Stuntman:

Film Experience:

Point Break release 2015

Coors Light Stunts National Commercial

Nationwide Insurance Stunts National Commercial

Transformers 3: Dark of The Moon

-First of their kind: BASE, Wingsuit, Proximity Urban Flying Stunts.

-Awarded Taurus Stunt Award for 2011: Specialty Stunt of the Year Award

Independent Feature film titled: Human Flight 3D

-BASE, Wingsuit Proximity Mountain flying stunts & acting.

Imax Film: Adrenaline Rush~ The Science of Risk

-Freeflying.

Television:

ABC Good Morning America

ABC Nightline

Numerous interviews for coverage of different stunt shows around the U.S.

Multi Media coverage:

Featured consistently, for the last 14 years, in high profile multi-media outlets across the world accumulating millions of impressions yearly.

Aerial Experience:

26 years skydiving

21 years professional Skydiver and Camera Man.

9 years professional BASE Jumper.

22,000+ total Skydives

24 years Instructing Experience

7000+ Freefly Skydive Instructional Jumps

Trained National & World Champions from 4 different countries.

8,500 Jumps Filming

One of the Pioneers of the Skydiving discipline 'Freefly'

3000+ Wing Suit Jumps

1200+ BASE Jumps

850+ Wing Suit Proximity Jumps

25 Wing Suit Building Jumps

350 High Profile Live Stunt Shows

Multiple Medal winner for Canopy Piloting Competitions

Powered Paragliding Pilot

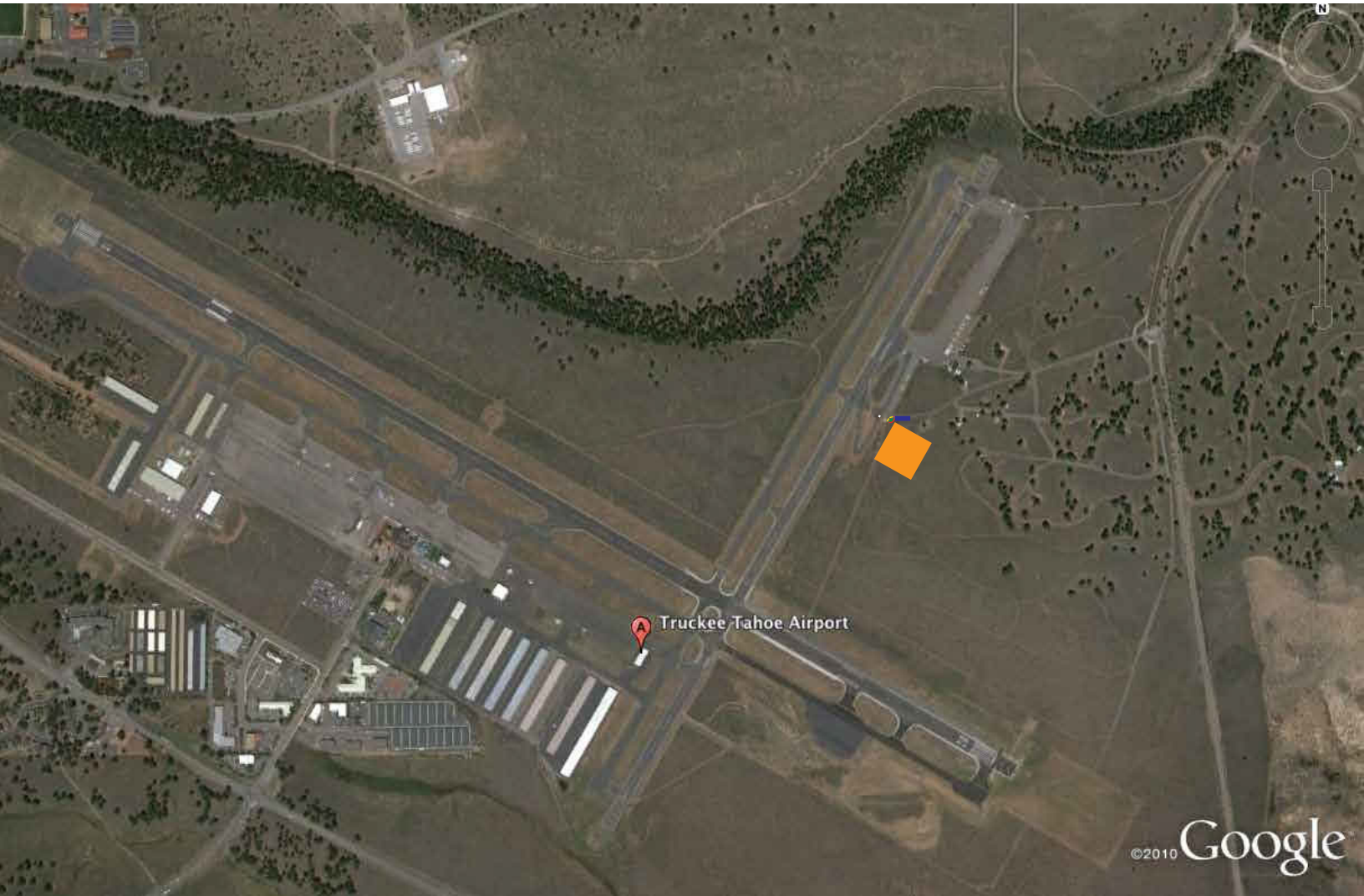
Paragliding Intermediate rating

Private Pilot - 200 hrs

Skydive at Truckee Lake Tahoe

Spring, 2015

Aerial Drop Zone View



Drop Zone/ Parachute Landing Area: 300ft by 300ft

Office Areas: 40ft by 10ft each

Spectator Viewing Area with boundary

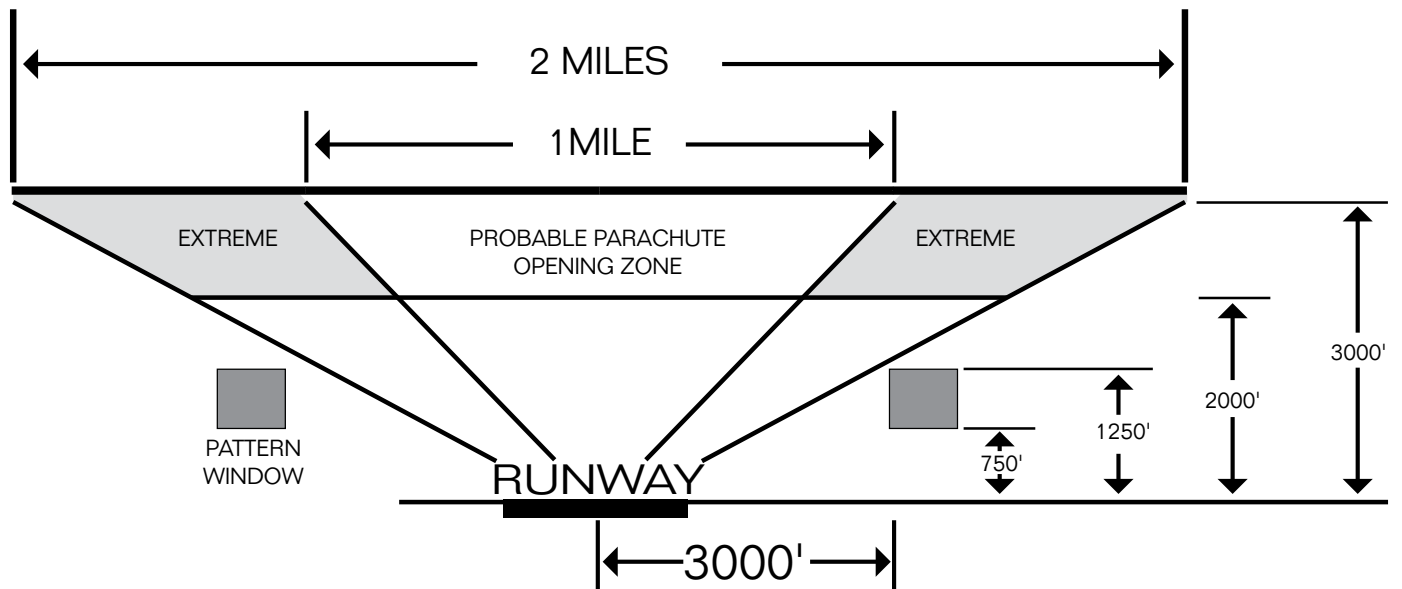
Parking Area: 100ft by 40ft

Plane Loading/ Boarding Area: 20ft by 20ft

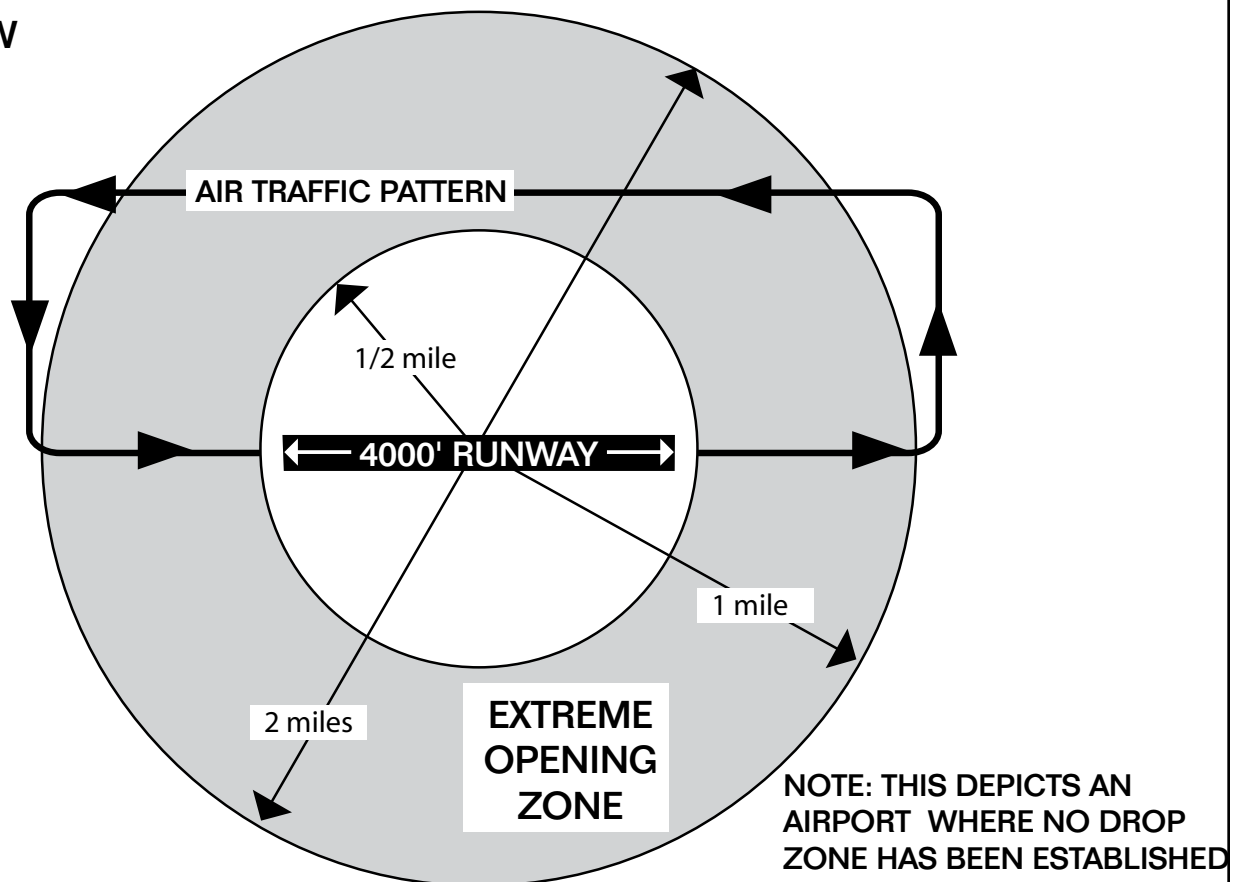
Restrooms: 10ft by 10ft

PARACHUTE OPERATIONS

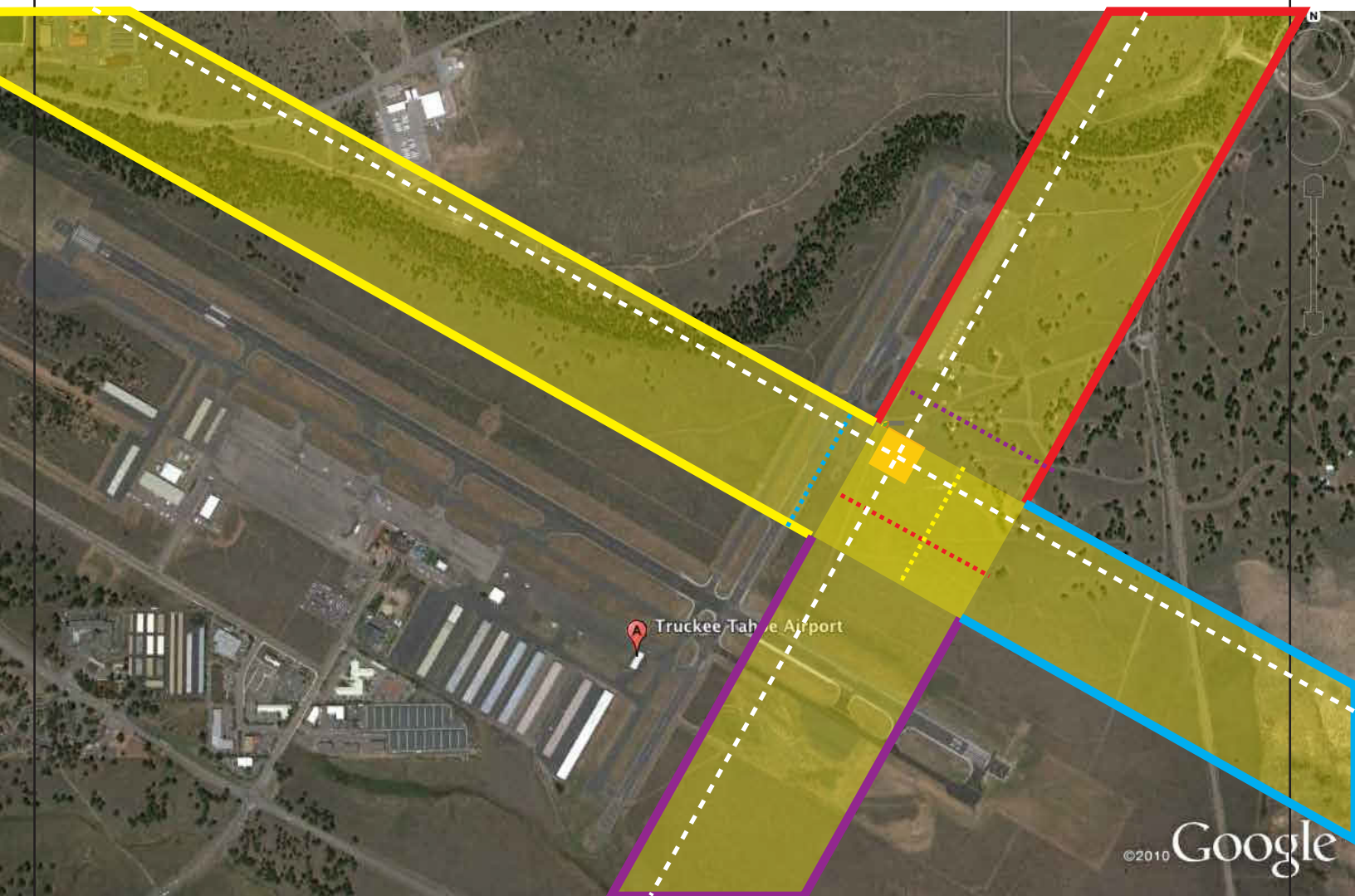
SIDE VIEW



TOP VIEW



Parachute Corridors



Drop Zone/ Parachute Landing Area: 300ft by 300ft

North Wind Corridor ends at red dotted line

South Wind Corridor ends at purple dotted line

West Wind Corridor ends at yellow dotted line

East Wind Corridor ends at blue dotted line

All Parachute Corridors

Jump Runs

1) SAFETY POLICY

Skydive Truckee's commitment to safe operations is the highest priority for management and all staff. Every measure will be taken both within the organization and with all other parties and organizations, to ensure the safety of skydivers, and all others.

With regards to all parachuting activity, a strict adherence to rules and regulations set out by the USPA in the Skydivers Information Manual (SIM), specifically the BSR's (Basic Safety Requirements) and the Federal Aviation Administration FARs will be mandated. An intolerance for any deviation from proven protocol will ensure optimal safety of the operation. The following FARs outline the FAA requirements for Skydivers, Pilots and Parachute Riggers and all operations and credentials of staff will comply with this.

Part 61—Certification: Pilots, Flight Instructors and Ground Instructors: This section establishes the qualifications and requirements for certificates and ratings, along with the privileges and limitations.

Part 65—Certification: Airmen, other than Flight Crew members and Parachute Riggers, receive certification through this regulation.

Part 91—General Operating and Flight Rules:

Flight operations for Skydiving Operations are conducted under Part 91.

Part 105—Parachute Operations:

This section prescribes the rules governing Parachute Operations.

Part 119—Certification; Air Carriers and Commercial Operators:

This section covers requirements for certification and operation of commercial operators; Section 119.1(e)(6) exempts Parachute Operations when flown within 25 miles of the airport.

2) SAFETY OBJECTIVES

Michael Swanson will be the Chief Safety Officer with Julia Drew and Jennifer Drew as key administrators. Safety procedures will be implemented at an operational level at all times and all staff will ensure adherence to policies.

Any issues, conflicts or potential hazards that may arise will be reported immediately to Mr Swanson, Jennifer or Julia Drew and addressed with any other parties concerned, for example Soar Truckee, other pilots, airport staff. Depending on the action required, a temporary solution to any problems will be found immediately with parties concerned. Should an alternative solution be necessary, an assessment involving all parties will be arranged.

Any events of concern will be documented by the administrators and a log kept of all details and circumstances.

The SMS will be updated as hazards are identified, risks determined and mitigated through corrective actions, and system improvements through training and revised policies and procedures are made. Thus ensuring our commitment to continual safety improvement.

3) SAFETY RISK MANAGEMENT

Please refer to attached Risk Management Strategy.



4) SAFETY ASSURANCE

Weekly meetings shall be held with all staff members to ensure all safety procedures are adhered to. All aspects of the skydiving operation will be addressed to assess the effectiveness of each system and examine possible changes if necessary. This shall include areas such as:

- Customer check in procedures
- Spectator activity
- Aircraft take off and landing
- Jump run
- Freefall
- Canopy Flight and Landing
- Communications overall with all parties on airport and in airspace
- Tandem and Experiences jumper dynamic

All Skydiving Activity will be conducted according to the previously mentioned FAR's and BSR's (Basic Safety Requirements) set out by the USPA in the SIM manual. Printed copies of these documents will be made available on site. The following BSR's are most relevant to this operation. There will be no student skydiving at this location so sections pertaining to student skydiving have been omitted. A full copy of the SIM is available upon request on the USPA website at www.uspa.org.

USPA SIM: Section 2.1A.

Applicability

1. These procedures apply to all jumps except those made under military orders and those made because of in-flight emergencies. Voluntary compliance with these procedures will protect the best interests of both the participants and the general public.
2. A "skydive" is defined as the descent of a person to the surface from an aircraft in flight when he or she uses or intends to use a parachute during all or part of that descent.
3. All persons participating in skydiving should be familiar with the Skydiver's Information Manual and all federal, state, and local regulations and rules pertaining to skydiving.

USPA SIM: Section 2.1B.

Compliance with Federal regulations

1. No skydive may be made in violation of Federal Aviation Administration (FAA) regulations.
2. FAA regulations include the use of restraint systems in the aircraft by all skydivers during movement on the surface, takeoff, and landing. [FAR 91.107]

USPA SIM: Section 2.1C.

Medical requirements

1. All persons engaging in skydiving must:
 - a. Posses at least a current FAA Third-Class Medical Certificate; or
 - b. Carry a certificate of physical fitness for skydiving from a registered physician; or
 - c. Have completed the USPA recommended medical statement.
2. Any skydiver acting as parachutist-in-command on a tandem jump must possess a current Third Class Medical Certificate or equivalent medical certificate acceptable to USPA, or, if residing outside the United States or its territories or possessions, a current Aviation Medical Certificate recognized by the Civil Aviation Authority of the residence country.



USPA SIM: Section 2.1D.

Spring, 2015

Age Requirements

1. For skydives made within the U.S. and its territories and possessions, skydivers are to be at least 18 years of age [FB]
 - a. All skydivers who are 16 or older and licensed prior to May 1, 2014 are exempt.
 - b. All student skydivers who are 16 or older and have made a skydive prior to May 1, 2014 must attain a USPA license by December 31, 2014 in order to be exempt.
2. For skydives made outside the U.S. and its territories and possessions, the minimum age is specified by the country's (or its national airport control's) requirements. Such skydivers who are under 16 years of age will not be issued a USPA license [FB]

USPA SIM: Section 2.1E.

Alcohol and Drugs

No person may make a parachute jump, or attempt to make a jump, if that person is or appears to be under the influence of either:

1. a. alcohol
2. b. any drug that affects that person's faculties in any way contrary to safety

USPA SIM: Section 2.1F.

Student skydivers

- 5c. Tandem training jumps [E]
- (1) Any USPA member conducting a tandem jump must hold a current USPA Tandem Instructor rating and a manufacturer's type rating.
 - (2) For progressive training requirements following tandem jumps, refer to "Crossover training."
 - (3) Intentional back-to-earth or vertical orientations that cause tandem freefall speeds exceeding that of droguefall are prohibited.
 - (4) Tandem equipment instruction must be conducted by an individual approved by the tandem equipment manufacturer of that system.
 - (5) All student tandem skydives must be conducted in accordance with the specific manufacturer's age requirements for the tandem system used for that jump.
 - (6) Use of any extendable or fixed pole camera mounts, attached or handheld by the tandem instructor or student, is prohibited [E]

Section 2.1F (cont)

9. All student jumps, including tandems, must be completed between official sunrise and sunset.

USPA SIM: Section 2.1G.

Winds

Maximum ground winds

1. For all solo students
 - a. 14 mph for ram-air canopies
 - b. 10 mph for round reserves
2. For licensed skydivers are unlimited

USPA SIM: Section 2.1H.

Minimum opening altitudes

Minimum container opening altitudes above the ground for skydivers are:

1. Tandem jumps—4,500 feet AGL [E]
2. All students and A-license holders—3,000 feet AGL [E]
3. B-license holders—2,500 feet AGL [E]
4. C- and D-license holders—2,500 feet AGL [S] (waiverable to a minimum altitude of 2,000 feet AGL)



USPA SIM: Section 2.1I

Drop zone requirements

1. Areas used for skydiving should be unobstructed, with the following minimum radial distances to the nearest hazard: [S]
 - a. solo students and A-license holders—100 meters
 - b. B- and C-license holders and all tandem skydives—50 meters
 - c. D-license holders—12 meters
2. Hazards are defined as telephone and power lines, towers, buildings, open bodies of water, highways, automobiles, and clusters of trees covering more than 3,000 square meters. [NW]
3. Manned ground-to-air communications (e.g., radios, panels, smoke, lights) are to be present on the drop zone during skydiving operations.[NW]

USPA SIM: Section 2.1J.

Pre-jump requirements

The appropriate altitude and surface winds are to be determined prior to conducting any skydive. K.

Extraordinary skydives

1. Night, water, and demonstration jumps are to be performed only with the advice of the local USPA S&TA, Instructor Examiner, or Regional Director. [NW]
2. Pre-planned breakaway jumps are to be made by only class C- and D-licenseholders using FAA TSO'ed equipment. [E]
3. Demonstration jumps into Level 2 areas require a D license with a USPA PRO Rating for all jumpers, including both tandem jump participants.[E]
4. Contact canopy formation activity is prohibited on tandem jumps.[E]
5. Tandem jumps into stadiums are prohibited.[E]
6. Any person performing a wingsuit jump must have at least 200 skydives, and hold a current USPA license.[E]

USPA SIM: Section 2.1L.

Parachute equipment

1. FAA regulations [FAR 105.19] require that when performing night jumps, each skydiver must display a light that is visible for at least three statute miles from the time the jumper is under an open parachute until landing. [NW]
with a visually accessible altimeter. [NW]

5. All skydivers wearing a round main or reserve canopy and all solo students must wear flotation gear when the intended exit, opening, or landing point is within one mile of an open body of water (an open body of water is defined as one in which a skydiver could drown). [S]

USPA SIM: Section 2.1M

Special altitude equipment and supplementary oxygen

Supplementary oxygen available on the aircraft is mandatory on skydives made from higher than 15,000 feet (MSL). [NW]



4) SAFETY PROMOTION

Every measure will be taken to ensure the rules and rules of the operation are followed: To this end the following additional steps will be taken:

- Skydiving equipment shall be inspected daily
- Experienced jumpers must hold a minimum of a USPA C license in order to jump
- Experienced jumpers will be required to present their reserve packing card, log book and proof of USPA membership and licensure in order to jump
- Before being allowed to jump, all experienced jumpers will be given a safety briefing to include; airport and skydiving operation rules and regulations, current weather conditions, landing patterns, glider activity, active runways, policy regarding areas of caution and off limit areas eg. how to cross a runway or taxiway if the situation arose
- An aerial photo of the airport and instructions regarding jump run, landing patterns and other aviation activity will be on display
- Rules regarding both jumpers and spectators will be posted on the bulletin board
- The management shall be open to input and communication from other operators regarding safety and skydiving activity and will conduct “check ins” by phone, person or email with other airport operators and management to exchange safety related information.



Assessed Events:

- Off landings
- Cutaways/ reserve parachute use
- Gliders about to enter or in the pattern
- Sudden weather changes
- Non-communicating aircraft in the vicinity of jump corridors

Off Landings:

Under certain circumstances it may be necessary, for the safe landing of parachutists and safety of the surrounding environment, for parachutists to execute what is known as an 'off landing' or 'landing out'.

Impact: In most cases, an experienced skydiver and Tandem instructors, have the ability to execute a safe and successful landing off of the allocated landing zone, when need be. Thus, the safety or risk impact of these types of events is usually low.

Mitigation: Each parachutist will assess his or her situation as it arises, as these are very specific to each parachute jump. Some issues that may arise to cause these types of situations are: A low risk gear issue, like a hard pull; A reserve parachute scenario; Sudden weather changes; An incorrect exit location; Avoiding other in-flight or landing hazards, like other aircraft in the landing pattern.

Contingency: Certain areas on the airport and off the airport will be allocated as safest areas to land out. Most situations where an off landing is necessary still allow the parachutist time to choose one of the allocated off landing zones with all of the surrounding risk factors in mind as well as their own safety and the safety of their passenger. The operators will immediately execute a retrieval of the off jumpers depending on the distance from the Drop Zone. All parachutists will be informed, prior to jumping at Skydive Truckee Tahoe, of the procedures for returning from an off landing which will be specific to each area allocated. Thus, no persons will be 'wandering' unaided or unaccompanied around the runways or other areas where aircraft could be present, causing further hazards.

Reduction: The allocation of off landing zones that speak to the safety and risk management of the parachutist and the surrounding factors, will be determined and thus the risk impact of these types of scenarios will be greatly reduced. All parachutists will be well informed of these areas and the correct means to return to the Drop Zone after landing at one of these off landing sites. The manifestor will be watching and counting parachutists on each load as they land and will implement the retrieval procedure in each unique situation.

Cutaways/ reserve parachute use:

Under certain circumstances it may be necessary for a parachutist to use his or her cutaway system and deploy the reserve parachute. This is at the sole discretion and assessed need of the parachutist, be it a solo or tandem jump.

Impact: In many cases, an experienced skydiver and Tandem instructors, have the ability to execute a safe and successful reserve parachute deployment and landing. Thus, the safety or risk impact of these types of events is usually low.

Mitigation: Some of the instances that may require a reserve parachute deployment can be avoided with detailed gear checks and adherence to safety awareness in the jump plane. Most experienced parachutists and tandem instructors have the knowledge, safety procedures and awareness to mitigate these types of instances. Other situations may be unforeseen and unavoidable gear malfunctions or freefall instances, and thus the resulting reserve deployment will be handled accordingly.



Cutaways/ reserve parachute use continued:

Contingency: Reserve parachute rides sometimes mean that the safest landing scenario may be to execute an off landing as above stated. This is not always the case, and often the parachutist can still make a safe landing on the allocated drop zone home landing area. Otherwise, off landing zone and associated procedures will be followed strictly by the parachutist and retrieval procedures will be followed strictly by the operators.

Reduction: All parachutists will be required to perform standard safety checks prior to boarding the aircraft and prior to exit from the aircraft. All gear will also undergo the required safety checks at check in and all parachutists will be aware of their own safety procedures, that help to reduce the occurrence of reserve parachute scenarios. The allocation of off landing zones that speak to the safety and risk management of the parachutist and the surrounding factors, will be determined as above, and with these practices in place the risk impact of these types of scenarios will be greatly reduced.

Gliders about to enter or in the parachutist landing pattern:

It may occur that a glider under duress may need to use the air space allocated to the parachutists landing pattern.

Impact: It may be necessary for a glider to encroach on the parachutists landing pattern depending on their own safety requirement or unforeseen situation that may arise, making it impossible for them to avoid the landing pattern of the parachutes. The safety risk associated with this type of event can be high if it coincides exactly with the timing of a parachute drop that has already been executed. However, it is unlikely that the jump plane would be uninformed of a glider in duress and to this end would be able to hold the jumpers in the plane until such times at the glider had safely left the area. Thus, reducing the risk impact of this type of event very easily with open and continued communication between pilots. This is communication that should be standard procedure and part of any pilots' safety awareness and everyday safety procedures, regardless of the type of aircraft they may be piloting.

Mitigation: Glider pilots should be well informed of parachuting activity and be aware of the need for continued communication with the jump plane pilot and jump manifest. This could come in the form of direct communication with either and both parties, or by following their own safety procedure in place with the communication required by the center at Soar Truckee. Because actual parachute activity comes in short burst of 5 minutes of actual parachutes in the air space before parachutes are on the ground, it is easy to communicate possible or actual air space obstructions to the pilot and the skydive manifestors so that exit of parachutists from the aircraft can be paused or halted when emergency situations like these arise.

Contingency: In the event that this situation arises, the procedure should weigh heavily on the glider plane pilot to communicate the situation as quickly and efficiently as possible. The jump plane pilot and manifestors will know to be ready for immediate and expeditious response to this situation. All parachute exits from the plane will be halted until the jump plane pilot can confirm cleared parachute landing airspace. In event that the exit of the aircraft was not halted it will be expected that both glider pilot and parachute pilot would be visually aware and assess the situation appropriately to lessen the possibility of any in-air collision. As above stated, parachutists will be made aware of alternate off landing areas that could be used if they see a glider plane obstructing the normal airspace used for an on site landing.

Reduction: The best practice to reduce the risk impact of this type of situation is awareness and communication on the part of all pilots involved. Since the impact of parachutists actually physically present in the allocated parachute landing airspace is so little and as stated, comes in bursts of 5 minutes at one time, the reduction of the risk impact of this situation can be highly successful, and quite possibly completely mitigated with a high level of communication required by all pilots and responsible parties.



Sudden weather changes:

It is apparent that the Truckee airspace, not unlike a number of areas, can have sudden weather shifts in the form of changing wind speeds and direction and cloud cover and visibility.

Impact: The skill level alone of experienced canopy pilots and tandem instructors is often good enough to mitigate these situations as they arise and the use of off landing sites along with these learned, practiced skills and a high level of communication between manifest and jump pilot combined makes the actual safety or risk impact of these types of events usually low.

Mitigation: As it is impossible to stop/ prevent sudden weather changes, the sole focus of these situations is how to reduce the impact of these situations instead of how to prevent/ lesson their occurrence.

Contingency: Manifest will communicate with the jump plane at all times. This makes it very easy for manifest to inform the jump pilot, who will then act accordingly, of what particular weather change the ground is experiencing. A decision will be reached between parachutists and the pilot as to whether the changed conditions are still acceptable, with possibly an altered jump run, and if they are not, the pilot will take necessary safety measures and either find a holding pattern to wait or land the plane with parachutists aboard.

Reduction: Once again, communication is key to reducing the risk impact of these types of events. Although the occurrence of these events cannot be reduced by risk management procedures the risk impact can be highly reduced, thus turning these potentially high-risk situations into low risk impact scenarios.

Non-communicating aircraft in the vicinity of jump corridors:

It is very possible that other unrelated aircraft, under no supervision of Soar Truckee, or Skydive Truckee Tahoe, or the Truckee-Tahoe Airport will overfly the Truckee Tahoe airspace and very possibly encroach on the parachute corridors.

Impact: A non-communicating aircraft is a risk to all activity in the Truckee-Tahoe airspace. Most aircraft in the vicinity will be highly aware of an aircraft in or entering the airspace that has not been active on the radio. It is visually possible to see such an aircraft as it passes through the airspace. This is obviously a high-risk impact situation as communication is missing.

Mitigation: There once again is no real way to reduce the probability of these events, as we have no immediate control over a pilot who does not communicate appropriately. A permanent Notice to Airmen (Notam) will be filed, this warns pilots of the parachuting activity in the airspace. Once again the risk impact of these occurrences can be greatly diminished, but the occurrence cannot.

Contingency: Through visual location of non-communicating aircraft, steps can be taken to avoid situations arising. The jump plane pilot, manifestors from the ground, and parachutists before they exit the aircraft will all be on the lookout for aircraft that are within their jump corridor. It would also be helpful that other aircraft, including the gliders would inform the pilot of the jump plane if they were aware of a non-communicating aircraft in the vicinity.

Reduction: This is one of those risk factors that affect all of the aircraft in the Truckee-Tahoe airspace and heightened awareness and a high level of communication between pilots can reduce the risk impact in general. Skydive Truckee Tahoe manifestors and pilots as well as parachutists will be on high alert for non-communicating aircraft and exits will be held and re-timed in the event such a situation arises.

This will be a continual and dynamic work in progress, it will be altered, added to and improved as events arise that need to be attended to. We will work closely with all other business on the Truckee Tahoe airport whom wish to talk about and work through any of these or other potential risk factors. We will continue to develop comprehensive and collaborative risk management procedures for any and all events that require it.





KAPLAN KIRSCH ROCKWELL

May 15, 2015

Hardy Bullock
Truckee Tahoe Airport District
10356 Truckee Airport Road
Truckee, CA 96161

Re: Review of Skydive at Truckee Lake Tahoe Application

Dear Hardy:

You have asked that we briefly summarize the Truckee Tahoe Airport District's ("District") legal obligations with regard to applications to provide skydiving service at the Truckee Tahoe Airport ("TRK") and, particularly, with regard to the manner in which the District has considered the application submitted by Skydive at Truckee Lake Tahoe ("Skydive Truckee"). We have advised that the District's approach to its treatment of skydiving generally and this Application in particular is consistent with its legal obligations and powers.

Legal Background

The District has signed Grant Assurances with the Federal Aviation Administration ("FAA") in exchange for federal grant funds, including Airport Improvement Program grants. The Grant Assurances are contractual commitments to the FAA that the FAA can and does enforce. Legal challenges to airport compliance with the Grant Assurances under FAR Part 16 by entities seeking to establish skydiving operations have been common in the last 10 years.

One of the Grant Assurances, Assurance 22, requires that the District make TRK available for public use on reasonable terms, and without unjust discrimination, to all types, kinds, and classes of aeronautical activities, including commercial aeronautical activities offering services to the public at the airport. See FAA Order 5190.6B, *Airport Compliance* at Chapter 13 (Sept. 30, 2009).

FAA has not been particularly supportive of airport sponsor arguments that skydiving should be completely excluded from airports on safety grounds. In interpreting Grant Assurance 22, the FAA has indicated that:

A complete prohibition on all aeronautical operations of one type, such as ultralights, gliders, parachute jumping, balloon and airship operations, acrobatic flying, or banner towing should be approved only if the FAA concludes that such operations cannot be mixed with other traffic without an unacceptable impact on safety or the efficiency and utility of the airport.

When it is determined that there are less restrictive ways or alternative methods of accommodating the activity while maintaining safety and efficiency, these alternative measures can be incorporated in the sponsor's rules or minimum standards for the activity in question at that airport.

FAA Order 5190.6B at 14-6. FAA has generally found complete bans on skydiving – or unreasonably restrictive conditions on skydiving which have the practical effect of a ban – to violate the grant assurances. *See e.g., Bodin v. County of Santa Clara*, FAA Docket No. 16-11-06 (Aug. 12, 2013) (sponsor denial of skydiving application on safety grounds violated grant assurances); *Skydive Sacramento v. City of Lincoln*, FAA Docket 16-09-09 (May 4, 2011) (insurance and other provisions were unreasonable under facts of the case). FAA has also usually determined that skydiving can be accommodated in a wide variety of airport contexts, rejecting sponsor suggestions that skydiving operations could not be handled safely at particular airport environments.

FAA has been more willing to accept limitations on the location, timing and other factors associated with skydiving to ensure safety of the airport and its users, if the restrictions and conditions are based on solid technical bases. FAA has approved airport rules, if supported by evidence regarding the need and lack of less restrictive alternatives, that:

- Limit skydiving operations to certain times of the day and week to avoid the times of busiest operation and greatest threat of interference with fixed-wing aircraft.
- Ban skydiving, soaring, ultralights, or banner towing when the volume of fixed-wing traffic at an airport would not allow those activities without significant delays in fixed-wing operations.
- Limit skydiving operations to certain areas of the airfield and certain traffic patterns to avoid conflict with fixed-wing patterns.

FAA Order 5190.6B at 14-3.

FAA's review of airport sponsor limitations on skydiving activities tends to be quite searching. The agency will support reasonable conditions that are well supported by evidence and are not discriminatory. The key is that the FAA will want to see airport-specific evidence regarding the safety of skydiving operations at that particular airport and will not accept generic or non-specific concerns about safety or interference with more traditional aircraft operations.

Minimum Standards for Commercial Skydiving

FAA encourages airport sponsors to develop minimum standards for aeronautical tenants in order to provide clear direction on standards and avoid possible discrimination. In order to ensure that any skydiving operations at TRK would be safe and efficient, provide good service to customers, and compatible with other operations at the airport, the District promulgated Policy Instruction 504.1, *Minimum Standards for Commercial Skydiving* (PI 504.1), on July 1, 2014. We worked closely with you to develop PI 504.1 in a manner that would maximize the District's interest in ensuring safety, efficiency and other objectives, while maintain compliance with FAA requirements. (The District proposed the policy after it received its first informal inquiry from a prospective skydiving operator. The District solicited and received comments from that prospective operator before finalizing the Policy; those comments were incorporated into the final version of the Policy as appropriate.)

Consistent with minimum standards at TRK for other aeronautical activities and minimum standards at other airports, PI 504.1 requires that a skydiving applicant submit an application regarding its fitness to provide service, adequate provisions for safety, and other measures. PI 504.1 also provides criteria that an applicant must meet, including compliance with safety requirements, insurance, service standards and similar measures. A critical element of PI 504.1 is the requirement that any applicant perform a Safety Management System ("SMS") analysis to ensure the safe integration of a skydiving operation with other aeronautical uses at TRK. SMS is becoming mandatory in many airport and aviation contexts, and FAA strongly encourages its use even where it is not yet mandatory. (SMS requirements already apply in some instances where an airport sponsor seeks FAA approval of projects or new airfield activities. In connection with the rollout of SMS requirements throughout the entire aviation sector, best practices require that airport sponsors gradually implement SMS requirements when practical within the existing local regulatory structure or where administratively convenient. While the District has not yet implemented SMS on a District-wide basis or for all airport projects, it is entirely consistent with best practices in the industry to require SMS analysis for wholly new operations or types of activities at the airport.)

There are reasonable bases for all of the elements of PI 504.1 to promote safety, efficiency and customer protection at TRK.

Skydive Truckee Application

May 14, 2015

Page 4

In early 2014, Skydive Truckee filed an application under PI 504.1 to provide skydiving services at TRK. While counsel for Skydive Truckee questioned the District's bases for requiring certain elements in the Application, including the requirement to perform a SMS review, Skydive Truckee did ultimately supply the information required in PI 504.1. Skydive Truckee also agreed to participate in an independent review of the safety analysis by independent third party, Convergent Performance, LLC. This independent review is consistent with requirements in draft FAA policies for SMS implementation.

Skydive Truckee filed a risk management plan for its proposed operations on March 1, 2015, to comply with the SMS requirement. Soar Truckee filed comments on the risk management plan on March 18, 2015, and Convergent Performance completed a safety assessment on the application and risk management plan on April 3, 2015. Convergent identified a number of shortcomings in the risk management plan, including incomplete procedures, unclear drop zone, and incomplete airspace deconfliction plan, and the absence of written safety protocols.

On May 1, 2015, Skydive Truckee filed an amended Safety Management Plan and response to the Convergent analysis. We understand that District staff has found that the new submittal meets the requirements of PI 504.1 and addresses the concerns identified by Convergent.

If the Board finds that the Skydive Truckee application, in combination with the amended Safety Management Plan, complies with existing District policies and its minimum standards, it would be appropriate for the Board to approve the application. If the Board does not find that the applicant has complied with applicable requirements, the Board would be well advised to provide specific technical reasons for its decision, with citation to the relevant District policies or minimum standards elements which the applicant has not satisfied.

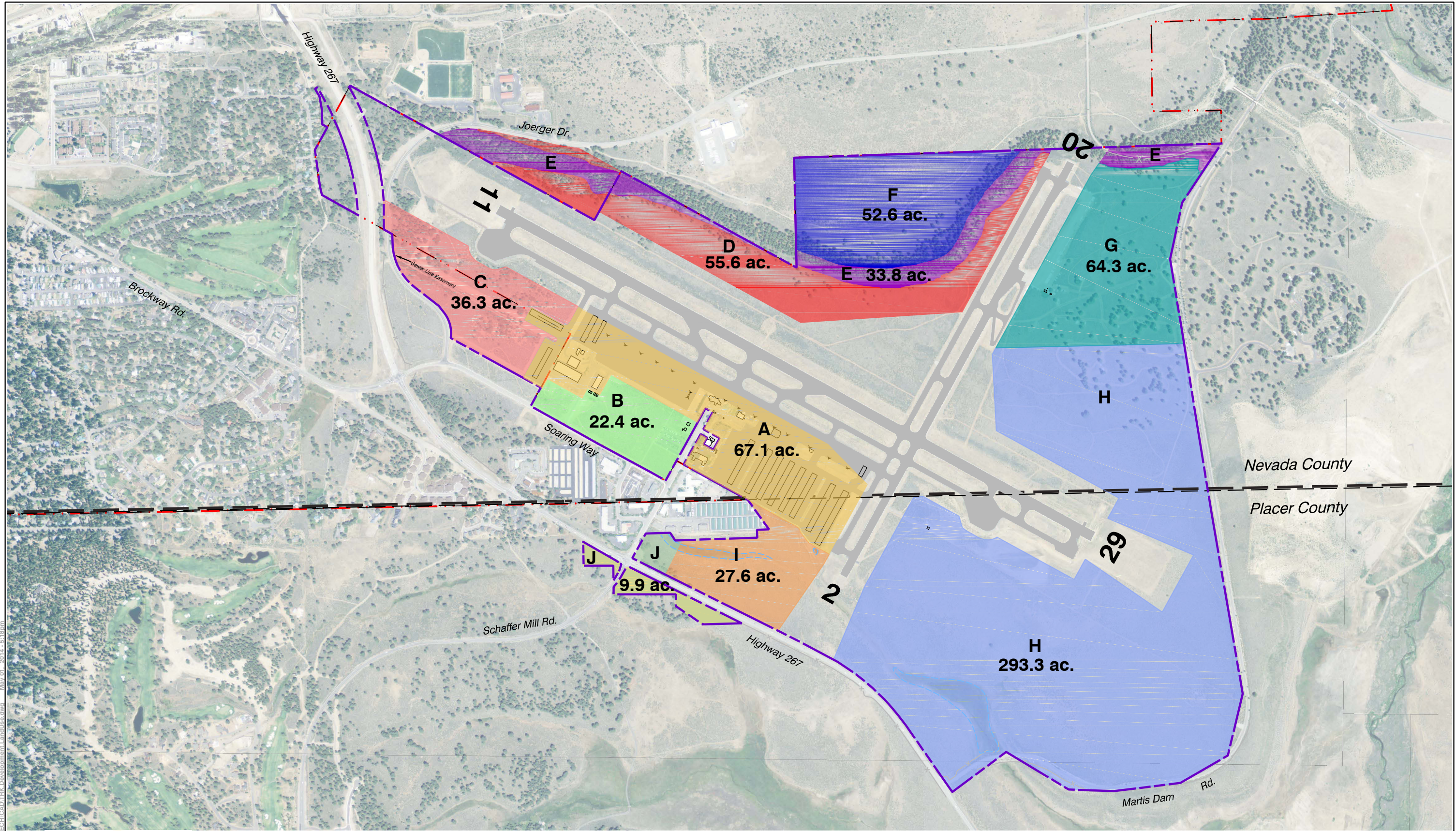
We would be pleased to provide more detailed advice in a closed Board session. Because we understand that you intend for this letter to be included in the publicly released packet of information for the Board meeting, we do not believe that it would be appropriate to provide specific legal advice in this letter.

Please contact me at the number below if you have any questions.

Sincerely,

A handwritten signature in black ink, appearing to read "Peter J. Kirsch", with a stylized, flowing script.

Peter J. Kirsch

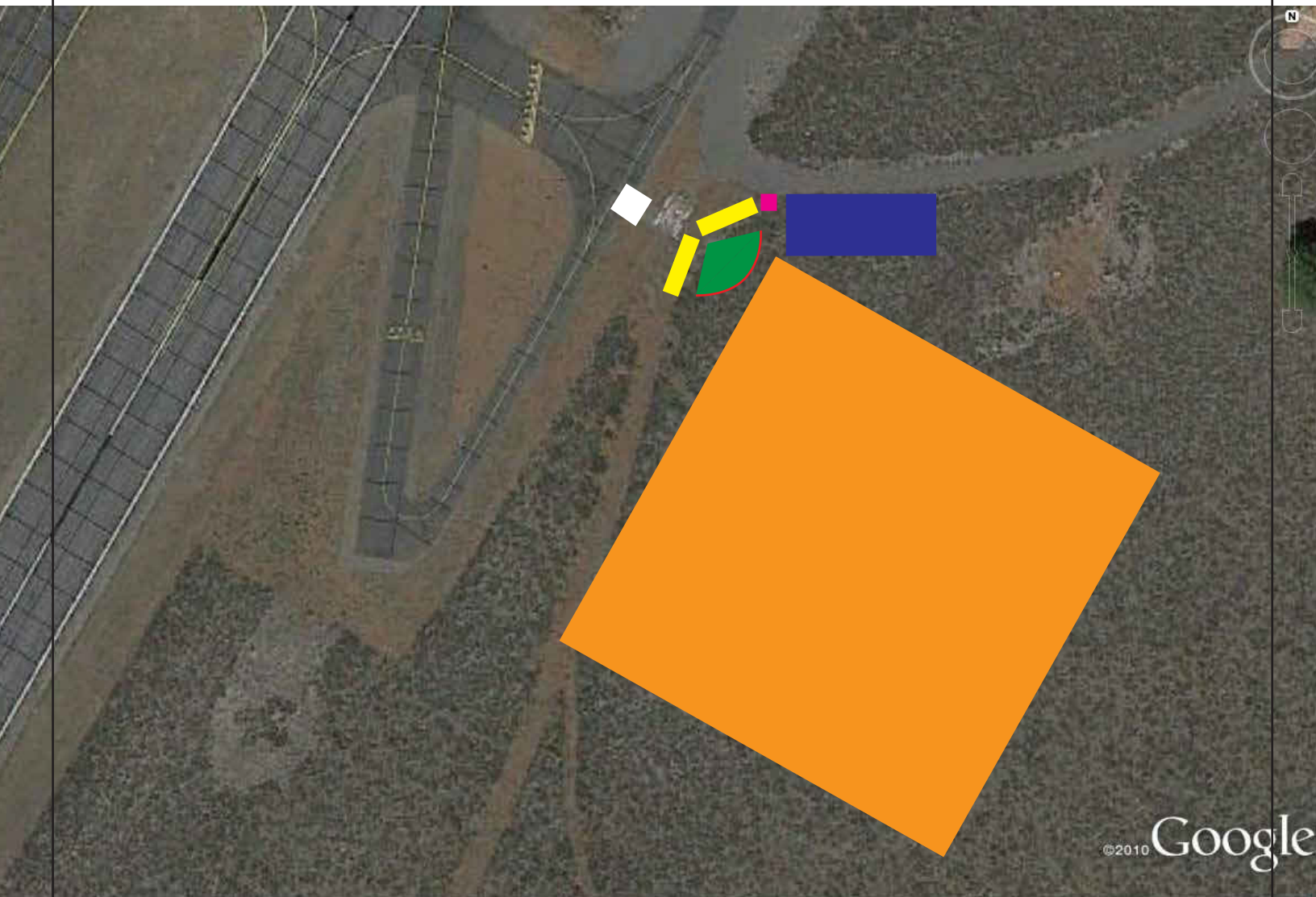









X:\2013\700114396\01\TECH\CAD\TRK Development LandUse.dwg May 01, 2014 - 5:18pm

Figure 4-35

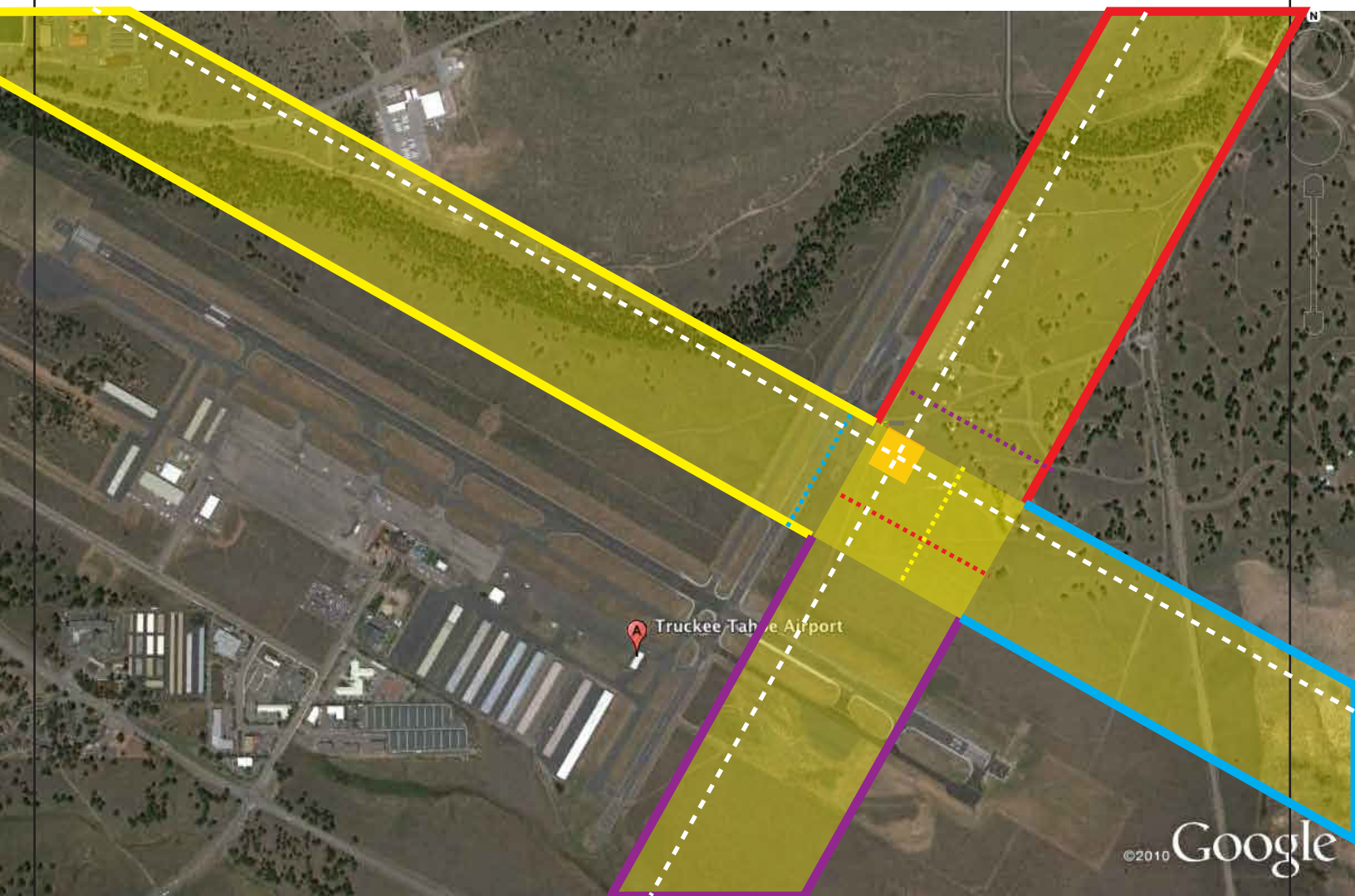
On Airport Land Use
Truckee-Tahoe Airport

Operations Layout



-  Office Areas: 40ft by 10ft each
-  Spectator Viewing Area with boundary 
-  Drop Zone/ Parachute Landing Area: 300ft by 300ft
-  Parking Area: 100ft by 40ft
-  Plane Loading/ Boarding Area: 20ft by 20ft
-  Restrooms: 10ft by 10ft

Parachute Corridors



Drop Zone/ Parachute Landing Area: 300ft by 300ft

North Wind Corridor ends at red dotted line

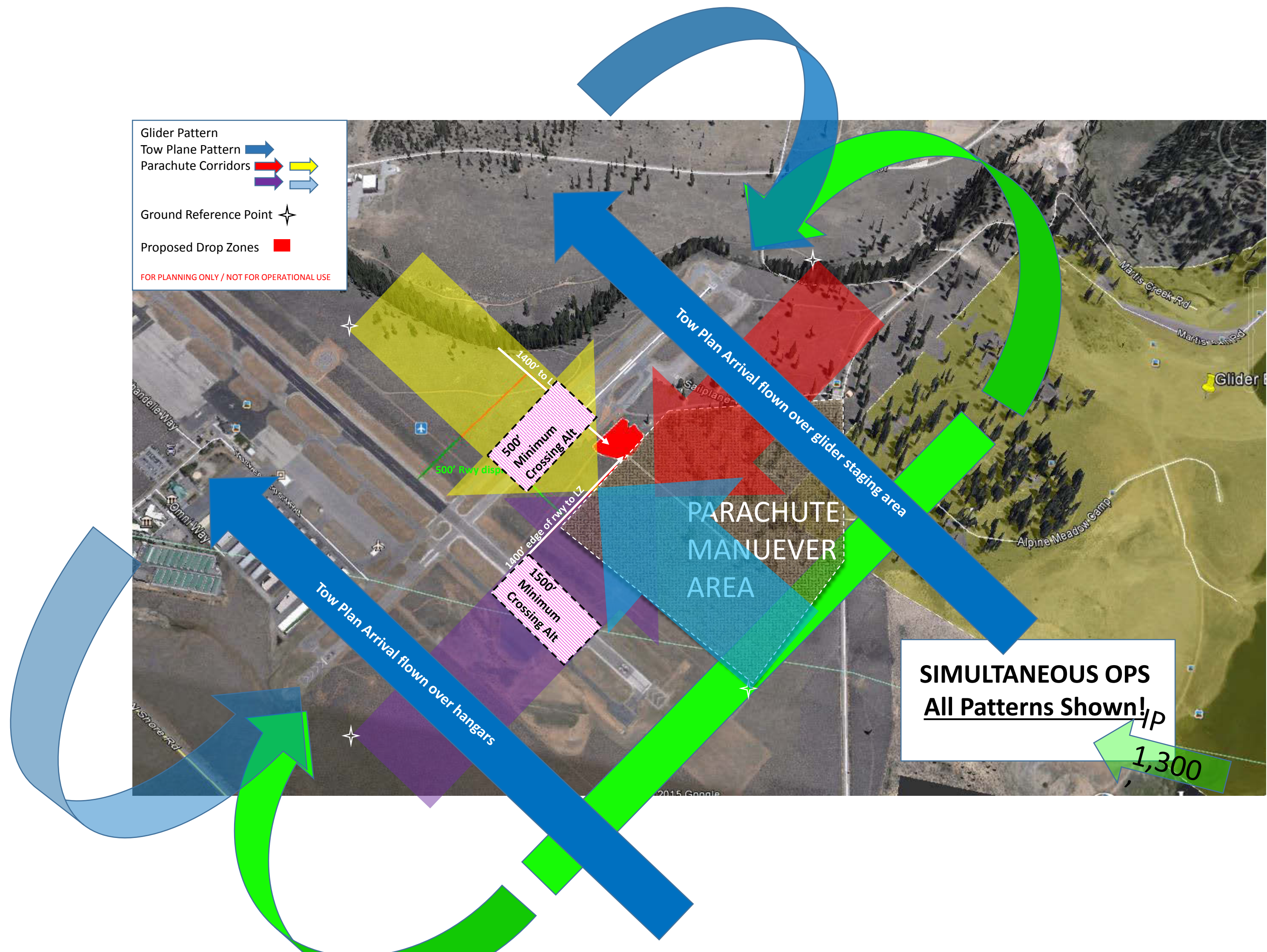
South Wind Corridor ends at purple dotted line

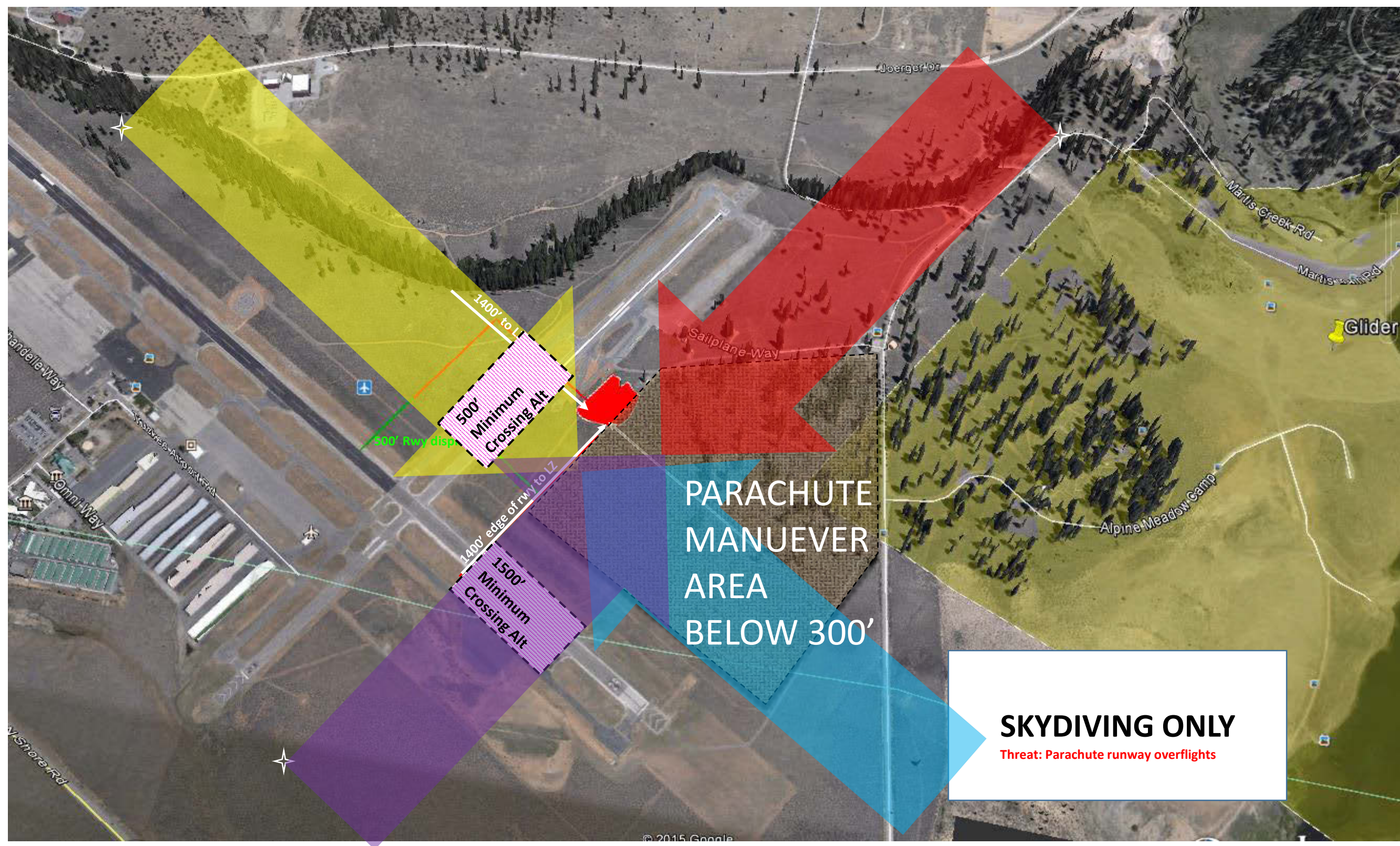
West Wind Corridor ends at yellow dotted line

East Wind Corridor ends at blue dotted line

All Parachute Corridors

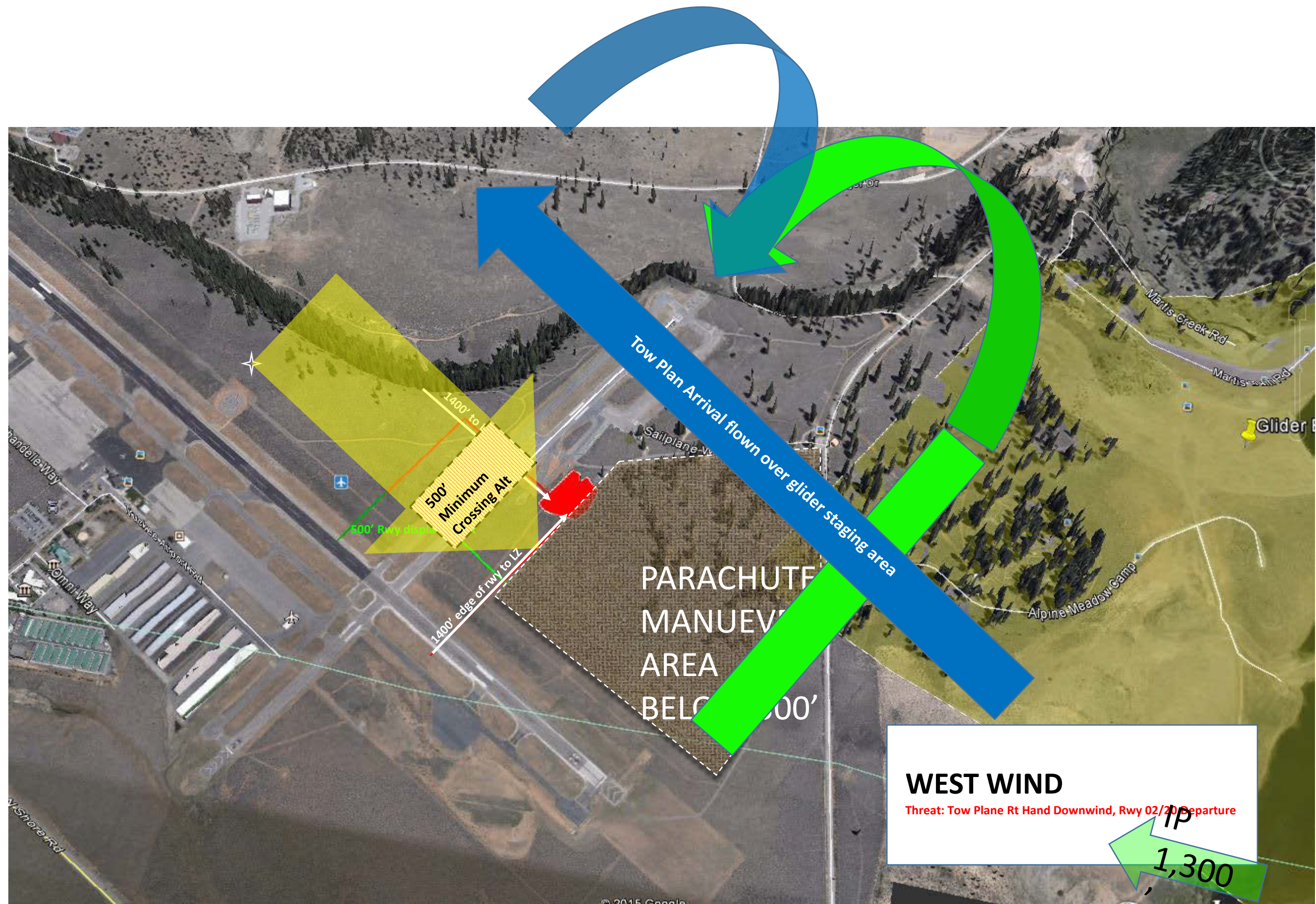
Jump Runs

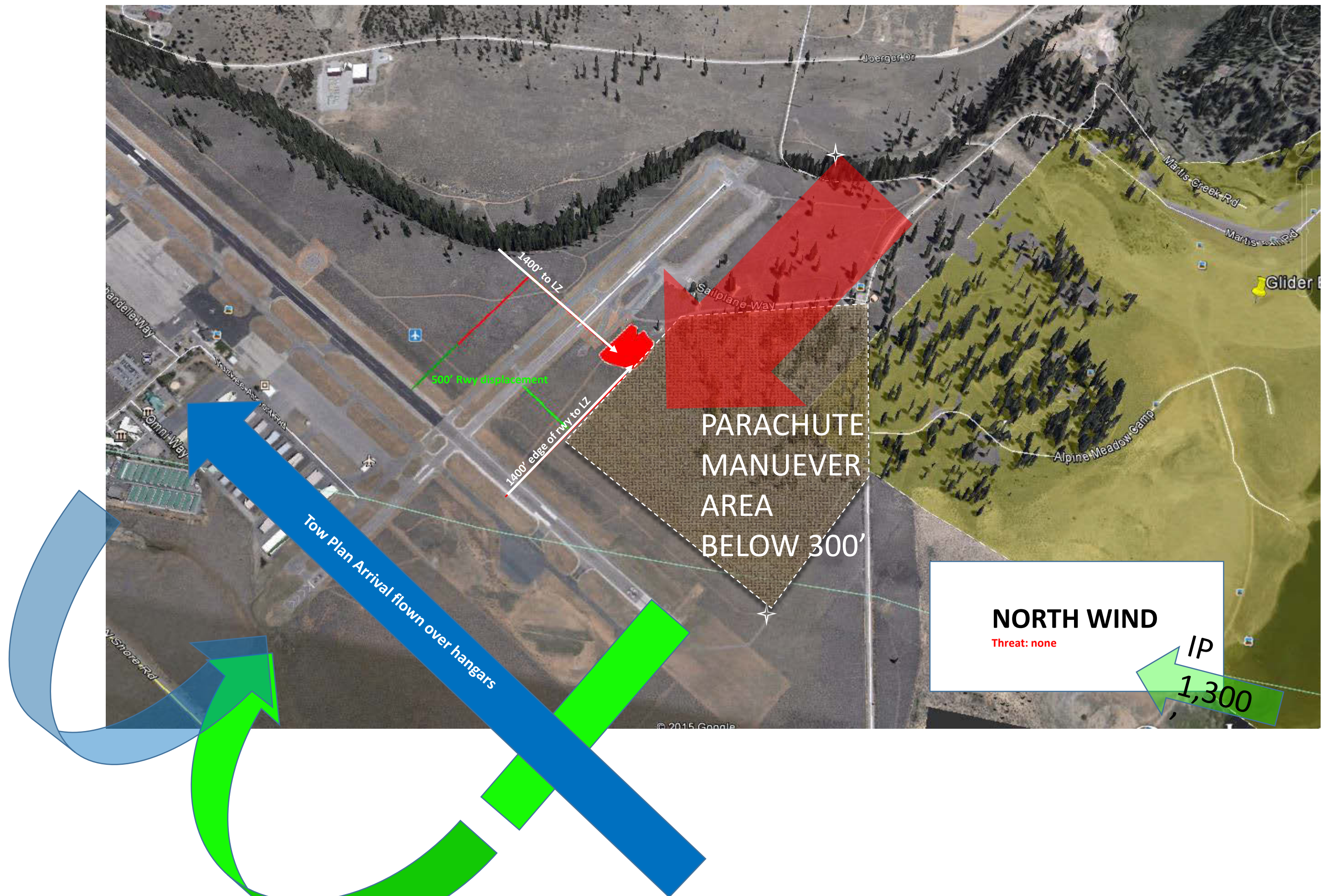


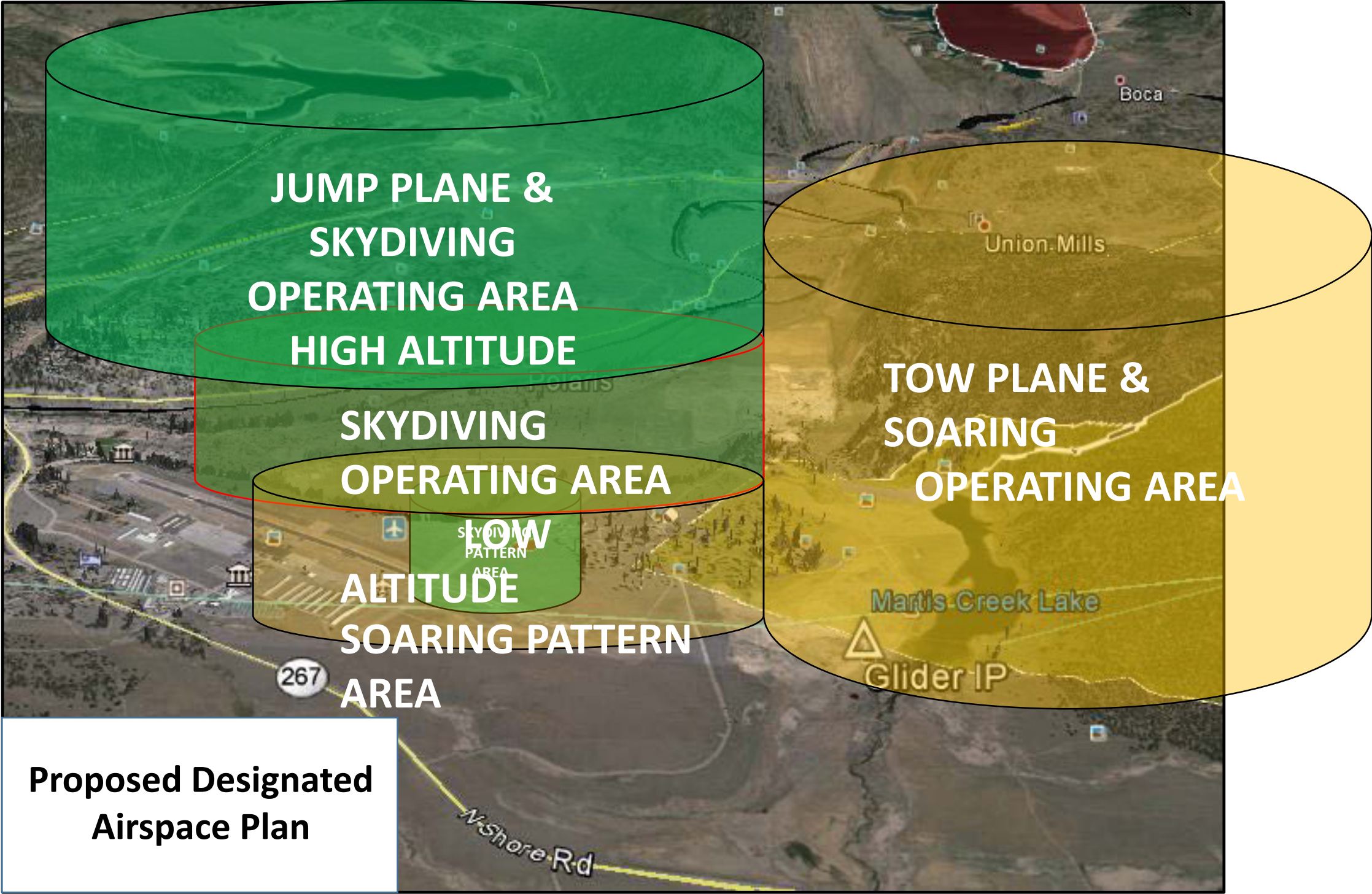


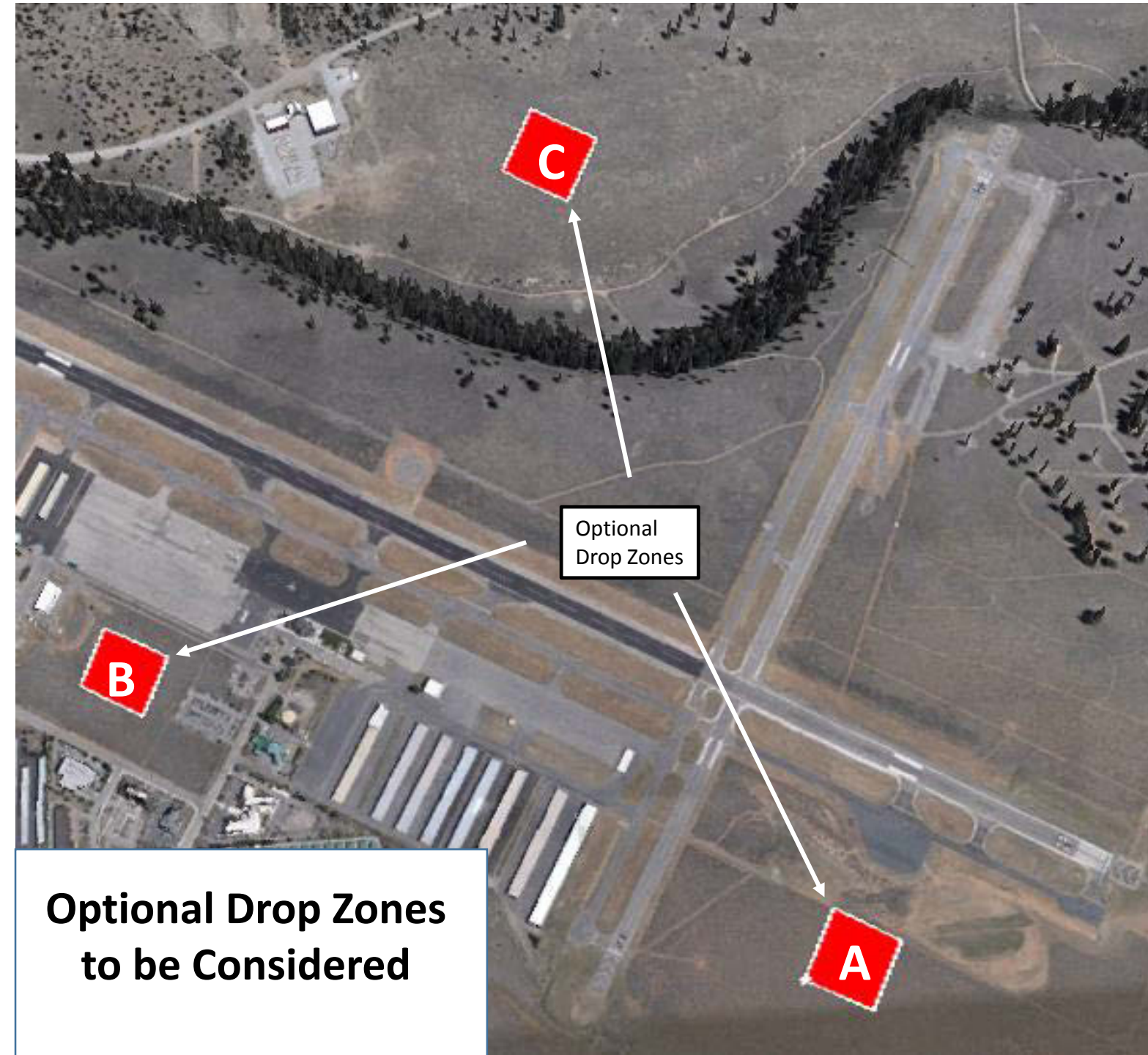










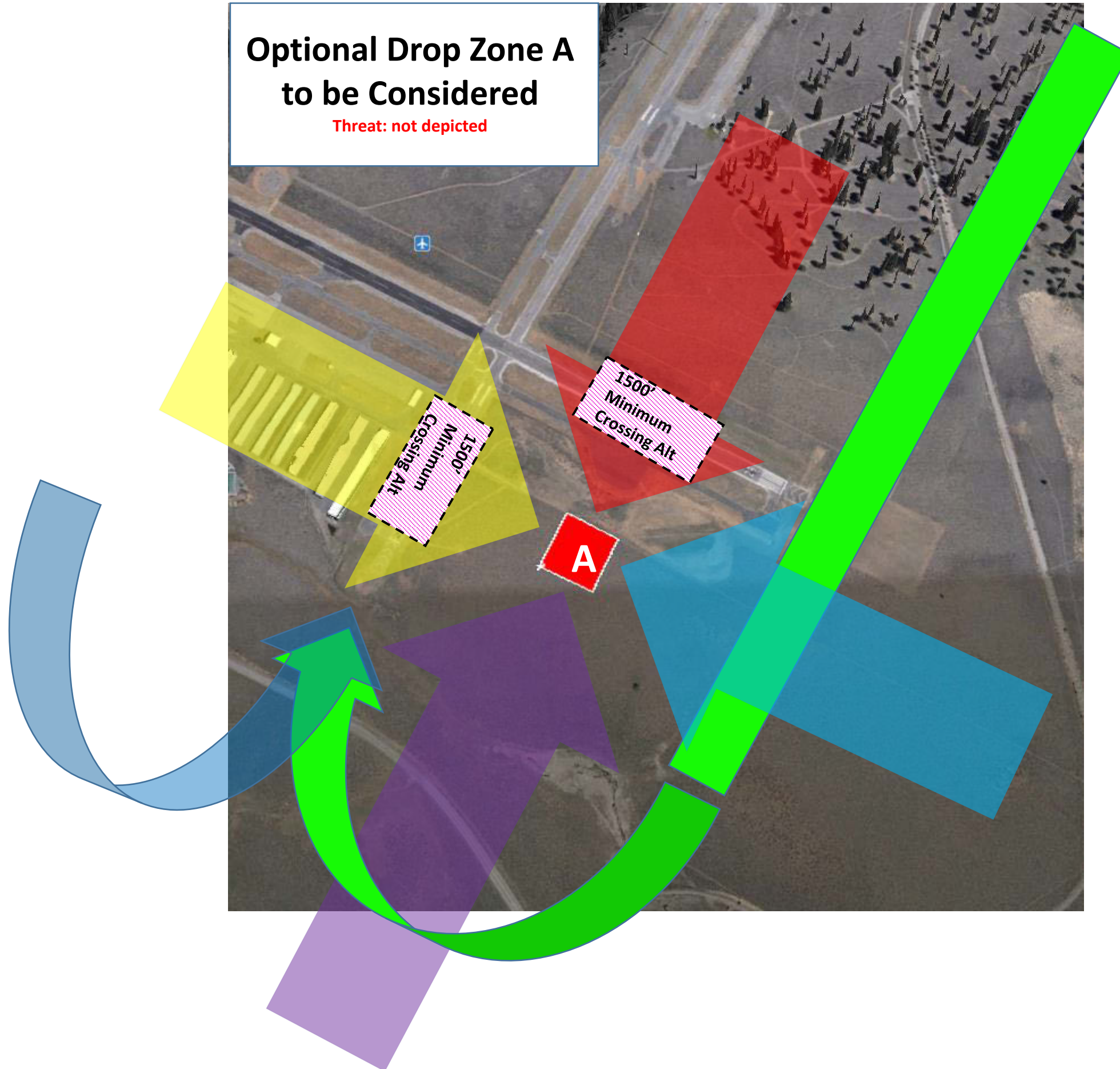


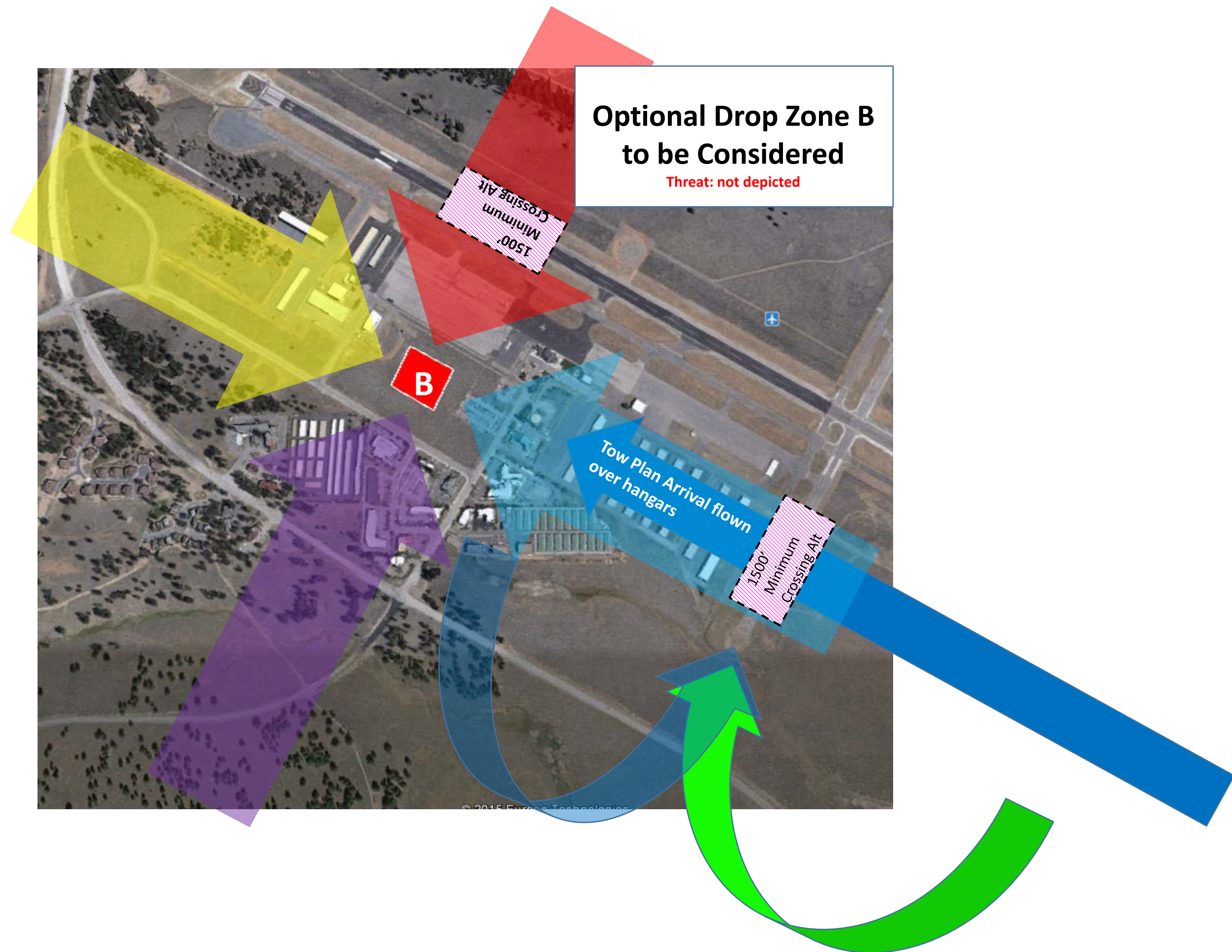
Optional
Drop Zones

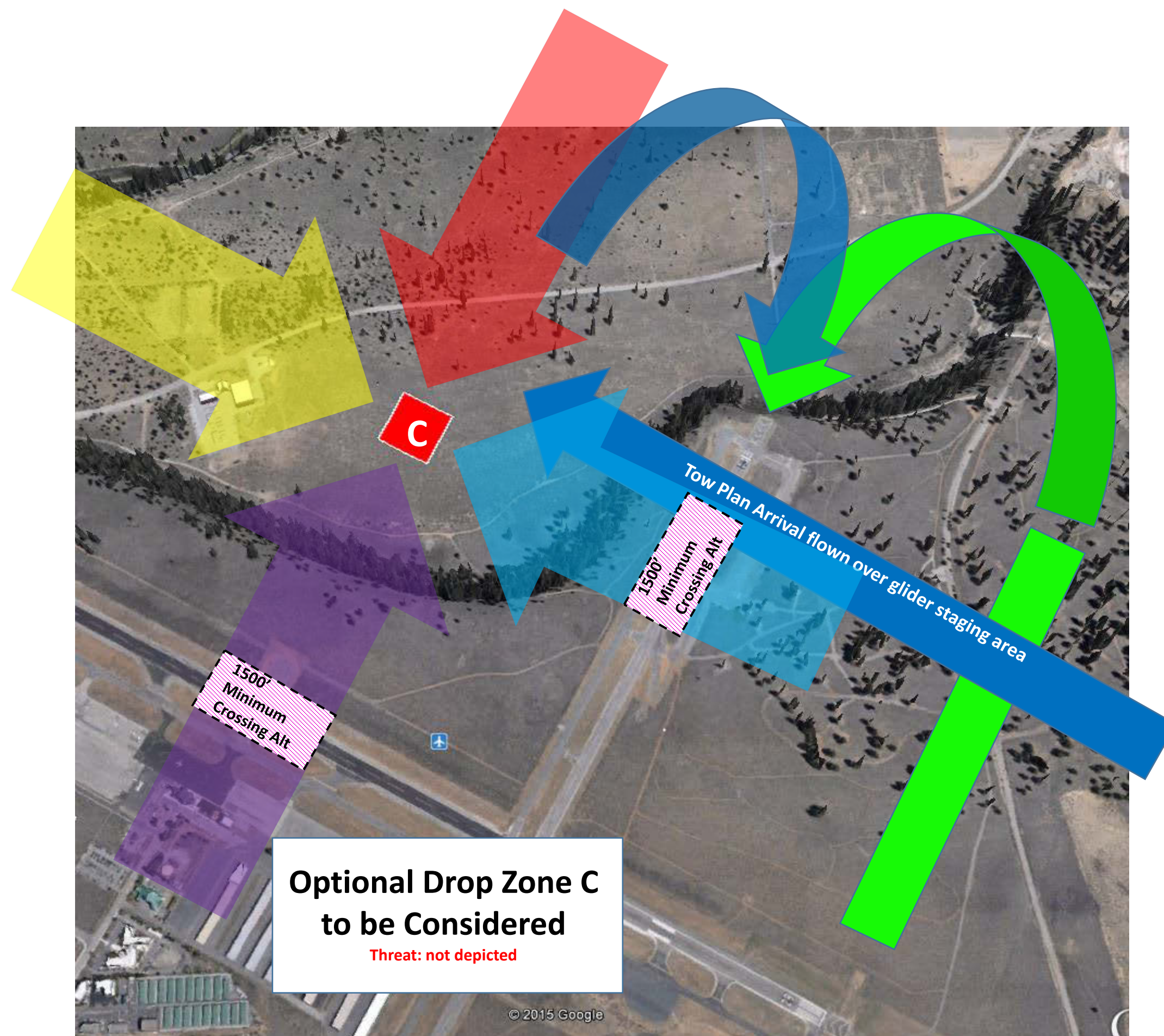
**Optional Drop Zones
to be Considered**

Optional Drop Zone A to be Considered

Threat: not depicted







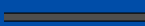
Glideport Area



May 2015
Map Created By: Xylem GIS
Geographic Coordinate System: GCS_WGS_1984



Campsites



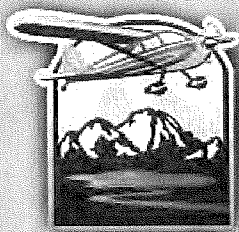
Roads



Boundary



Electrical Transformer for
FAA Visual Approach Slope Indicators



TRUCKEE
TAHOE
AIRPORT

Skydiving Operations

Assessment and Recommendations



Convergent Performance, LLC

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Executive Summary

Truckee Tahoe Airport (KTRK) is currently in negotiations of operational permits with "Skydive at Truckee Lake Tahoe" (Skydive). Convergent Performance, LLC is in a contractual agreement to provide a thorough evaluation of Skydive's existing Safety Management System (SMS) and proposal (Business Plan and Standard Operating Procedures [SOP]), and to provide a list of recommended improvements.

The major issues we found associated with the provided Skydive Proposal (Appendix 1) in relation to industry safety standards, regulatory guidance, the current air traffic environment, geographical setting, and operational procedures at KTRK are:

1. Incomplete written operational procedures for jump aircraft and skydivers
2. Proposed Drop Zone (DZ) location at KTRK
3. Incomplete airspace de-confliction plan addressing mid-air collision avoidance with KTRK organic aircraft and in-transit aircraft
4. Absence of written safety program strategy
5. Absence of a risk management (RM) program strategy

As described in the Truckee Tahoe Master Plan (Appendix 2), "the Truckee Tahoe Airport is a regional general aviation airport serving the Town of Truckee, communities along the northern side of Lake Tahoe, and other nearby areas in the central Sierra Nevada mountain range of California. The Town of Truckee, the only incorporated area in the region, lies directly to the northwest, with the town boundary wrapping around the west and north sides of the airport property. The airport property straddles the county line between Nevada County to the north and Placer County to the south. Airport facilities are predominantly in Nevada County, but the southern ends of the runways and about a third of the contiguous airport property are located in Placer County. The Nevada state line lies 7 miles to the east. The topography of the airport environs is mountainous. While the airport itself sits on the relatively level floor of the Martis Valley at an elevation of 5,900 feet, surrounding peaks reach elevations of 9,000 to nearly 11,000 feet. Donner Pass to the west has an elevation of 7,239 feet. Flowing from Lake Tahoe to Reno and ultimately discharging into Pyramid Lake, the Truckee River runs north of the airport through the center of Truckee.

The primary runway, recently renumbered as Runway 11-29, is 7,000 feet long and the secondary Runway 02-20 is 4,650 feet in length. Apron space is available for parking approximately 192 aircraft and hangar storage accommodates another 219 aircraft. Only approximately 35% (328 acres) of the contiguous airport property is presently occupied by aviation facilities, non-aviation facilities, or is required to remain open for aeronautical purposes. To the extent determined to be needed, expansion of aviation facilities has top priority for future use of airport property. The remaining land is potentially available for non-aviation development.

Terrain and weather are other factors affecting activity at KTRK. The high airport elevation and surrounding mountains make flying more challenging than at flatland airports. The paths aircraft may take to and from the airport are affected by the mountain terrain. Aircraft will make use of the valleys and passes around the airport. Pilots must take extra precautions because of the high altitude and low air density, which increase runway length and reduce climb performance, especially in warm weather. Because mountain weather can change rapidly, weather monitoring, reporting, and aircraft surveillance are very important. During winter weather, snow and ice on the runway, plus ice buildup on aircraft, also increase landing length required. Because of the high volume of recreational flight activity, operations virtually cease at night, and reduce significantly as weather conditions worsen. Surface winds vary significantly, which is common in mountain areas where the surrounding terrain channels the wind. Truckee Tahoe Airport has two runways to help minimize the effect of crosswinds so aircraft may have a higher opportunity to arrive and depart into a headwind. Runway 02-20 has better overall wind coverage, but its shorter length is a constraint for many turbine powered aircraft."

The volume of flight operations at KTRK is relatively high, considering various aspects of the airport to include: non-towered airport facility, high mountainous terrain setting vulnerable to adverse seasonal weather conditions, and limited hangar parking facilities. The Airport Activity Data Summary within the KTRK Master Plan (Appendix 2) lists operational data for 2013; which is comparable to 2014 activity.

Although all aviation traffic conducted at KTRK is considered for this assessment, a primary focus is on Soaring Truckee, Inc. (STI). The established operations of STI are located in the vicinity of the proposed Skydive operations, to include the DZ, jump plane departure and climb pattern, skydive operating area and pattern corridor, and ground operations area.

KTRK airport management and the Truckee Tahoe Airport District (TTAD) is currently in a contractual agreement with Convergent Performance, LLC to assess the airport's current state of its safety program, consult and develop safety program management procedures, and implement an SMS. A significant part of this effort is focused on the current state of operations compared to the desired state of operations.

KTRK airport management is clearly committed to furthering the development of its safety management programs, and therefore the implementation of industry best practices and risk mitigation of all operations at the airport. These initiatives include both internal process improvement efforts and abidance of federal regulations. A primary guidance document being utilized by Convergent Performance is the Federal Aviation Administration's (FAA) Advisory Circular (AC) directed at "Introduction to SMS for Airport Operators," AC No: 150/5200-37 and "Safety Management Systems for Airports," 150/5200-37A (draft). Relative to this assessment, we also focused on Federal Aviation Regulation (FAR) Part 105, Parachute Operations.

Introduction

Convergent Performance personnel executed the contractual requirements listed above by focusing on two primary areas, 1) Skydive's SMS, and 2) operational recommendations associated with current airport and surrounding airspace activities at KTRK. The overall assessment and recommendations are based on subject matter expert knowledge and information provided by KTRK airport management, Skydive's representatives, and STI's representatives.

Skydive at Truckee Lake Tahoe provided information to Convergent Performance via its proposal (Appendix 1), email, and phone conversations between Mike Swanson (Skydive) and Doug Downey (Convergent Performance). Additional information regarding the proposed skydive operations was translated through Hardy Bullock (KTRK).

STI provided information to Convergent Performance via its website, email, and phone conversations between Don Brown (STI) and Doug Downey. Additional information regarding the proposed skydive operations was translated through Hardy Bullock.

A thorough analysis of Skydive's proposal was cross-referenced with established aviation industry SMS standards, United States Parachuting Association (USPA) Basic Safety Requirements (BSR), FAR Part 105, and the listed FAA ACs. Although the FAA ACs do not specifically address parachute operations at airports, the current document does cite "an SMS can be integrated into all aspects of airport operations, business, and management practices."

The recommendations for the proposed Skydive operations coinciding with existing operations at KTRK were cross-referenced with established STI operating procedures, established KTRK operating procedures, USPA BSRs, FARs, and subject matter expertise. The focus of the recommendations is based on coinciding operations of parachute operations, STI glider operations, and in-transit aircraft operations.

Recommendations

1. Address incomplete written operational procedures for jump aircraft and skydivers

Issue: The procedures written within the Skydive proposal (Appendix 1) are explained steps in the subsections: Area Functions and Skydiving Procedures. The steps appear to be in operational and/or procedural chronological order. However, many of the steps are too vague as currently written, incorrect in relation to KTRK procedures, or lacking information supporting complete situational awareness.

- a) Example: (page 8) Procedures will be as such: #7, "Aircraft takes off." This is too vague, and should reference to local established departure procedures and de-confliction coordination procedures with STI operations.
- b) Example: (page 8) Procedures will be as such: #12, 13 21, reference "ATC." This is incorrect since there are no ATC facilities at KTRK, unless this is in reference to Oakland ARTCC or Sacramento RCAG.
- c) Example: (page 8) Procedures will be as such: #16, 23, "Pilot confirms clear airspace." This is lacking information supporting complete situational awareness (i.e. radio call on UNICOM, contact with Manifest, visual look-out, etc.).

Recommendations:

- a) Update the written procedures to eliminate vagueness allowing for "basic person" full-comprehension, correct to align with established KTRK procedures, and amplify to ensure situational awareness is made available to all operators, where applicable.
- b) Coordinate procedures with existing airport operations; especially STI in order to ensure managed risk at the lowest level and avoid mid-air collision scenarios.

2. Proposed DZ location at KTRK

Issue: The proposed DZ per the Skydive proposal (Appendix 1) is located directly adjacent to the STI established operations near the approach end of Runway 20. This location poses significant points of contention for runway and taxiway operations, shared operational landscape, and airborne de-confliction procedures for arrival, departure, and parachute approach corridors. However, considering the known intrinsic coordination required for safe and synchronized co-operations, the location offers operational benefits to both Skydive and STI persons in charge of operations.

The co-location of both operations would not only enable direct face-face coordination between operational decision makers, but would enhance situational awareness of both activities in that area. For example, the mere presence of the jump plane on the ground clearly indicates there are no jumpers airborne at that time, and glider pilots could be made aware of such a status. Also, issues arising from the dynamics of both operations could be discussed face-face to ensure comprehensive coordination to manage such issues. For example, an assessed high-risk flight (i.e. solo student) or jump (i.e. gusting winds) would raise awareness of both operations to initiate risk mitigation controls in response to the opposing operation's risk status.

However, the proposed DZ incorporates the very dynamic flight operation of parachutes within the direct vicinity of another very dynamic flight operation of tow aircraft and gliders. This operational scenario would

require the adoption of strict procedures and communications to ensure safe operations on the ground and airborne.

Note: Despite the eventual approved location of Skydive's DZ at KTRK, both Skydive and STI must develop, incorporate, and adhere to strict operational procedures and communications to ensure ground and mid-air de-confliction via "well clear" guidance, while providing responsible parties the lowest level of manageable risk.

Recommendations:

- a) The responsible parties from KTRK, Skydive, and STI should consider the initial proposed DZ along with the alternate DZs, as depicted in the Skydiving De-Confliction Proposal (Appendix 3). Parties should consider operational advantages and requirements, current KTRK operational procedures, aircraft and parachute capabilities and limitations, and acceptable level of risk based on confidence in strict operational procedures and communications.
 - b) Develop a sequential implementation of co-operations from a limited operational level up to a normal operational level. This will allow for an intentional and managed increase of operations (parachute and glider) while continuously assessing the adopted procedures and communications for potential conflicts or best practice alternatives.
 - c) **Note:** the graphic displays and information in the Skydiving De-Confliction Proposal (Appendix 3) are for planning purposes only. In order to adopt any part, or all of this graphic plan, for operational use, a detailed effort is required to ensure ground measurements, altitudes, and depicted flight paths are completely accurate.
3. Address incomplete airspace de-confliction plan addressing mid-air collision avoidance with KTRK organic aircraft and in-transit aircraft

Issue: The procedures written within the Skydive proposal (Appendix 1) do not address de-confliction procedures or mitigating steps to ensure "well clear" operations are conducted while avoiding mid-air collisions. The standard mitigating steps for aircraft de-confliction is executed through geographic and altitude separation, or a combination of both. An added step complimenting the first two is timing. The proposal cites intent to execute a "climbing pattern over Boca Reservoir," yet Mike Swanson has stated a planned intent to climb in the airspace currently depicted and utilized for tow plane and glider operations (north-northeast to east-southeast; approximately 020 to 110 headings off the intersection of KTRK to a max eastern range approximately 6nm away). This example of written procedures conflicting with verbal intent validates an incomplete planning process and coordination with organic aircraft and associated operations at KTRK.

Established arrival and departure procedures are published at KTRK to include tow plane and glider operations primarily for Runway 02-20. The proposed skydiving corridor and pattern procedures are not published at this time.

Recommendations:

- a) The responsible parties from KTRK, Skydive, and STI consider current and proposed arrival, departure, holding, climb profile, and glider operation area procedures in order to operate simultaneously. Parties should consider operational advantages and requirements, current KTRK operational procedures, aircraft and parachute capabilities and limitations, and acceptable level of risk based on confidence in strict operational procedures and communications.
- b) The defined and published "Glider Area" should be a sterile airspace solely for tow plan and glider operations. All STI aircraft should maintain good flight discipline and remain in the established area despite thermal opportunities elsewhere in the local flying area. Although the "Glider Area" is published via the KTRK website, STI website, and published procedures, the flight tracker depiction (Appendix 4) indicates a lack of adherence to the published procedures by STI pilots. In order to provide predictability of potential traffic conflicts and sanitized airspace, STI aircraft would have to maintain flight paths within the defined area until commencing arrival procedures, or dealing with an in-flight emergency.

If required for jump plane climb efficiency, a de-confliction plan should be developed to enable the jump plane to climb around the perimeter of this defined area while taking advantage of the same geographical and environmental factors allowing dynamic lifting forces.
- c) (if option b is not viable) A defined and published jump plane climb and operating area should be developed in an area outside the published "Glider Area" and within operational constraining distances from KTRK. Conflicts with noise abatement procedures and ATC controlled airspace and published procedures must be considered.
- d) KTRK airport management should contemplate all related regulatory guidance and industry best practices when considering the adopted procedures of mixed operations of gliders and skydivers at the airport. The FAA AC 150/5190-7; Minimum Standards for Aeronautical Activities: paragraph 2.1.f, provides a template of operational considerations and requirements relative to this scenario.
- e) The FAA recommends that shared-facility airports have operating procedures so that each activity can operate safely by knowing the procedures for each of the other activities. Representatives of each type of activity can operate more effectively by knowing the procedures for each of the other activities. Representatives of each type of airport user group should develop procedures specific to their activity and share

these procedures with other user groups. It is the airport management's responsibility to ensure that airport policies and procedures are kept current. This can be accomplished via regularly scheduled meetings with all airport user groups.

4. Address absence of written safety program strategy

Issue: The written Skydive proposal (Appendix 1) does not address safe operations or an established internal safety program. The words "safe" and "safety" do not even exist in the written document, nor is the USPA BSR addressed. Although FAR Part 105 does not address an established safety program, it does state "No person may conduct a parachute operation, and no pilot in command of an aircraft may allow a parachute operation to be conducted from an aircraft, if that operation creates a hazard to air traffic or to persons or property on the surface." The lack of a published or intended safety program for Skydive's operation poses a hazard to operations at KTRK, on the ground and in the air.

Recommendations:

- a) Skydive at Truckee should develop an SMS plan based on the four elements in Chapter 2 of FAA AC 150/5200-37. Some of what is written in the SOPs of the proposal (Appendix 1) will fit right into these elements.
- b) Incorporate Skydiver's Information Manual (SIM) 2014-2015, Section 2, BSR information and requirements into the SMS plan, as depicted in paragraph (a) above.

5. Address absence of Risk Management strategy

Issue: The written Skydive proposal (Appendix 1) does not address RM procedures or an RM strategy. IAW FAA AC 105-2D, while not approved by the FAA, the BSRs are considered industry best practices and are widely accepted for use by individuals and parachute centers. Likewise, RM tools are also widely accepted and considered industry best practices for aviation as well as approved by the FAA.

Recommendations:

- a) Develop an RM tool applicable to parachute profiles for operational aspects deemed as posing risk, and therefore require RM and mitigation. Example aspects would include RM profiles for winds, adverse weather, operations tempo, jumper experience level, pilot experience level, different canopies, etc. This tool will satisfy the airport's SMS requirements as well as provide manifestors an objective decision-making tool when operations are out of the norm. Communication of the assessed RM level between Skydive and STI will enable greater situational awareness of overall risk between the two operations.

Conclusion

The Truckee Tahoe Airport is a highly successful and well managed airport, which is very customer oriented and has a benchmarking relationship with the local community. This airport is a highly utilized transportation and recreational aviation hub located in a region supporting seasonal tourists. Consequently, airport management is faced with the dynamics of high volume traffic, limited airspace, and geographical and environmental hazards. The current operational procedures are designed for these dynamics in order to manage risk while supporting customer requirements, and closely managed with community involvement and safety.

The introductory concept of a skydiving operation at KTRK appears to be well-accepted by airport management and established airport users; according to written and verbal statements. From an operational and risk management perspective, the addition of this dynamic operation at KTRK poses increased risk and a requirement to alter current operational procedures. However, this increased risk can be reduced to a manageable level. Operational procedures, as currently published, are readily subject to change with user and management concurrence.

The recommendations within this report are focused on the likelihood of Skydive eventually commencing operations at KTRK. The consideration and adoption of all or some of the listed recommendations are at the sole discretion of the parties involved and their related authority. However, Convergent Performance, LLC believes all listed recommendations should be adopted in some degree, in order to more safely integrate Skydive's operations at the airport, while providing airport management the lowest level of allowable risk commensurate with current strategies.

For questions, comments, or any other inquiry related to this recommendations report, please contact Hardy Bullock from the Truckee Tahoe Airport, who may consult with Convergent Performance, as necessary.

Terminology and Definitions

1. Advisory Circular (AC): publication offered by the Federal Aviation Administration to provide guidance for compliance with airworthiness regulations.
2. ATC: Air Traffic Control.
3. BSR: Basic Safety Requirements (USPA published safety guidance).
4. Convergent Performance, LLC: contracted consulting company.
5. Drop Zone (DZ): designated landing area for parachute operations.
6. FAR: Federal Aviation Regulation.
7. Glider Area: predetermined and published airspace at KTRK designated for STI glider operations.

8. Glider: heavier-than-air aircraft primarily intended for unpowered flight, however some gliders at KTRK are motorized.
9. Jump Aircraft/Plane: primary aircraft utilized to transport skydive personnel and crew members to altitude in support of parachute operations.
10. KTRK: four-letter airfield identifier for Truckee Tahoe Airport.
11. Manifestor: Skydive's person in charge of running the jump plane manifest.
12. Pilot in Command (PIC): the person aboard the aircraft who is ultimately responsible for its operation and safety during flight.
13. Risk Management (RM): the managed process of identification, analysis, assessment, control, and avoidance, minimization, or elimination of unacceptable risks.
14. Runway 02-20: active runway at KTRK with opposing compass headings of 020 and 200 degrees, respectively.
15. Safety Management System (SMS): a composite program which enhances safety, ensures compliance with applicable regulatory standards, and can be integrated into all aspect of airport operations, including business and management practices.
16. Skydive: Skydive at Truckee Lake Tahoe.
17. Standard Operating Procedure (SOP): policy or procedure providing written guidance.
18. STI: Soaring Trucking, Inc.
19. Thermal: an upward current of warm air, used by gliders to gain altitude.
20. TTAD: Truckee Tahoe Airport District.
21. Universal Communications (UNICOM): common radio frequency employed at airports with a low volume of general aviation traffic and where no control tower is active.
22. USPA: United States Parachuting Association.
23. Well Clear: There are currently no accepted time or distance-based standards for what it means for two aircraft to be "well clear;" that determination is left to the pilot's discretion. Common accepted understanding is avoidance of mid-air collisions, or the evasive maneuvers required to avoid mid-air collisions.

Appendices

Appendix 01 – References

AirNav.com

Bryon Airport Information (C83)

FAA 5190.6B FAA Airport Compliance Manual

FAA Advisory Circular 105-2D

FAA Advisory Circular 150/5190-6

FAA Advisory Circular 150/5190-7

FAA Advisory Circular 150/5200-37

FAA Advisory Circular 150/5200-37A (draft)

FAA Advisory Circular 90-66A

FAA Order: JO 7400.2K; Ch18 Class E Airspace

FAA Safety Team (FAAST) Website

FAR/AIM

Lincoln Airport Information (LHM)

Minden-Tahoe Airport Information (KMEV)

Soar Truckee Inc. Website (soartruckee.com)

STI Memo to TTAD; dated 27 March, 2015

Truckee Tahoe Strategic Plan

U.S. Air Force Academy Airfield (KAFF) Operational Procedures

USPA Airport compliance

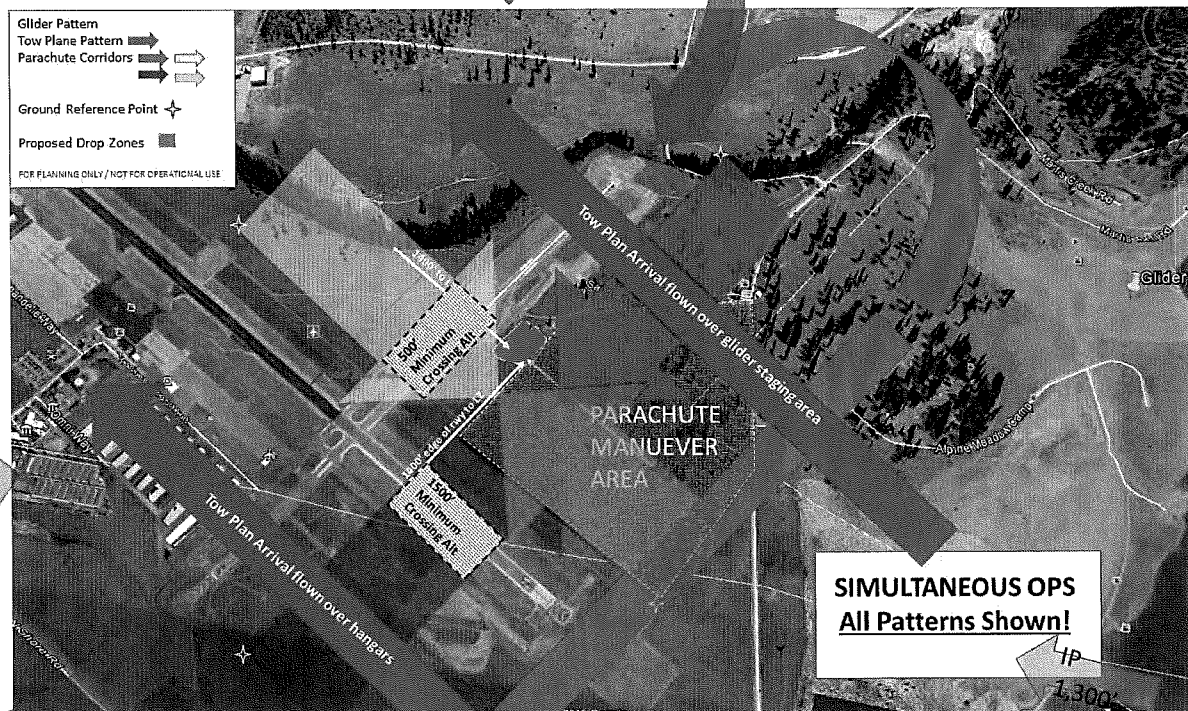
USPA Skydiver's Information Manual

USPA Website (uspa.org)

Yolo Country Airport Information (KDWA)

Appendix 3 – Skydiving De-Confliction Proposal

DISCLAIMER: the following images are for planning purposes only, and not for operational use

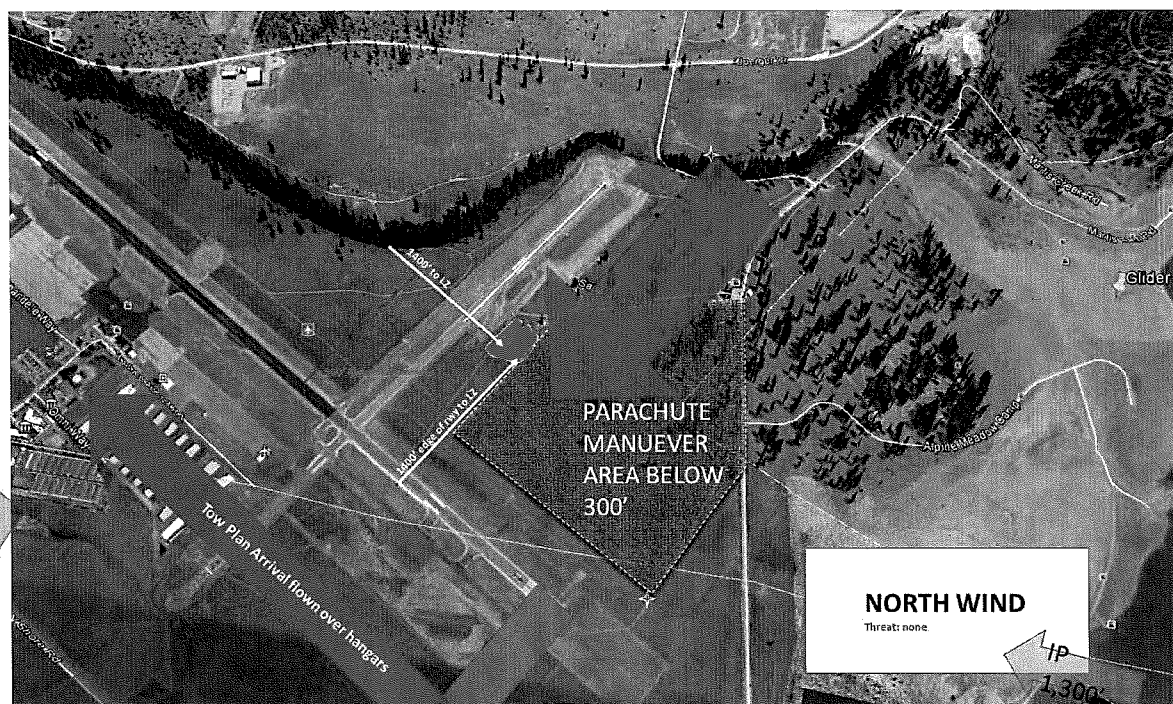


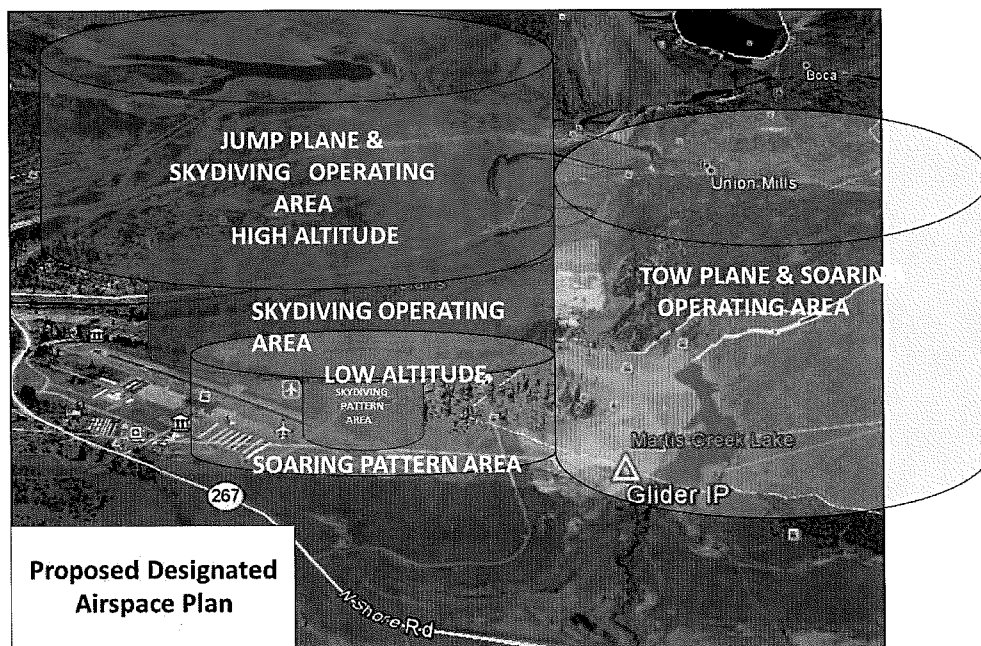


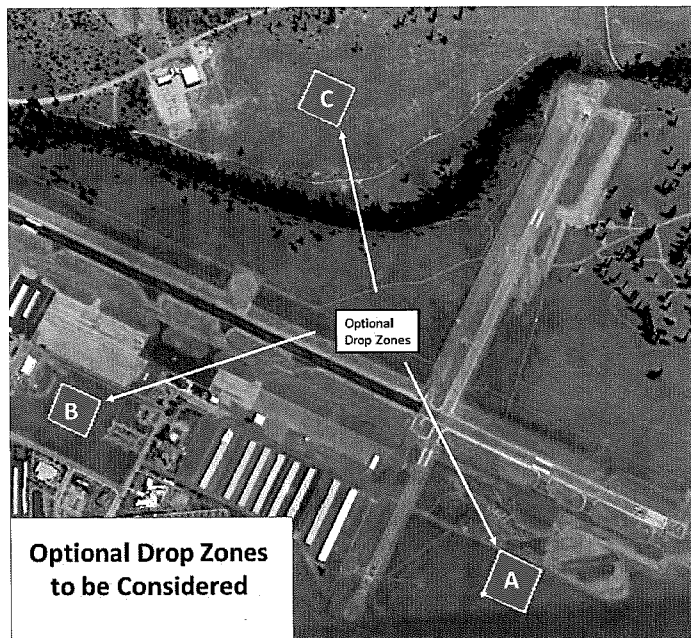


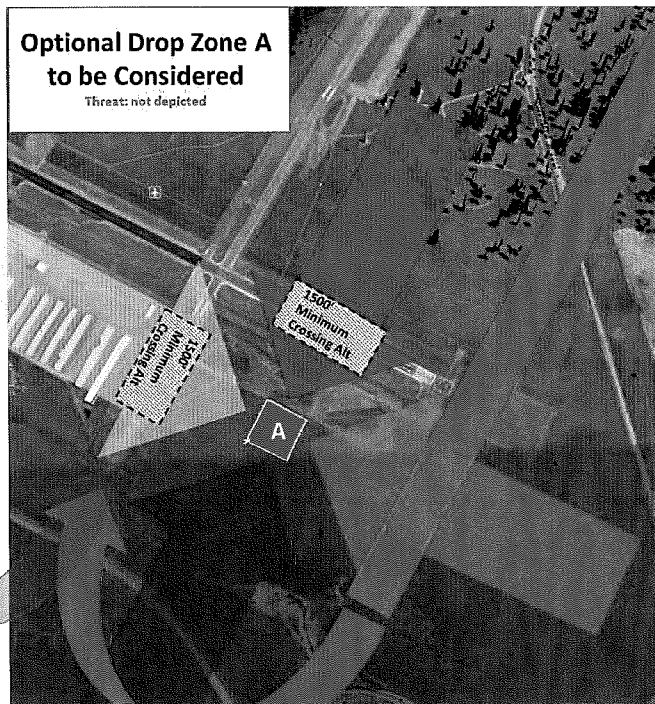


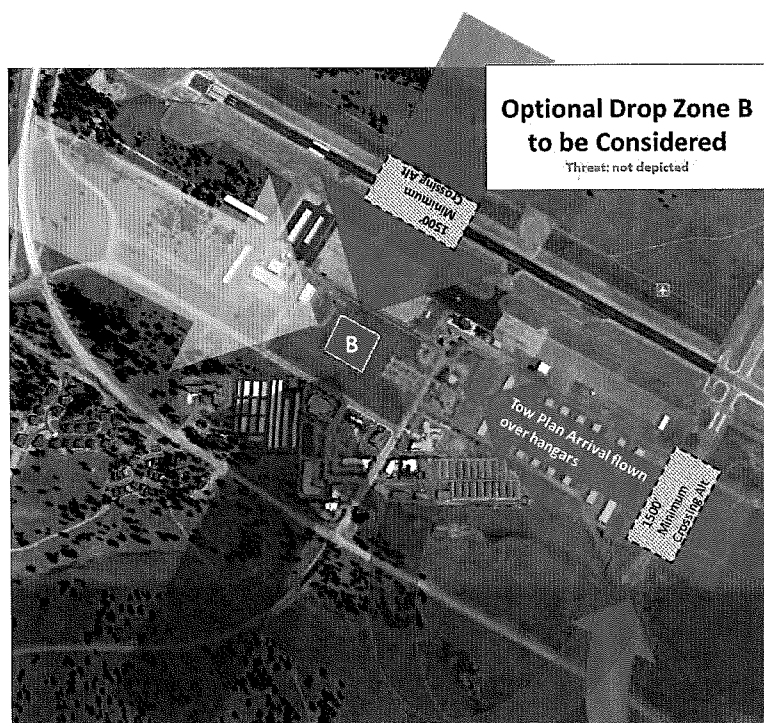


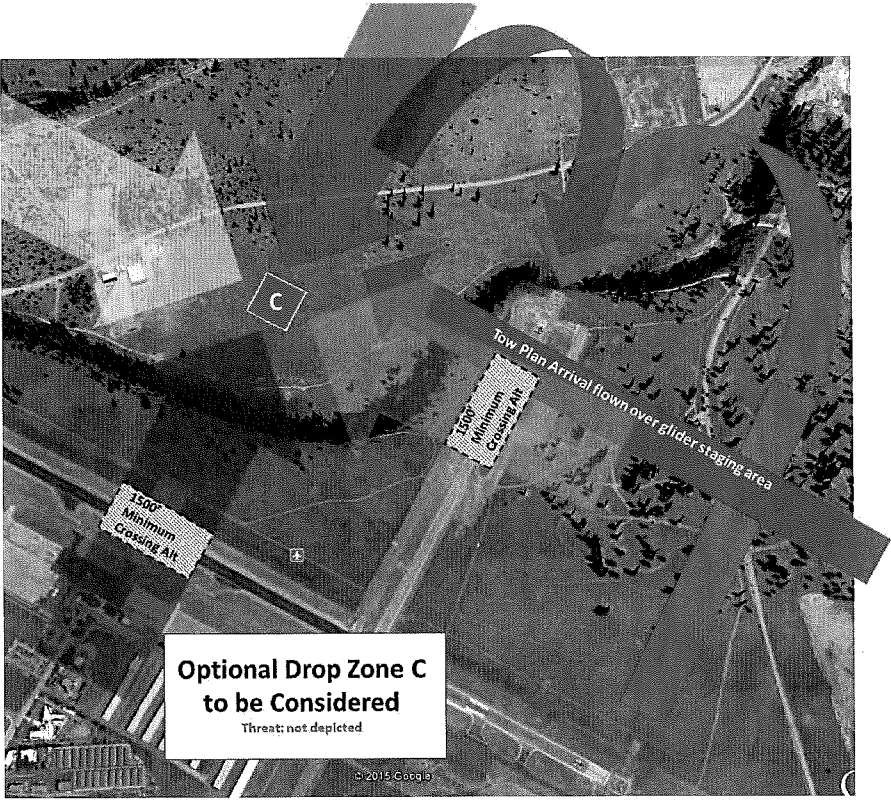




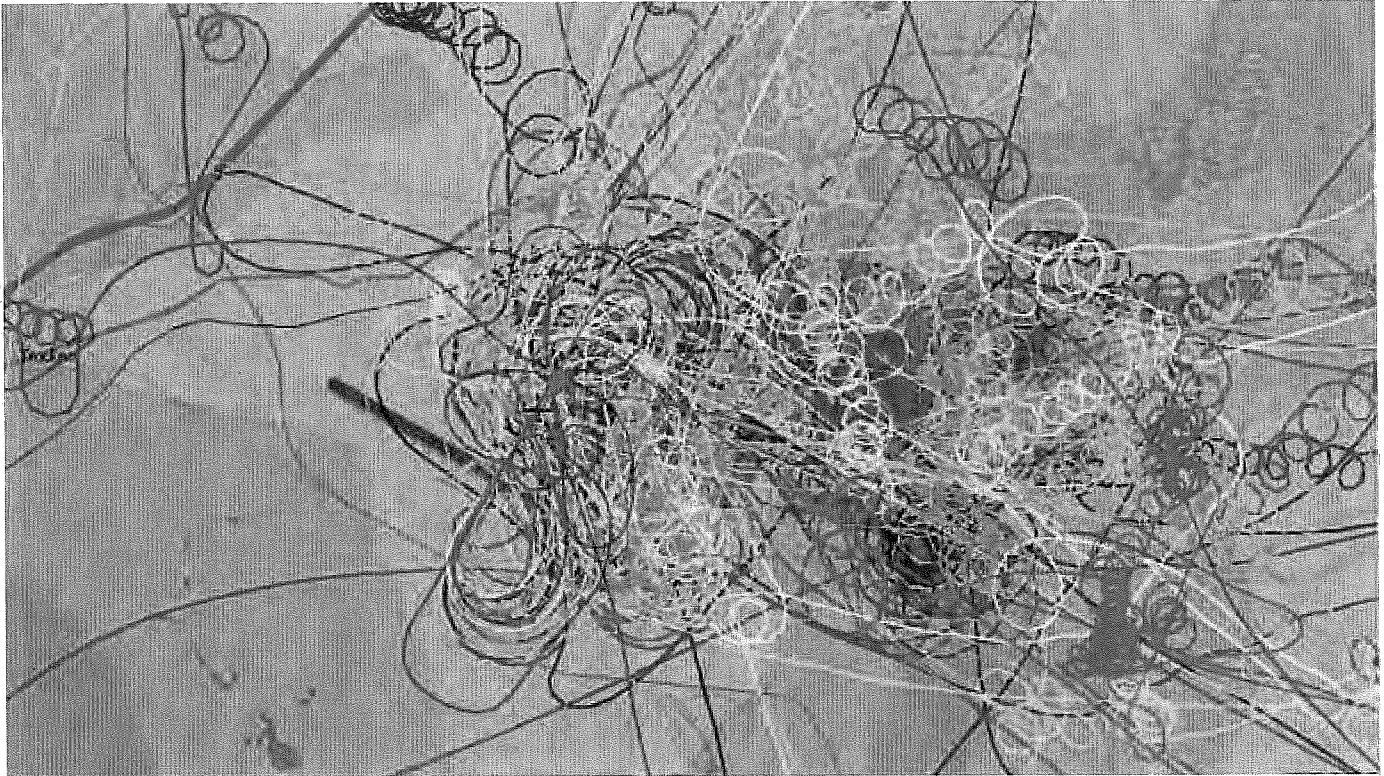




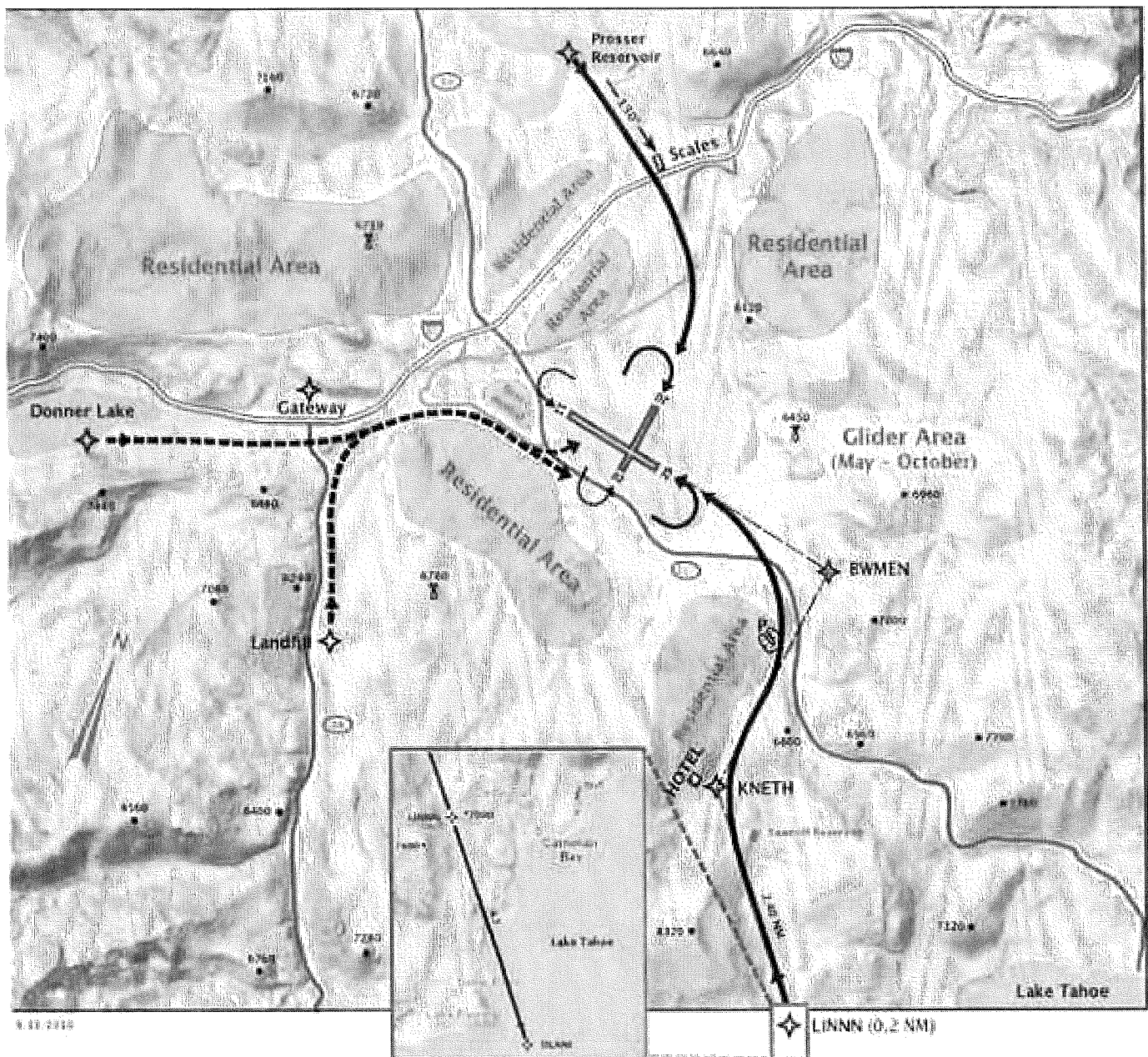




Appendix 4 – STI Documented Airspace Flight Tracker



Source: STI memo; dated 27 Mar 2015



Source: KTRK website/Procedures



April 6, 2015

To: Hardy Bullock, Director of Airport Operations, TTAD
From: Richard Pearl, President, STI
RE: Response to Convergent Performance Skydiving Report

Soar Truckee, Inc. (STI) management and its Board of Directors have reviewed the report of Convergent Performance, LLC (Convergent) as it applies to skydiving operations at Truckee-Tahoe Airport District (TTAD) and believes the primary Drop Zone recommendation presented in the report poses significant risks to glider pilots, parachutists, and the paying public for both operations.

Nothing in this critique should be taken as our non-acceptance of skydiving at KTRK, but purely our issue with the primary recommendation of the consultant as to the Drop Zone. We agree completely with the consultant's recommendation #4 on page 7: "The written Skydive proposal does not address safe operations or an established internal safety program...FAR Part 105 states "No person may conduct a parachute operation...if that operation creates a hazard to air traffic..." We believe co-placing the DZ with our operation – and inside the established glider downwind landing pattern – fails to meet this restriction.

STI previously provided TTAD with a nine-page analysis of the realities of soaring operations at KTRK. The analysis was based on decades of sailplane operations at KTRK and reflects the experience of aviators with a combined 175 years of flying sailplanes at KTRK and in the Lake Tahoe region. The background of this group included flight instructors and nationally recognized soaring pilots.

Our objections to the DZ recommendation are as follows:

- ✚ *KTRK glider procedures for flying safety* – In our March 27th communication to TTAD, we provided flight procedures that have been developed to maximize glider safety given the particular KTRK environment. In particular, we discussed our recommended pattern entry to runway 20 via a 90-degree parallel and immediately north of runway 29 line, as opposed to the more normal 45-degree entry, and thus effectively completely encasing the proposed Drop Zone on the downwind leg. Even the 90-degree entry only provides the barest downwind leg before having to turn to the base leg. To recommend that we adjust this minimum pattern – even under the best of conditions - is a serious compromise of safety.
- ✚ *Comparable, co-joining examples of glider/parachute operations* - We are unaware of any glider/parachute operation where the proposed DZ recommendation mirrored similar situations at other civilian airports (having high intensity glider traffic and a DZ contained within the downwind leg of the landing pattern). In our investigation, the one example of a co-joined glider/parachute operation is at the US Air Force Academy, but this

operation is totally different in its command and control of air and ground movements aspect than any other airport in the country.

In a March 27th communication to TTAD we provided specific examples of high intensity glider/sailplane operations and aircraft traffic patterns versus Drop zones. None of these operations contained the DZ within the downwind leg of the glider and/or power aircraft. Subsequently, we looked at parachute operations at Lodi and Yolo County airports. Both of these DZ's are opposite the prevailing traffic patterns.

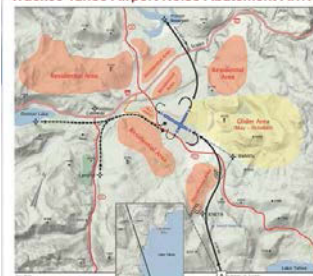
Further, KTRK is among the most challenging environments in which to fly, especially for gliders and especially in the landing phase. Truckee often experiences strong, gusting and variable winds on summer afternoons. This is likely to impair the ability of parachutists to precisely control their path while approaching for landing, risking the possibility they may infringe on the landing pattern area while maneuvering or on the runway area while landing.

- ✚ *Operational control issues* - The report assumes the potential for a controlled aeronautical environment, but this is at variance with the reality as it exists in an uncontrolled environment such as KTRK. The report indicates that risk can be mitigated with appropriate "command and control" by glider and parachute managements working together. We believe this to be a very risk-sensitive, and essentially unworkable, assumption. While STI management can control the glider launch phase, it has absolutely no power over sailplanes in the air, specifically where they should fly in FAA-designated uncontrolled airspace, and how and when they should perform a landing. We can, of course, issue guidance as recommended procedures but individual safety will always take precedence.

In regards to landing, gliders typically fly their landing pattern closer to the runway than do power aircraft. They do this out of necessity because, lacking an engine, they may need to cut their pattern short and turn directly towards the runway if strong downdrafts are encountered (which has been known to happen at Truckee). This means that any area available for parachutists to maneuver between the glider downwind leg and the runway will be quite small.

- ✚ *Designated flight area issues* – The report mentions a "glider area" on a map where gliders are to ostensibly operate. The Glider Area designation is purely a cautionary advisory for power pilots, and while it perhaps should be re-labeled, is not a designated area where gliders are to contain their flight activities. The fact is that our gliders range over the entire Truckee Valley at altitudes up to FL 180.

Truckee Tahoe Airport Noise Abatement Arrival Procedures



From this the consultant then states that the STI-submitted Tracker traces “indicates a lack of adherence to the published procedures...” We submitted the traces precisely because it reveals the intensity of glider operations as they exist on a typical weekend day. None of these flights are controlled or controllable, as is similar for powered aircraft flying within the Truckee Valley. There are no published procedures restricting where gliders, or any other aircraft (outside of noise abatement recommendations for power aircraft), may fly in the Truckee Valley above the traffic pattern altitudes.

- ✚ *TTAD/user support documentation.* The report’s conclusion section states “The introductory concept of a skydiving operation at KTRK appears to be well-accepted by airport management and established users.” We would like the background behind this statement, specifically: (1) what was the question or questions asked, and (2) who provided this “acceptance” and what specifically did they state to the consultant. If it means that the acceptance reflects a possibility of skydiving operations pending a safety and operations evaluation, then it is a meaningless at best or misleading at worst.
- ✚ *On-airport options* – The report includes one diagram of potential on-airport Drop Zone options, in the appendix. These were listed but not discussed. We believe each option should be individually discussed with specific pros and cons of each site, as with the primary recommendation. The report does mention (page 4) that the recommended DZ “poses significant points of contention” both on the ground and airborne. We believe this section needs expansion in light of the DZ being totally encased within the downwind leg of glider operations.
- ✚ *Off-airport options* – The report does not offer any off-airport (remote) Drop Zone options, although this is not an unheard of situation. At Skydive Hollister, the jump plane takes off from Hollister airport, but to eliminate potential conflicts with the CalFire tanker aircraft based there it (Skydive Hollister) was required to obtain a land-lease with a private landowner 7.5 miles from the airport for the parachute DZ. KTRK is much, much busier than Hollister in the summer.

At Watsonville Airport, the parachute drop zone is on the opposite side of the airport and far away from the normal landing pattern routes.

Finally, we wish to repeat that we are not opposed to skydiving operations at KTRK if they can be performed safely. Our mutual objective is to see that the collision outcome shown below does not occur at KTRK.



Respectively Submitted,

Richard Pearl
President, STI