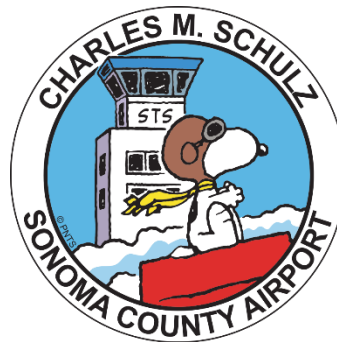


# APPROACH FEASIBILITY STUDY

October 2<sup>nd</sup> and 3<sup>rd</sup>, 2024

Charles M. Schulz – Sonoma County Airport

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# PRESENTATION AGENDA

## STS APPROACH FEASIBILITY STUDY

- Project Team Introduction
- Meeting Format
- Project Background & Meeting Objectives
- Study Objectives
- Project Tasks
- Project/Design Approach
- Conceptual Designs
- Part 150 Consideration
- Fly Quiet Program



# WHO IS ATTENDING

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**Jon Stout**

*Airport Manager*

Mr. Stout is responsible for the daily management and long-term development of Charles M. Schulz – Sonoma County Airport (KSTS).

Jon has overseen the daily operations of Sonoma County Airport since June 2002. He oversees the Airport's annual budget, capital expenditures and long-term development



**Vinnie Khera**

*Project Manager*

20+ years of experience in the management and technical aspects of Aviation Project Management. 19+ Years of Airport & Airspace Planning, Systems Engineering, Research, Development, Integration and Modeling/Simulation coupled with Program and Functional Management.

# WHO IS ATTENDING

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**Jeffrey Cochrane**  
*Lead Senior Analyst/  
Airspace Procedure Design  
Specialist*

Over 25 years of experience in providing airspace design and Air Traffic Management (ATM) optimization support in conjunction with the implementation of projects in various locations worldwide. Former Director of Navigation and Airspace at NAV CANADA.

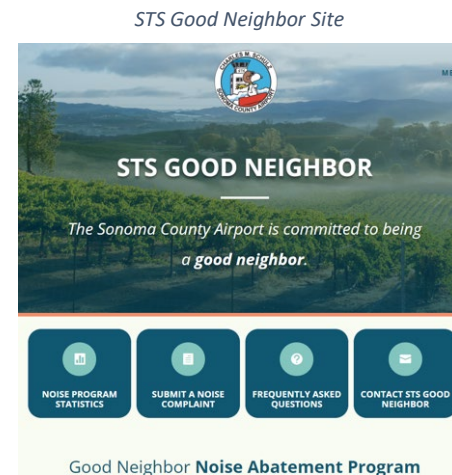


**Patty Daniel**  
*Senior Analyst  
Lead Stakeholder &  
Community Outreach*

Retired FAA Airspace & Procedures manager with over 40 years of experience. Ms. Daniel is a former air-traffic control specialist/manager from CA, experienced in airspace and procedures, and Performance Based Navigation (PBN).

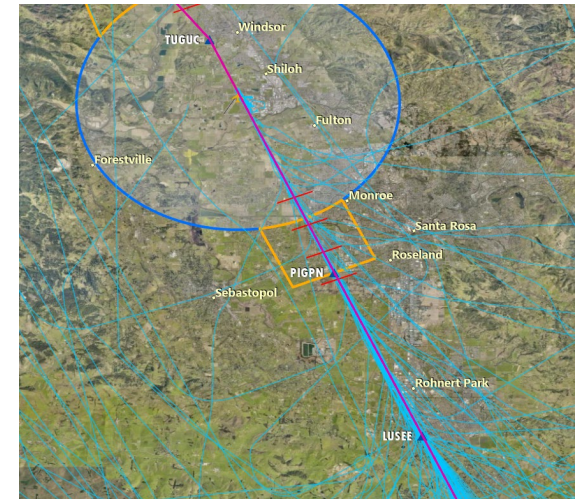
# Meeting Format

- **Presentation**
- **Workshop**
  - Stations with Information and Experts
  - Current Conditions
  - Proposed Conditions (Under Evaluation)
- **Comments, Questions, and Concerns**
  - Court Reporter is onsite
  - Good Neighbor Website/QR Code
  - Will be addressed via formal response

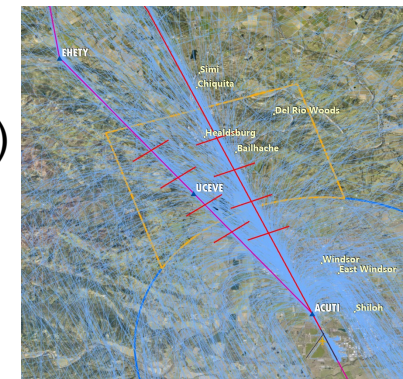


# Project Background & Meeting Objectives

- **WHY** are we doing this study
- **Evaluate conceptual alternative options (if any)**
  - Today's Meeting Focus
- **Noise Concerns**
  - Be a good neighbor
- **Understand The Process**
  - Provide insight into the complex nature of Airspace & Procedure Development & Implementation
    - Long and Pre-Defined Process (Federal Regulations)
- **Present 'DRAFT' Procedure Designs**
- **Receive constructive input**

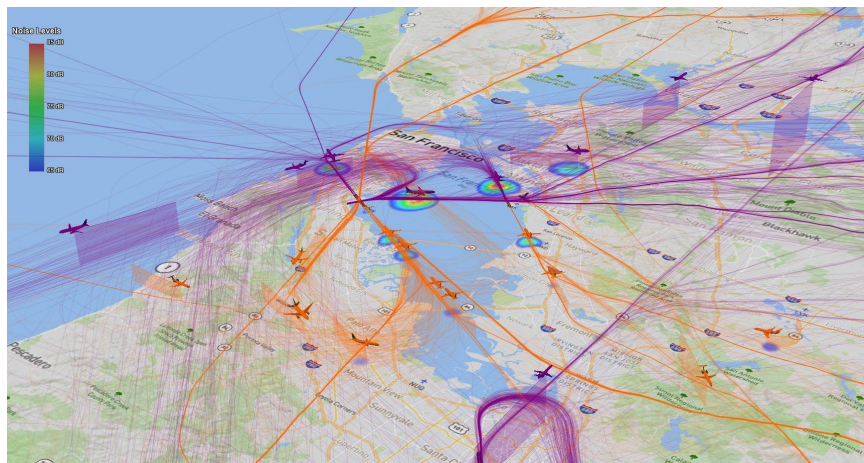


*Sampling of Radar Tracks*

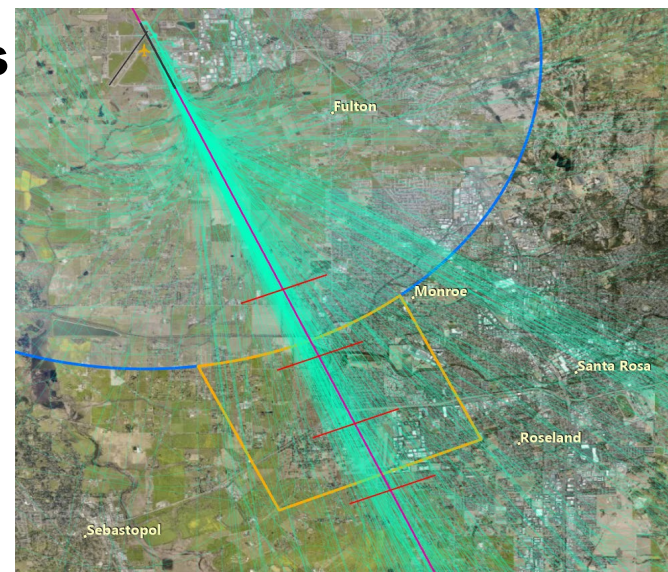


# Study Objectives

- **Assess Existing Airspace/Procedure Design & Usage**
- **Evaluate Surrounding Area & Terrain**
- **Assess and Evaluate Alternative Designs**
  - Based on criteria, understanding the benefits, if any



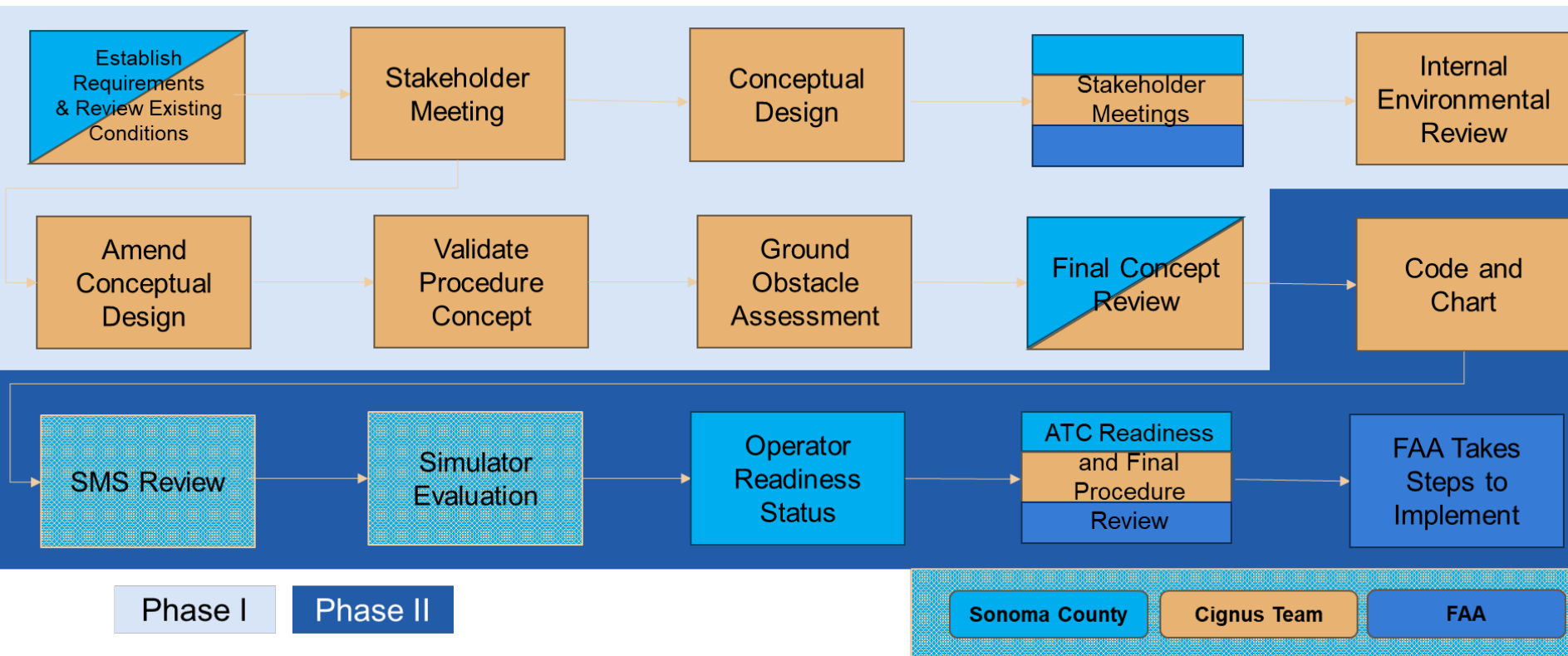
Sample of Radar Tracks



Runway 14 Departure Track Analysis

# MANDATED PROCESS

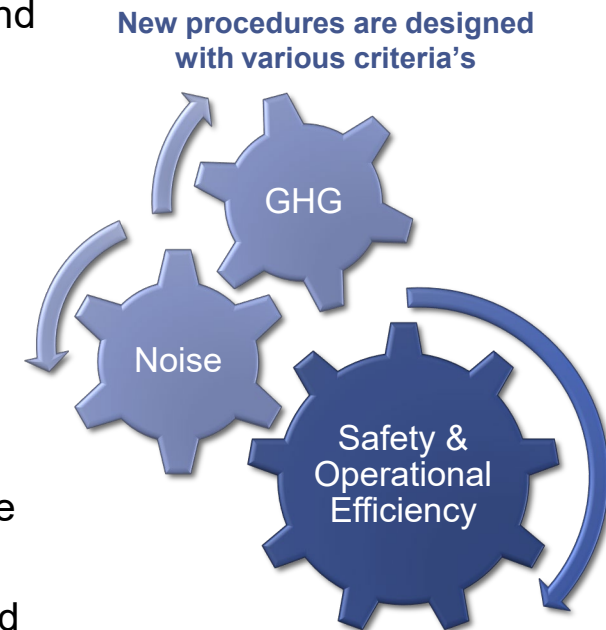
## Feasibility Study Process





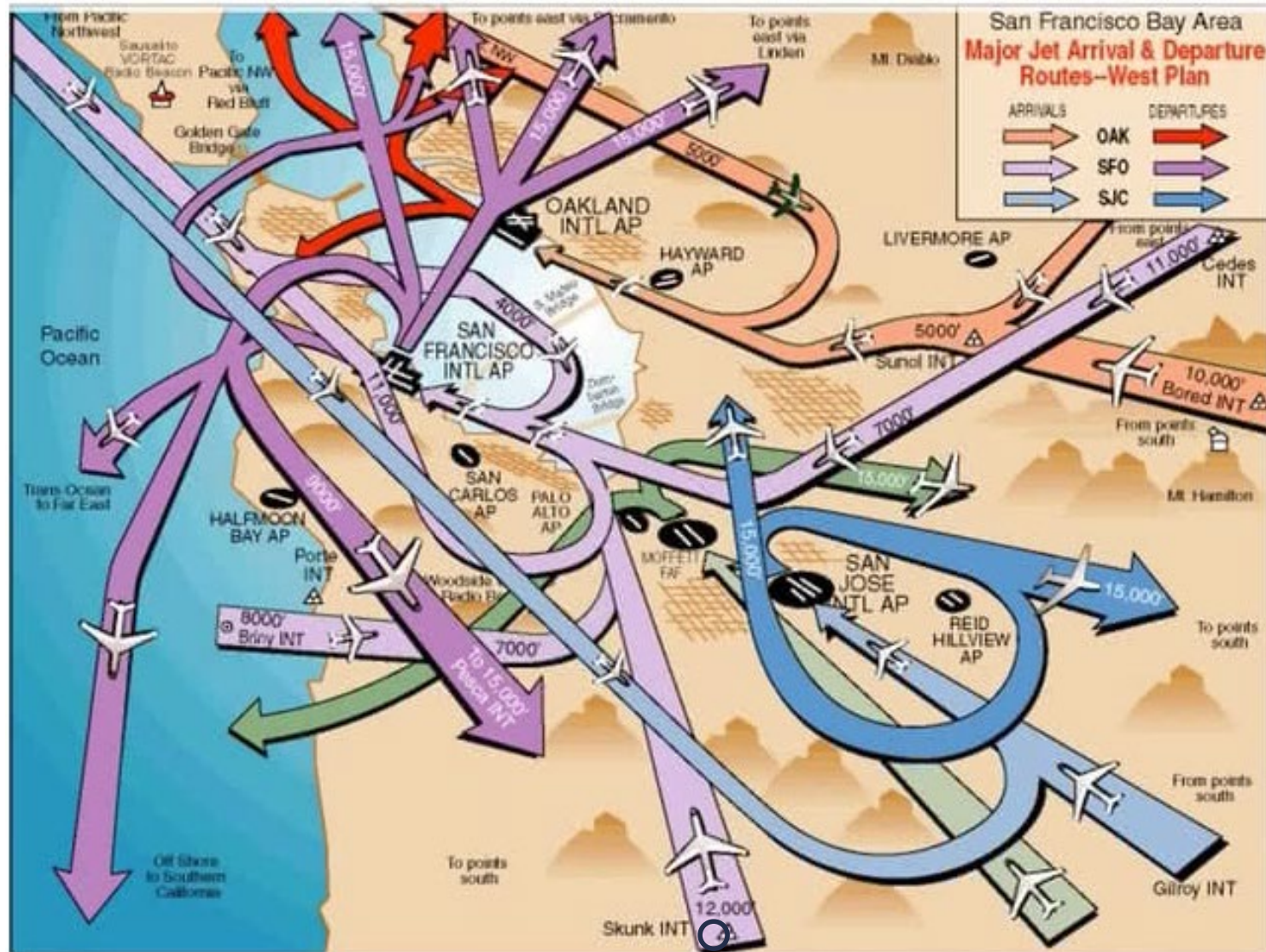
# Procedure Design Approach

- The following steps were conducted in developing the new procedures:
  - Evaluation of existing procedure tracks, noise footprint, and limitations
  - Community engagement and feedback (50+ Comments reviewed and considered to the extent feasible)
  - Engagement with stakeholders
    - Charles M Schulz - Sonoma County Airport – KSTS
    - Federal Aviation Administration
    - Oakland Air Route Traffic Control Center (ZOA)
- New procedures have stabilized, straight in approaches and landing with a Continuous Descent Arrival (CDA) with low or idle power settings.
- New procedures improve connectivity with enroute structure and newly published Standard Terminal Arrival (STAR) Procedures – REBAS and VNYRD

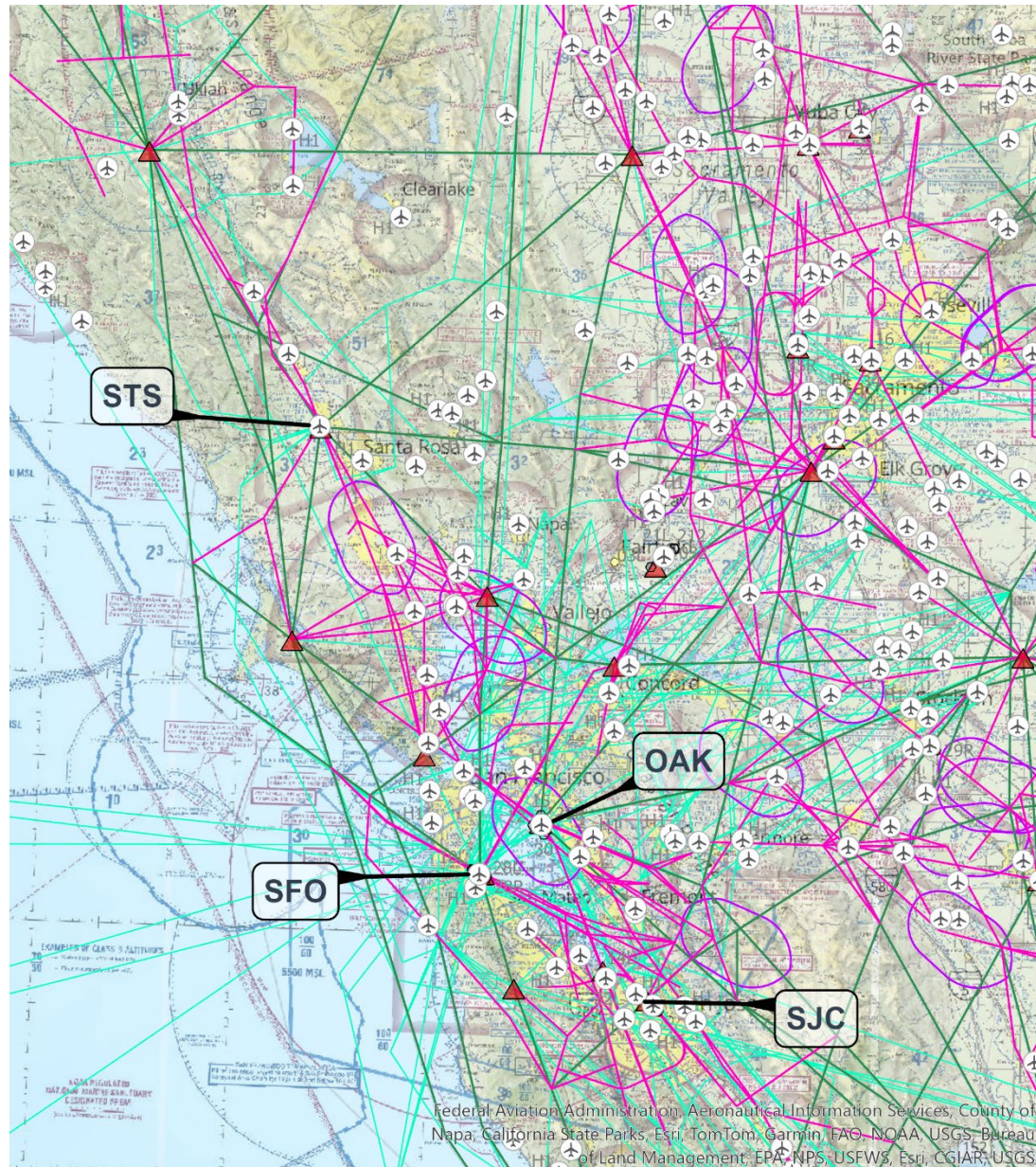


# Procedure Design Approach - The Northern California Airspace Network

## West Plan Traffic Flows



# Procedure Design Approach - The Northern California Airspace Network Contd..



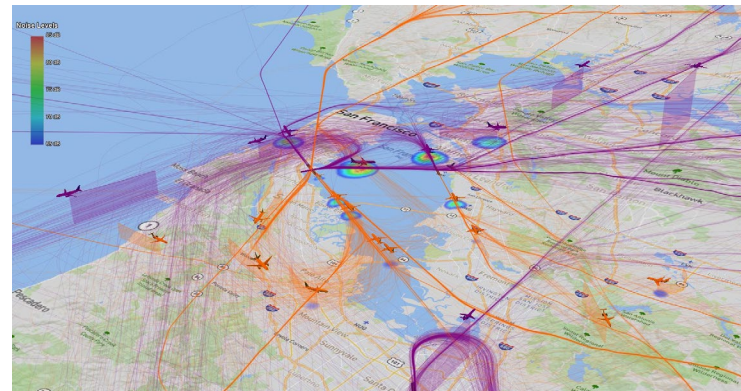
# Procedure Catalogue

## Current Procedures

- ILS OR LOC RWY 32
- RNAV (GPS) RWY 32
- RNAV (GPS) RWY 14
- RNAV (GPS) RWY 02
- Standard Terminal Arrival (STAR) Procedures
  - REBAS (RNAV) Arrival
  - VNYRD (RNAV) Arrival

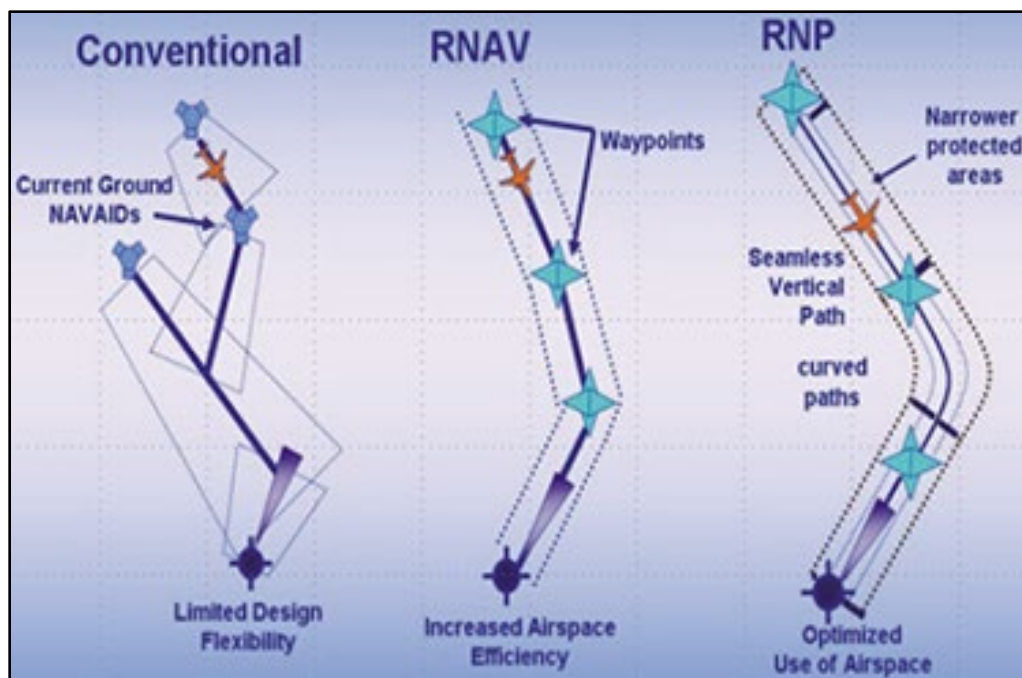
## New 'Proposed' Procedures

- RNAV (GPS) & (RNP) RWY 32
- RNAV (GPS) & (RNP) RWY 14
- RNAV (GPS) RWY 2
- RNAV (RNP) RWY 2
- VFR Flight Guidance (Similar to Helicopter Traffic)

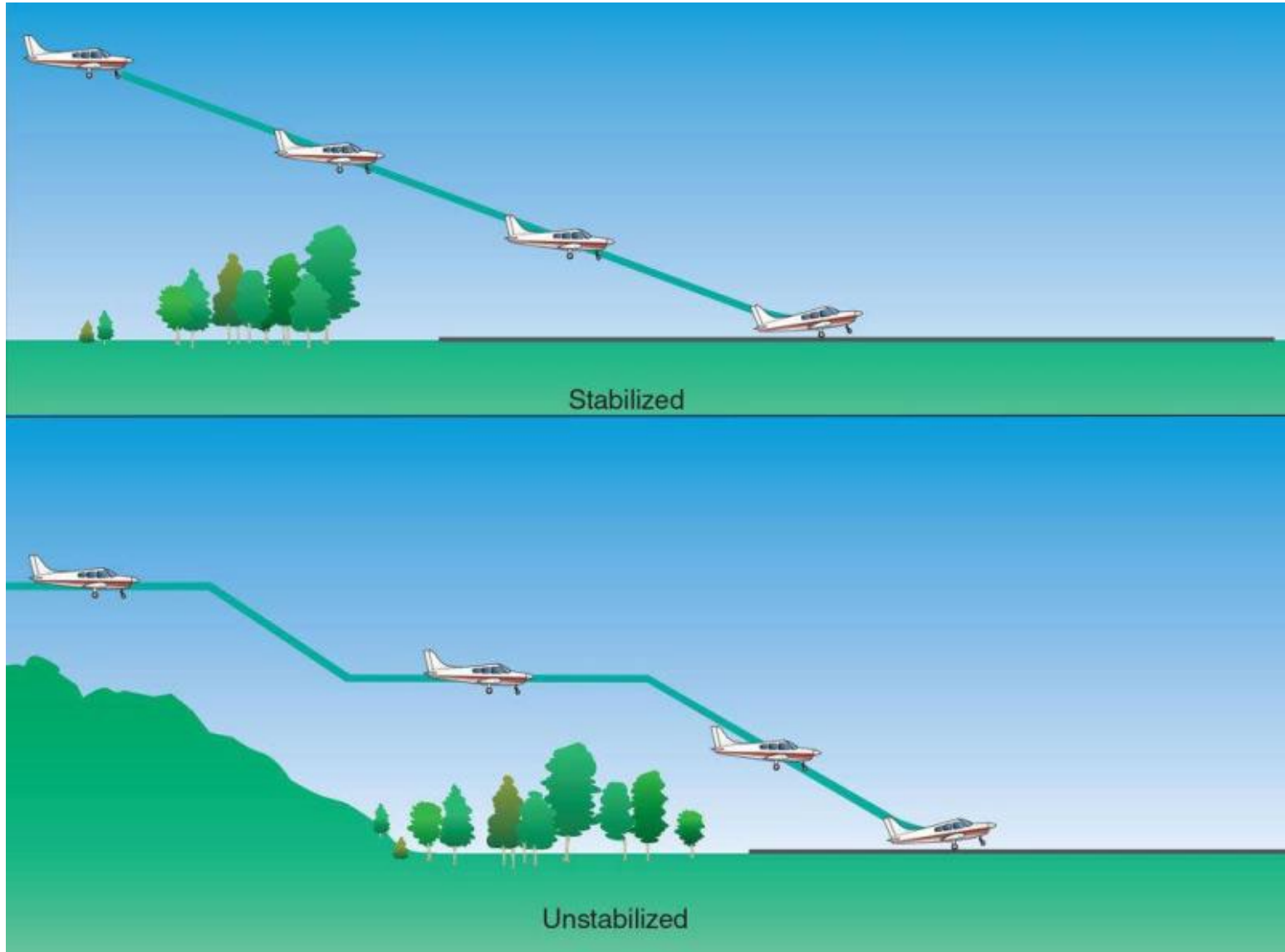


# Modernization enablers – new tool sets

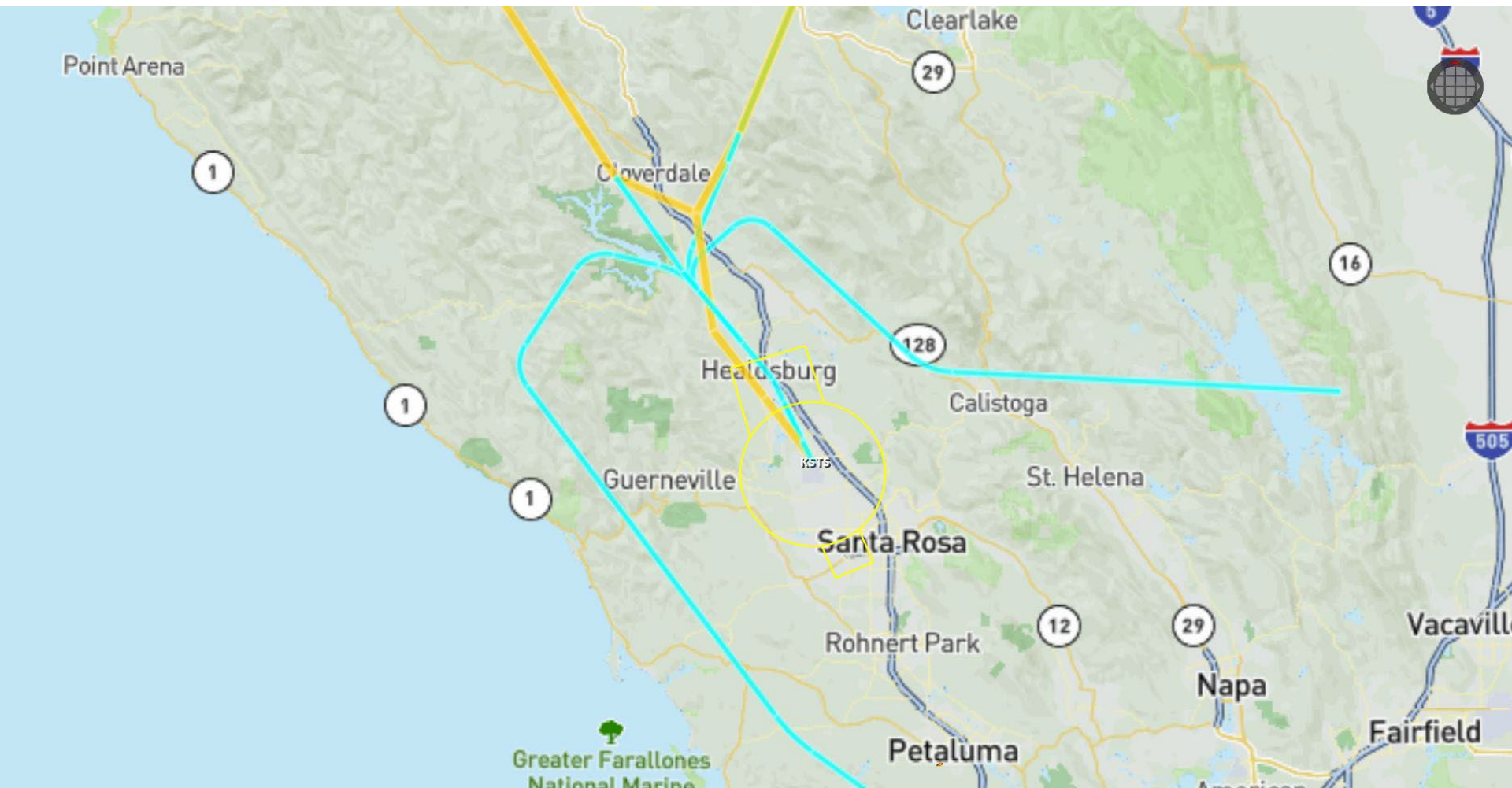
- New navigation technology supports high precision, predictable paths
- Better navigation accuracy that is in the design and guaranteed by the aircraft's performance
- Precision and predictability result in improved ability to manage noise
- New procedures can be linked from the enroute all the way to the runway and work with current flight deck and air traffic control systems



# Modernization enablers – Continuous descent



# RUNWAY 14 - Proposed Procedures Overlaid on Existing Procedures



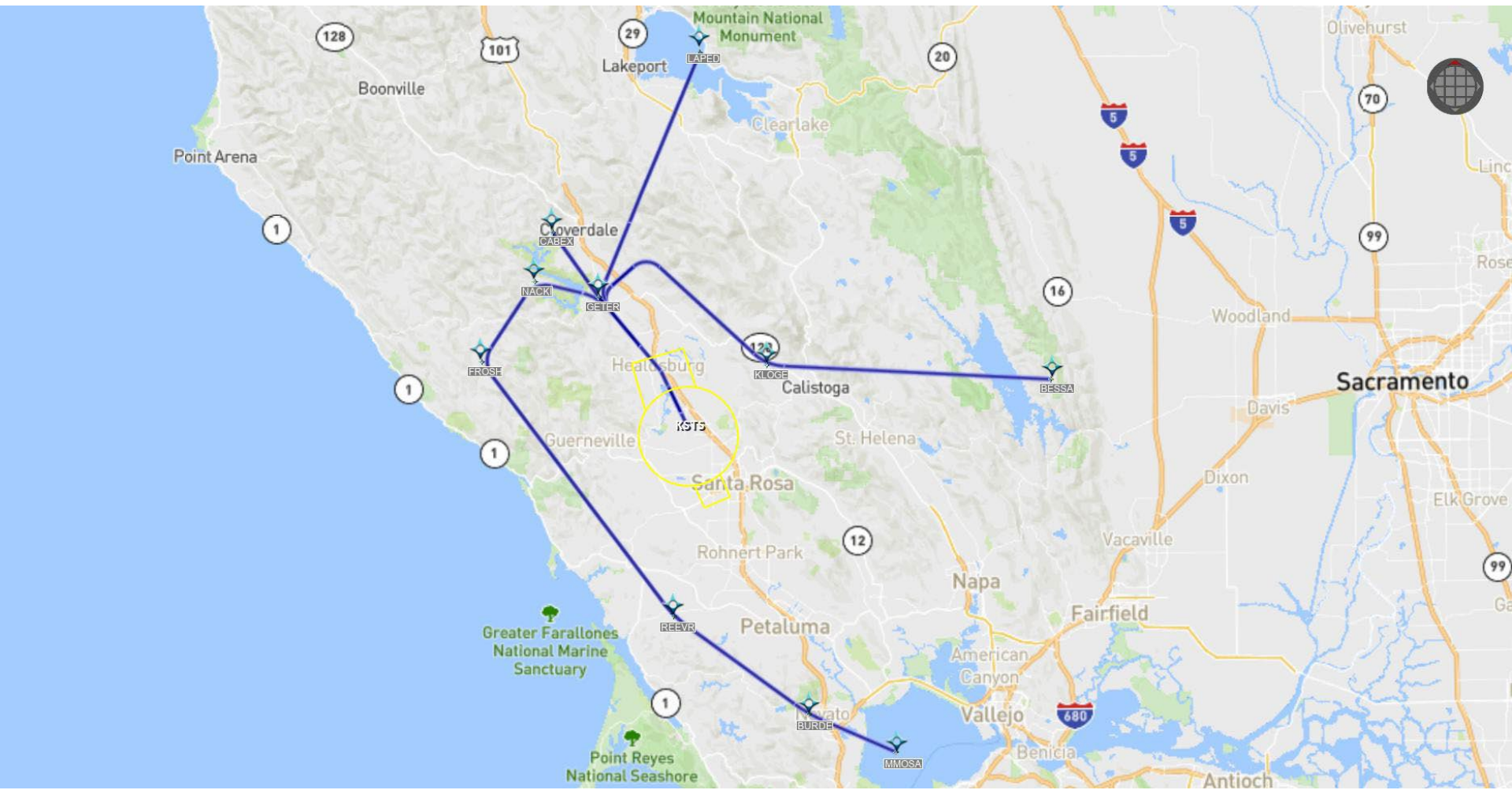
## LEGEND

-  Proposed procedure
-  Existing Procedure

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# RUNWAY 14 - Proposed Procedures



## LEGEND

— Proposed procedure

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# RUNWAY 14 - Proposed Procedures

## Connections to Airway Network Below 18,000 feet



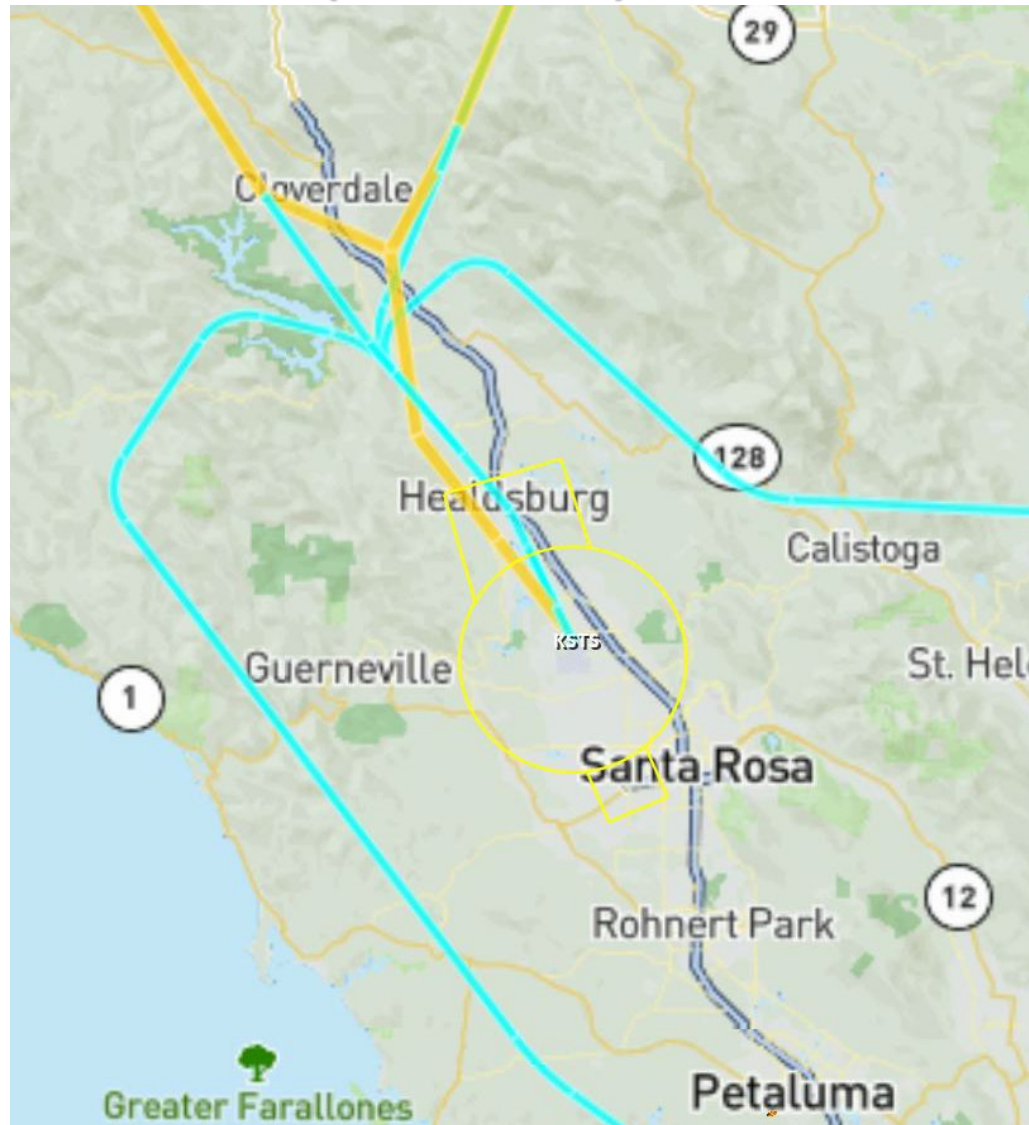
### LEGEND

 Proposed procedure

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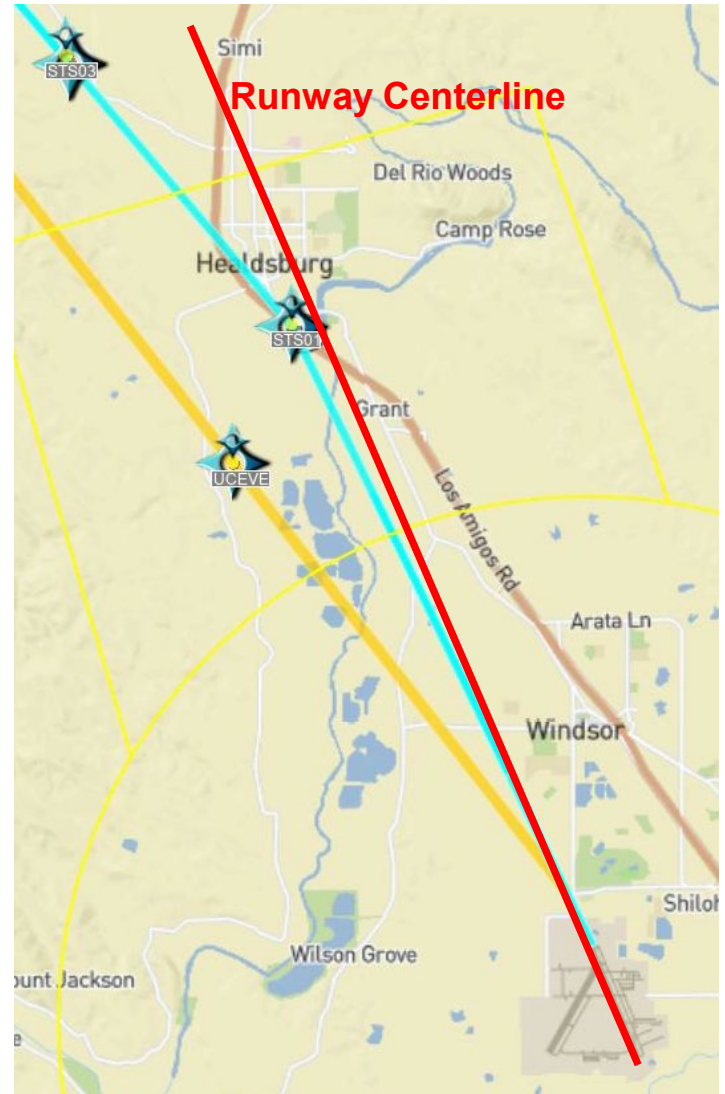
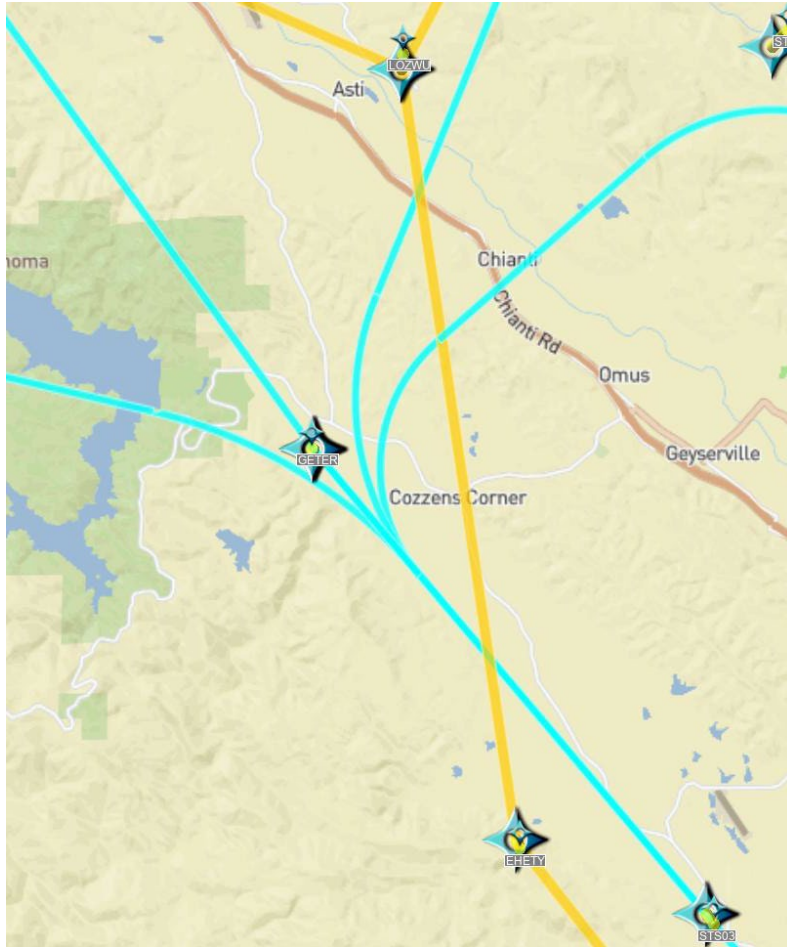
# RUNWAY 14 - Proposed Procedures Overlaid on Existing Procedures (Zoomed In)



## LEGEND

- Proposed procedure
- Existing Procedure

# RUNWAY 14 - Proposed Procedures Overlaid on Existing Procedures (Zoomed In)

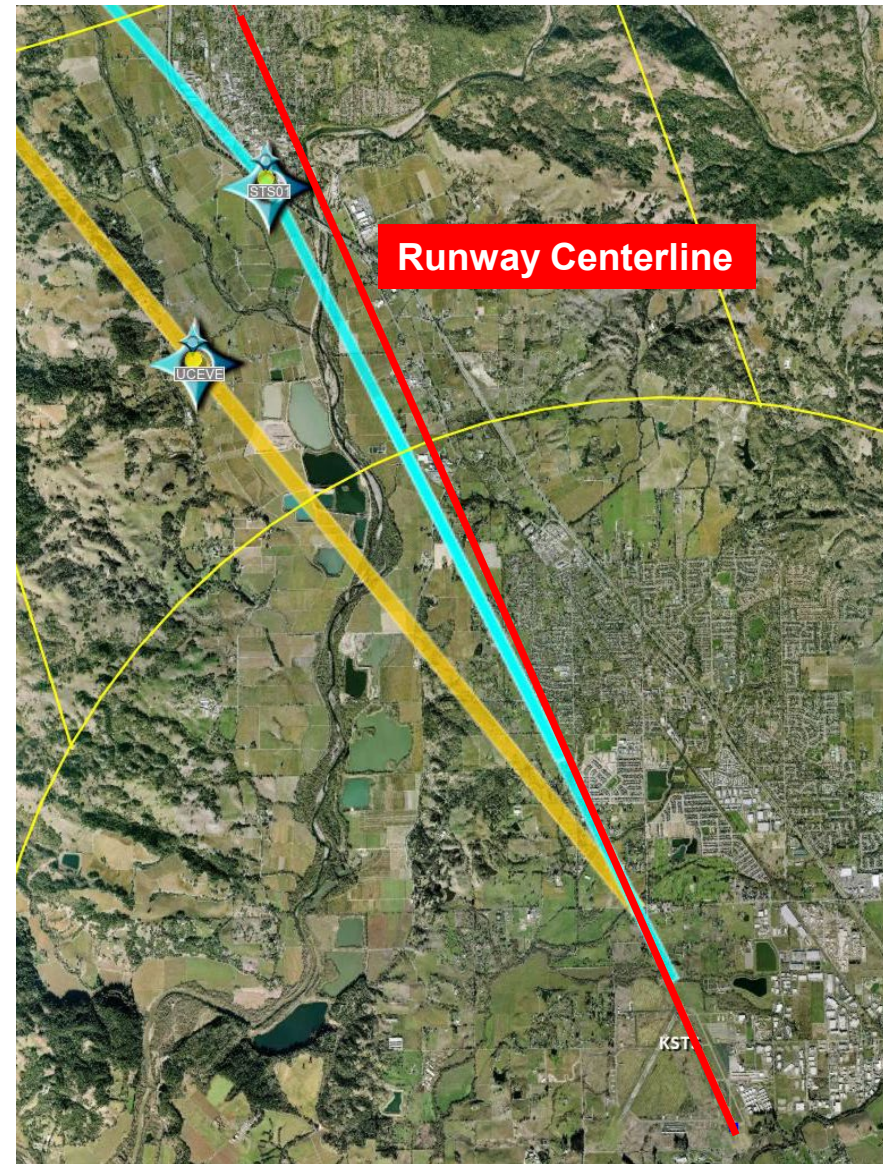
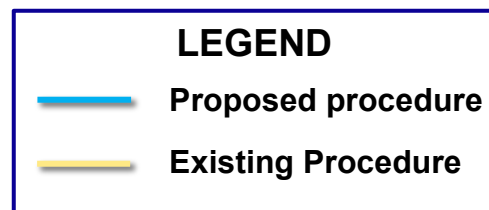


## LEGEND

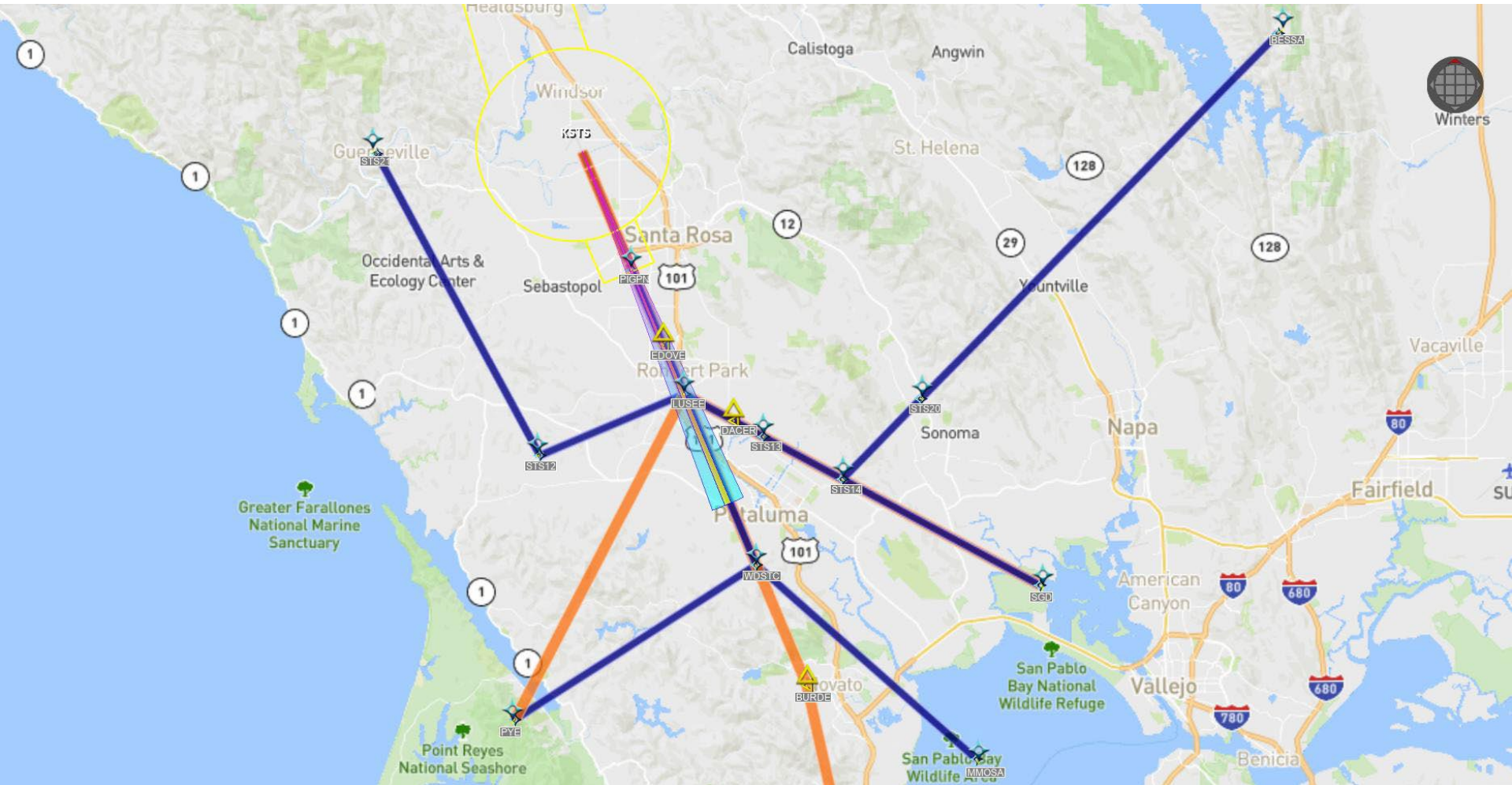
-  Proposed procedure
-  Existing Procedure

# Runway 14 - What's Different

- New approach enables arriving aircraft to be in a continuous state of descent with low or idle power settings
- RW14 with a slightly steeper descent angle to mitigate overflight of Healdsburg residential community
- Final approach is offset from the runway centerline



# RUNWAY 32 - Proposed Procedures Overlaid on Existing Procedures



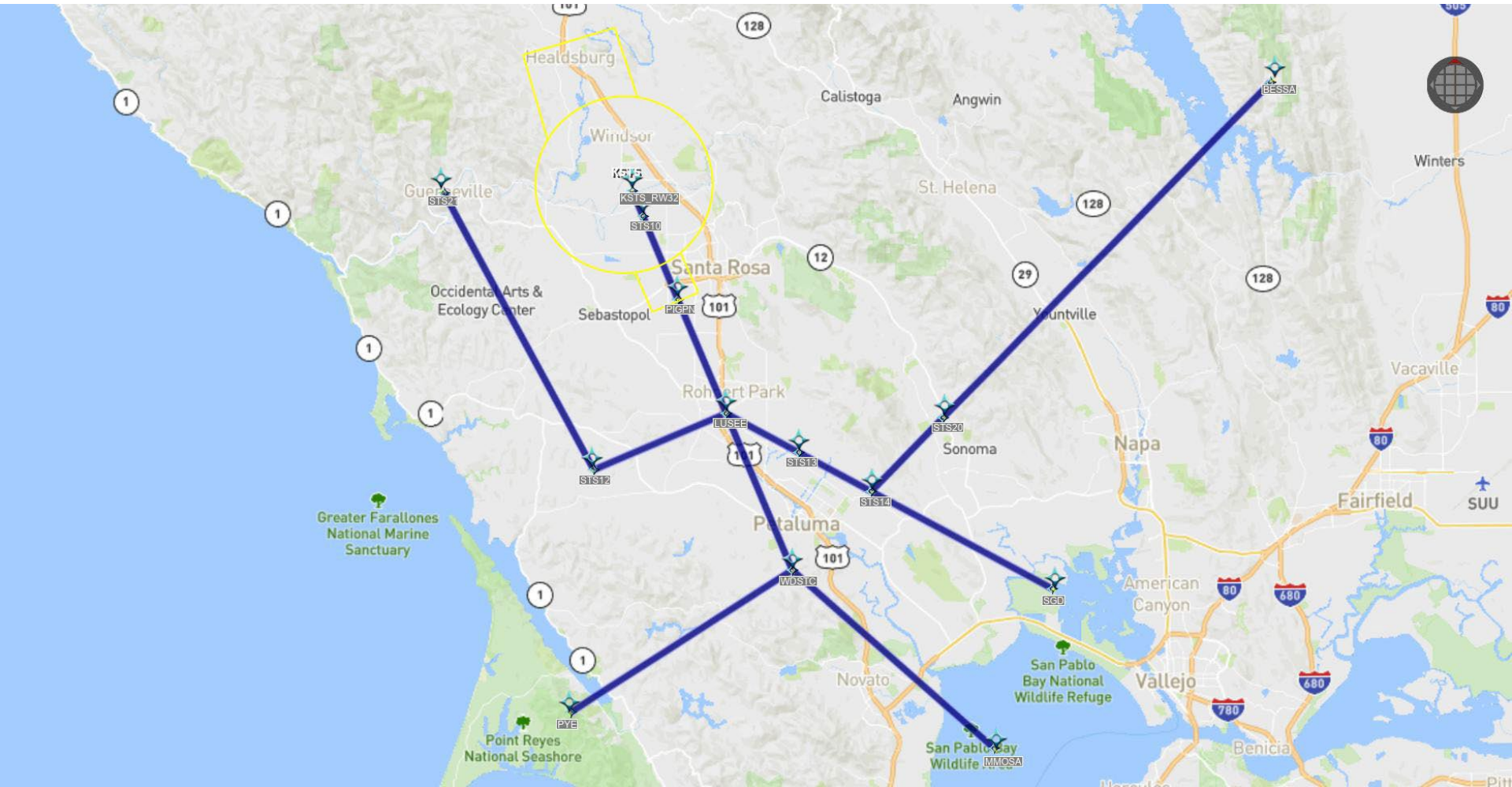
## LEGEND

-  Proposed procedure
-  Existing Procedure

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# RUNWAY 32 - Proposed Procedures



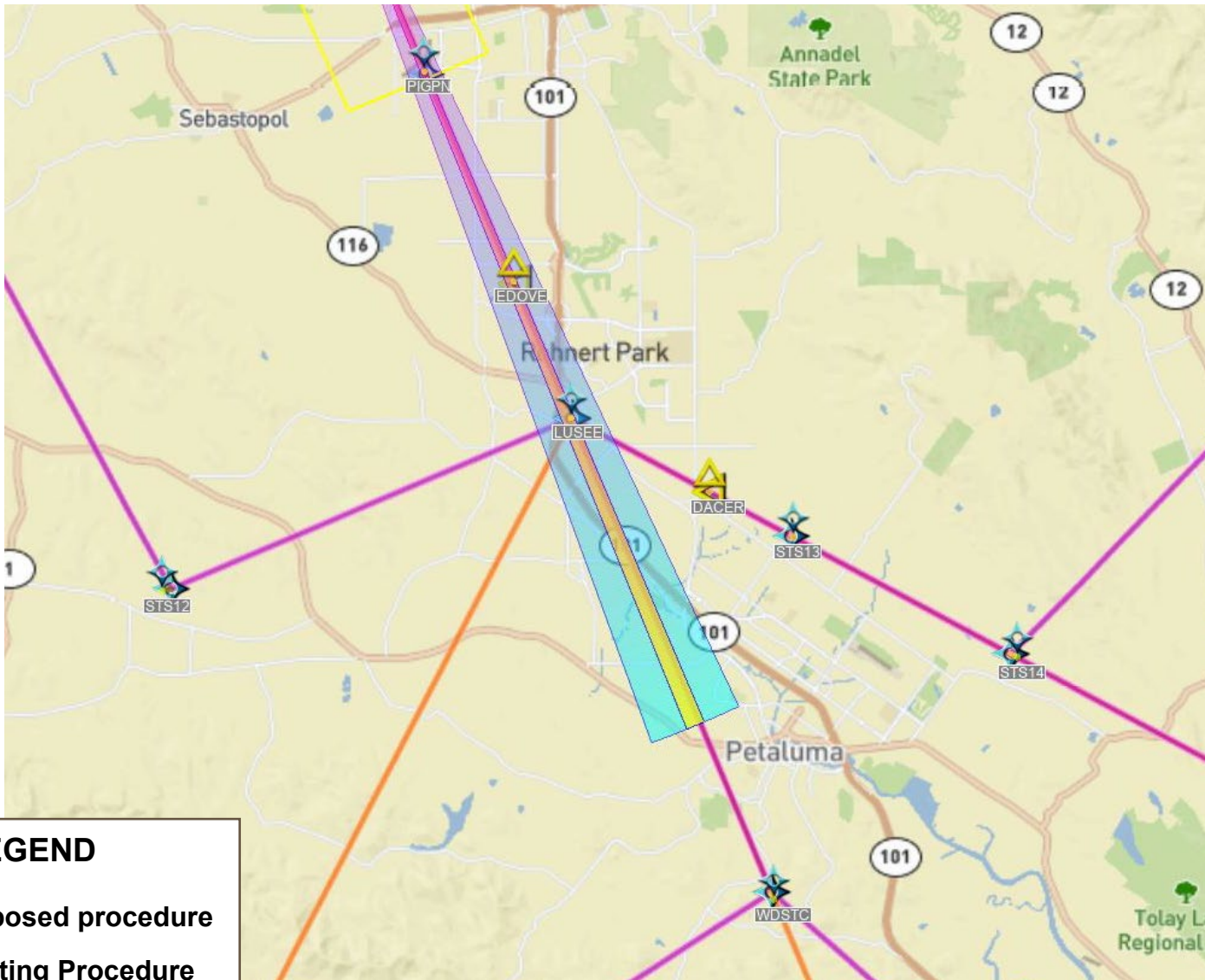
## LEGEND

— Proposed procedure

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# RUNWAY 32 - Proposed Procedures Overlaid on Existing Procedures

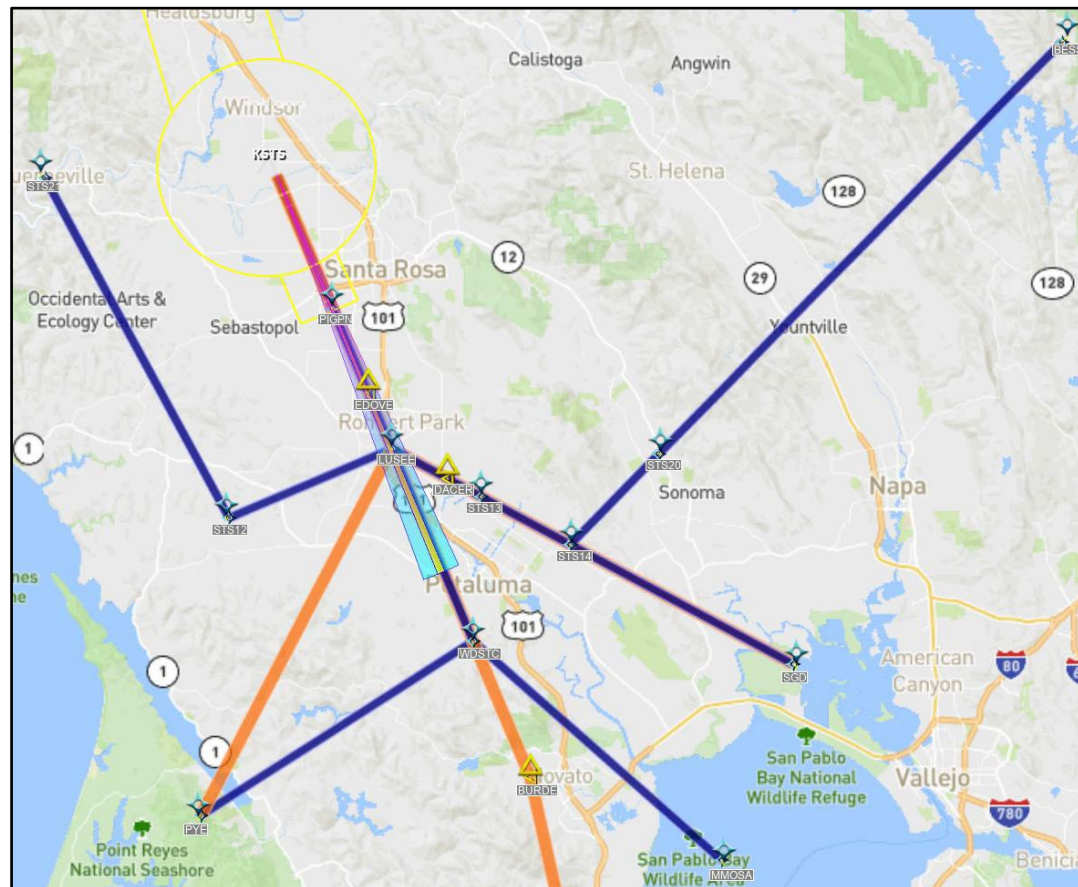


## LEGEND

-  Proposed procedure
-  Existing Procedure

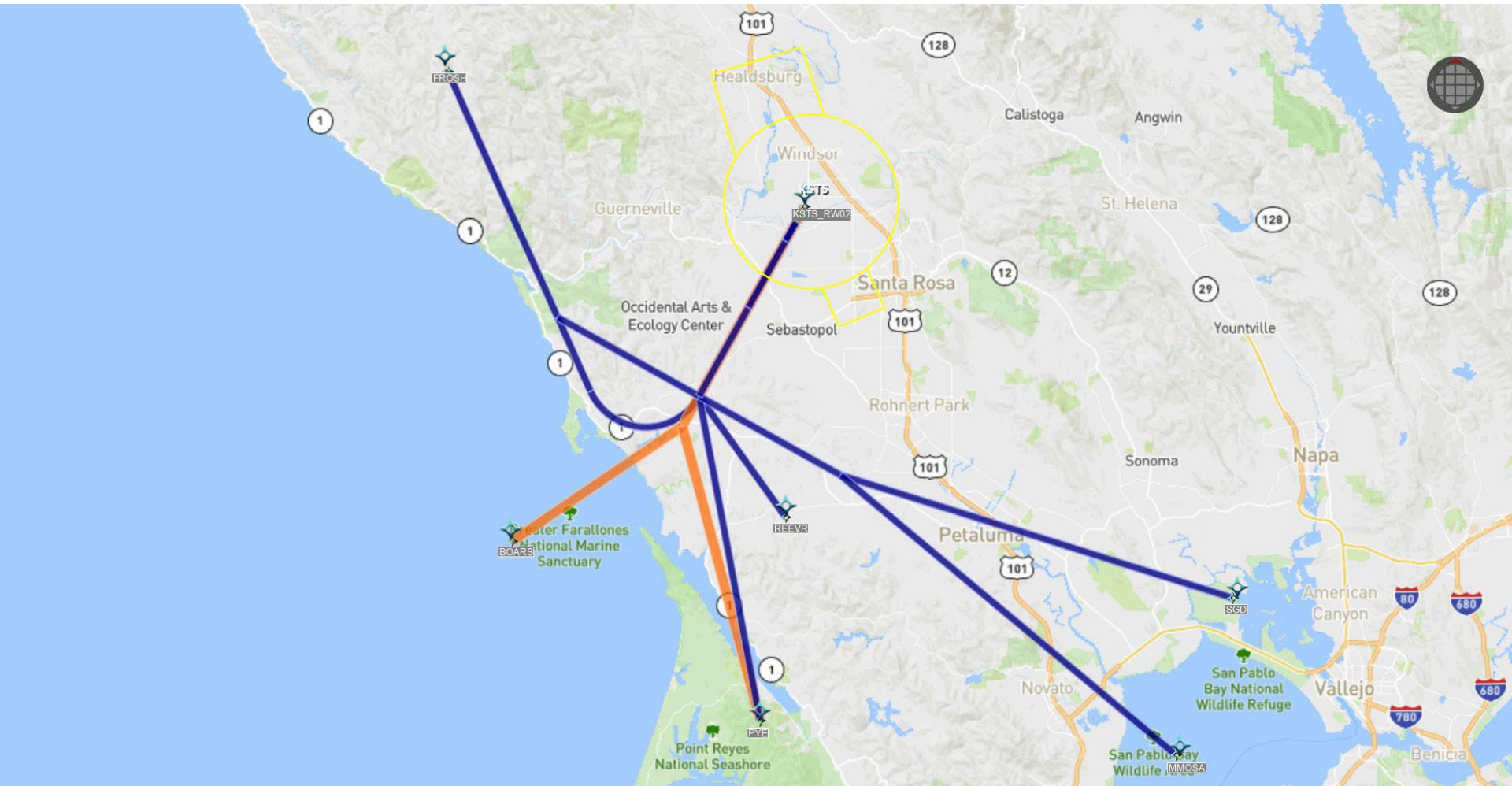
# Runway 32 - What's Different

- Reduce unnecessary flights over residential areas
- More consistent flight paths to better manage noise levels
- Reduced noise footprint
- Reduction in GHG emissions





# RUNWAY 02 - Proposed Procedures Overlaid on Existing Procedures



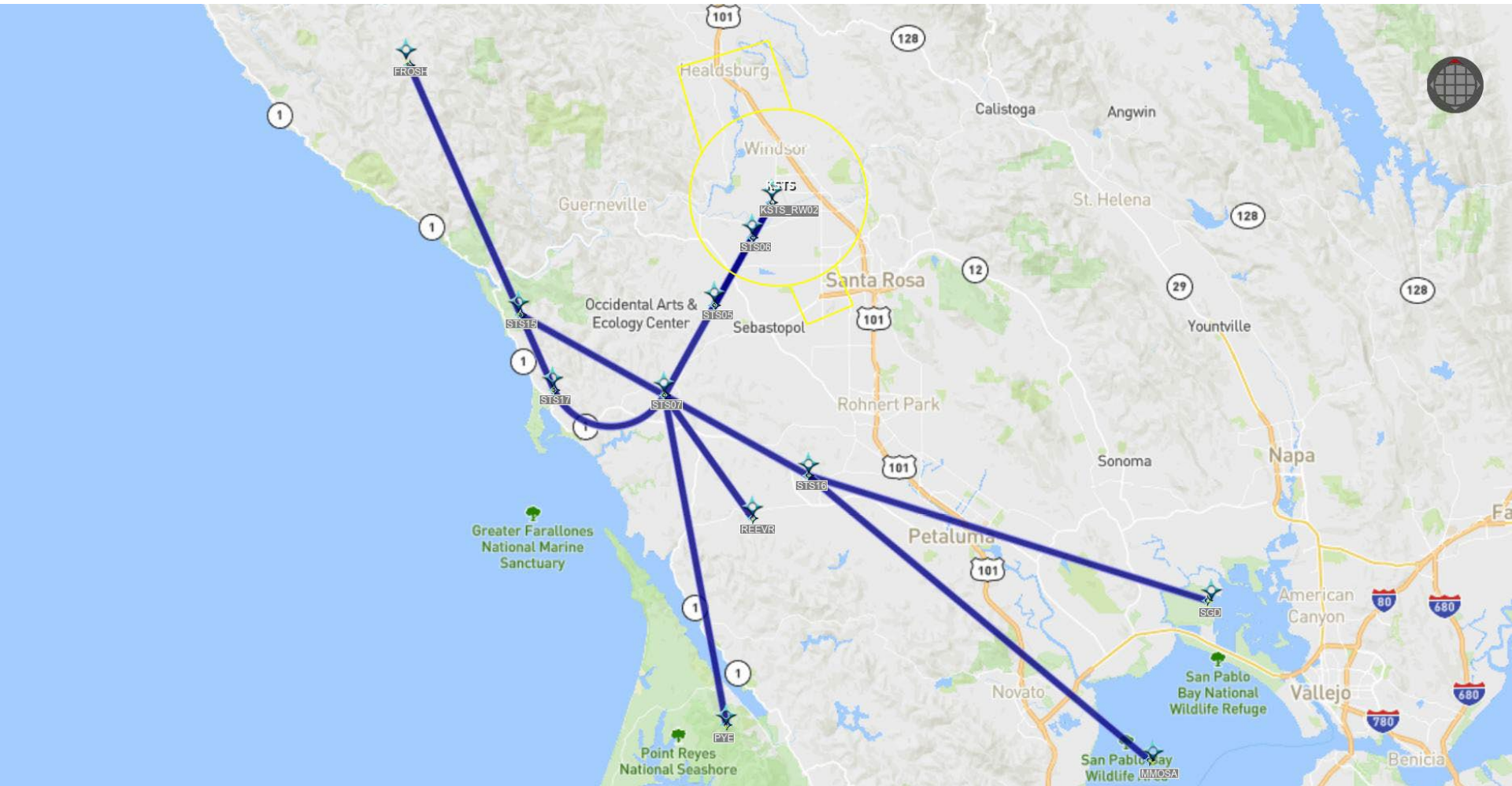
## LEGEND

-  Proposed procedure
-  Existing Procedure

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# RUNWAY 02 - Proposed Procedures



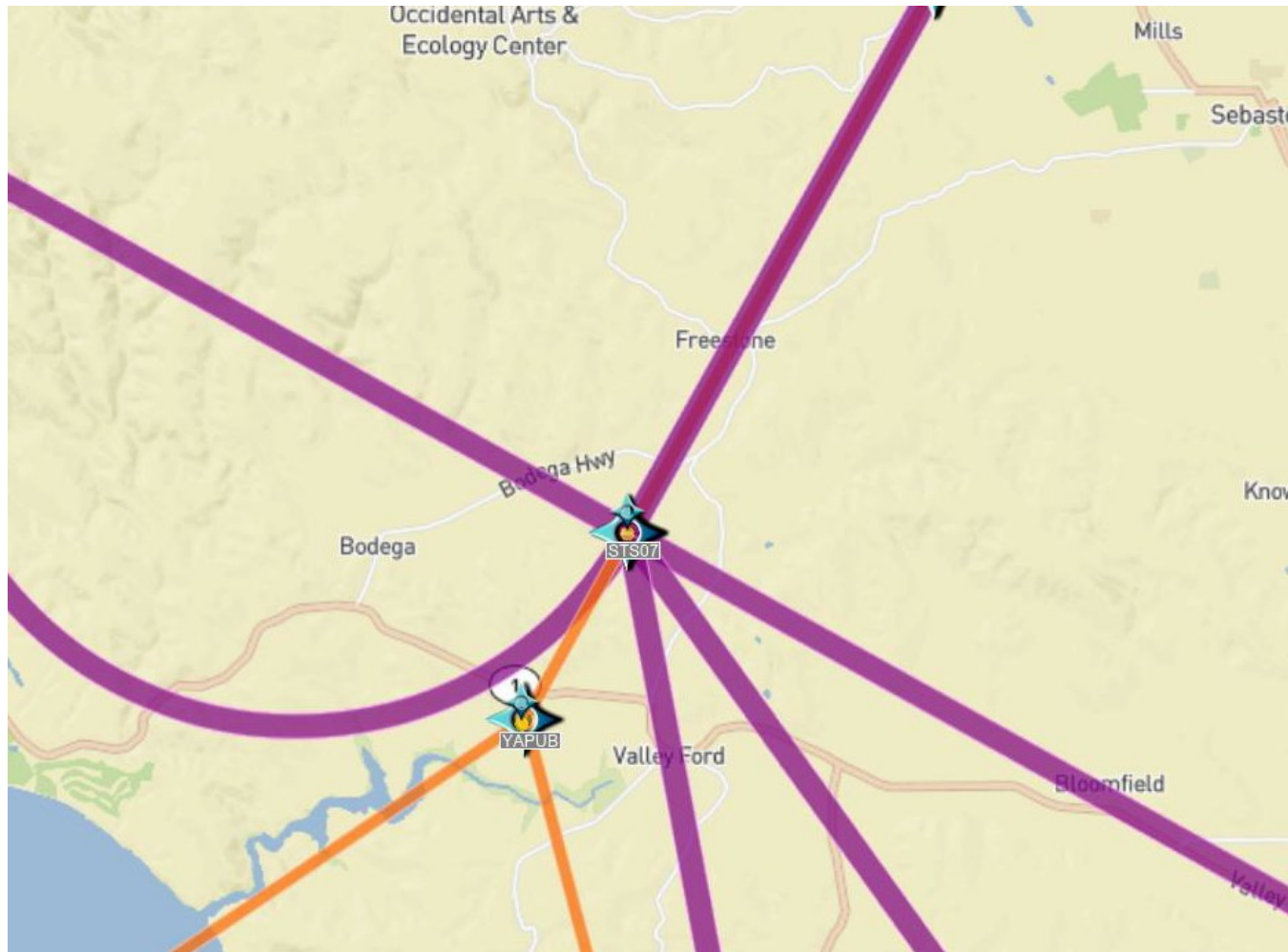
## LEGEND

— Proposed procedure

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# RUNWAY 02 - Proposed Procedures Overlaid on Existing Procedures



## LEGEND

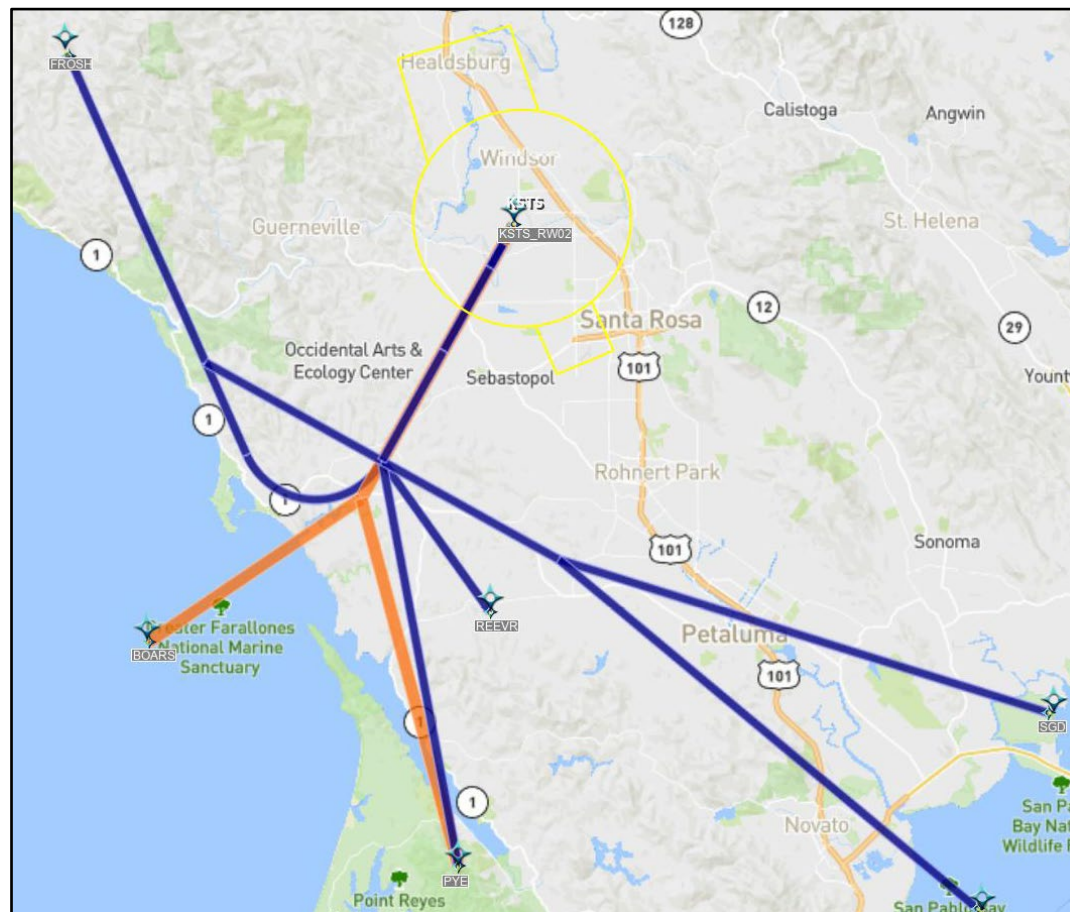
-  Proposed procedure
-  Existing Procedure

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# Runway 02 - What's Different

- Reduce unnecessary flights over residential areas
- More consistent flight paths to better manage noise levels
- Reduced noise footprint over Sebastopol
- Reduction in GHG emissions

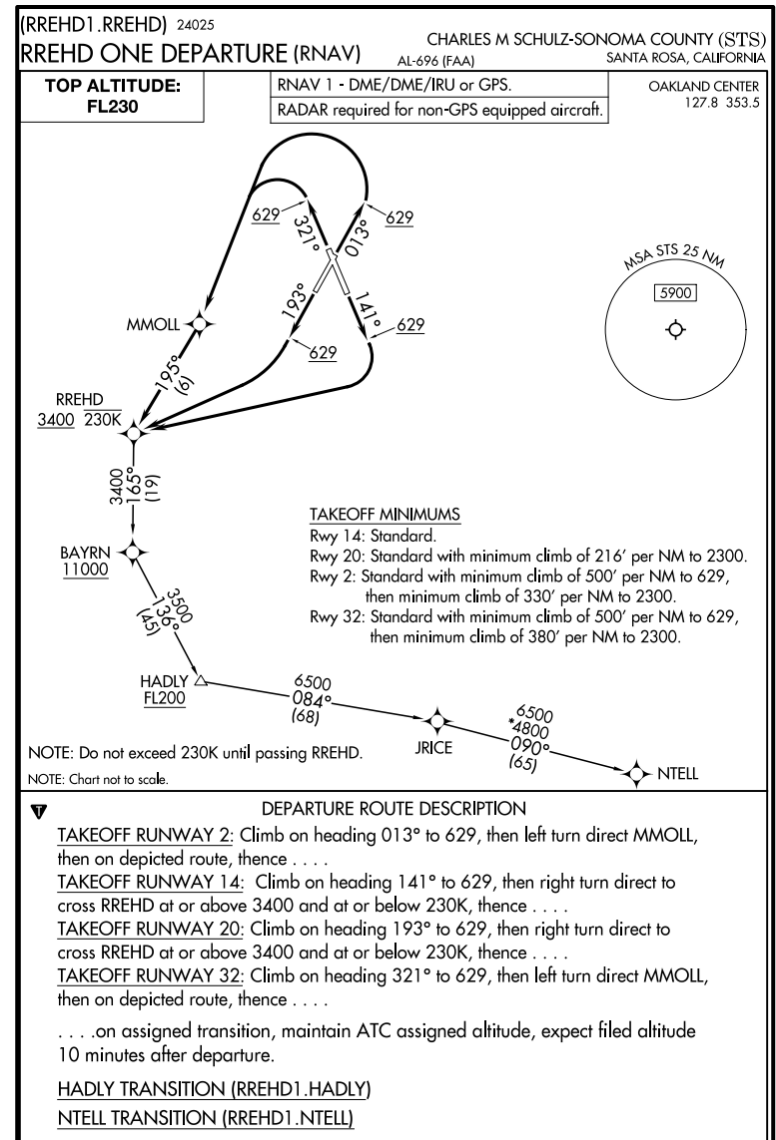


## LEGEND

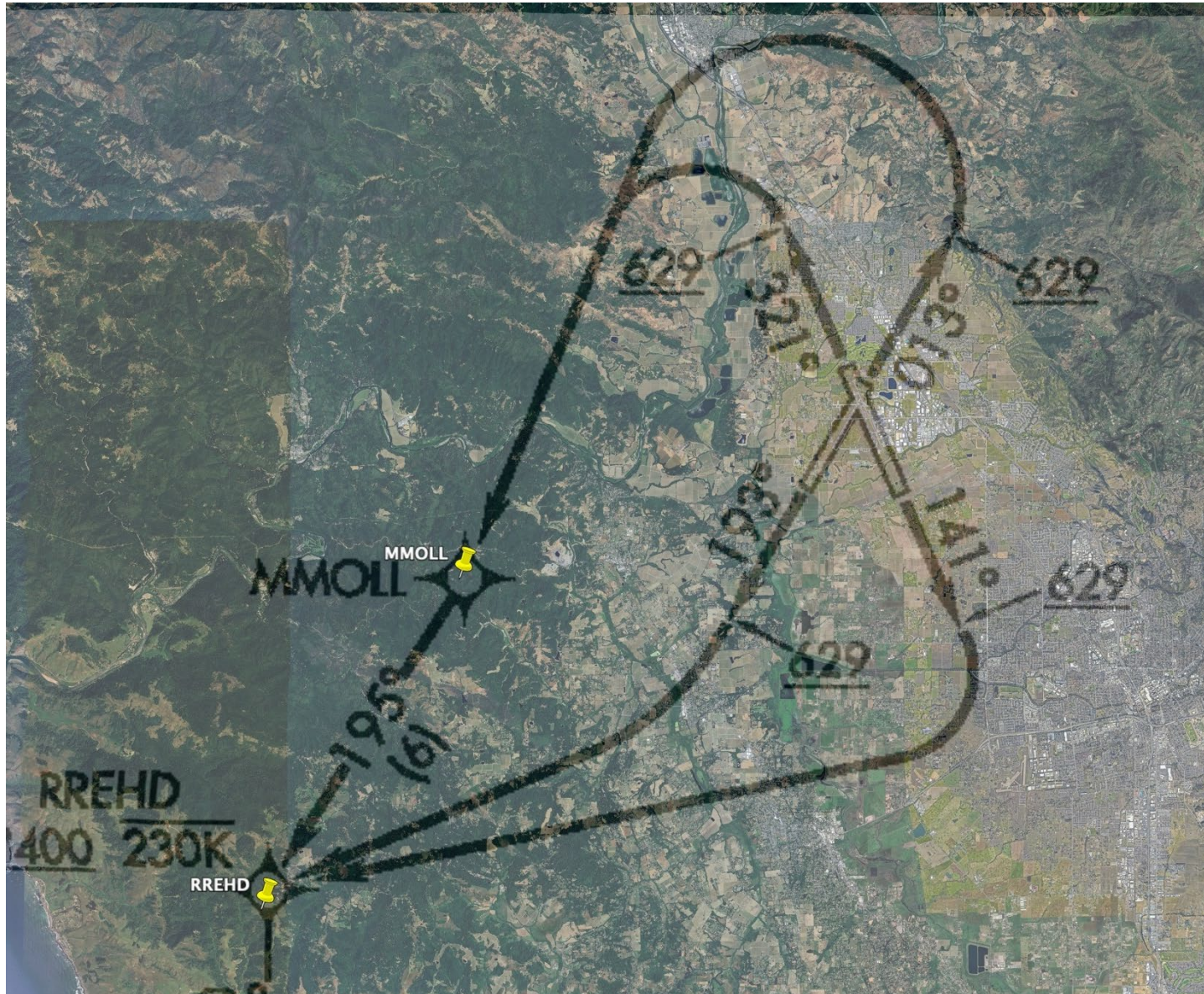
- Proposed procedure
- Existing Procedure

# DEPARTURE PROCEDURE - RREHD

- **Current Published Guidance**
  - Aircraft turn at 500 feet while climbing
    - Turn point varies based on rate of climb and wind direction/speed
- **Proposed Modifications**
  - Establish a turn point over the ground
  - Establish a path to the turn point
- **Expected Outcomes**
  - Improved noise management
    - Minimal variation
    - Predictable noise exposure
- **Future Concept/Update**
  - TBD based on FAA Approval



# DEPARTURE PROCEDURE - RREHD



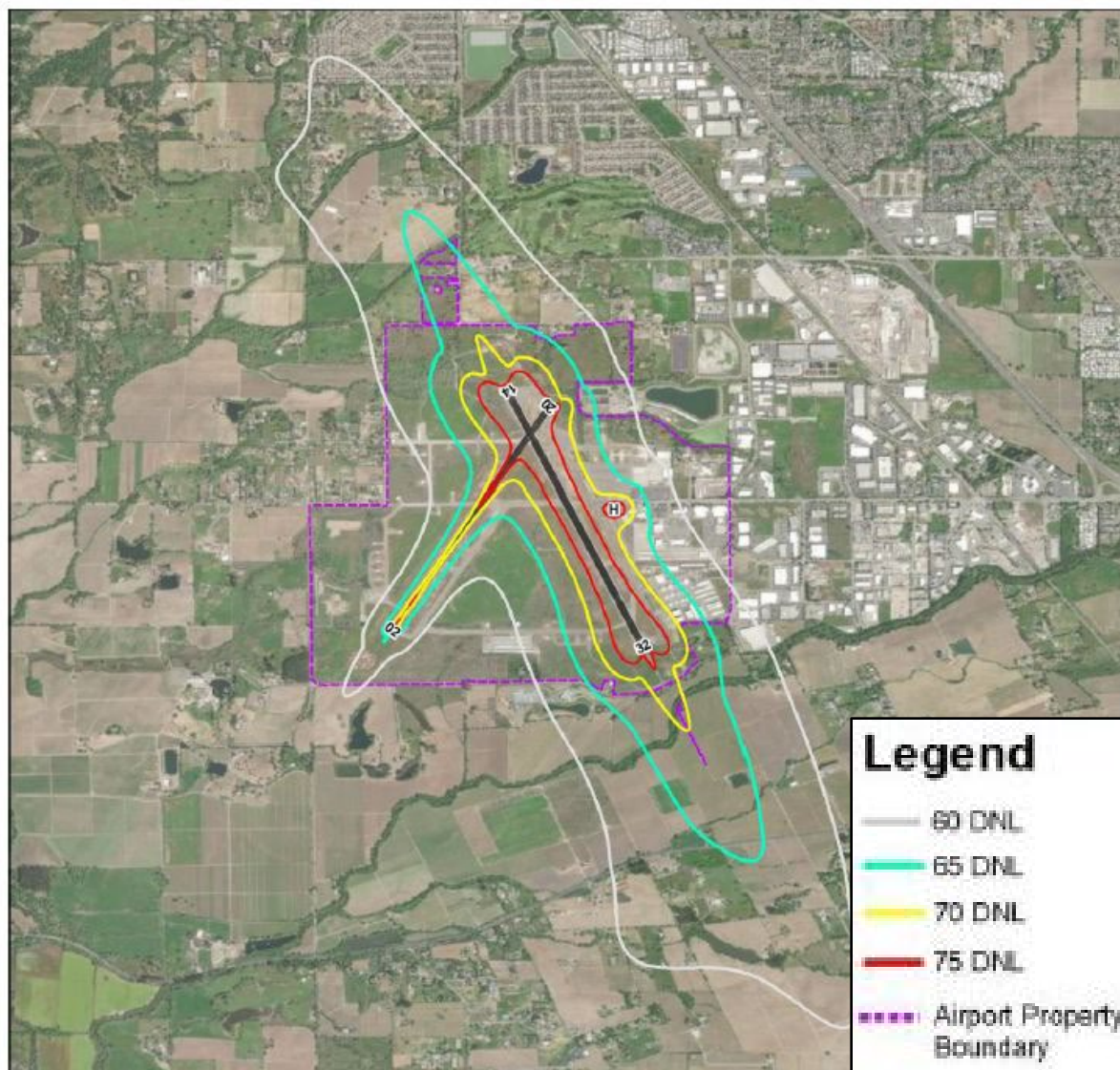
# PART 150 vs. Procedure Redesign

## What is a PART 150 & Why is it not the answer for STS

- Part 150 establishes a voluntary, FAA administered program that includes procedures to be followed by airports/aircraft to assess aircraft noise and land use
  - Part 150 only focuses inside the 65 Community Noise Level Equivalent (CNEL) – anything outside is not eligible for consideration
  - STS only has eight non-compatible land uses within the Future Year (2038) noise contour that would qualify under the federal guidelines
  - Airport has noise mitigation strategies in place that may include: purchase assurance, acoustical treatment, purchase of easements, sales related assistance, and operational mitigations

**PART 150 NOISE COMPATIBILITY  
PLANNING STUDY**

# PART 150 vs. Procedure Redesign

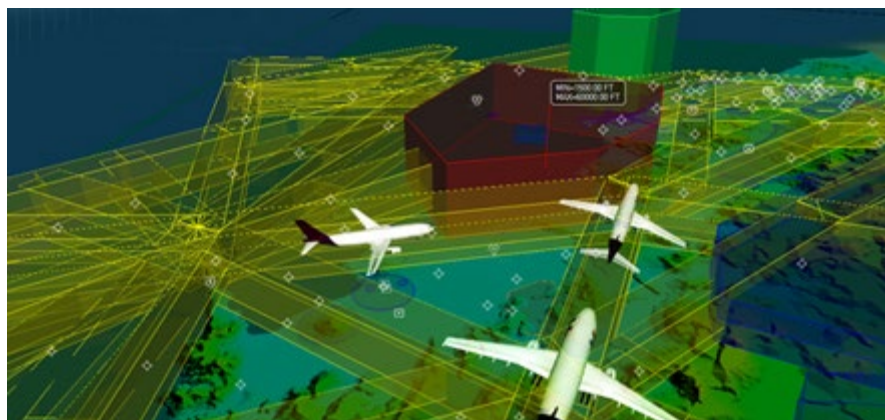




# PART 150 vs. Procedure Redesign

## Advantages of procedure redesign

- An approach feasibility study evaluates the entire airspace structure
  - It does not focus on conforming or non-conforming land-use
  - If any procedures are brought forward for implementation and approved by the FAA, they would be published for use by ATC
- A change that could benefit the entire community



## Fly Quiet Program (Fixed Wing & Helicopter)

- Fly quiet programs establish voluntary guidelines
  - **Program Objectives**
    - Encourage adherence to noise abatement procedures
    - Utilize preferential runway programs
    - Aircraft to be operated in a noise conscious way
    - Fly the quietest aircraft
  - **Current Status**
    - Early stages of development of voluntary guidance
    - Findings and recommendations of this Approach Feasibility Study are critical building blocks

# QUESTIONS OR COMMENTS

 Court Reporter Present OR Scan QR code below

 <https://stsgoodneighbor.com/>



## APPROACH FEASIBILITY WORKSHOP

Scan the QR code or visit: <https://linktr.ee/stsairport> to view workshop materials, submit comments or questions, submit a noise complaint, or access our website.

Responses will be compiled and published at a later date.



## TALLER DE VIABILIDAD DE LA APROXIMACIÓN

Escanear el código QR o visitar <https://linktr.ee/stsairport> para ver los materiales del taller, enviar comentarios o preguntas, enviar una queja por ruido o acceder a nuestro sitio web.

Las respuestas se compilarán y publicarán en una fecha posterior.



# Definitions & Abbreviations

- **Pending Routes** - Routes that have been proposed and are in the process of being reviewed and approved but are not yet active
- **Effective** - Routes that have completed the review and approval process and are now active for use by aircraft.
- **T-ROUTES** - Low altitude RNAV routes (From 1,200 feet above the surface (or in some instances higher) up to but not including 18,000 feet MSL)
- **Waypoint** - A waypoint is a predetermined geographical location that is defined by latitude and longitude coordinates

CDA - Continuous Descent Arrival

DME - Distance Measuring Equipment

FAA - Federal Aviation Administration

GHG - Greenhouse Gas

GPS - Global Positioning System

ILS - Instrument Landing System

KSTS - Sonoma County Charles M. Schulz

LOC - Localizer

PAPI - Precision Approach Path Indicators

RNAV - Area Navigation

RNP - Required Navigation Performance

RWY - Runway

STAR - Standard Terminal Arrival Procedures

VOR - VHF Omnidirectional Radio Range

ZOA - Oakland Air Route Traffic Control Center

# Acronyms

- ATM Air Traffic Management
- FAA Federal Aviation Administration
- GHG Greenhouse Gas
- GPS Global Positioning System
- ICAO International Civil Aviation Organization
- ILS Instrument Landing System
- KSTS Charles M. Schulz Sonoma County Airport
- NAVAIDS Navigation Aids
- OCS Obstacle Clearance Surfaces
- PBN Performance Based Navigation
- PBN Performance-based Navigation
- RNAV Area Navigation
- RNP Required Navigation Performance
- ROC Required Obstacle Clearance
- RWY Runway
- SMS Safety Management System