



Flight Procedure Optimization

Truckee Tahoe Airport
December 2021 Update

FAA Published Departure Procedure

The following ATC concerns were identified for the existing TAHOE ONE (RNAV) Departure.

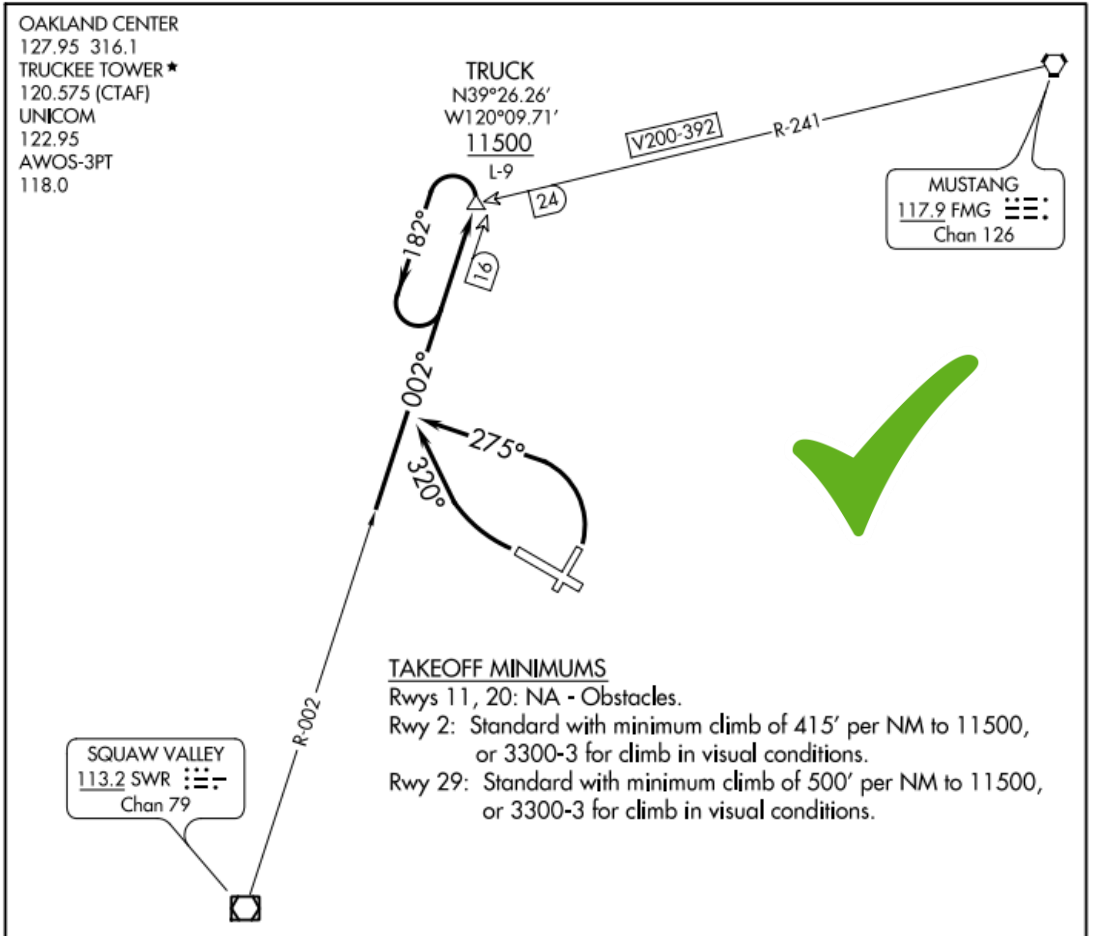
1. Rename the TAHOE SID so as not to confuse with South Lake Tahoe (**safety issue**).
2. **Improve flyability and safety** for the users (we have frequent incidences of aircraft getting confused and not flying the TAHOE1 correctly).
3. **Improve efficiency** by eliminating the climb in hold and allowing use of successive departure rules (ZOA now has surveillance coverage down to around 100 feet AGL at the airport).
4. **Reduce coordination** with NCT. Currently ZOA must coordinate every departure. The proposed design would only require coordination for the HALLE and LLC transitions (less than 20%). The segment between ASTAA and NUFX3 is greater than 3NM.
5. Create a transition to SWR as greater than 50% of KTRK IFR departures are headed south. This also position the aircraft south of the SLMMR STAR as soon as possible thereby **reducing conflicts**.
6. **Reduce congestion** over FMG.
7. **Lower the MEAs** where possible.
8. **Reduce noise complaints** (see snapshot of noise abatement graphic; the new SID moves the track a bit west over the highway avoiding residential areas).
9. Design for the **maximum number of users** possible.

ASTAA ONE DEPARTURE (RNAV)

- Flight Tech worked with Oakland Center & NATCA to develop a new Instrument Departure to replace the TAHOE ONE (RNAV) DP.
- The current TAHOE ONE (RNAV) Departure is mostly unused due ATC conflicts related to placement of the TAHOE WP in NorCal/Reno Airspace.
- The new ASTAA SID is a RNAV equivalent of the 'TRUCK FOUR' Obstacle Departure (Conventional NAV) but has the added benefit of defined Transitions to common points along the enroute airway structure.
- Upon completion of coordination and development it was delivered to the FAA Western Region Flight Procedures Team for publication.
- ASTAA SID will be published on November 3rd, 2022 and available publicly to all pilots.
- The TAHOE ONE (RNAV) DP will be decommissioned and removed on November 3rd, 2022.

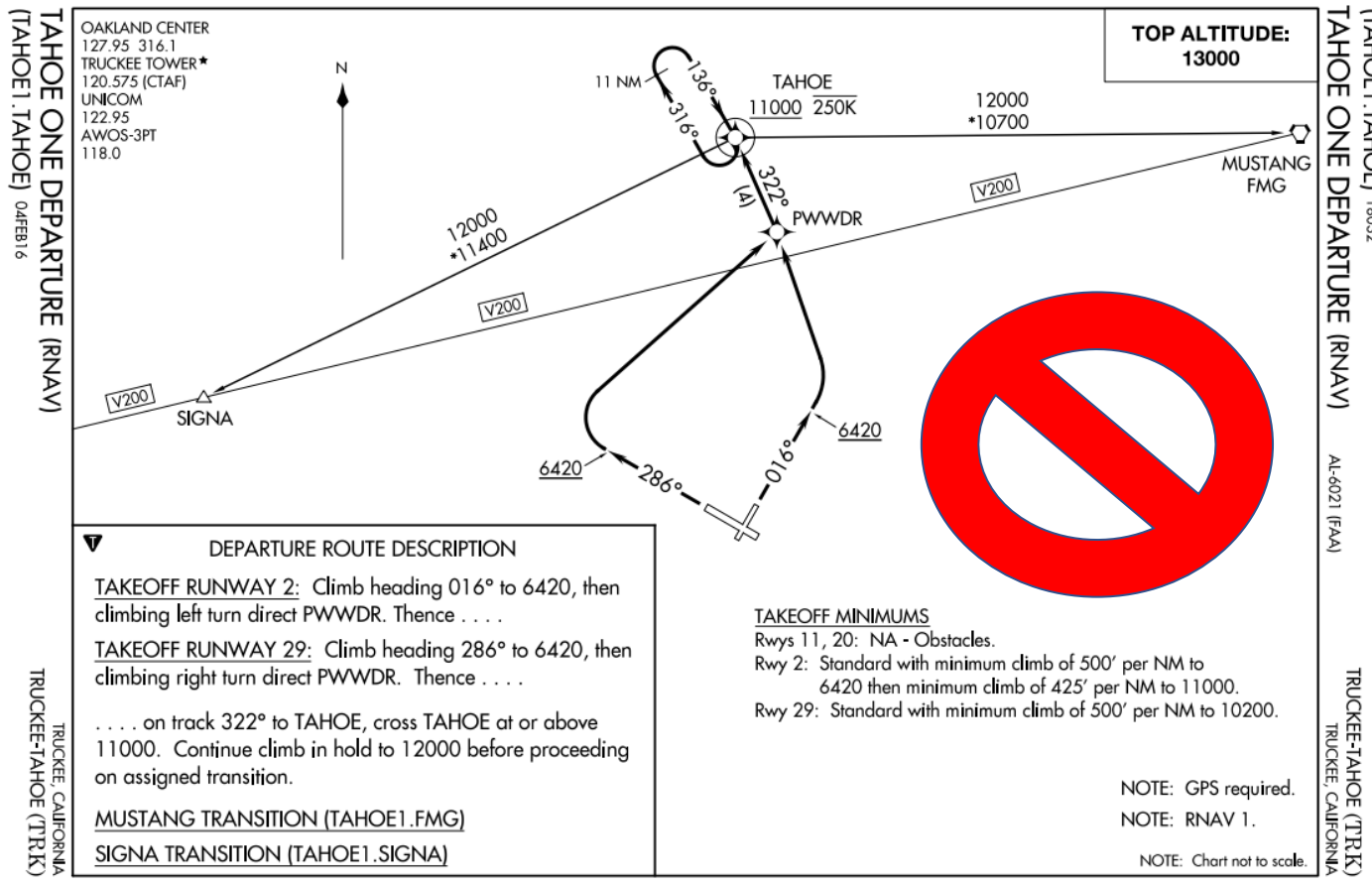
Existing Departure Plates

(TRUCK4.TRUCK) 18032
TRUCK FOUR DEPARTURE (OBSTACLE) AL-6021 (FAA) TRUCKEE-TAHOE (TRK) TRUCKEE, CALIFORNIA

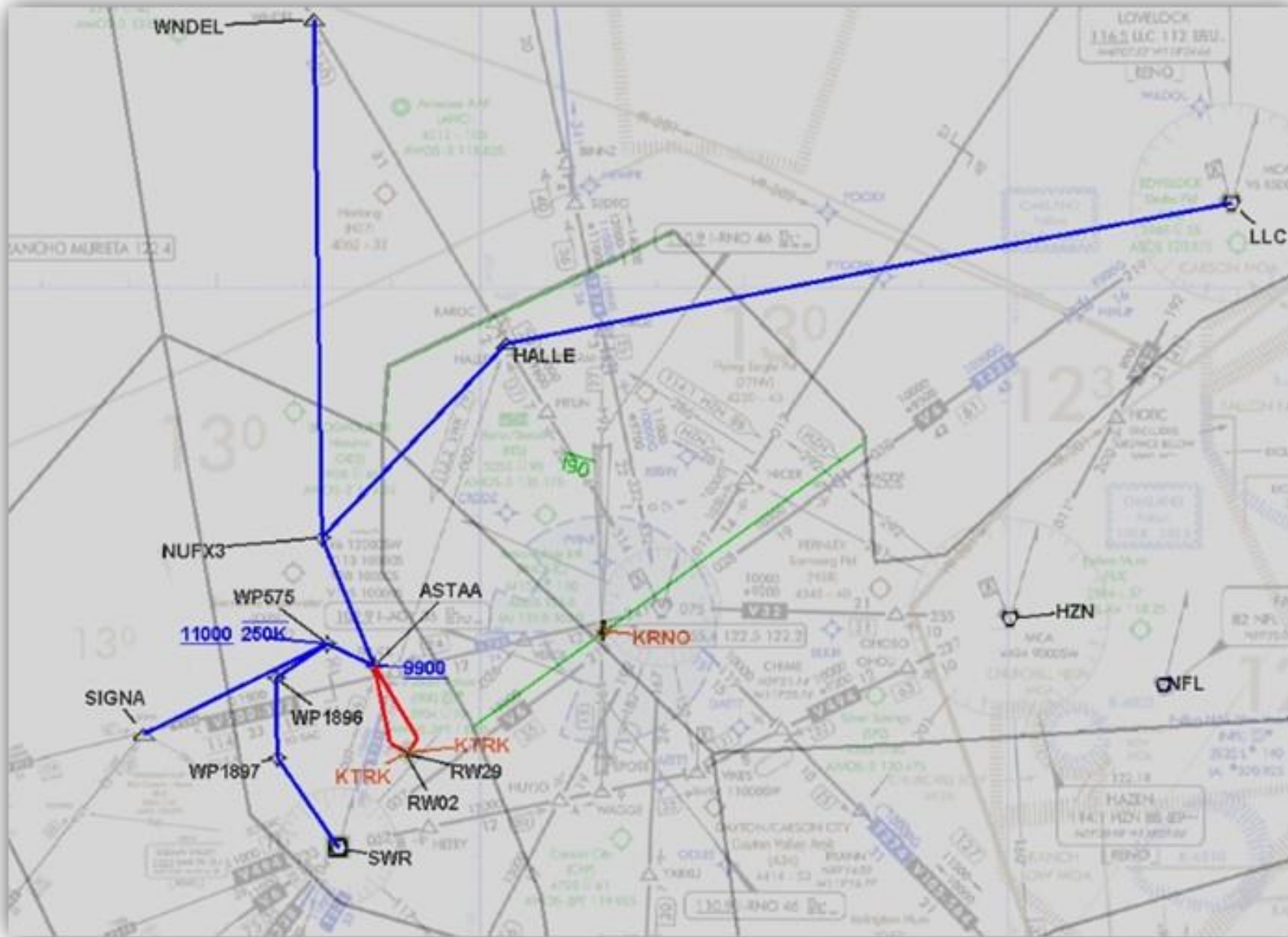


The TRUCK FOUR DP will remain and be used for aircraft needing a conventional (radio) navigation solution.

TAHOE ONE DP (RNAV) – To be cancelled and replaced by the ASTAA



ASTAA SID Routing & Overview Map

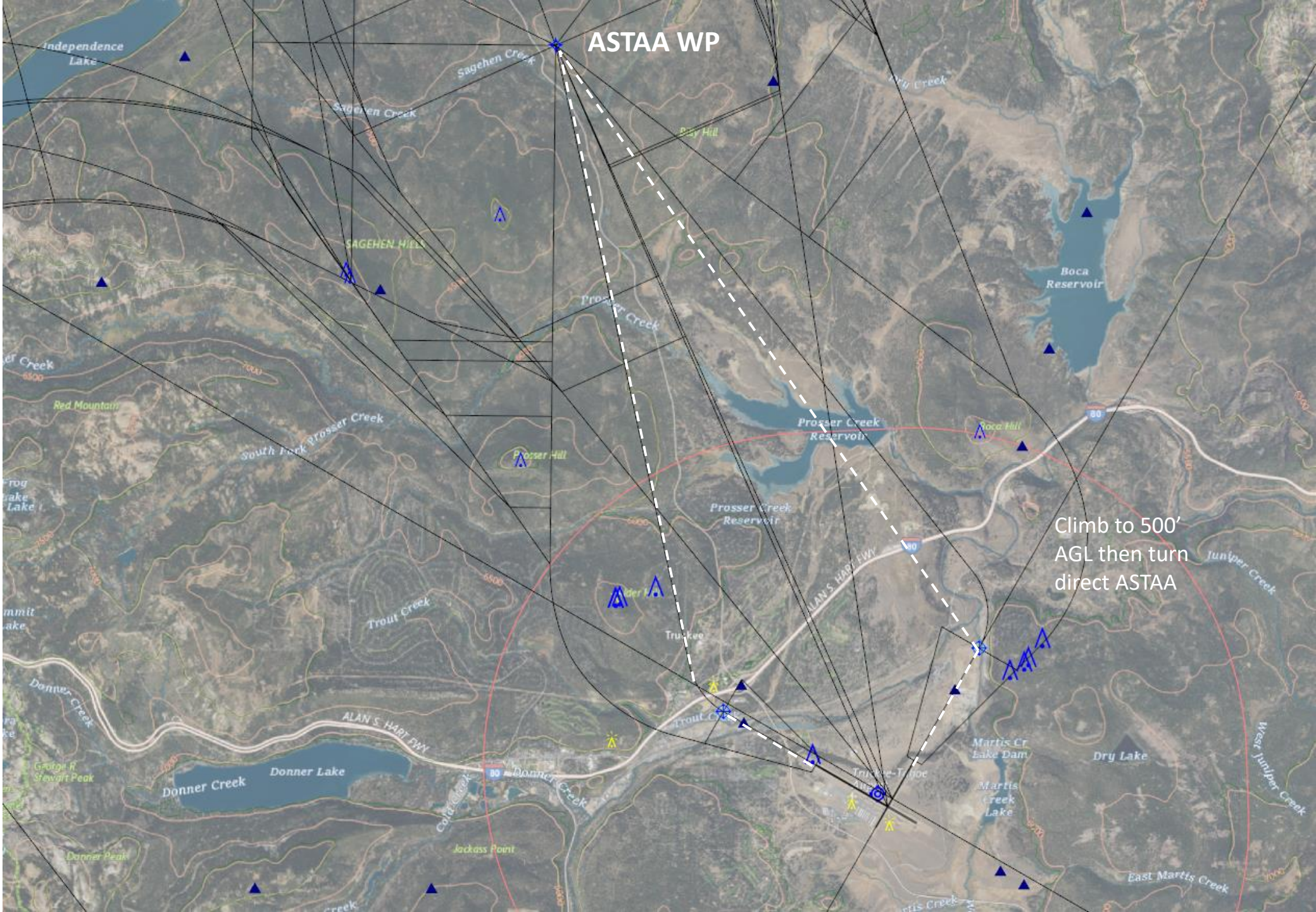


**Provides Defined RNAV
Transitions to the following
End Points:**

- ✓ Lovelock (LLC) VOR
- ✓ WNDL (Enroute Airway)
- ✓ SIGNA (Enroute Airway)
- ✓ Squaw Valley (SWR) VOR

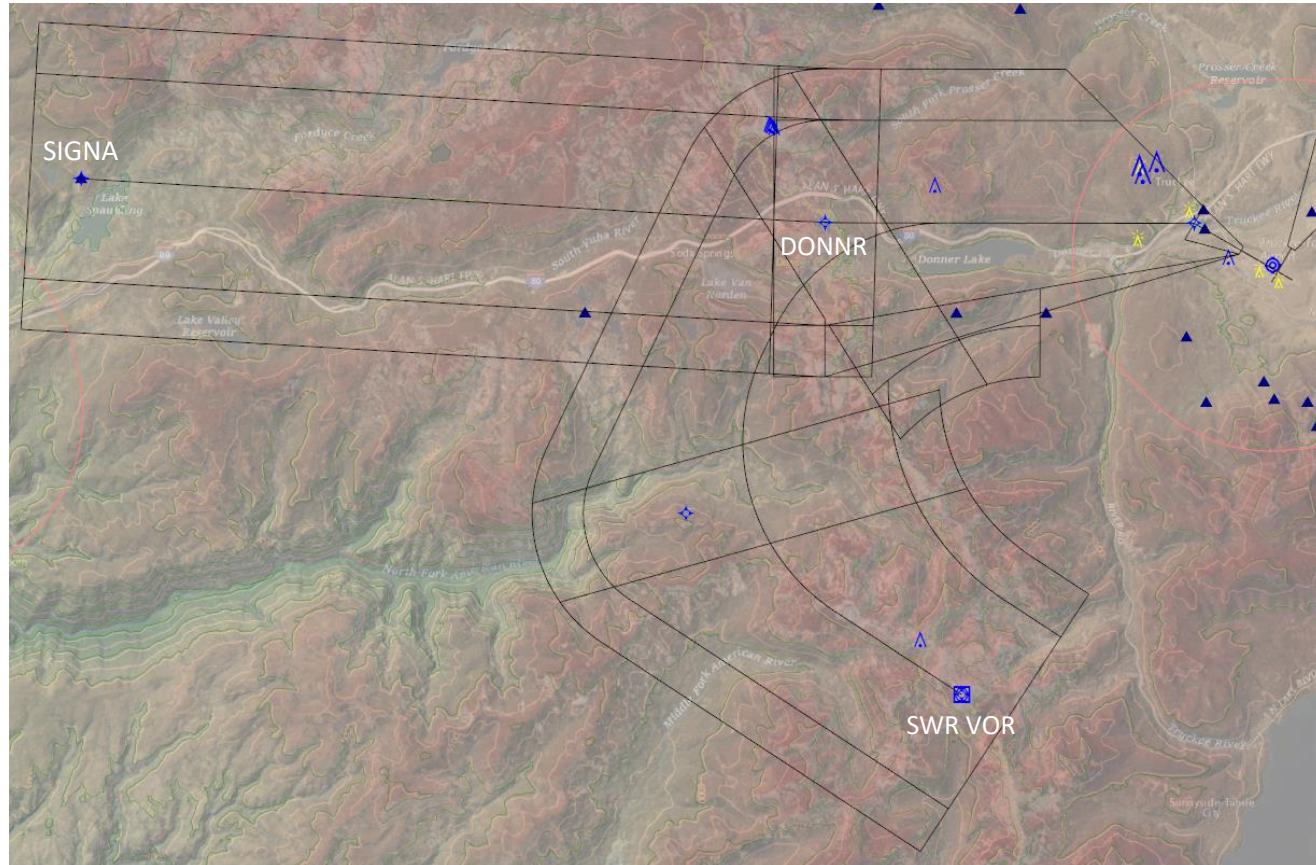
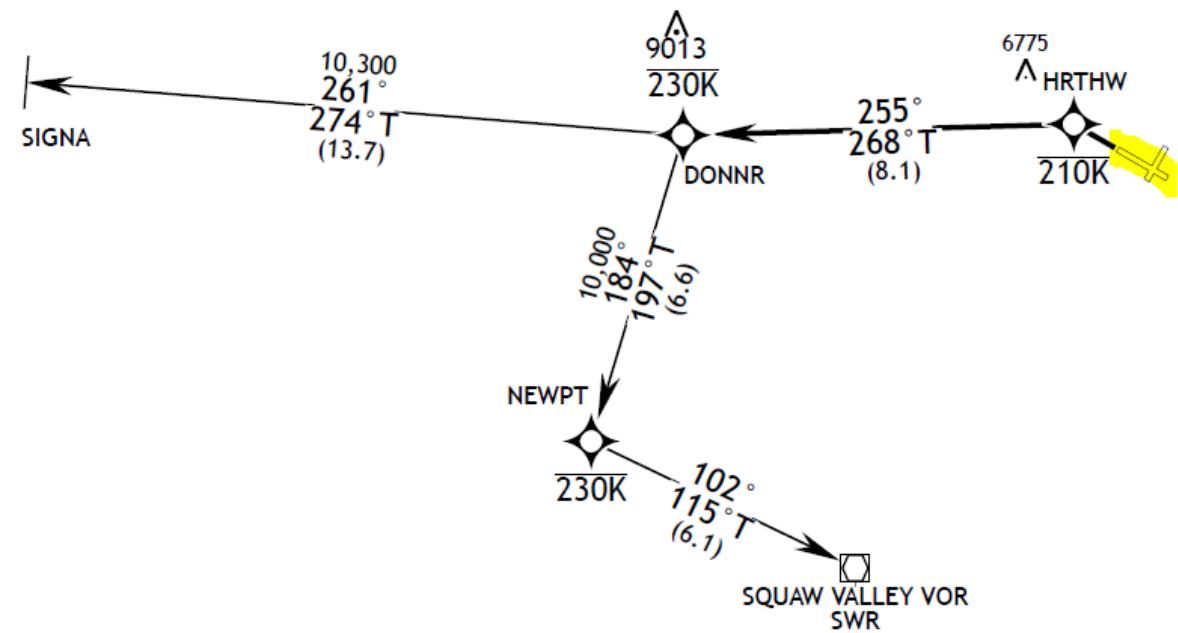
ASTAA DP

Sat
Overlay
Map #2



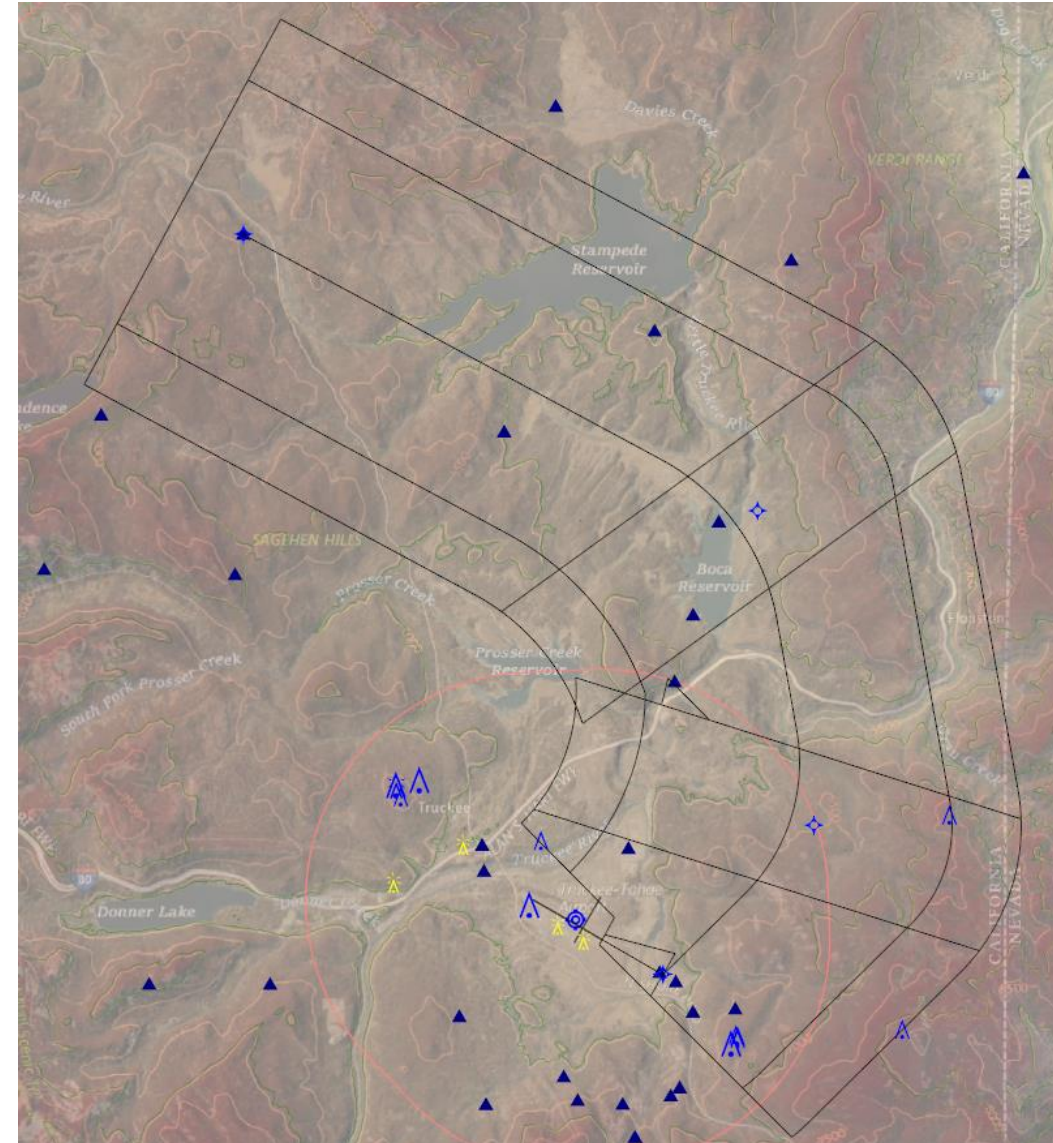
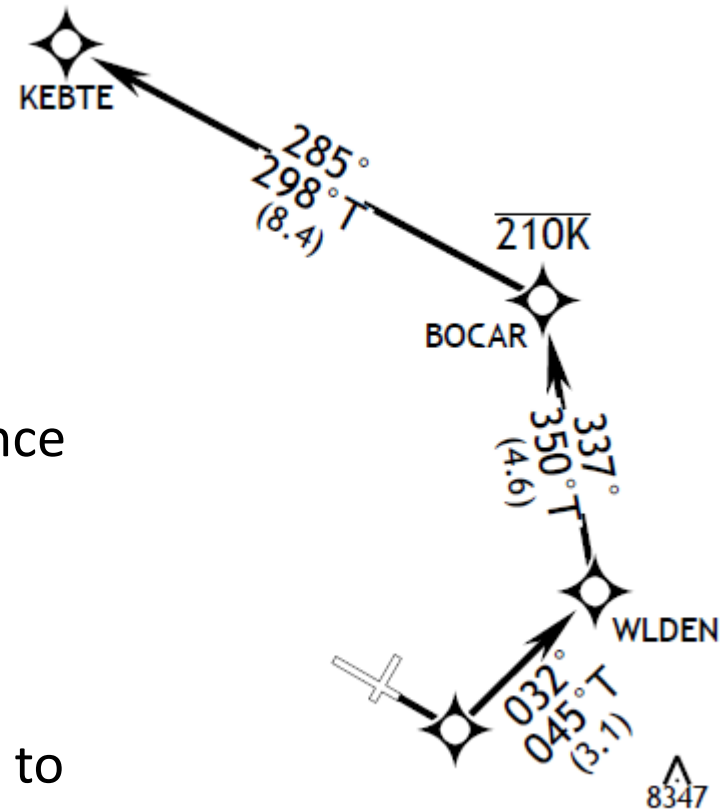
New Noise Abatement Departure Concept #1

- DONNR ONE RNAV DP – Routes Departures –west- over the highway away from residential areas
- RWY 29: Standard with minimum climb of 475 ft/NM to 10100 ft.
- Provides RNAV Transitions to SIGNA & SQUAW VOR



New Noise Abatement Departure Concept #2

- KEBTE ONE RNAV ODP
- Provides a RNAV DP Solution for RWY 11
- Requires High Performance Turbine A/C.
- 775 ft/nm as RNAV-1
- 624 ft/nm as RNP-1 (no secondaries (waiver))
- May not be possible due to excessive climb gradient requirements.



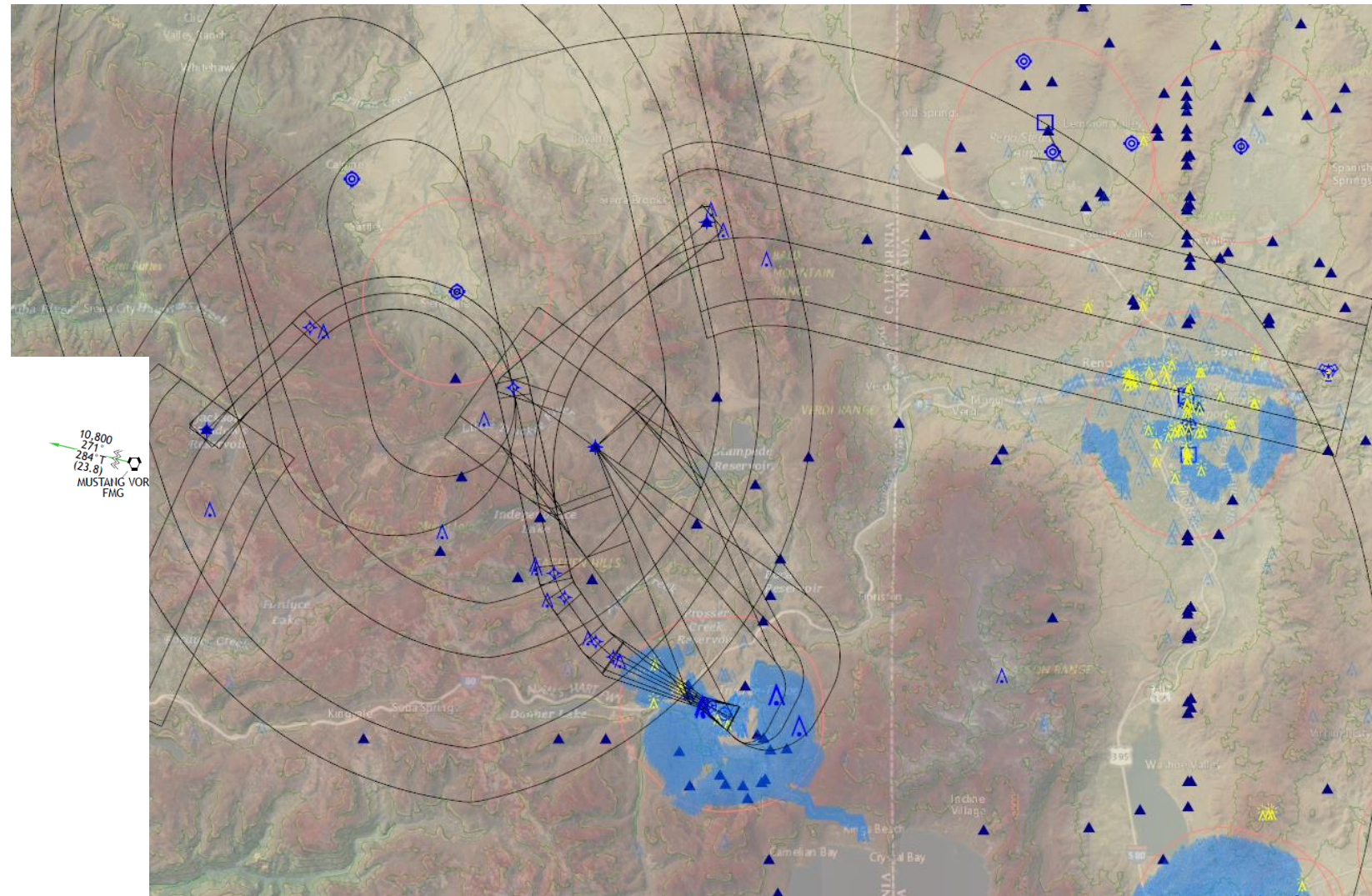
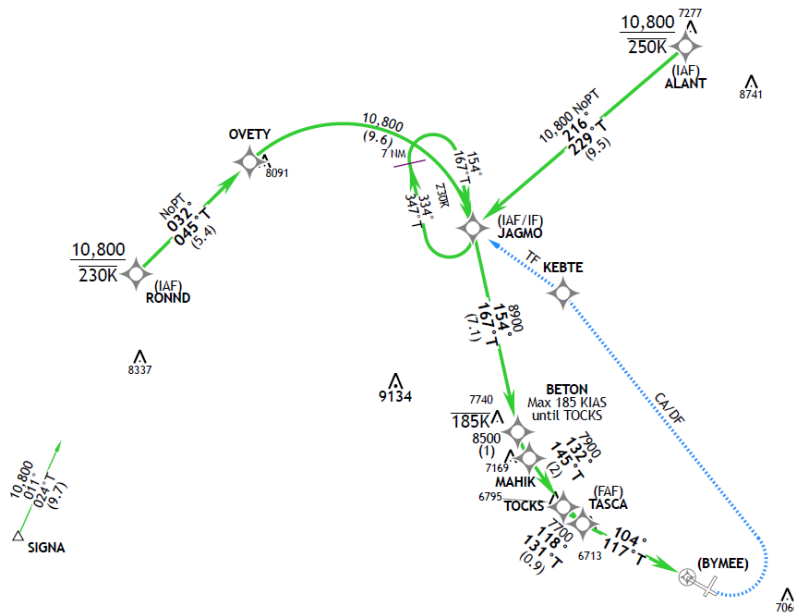
Approach Procedure Concepts

The following four new approach procedure concepts were evaluated as part of the feasibility assessment. The goal was to improve safety of flight by providing guided straight-in solutions thus eliminating risky circle to land operations.

- RNAV (GPS) M RWY 11 – Advanced WAAS
- RNAV (GPS) M RWY 29 – (Extended Visual) Northwest Arrival
- RNAV (GPS) M RWY 29 – (Extended Visual) Lake Tahoe Arrival
- RNAV (RNP) M RWY 29 – RNP-AR

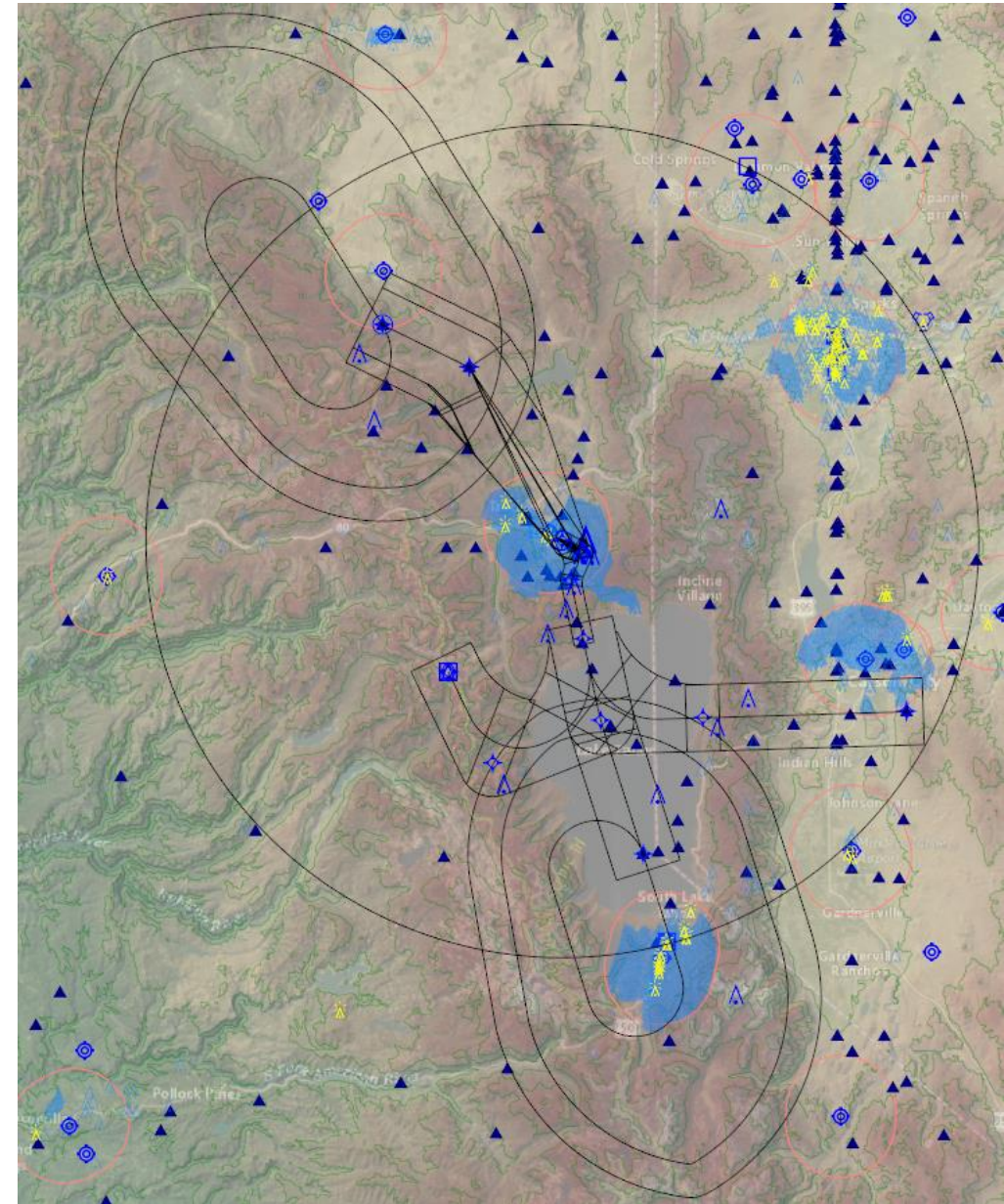
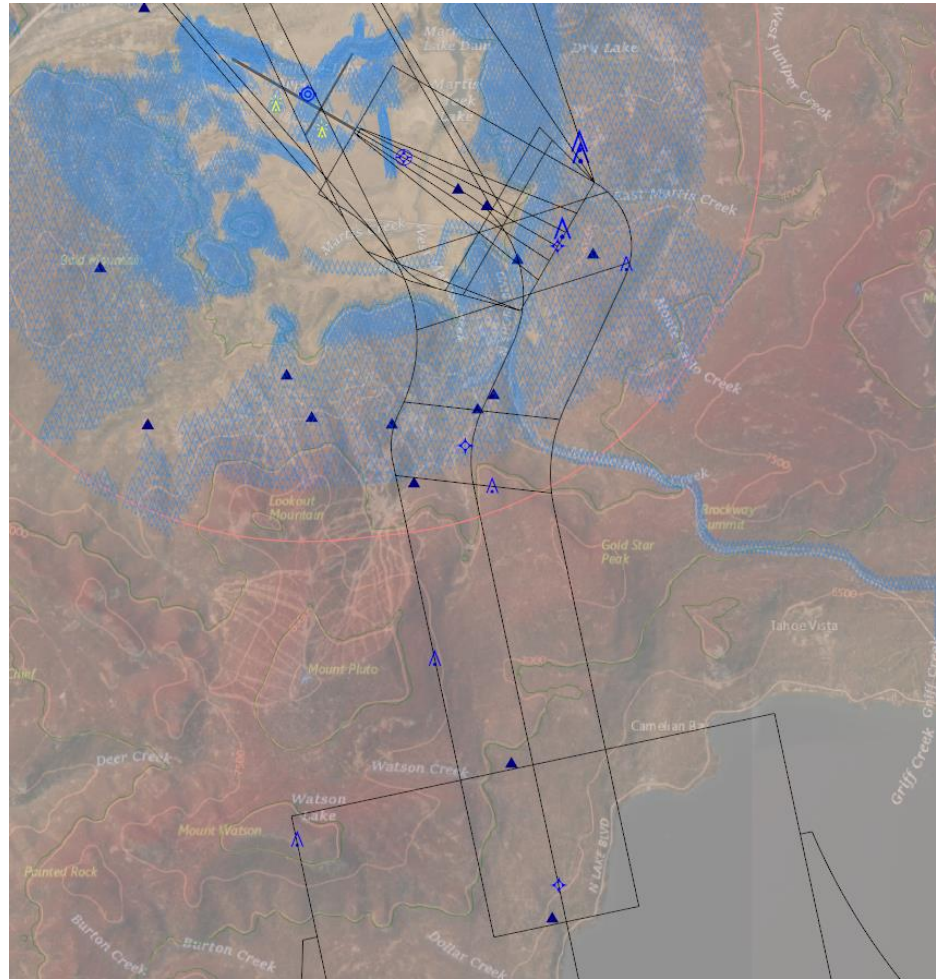
RNAV (GPS) M RWY 11 – Advanced WAAS

- Provides Vertically Guided LPV Straight-in solution to RWY 11
- Requires 4.14 Glidepath Angle
- WX Minimums of 6218- $\frac{7}{8}$ (314')
- Eliminates the need for circle to land procedures to RWY 11.



RNAV (GPS) RWY 29 -Tahoe Arrival

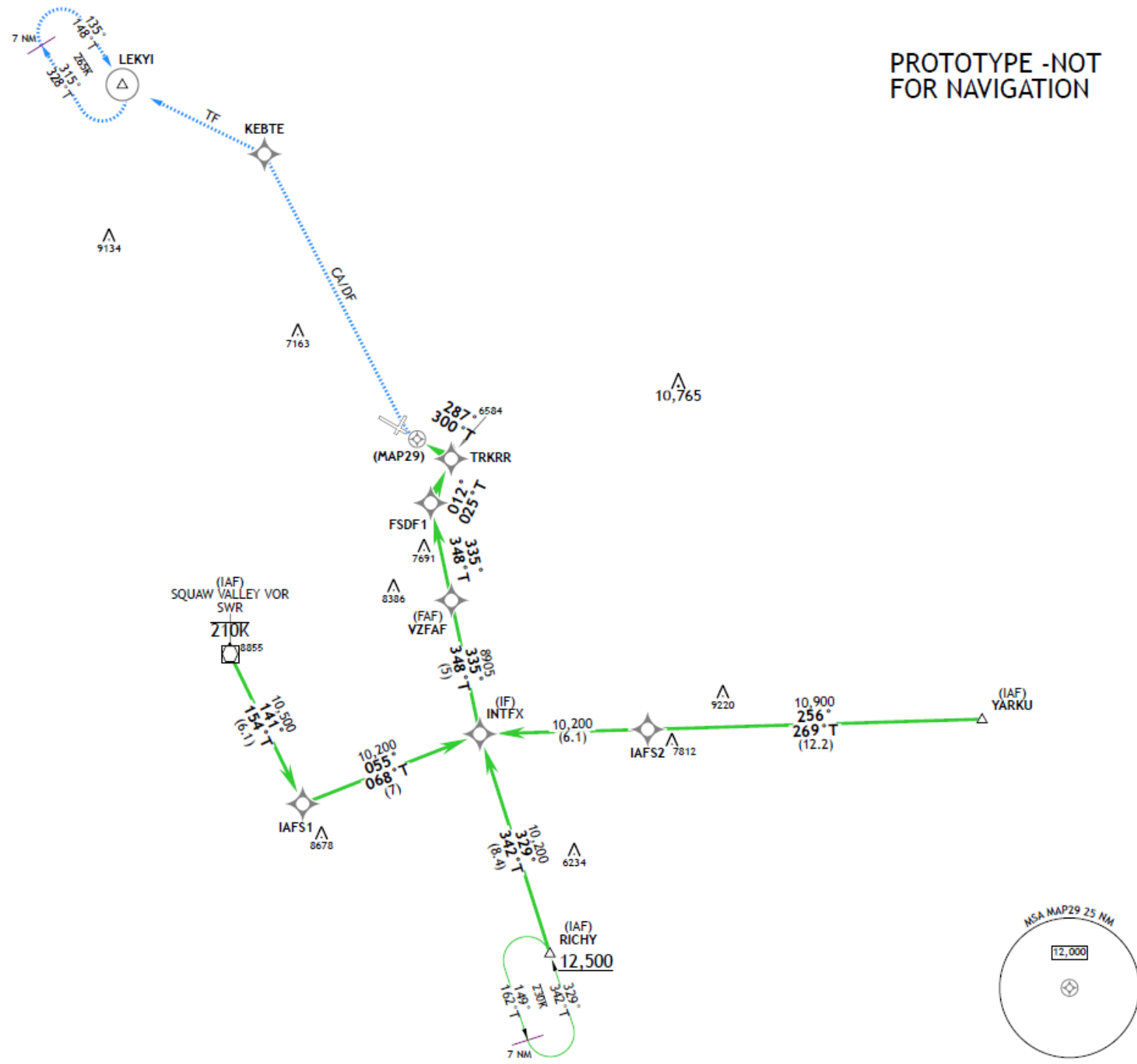
- Provides a guided entry to the airport from the South over Lake Tahoe.
- RNAV (GPS) with LNAV Minima
- Preferred by Oakland ARTCC due to traffic deconfliction benefits.
- Requires Extended Visual Segment (Special Criteria application)



RWY 29 – Tahoe Arrival

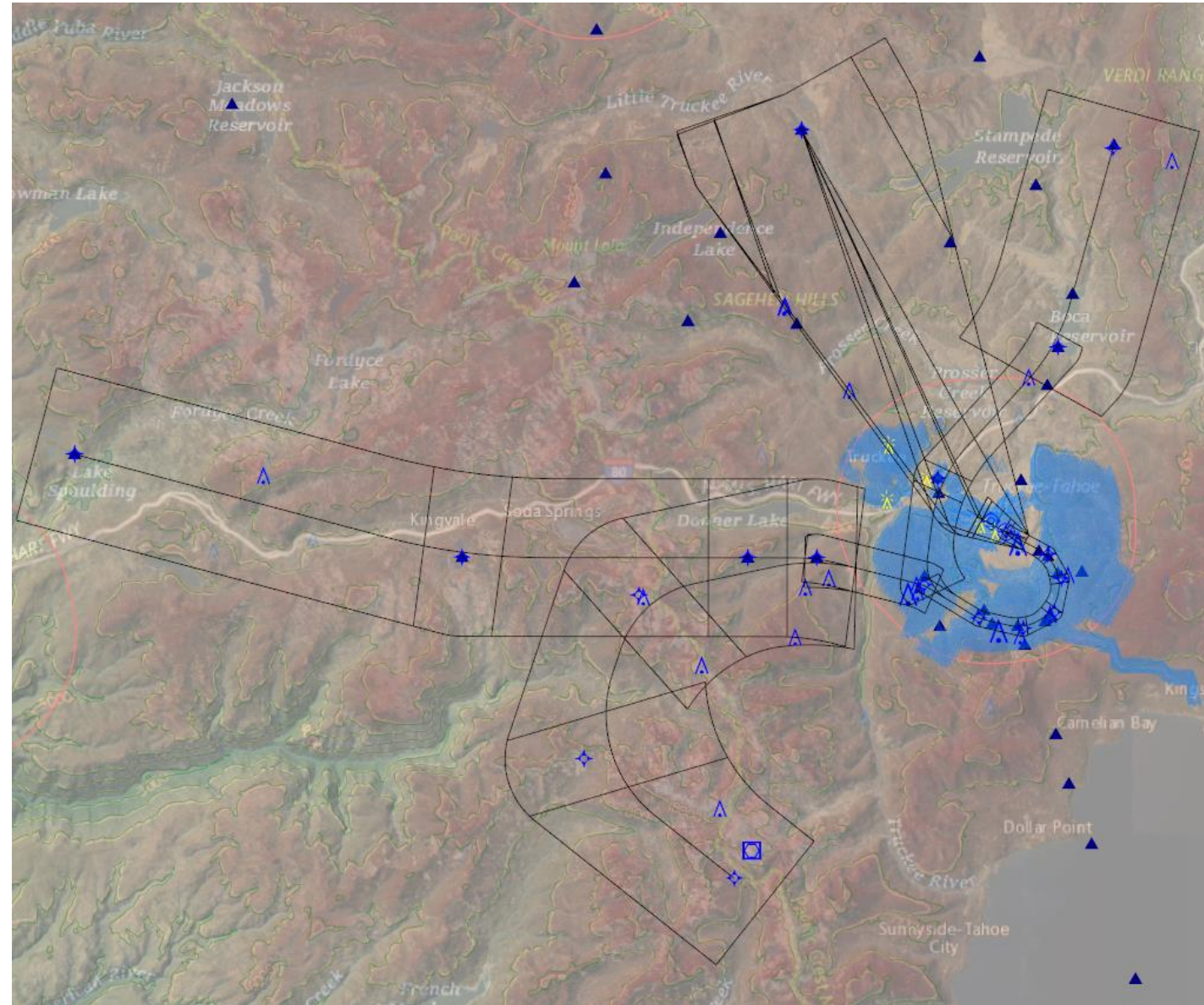
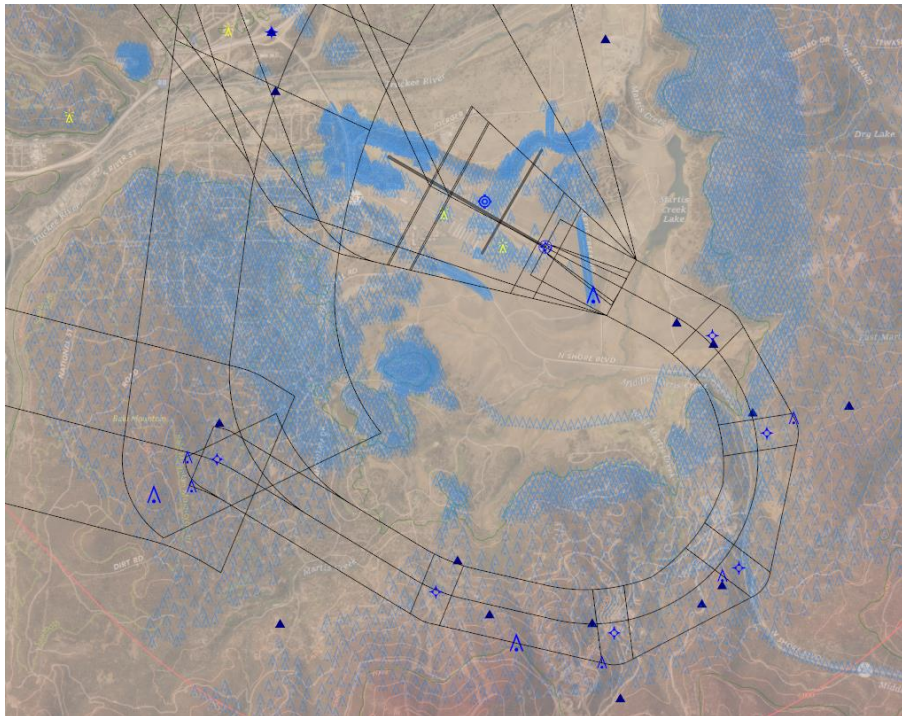
PROTOTYPE - NOT FOR NAVIGATION

- Chart Depiction
- Requires Extended Visual Segment



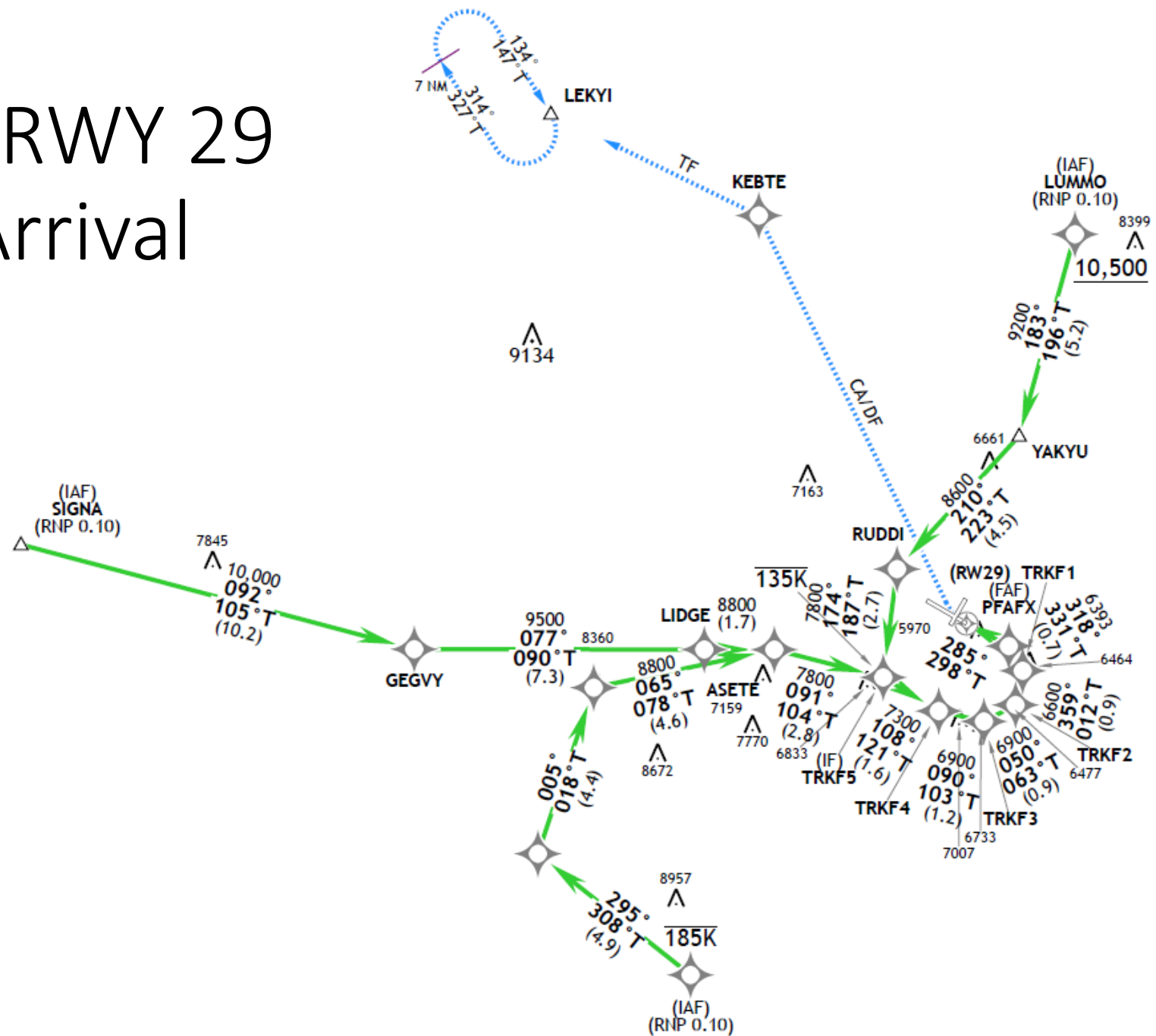
RNAV (GPS) RWY 29 Northwest Arrival

- Provides a guided entry to the airport from the West & Squaw Valley VOR.
- RNAV (GPS) with LNAV Minima
- Requires Extended Visual Segment (Special Criteria application)
- Similar routing to existing NetJets RVFPs.



RNAV (GPS) RWY 29 Northwest Arrival

- Chart Depiction



RWY 29

RNP-AR Solution

- RNP-AR Solution requiring advanced A/C equipage.
- Available for larger business jets
- Final RNP 0.10 or 0.30
- Standard RNAV-1 Missed Approach

