

# Airspace Design Review Project Update

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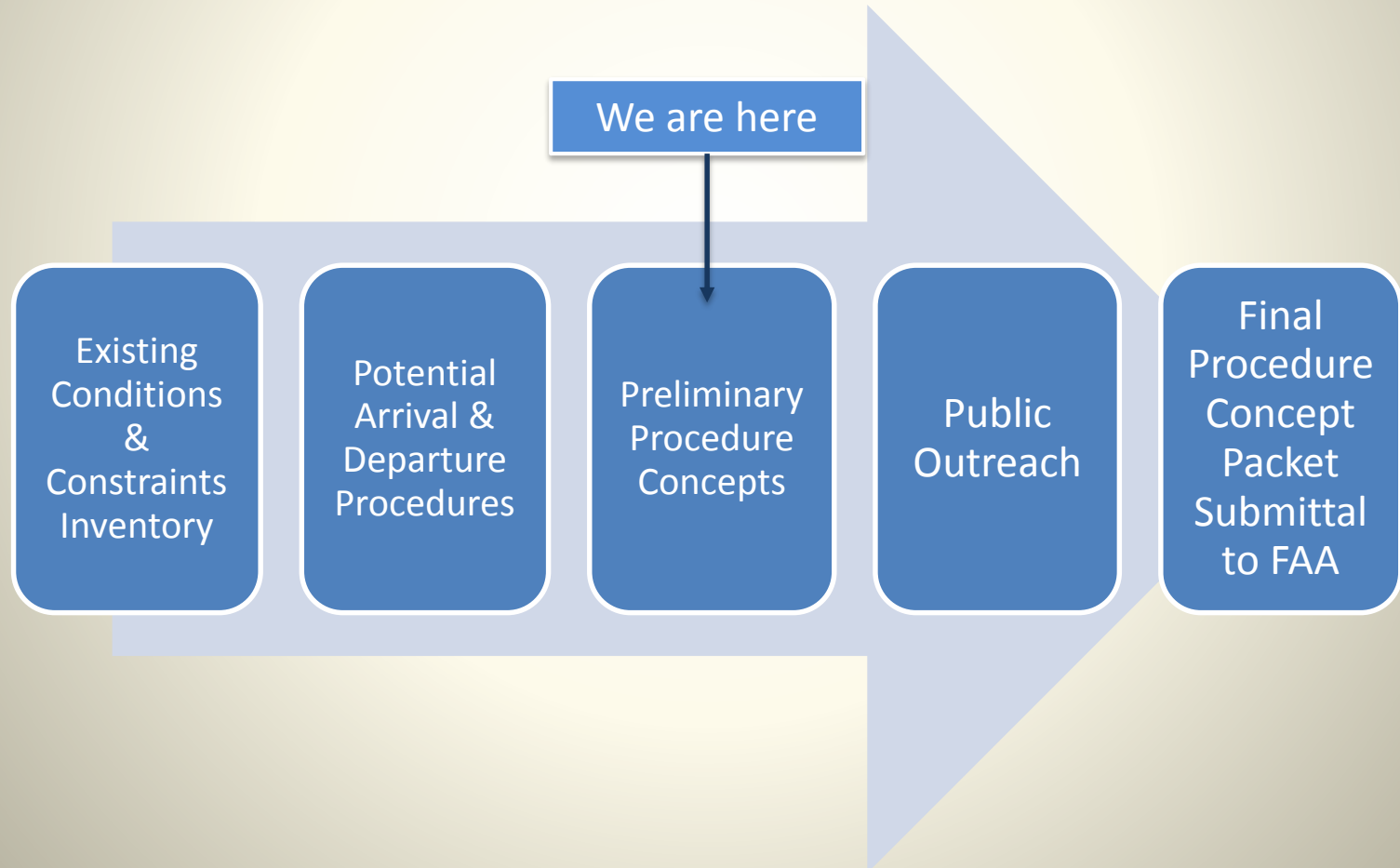
## What is the goal of this project?

1. Recommend procedures to reduce community annoyance, enhance safety, and promote efficiency.
2. Survey existing procedures and analyze results relative to current GIS data for housing and land use.
3. Advocate for KTRK with the FAA.
4. Present solutions for visual flight procedures.
5. Present methods for disseminating information to pilots about KTRK.
6. Show development paths for Special Procedures and Specific Publications that enhance airspace use at KTRK.

# What do we want from the Board tonight?

- Authorize staff to engage in community outreach on procedures outlined within the study with a comment period and a return presentation to the Board with the findings in July of 2016.

# Project Schedule



## Procedure Concept Criteria

1. Must provide environmental benefits – reduced emissions, noise, and track miles.
2. Serve all runways to enhance runway utilization and reduce environmental impact on specific neighborhoods.
3. Meet current FAA procedure design criteria.
4. Meet current FAA terrain and obstruction requirements.
5. Meet current PBN design criteria.
6. Provide independent operations from current procedures at:
  - South Lake Tahoe Airport (KTVL)
  - Reno/Tahoe International Airport (KRNO)
  - Sacramento International Airport (KSMF)
7. Be available to the majority of aircraft that use KTRK.

# HARDY RNAV Standard Instrument Departure

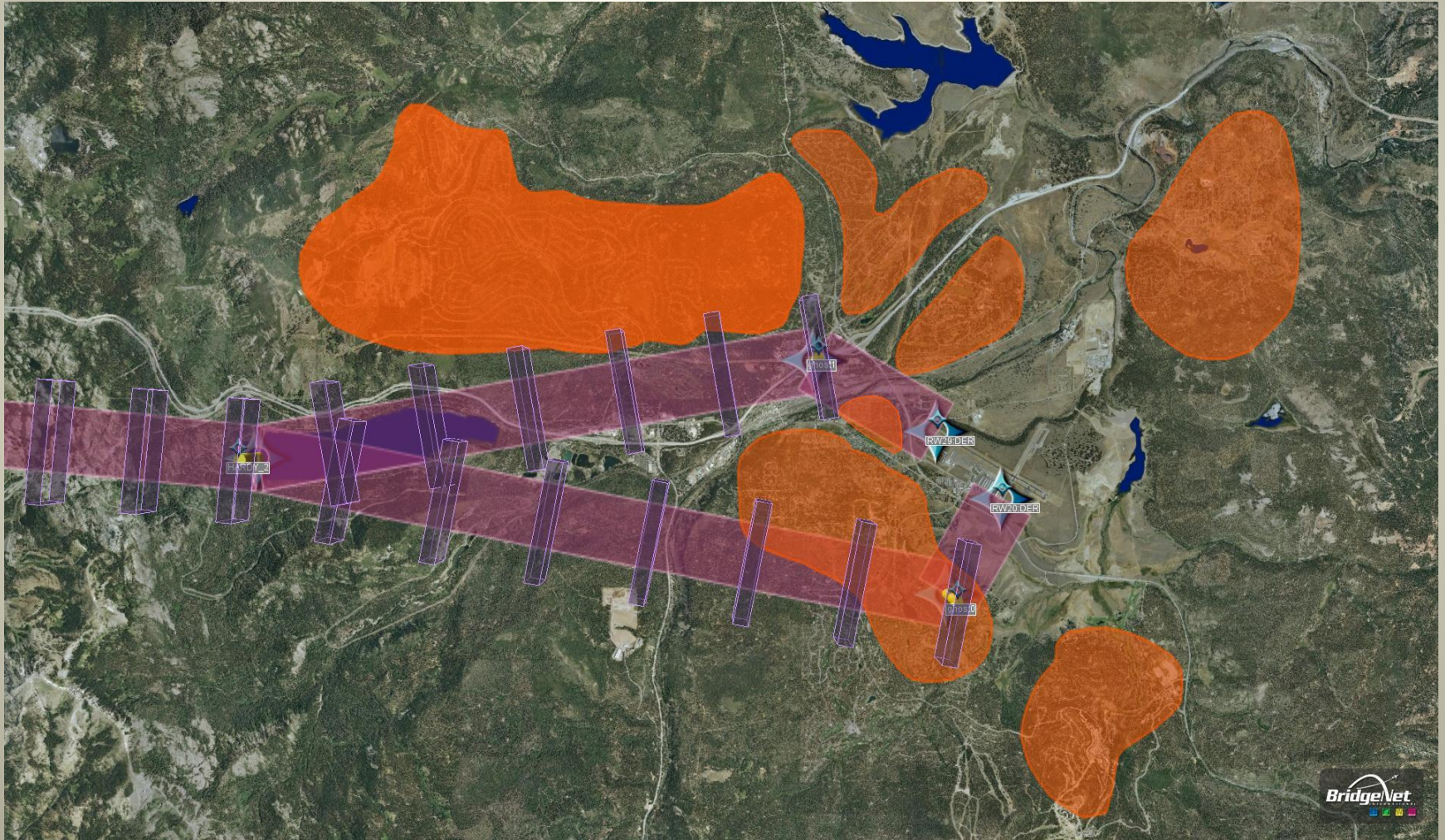
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Procedure goals:

1. Provide separation from South Lake Tahoe operations.
2. Use historic noise abatement routes.
3. Remain over compatible land uses.
4. Create RNAV path that is consistent for the community and pilots.



# HARDY RNAV Standard Instrument Departure



## BULOK RNAV Standard Instrument Departure

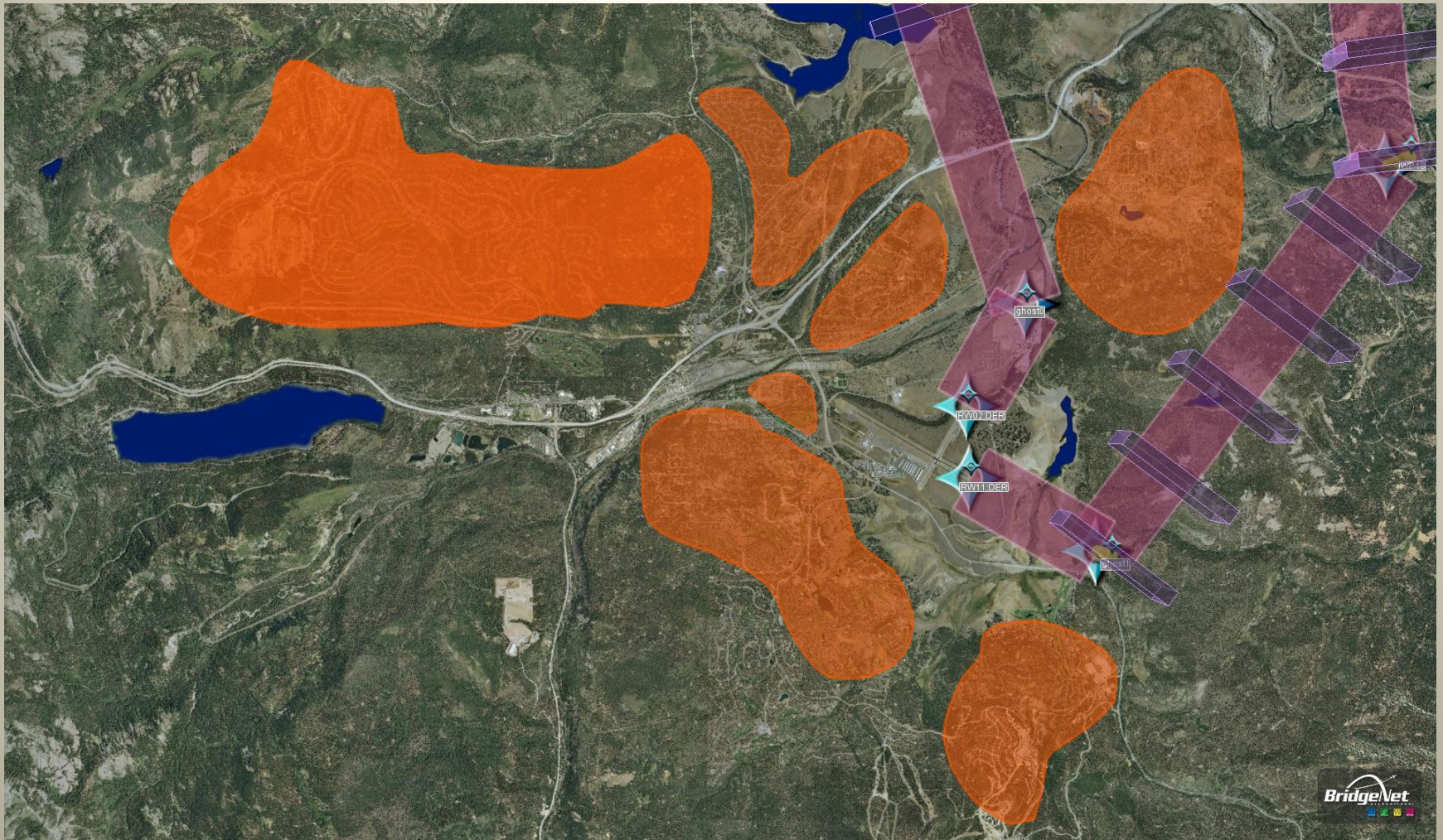
- Depart and climb runway heading, Runway 02, turning northwest over aggregate plant.
- Remain south of Glenshire Road.
- Depart and climb runway heading, Runway 11, for approximately 1 mile.
- Turn towards the northeast, remain south of Glenshire development.

### Procedure goals:

1. Provide separation from South Lake Tahoe operations.
2. Remain over compatible land uses.
3. Create RNAV path that is consistent for the community and pilots.
4. Create equitable runway use.



# BULOK RNAV Standard Instrument Departure



## Runway 11 Feeder Fix Amendment

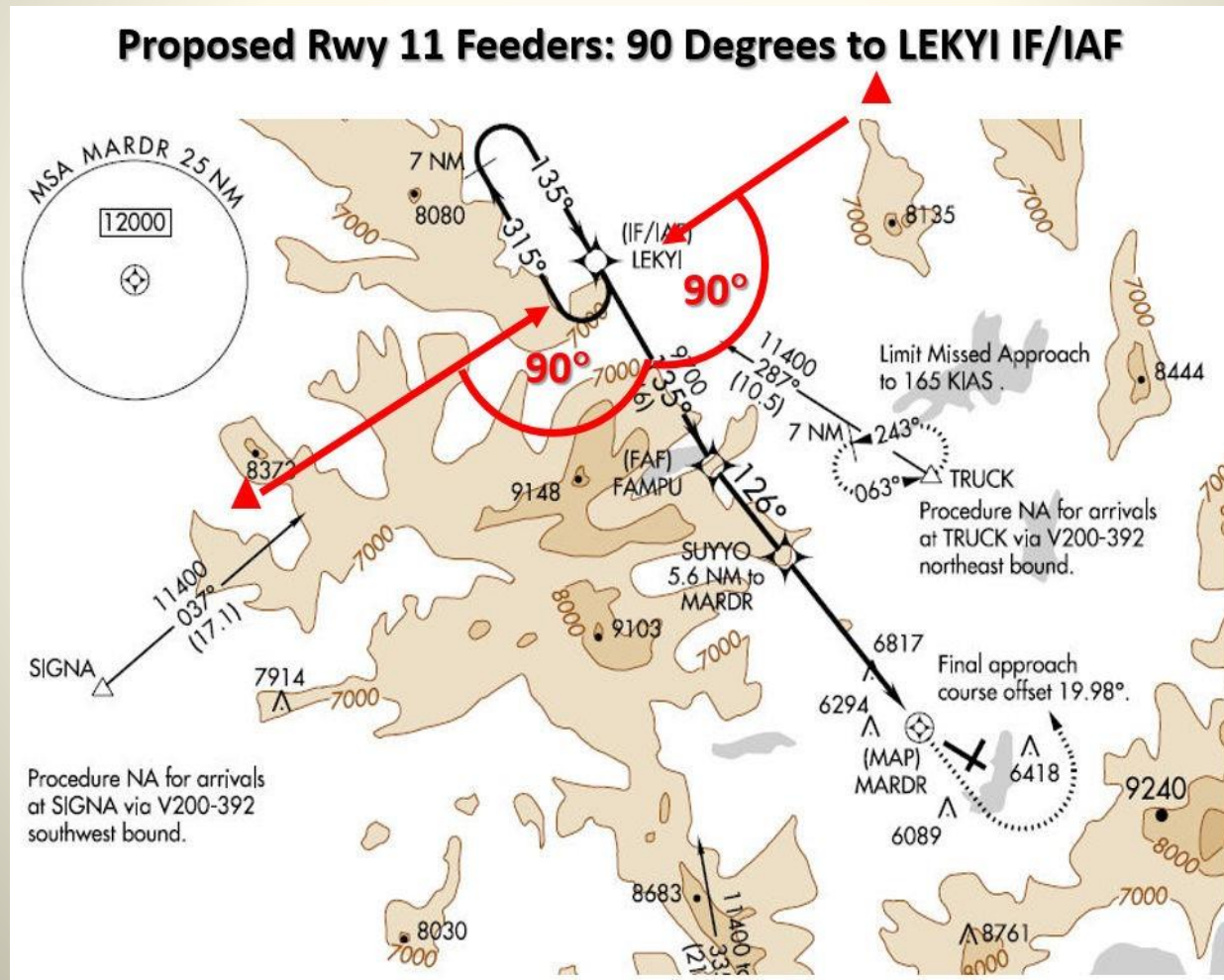
- Create additional reporting point for arriving aircraft.
- Remove use of holding pattern and reversing course.
- Changes outside of the main study area and Truckee environs.

### Procedure goals:

1. Provide smooth transition from en route to local airspace.
2. Reduce air traffic delays to KTRK resulting in ground holds and track miles.
3. Give the en route air traffic controllers additional tools to route aircraft into and out of KTRK.



# Runway 11 Arrival Route



## Runway 20 Arrival Route

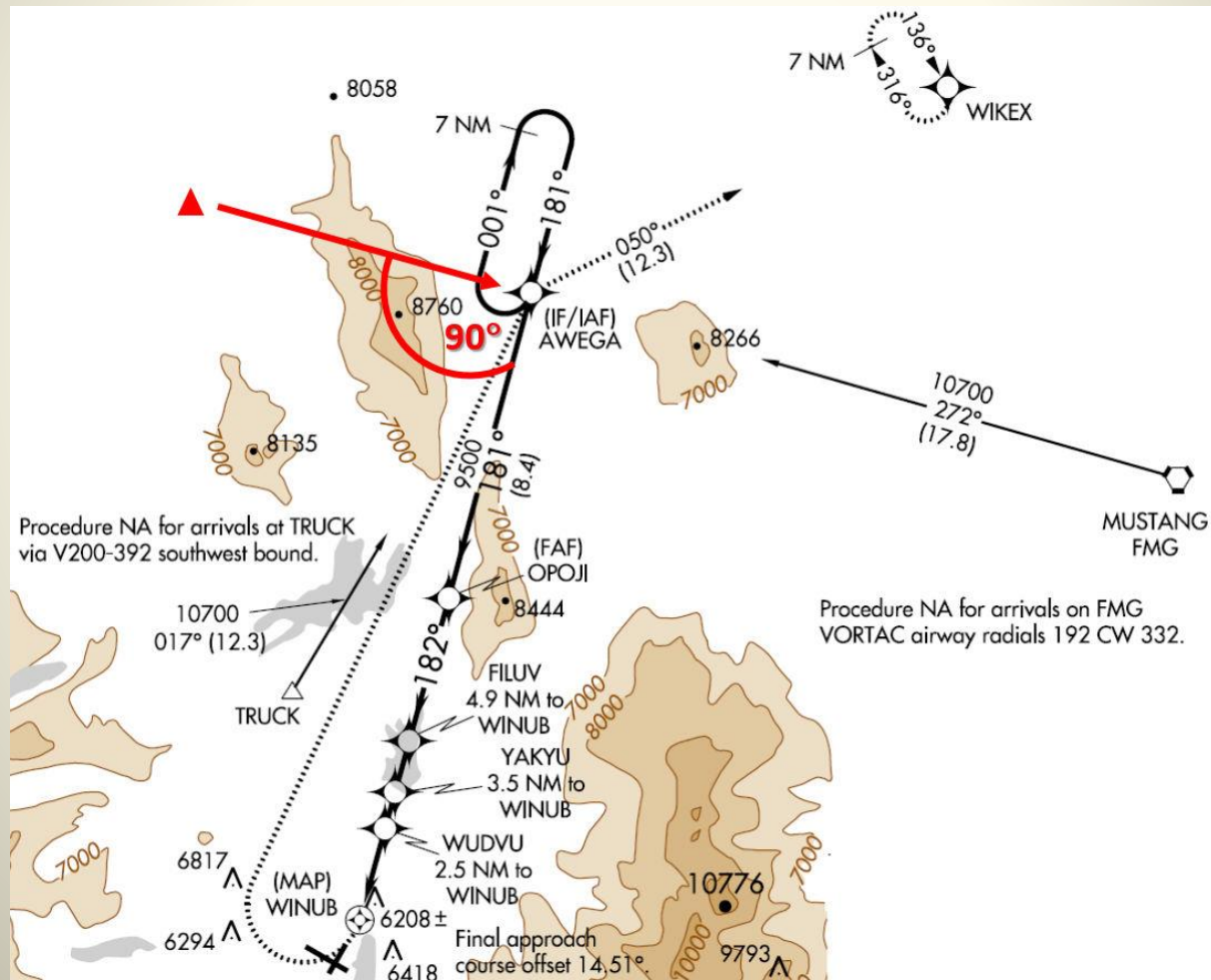
- Create reporting point to the west of the airport.
- Reduce use of easterly reporting point, Mustang Waypoint, which increases unnecessary track miles.
- Changes outside of the main study area and Truckee environs.

### Procedure Goals:

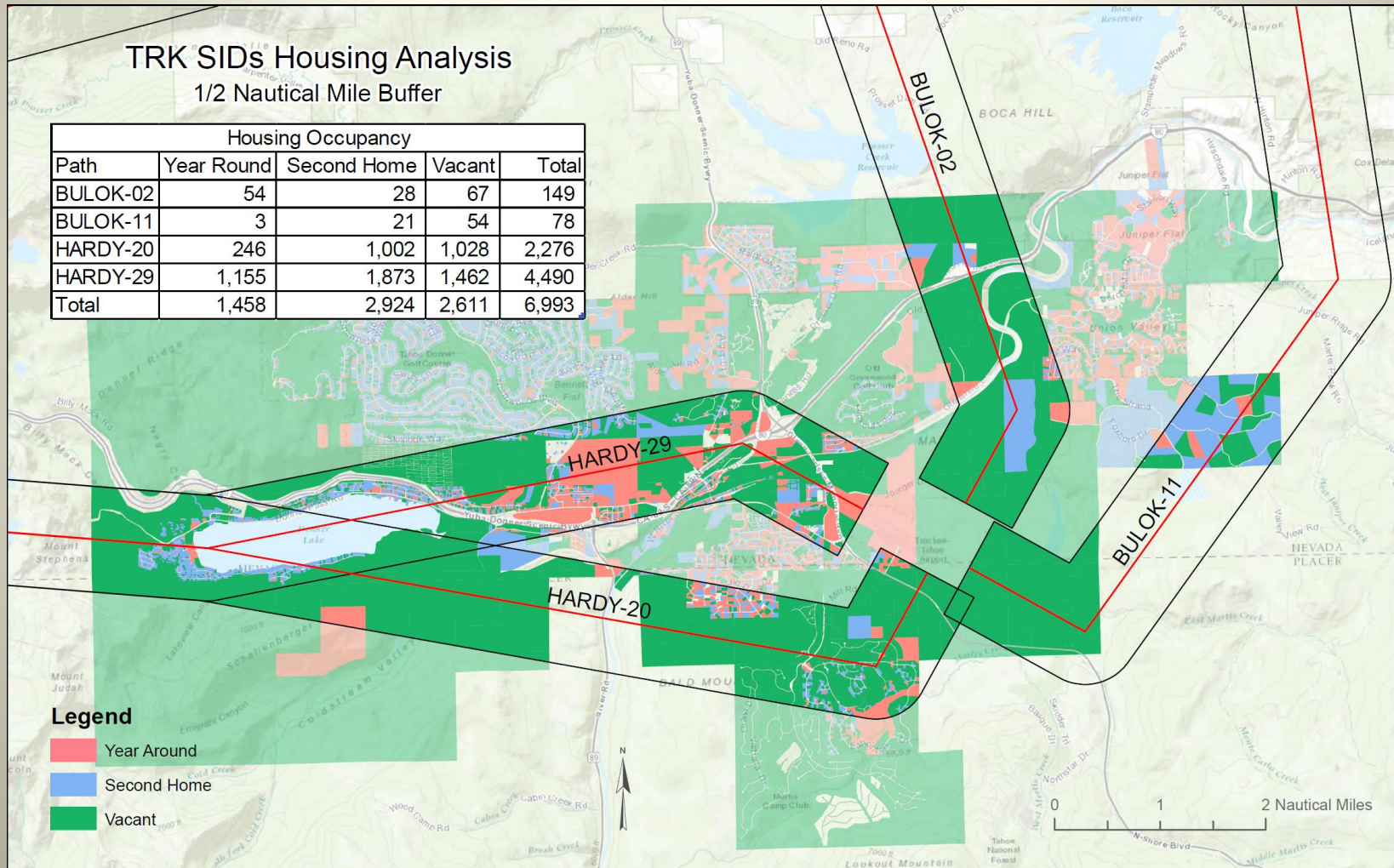
1. Reduce use of Mustang waypoint due to interaction with KRNO.
2. Provide smooth transition from en route to local airspace.
3. Reduce air traffic delays to KTRK.
4. Give the en route air traffic controllers additional tools to route aircraft into and out of KTRK.



# Runway 20 Arrival Route



# Housing Analysis



## Land Use

Housing Occupancy				
Path	Year Round	Second Home	Vacant	Total
BULOK-02	54	28	67	149
BULOK-11	3	21	54	78
HARDY-20	246	1,002	1,028	2,276
HARDY-29	1,155	1,873	1,462	4,490
Total	1,458	2,924	2,611	6,993

## Findings

1. Certified departures off every runway are feasible and possible.
2. Certified arrivals are problematic based on terrain.
3. Standard Terminal Arrivals (STAR) & Standard Instrument Departures (SID) create a common point for controllers to drop planes so tower controllers can guide them to the airport. These help support Visual Flight Procedures.
4. A valid obstruction survey will be required to implement procedures.
5. A tower will help promote the use of certain procedures.



# Recommendations

Community outreach for each procedure:

- Ensure notional procedure designs reduce environmental impacts.
- Conduct targeted outreach in spring or early summer 2016 with ACAT Community Neighborhood meetings.
- Present results and project summary at the July 2016 TTAD Board meeting.

Complete obstruction survey:

- Required by FAA to implement procedures.
- Creates reliable, credible information for procedure clearance requirements.