



# Truckee Tahoe Airport District

Board Meeting  
October 17, 2013



# Objectives



- Assess alternatives for community benefit potential
- Recommend alternatives that will be assessed for public support and implementation.



# Runway Alternatives



## GOALS

- Reduce Impacts on Community
  - Visual (Over Flight)
  - Noise



# Runway 11-29



- Shift and displace landing thresholds
- Goal is to have aircraft at higher altitudes over residences after departure on Runway 29,

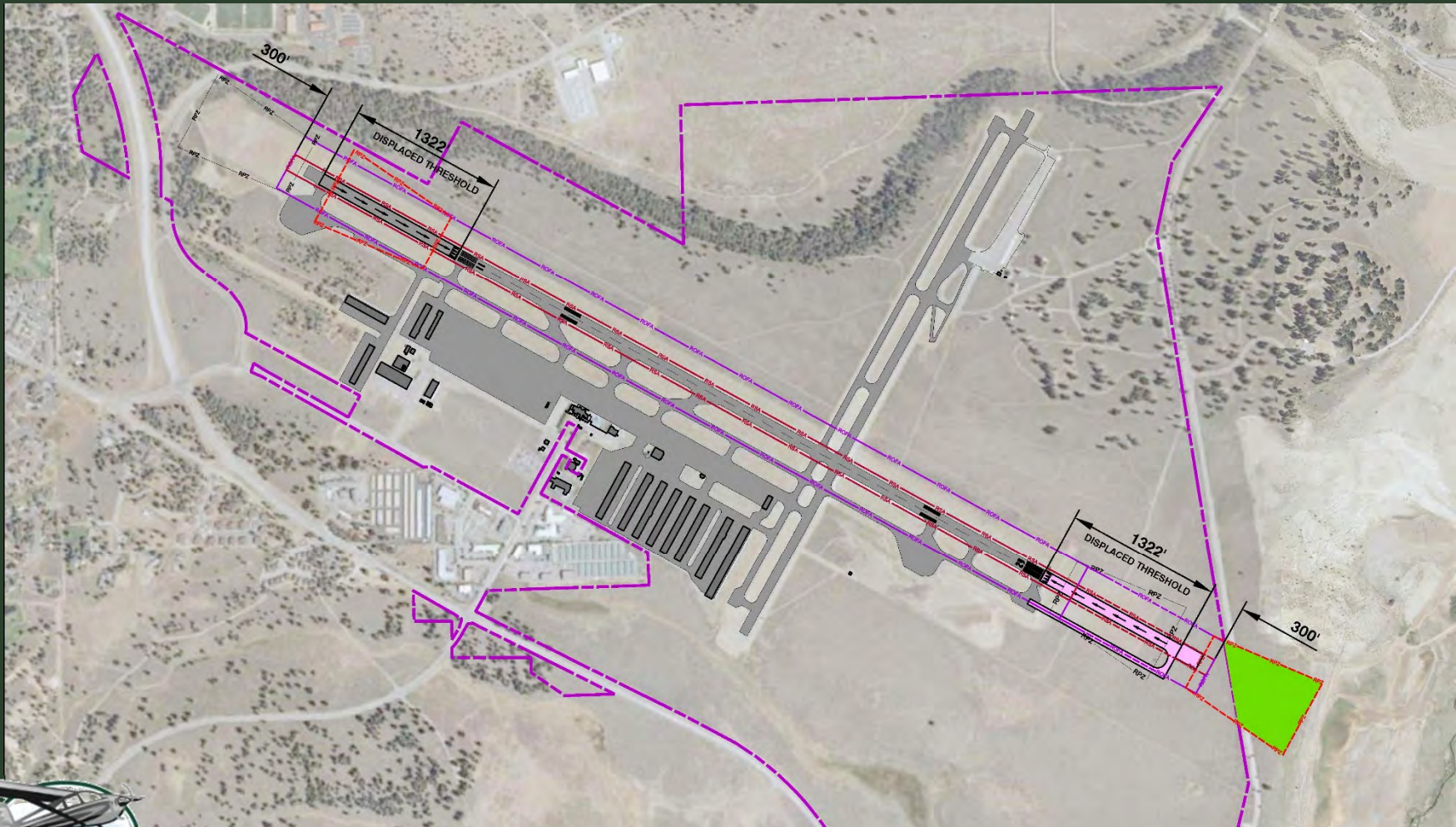




# Alternative 1A: Runway 11-29



A MASTER PLAN DEVELOPED BY THE COMMUNITY

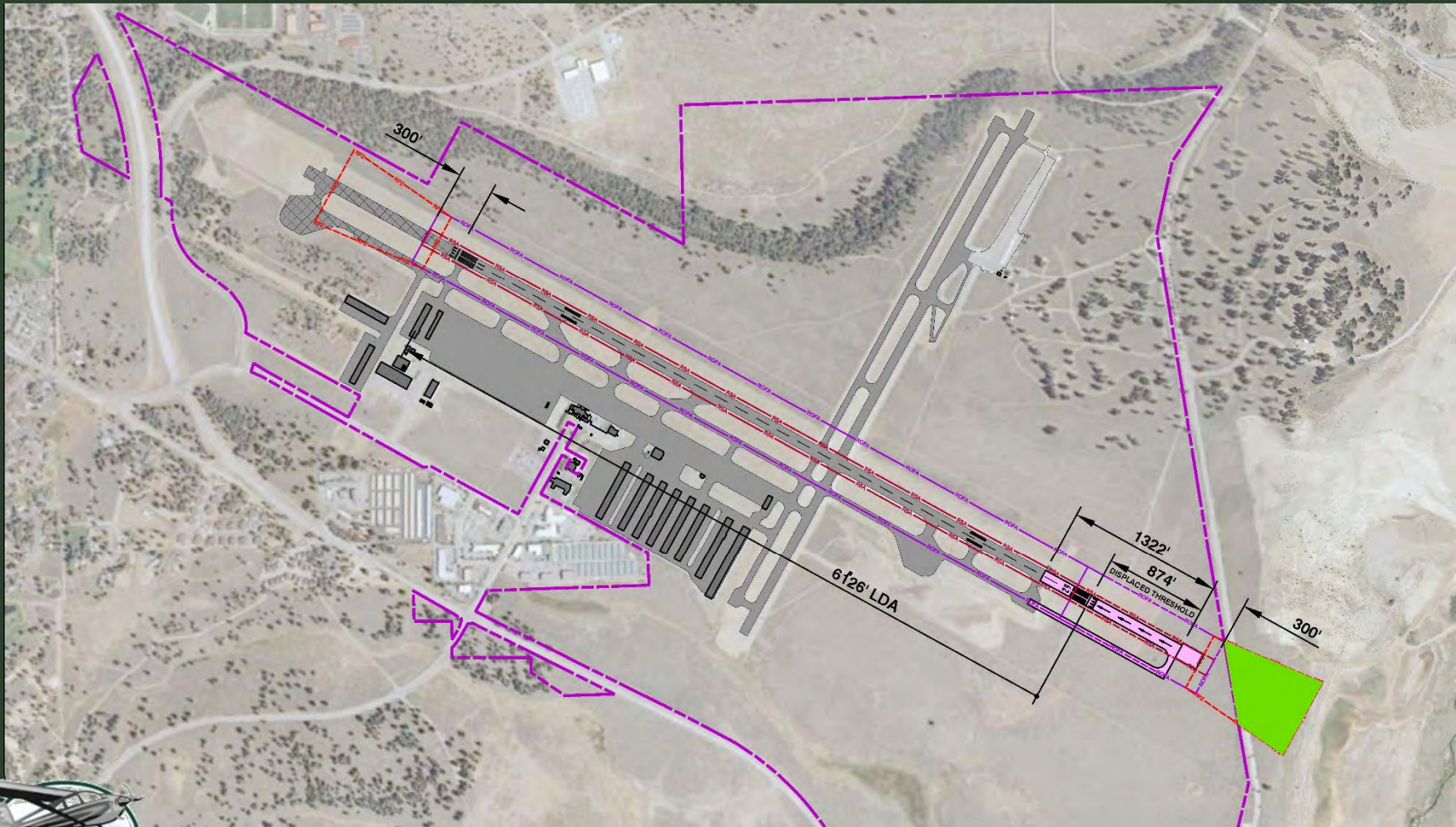




# Alternative 1B: Runway 11-29



A MASTER PLAN DEVELOPED BY THE COMMUNITY

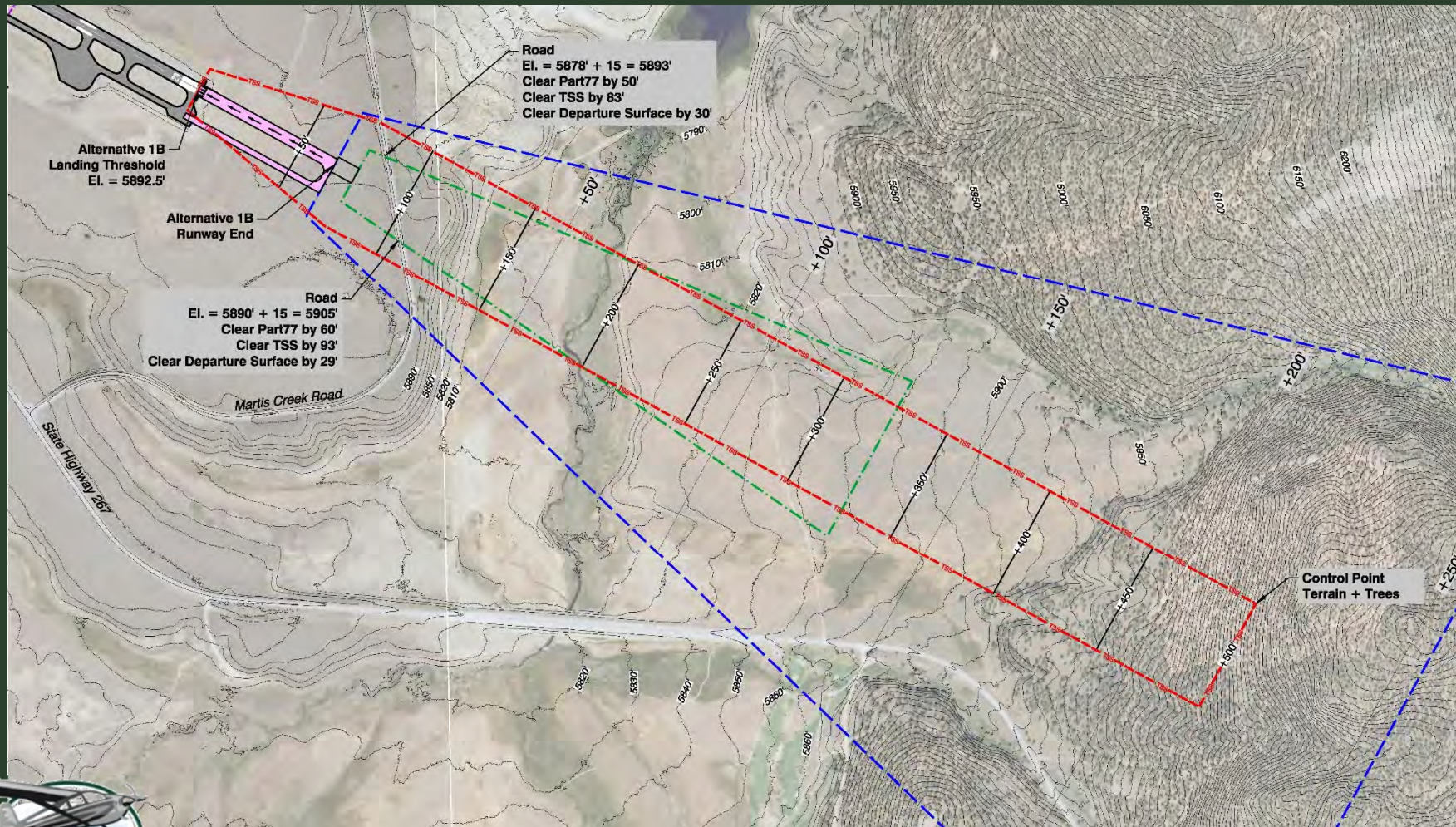




# Alternative 1B: Airspace Impacts



A MASTER PLAN DEVELOPED BY THE COMMUNITY

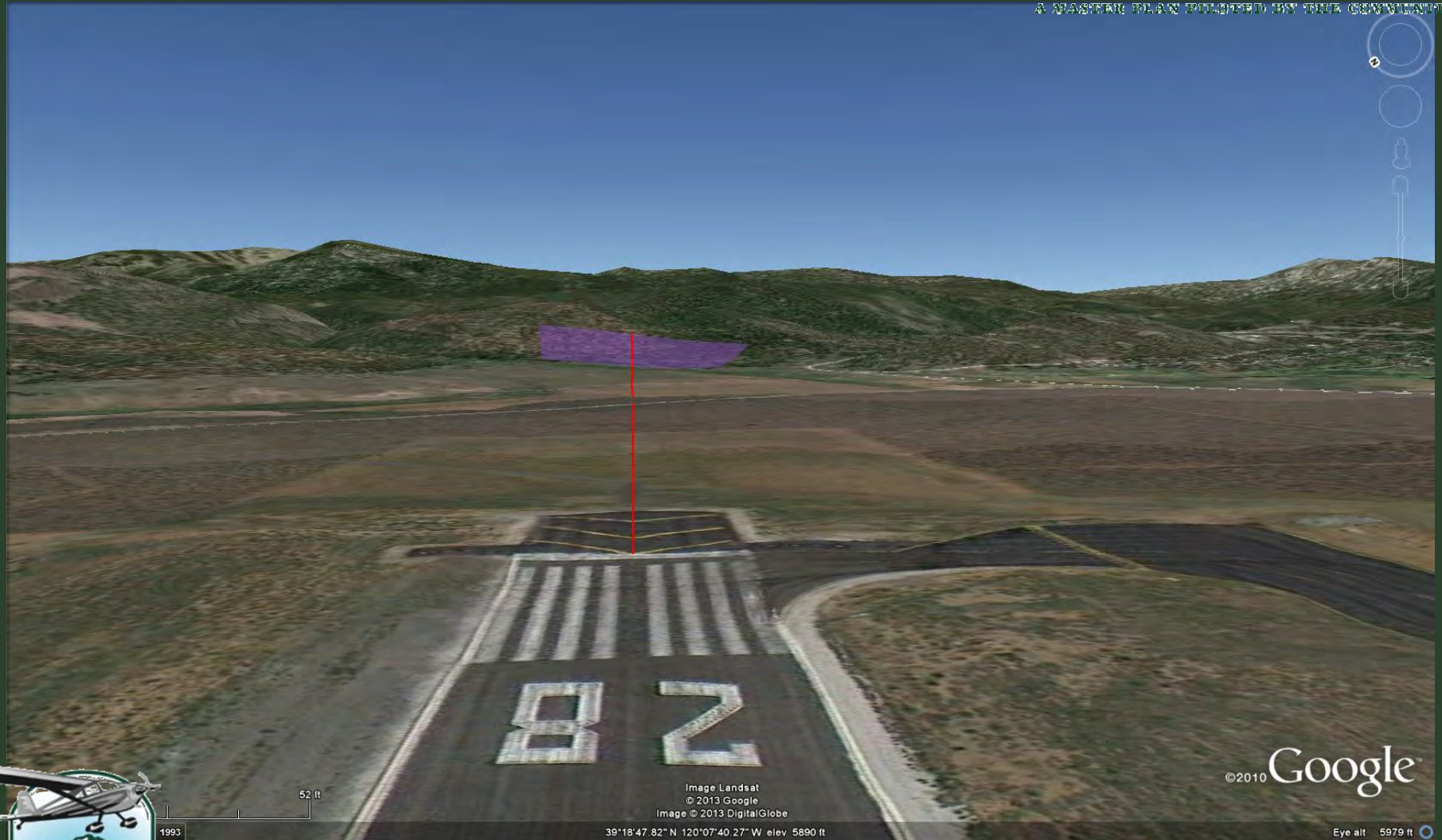




# Alternative 1B: Airspace Impacts



A MASTER PLAN DEVELOPED BY THE COMMUNITY

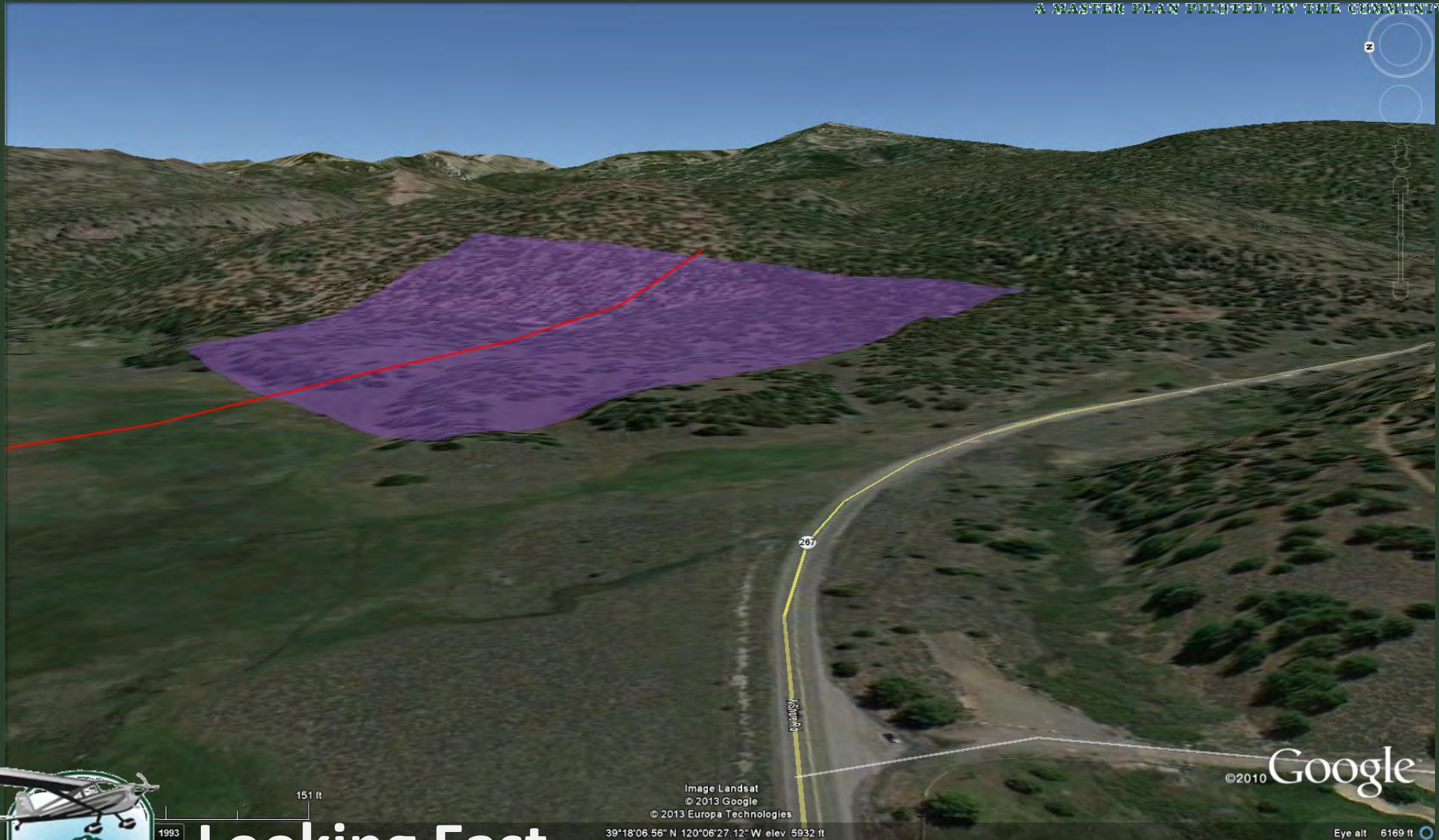




# Alternative 1B: Airspace Impacts



A MASTER PLAN FILDED BY THE COMMUNITY



## Looking East

# Alternative 1: Runway 11-29

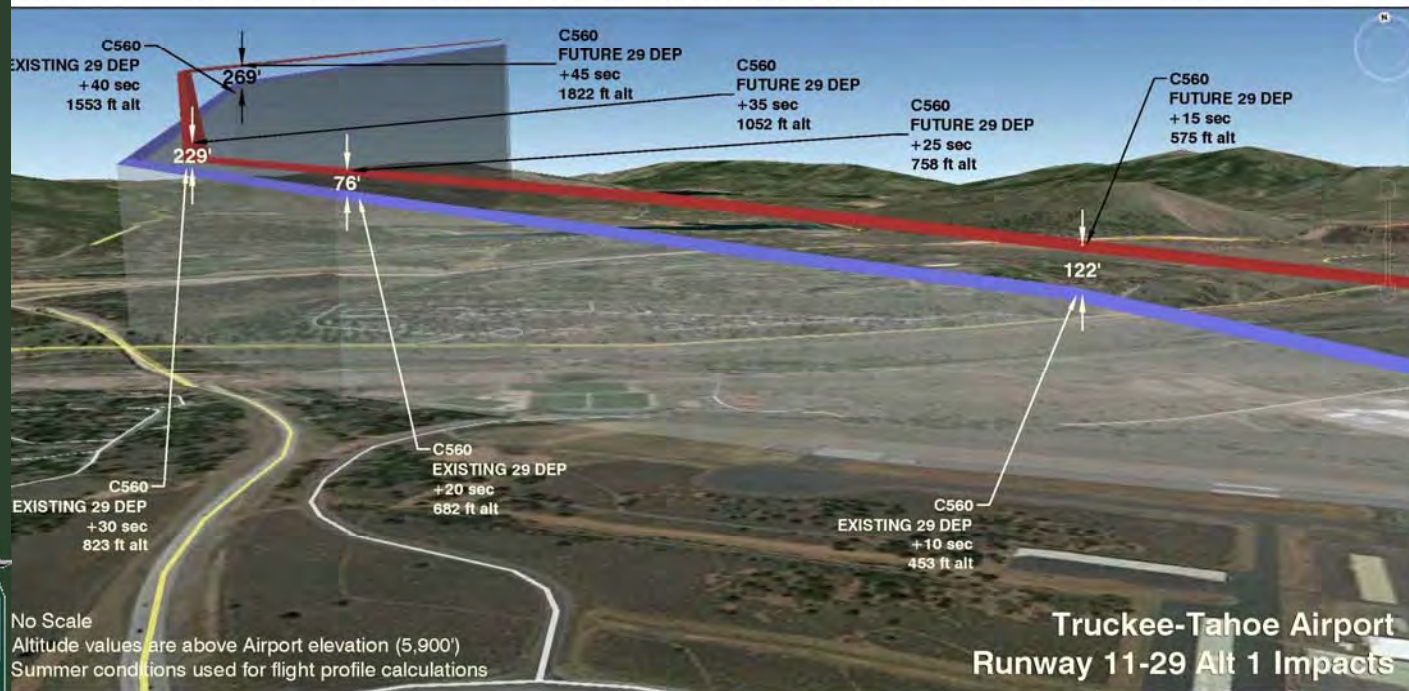
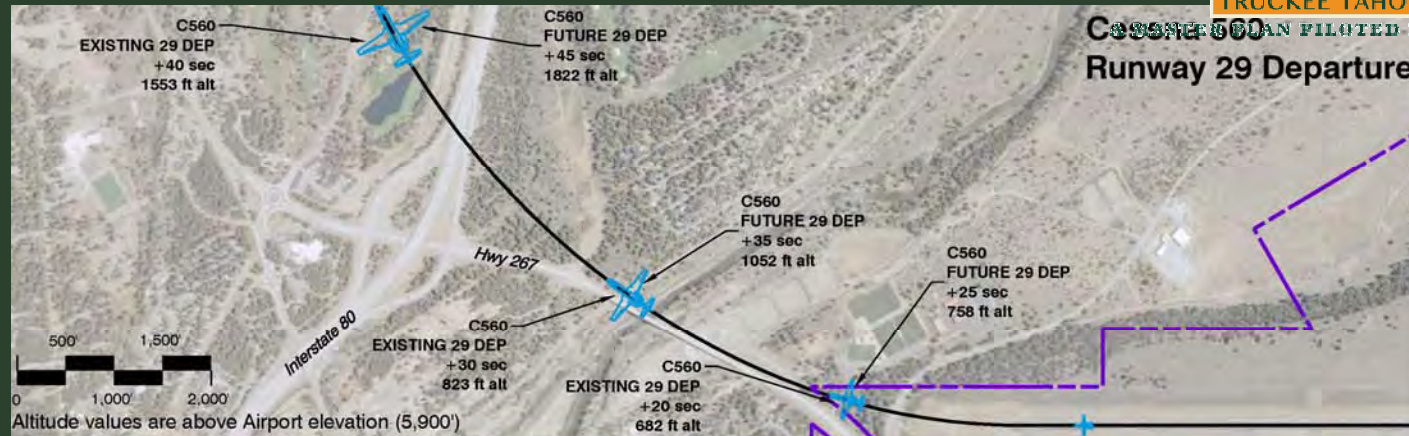


- Graphics help quantify differences in:
  - Runway 11-29 Visual, Height, and Time
  - Runway 11-29 Noise



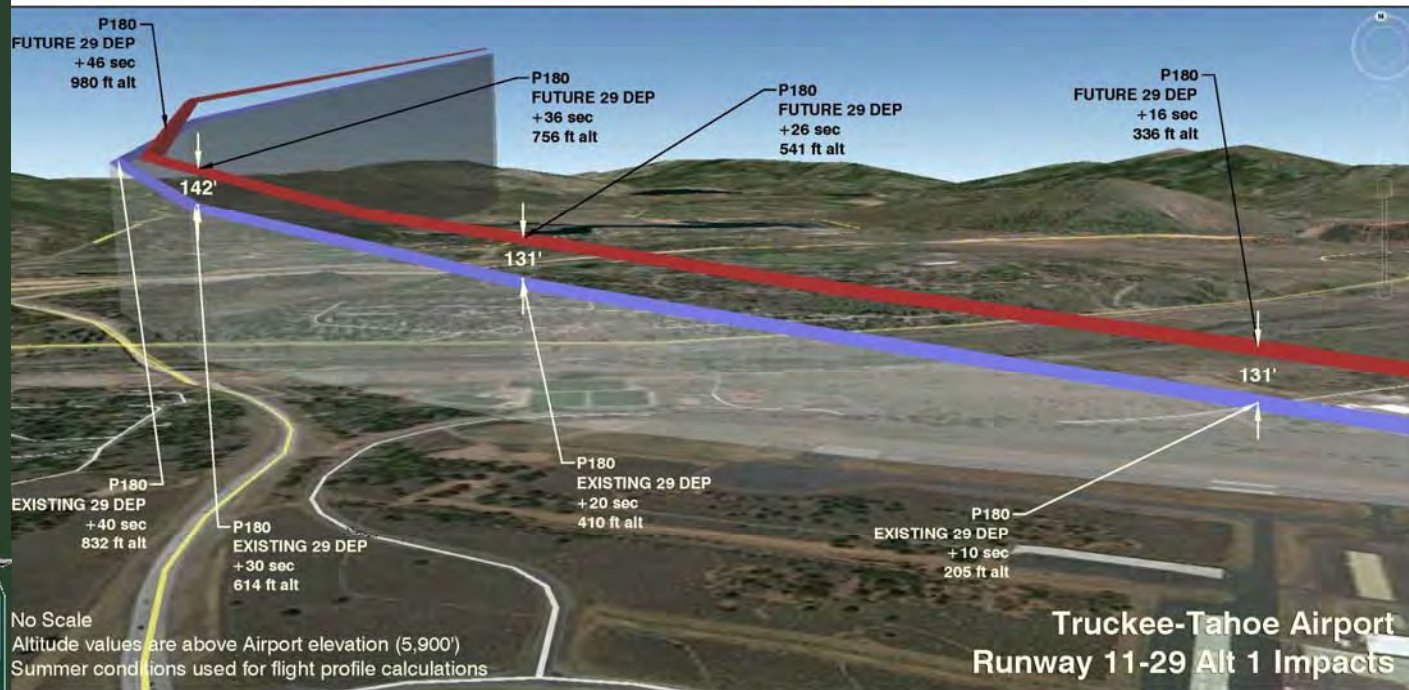
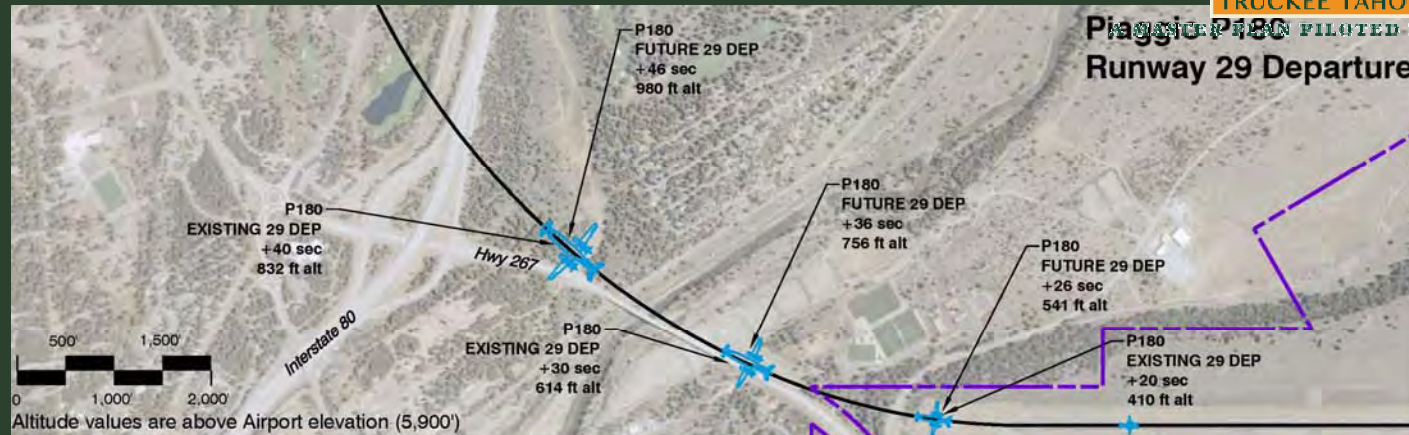


# Jet Departure Profile





# Piaggio Departure Profile

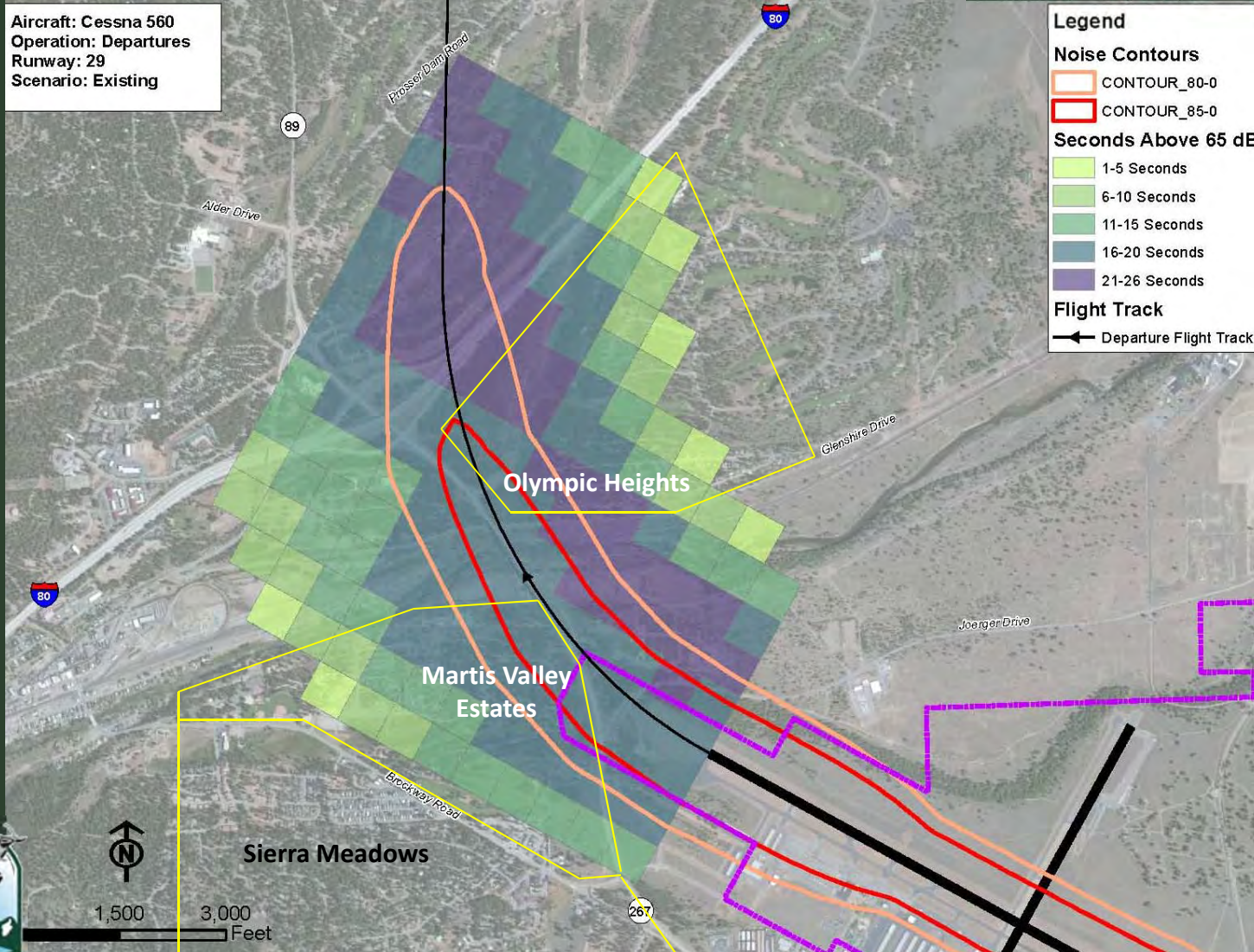




# RW 29, Jet Departure-Existing

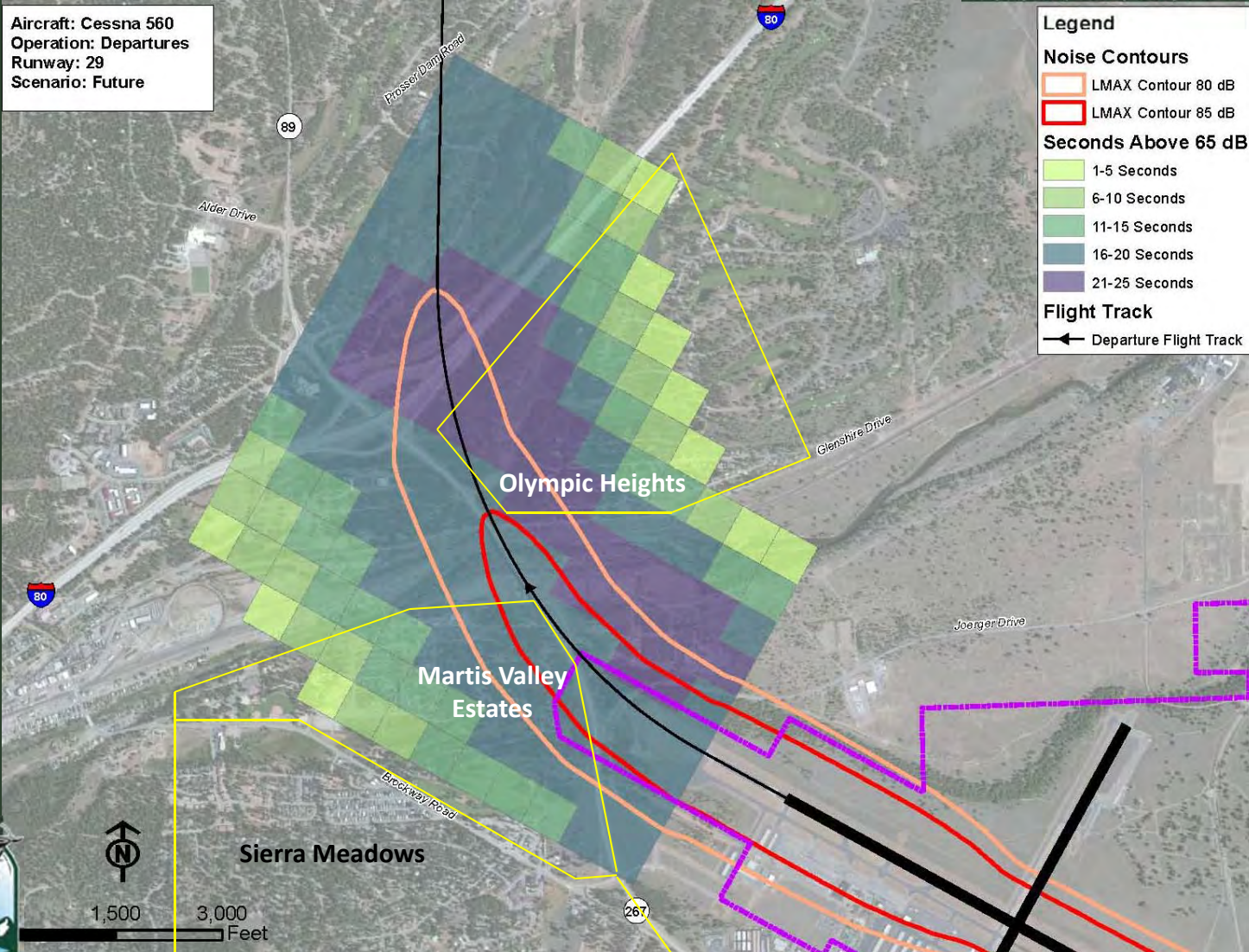


A MASTER PLAN DEVELOPED BY THE COMMUNITY





# RW 29, Jet Departure-w/ Extension

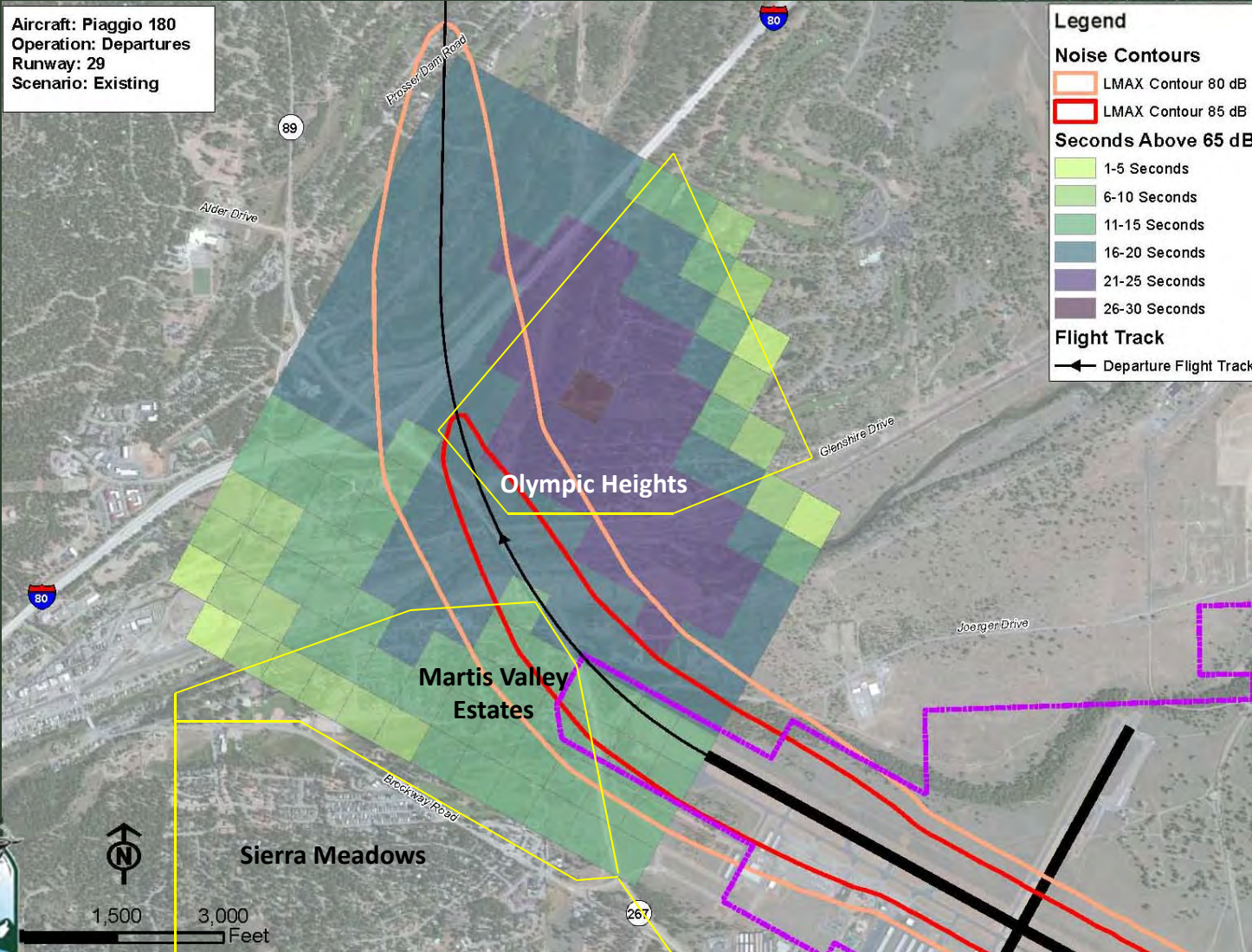




# RW 29, Piaggio Departure-Existing



A MASTER PLAN DEVELOPED BY THE COMMUNITY

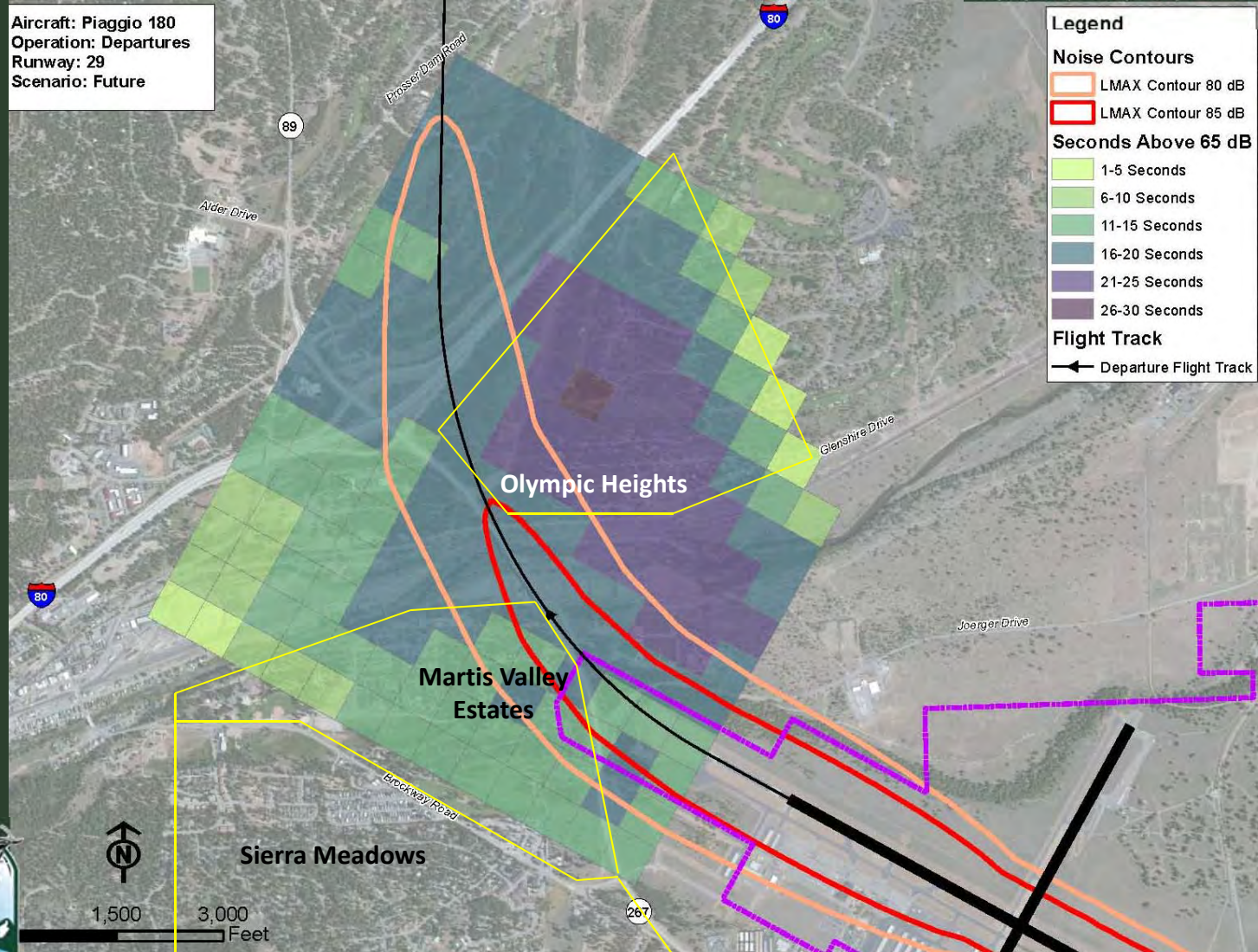




# RW 29, Piaggio Departure-w/ Extension



A MASTER PLAN DEVELOPED BY THE COMMUNITY





# RW 11, Jet Arrival- Existing



A MASTER PLAN DEVELOPED BY THE COMMUNITY

Aircraft: Cessna 560  
Operation: Arrivals  
Runway: 11  
Scenario: Existing

## Legend

### Noise Contours

LMAX Contour 80 dB

LMAX Contour 85 dB

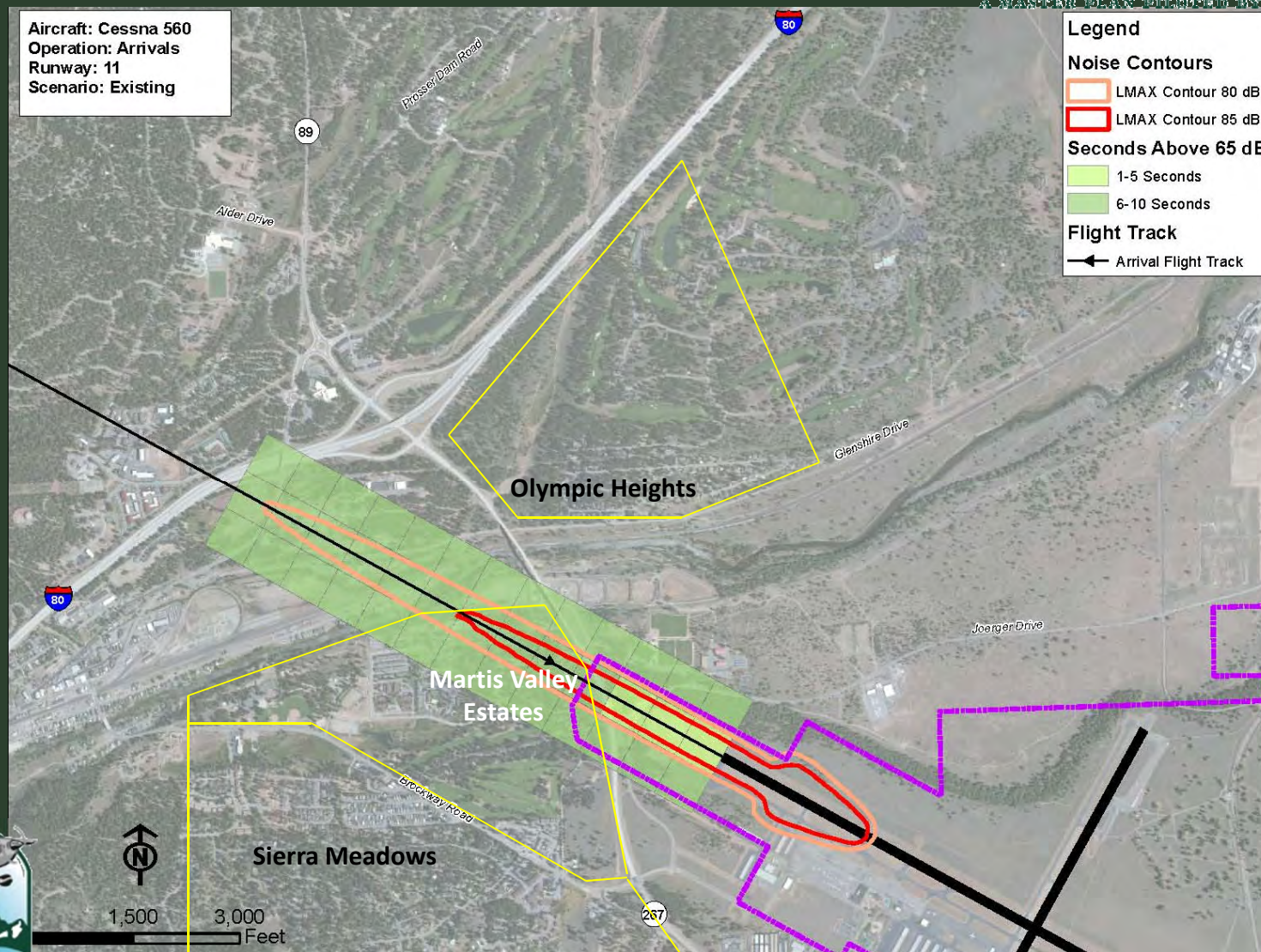
### Seconds Above 65 dB

1-5 Seconds

6-10 Seconds

### Flight Track

Arrival Flight Track





# RW 11, Jet Arrival- w/ Extension



A MASTER PLAN DEVELOPED BY THE COMMUNITY

Aircraft: Cessna 560  
Operation: Arrivals  
Runway: 11  
Scenario: Future

## Legend

### Noise Contours

□ LMAX Contour 80 dB

□ LMAX Contour 85 dB

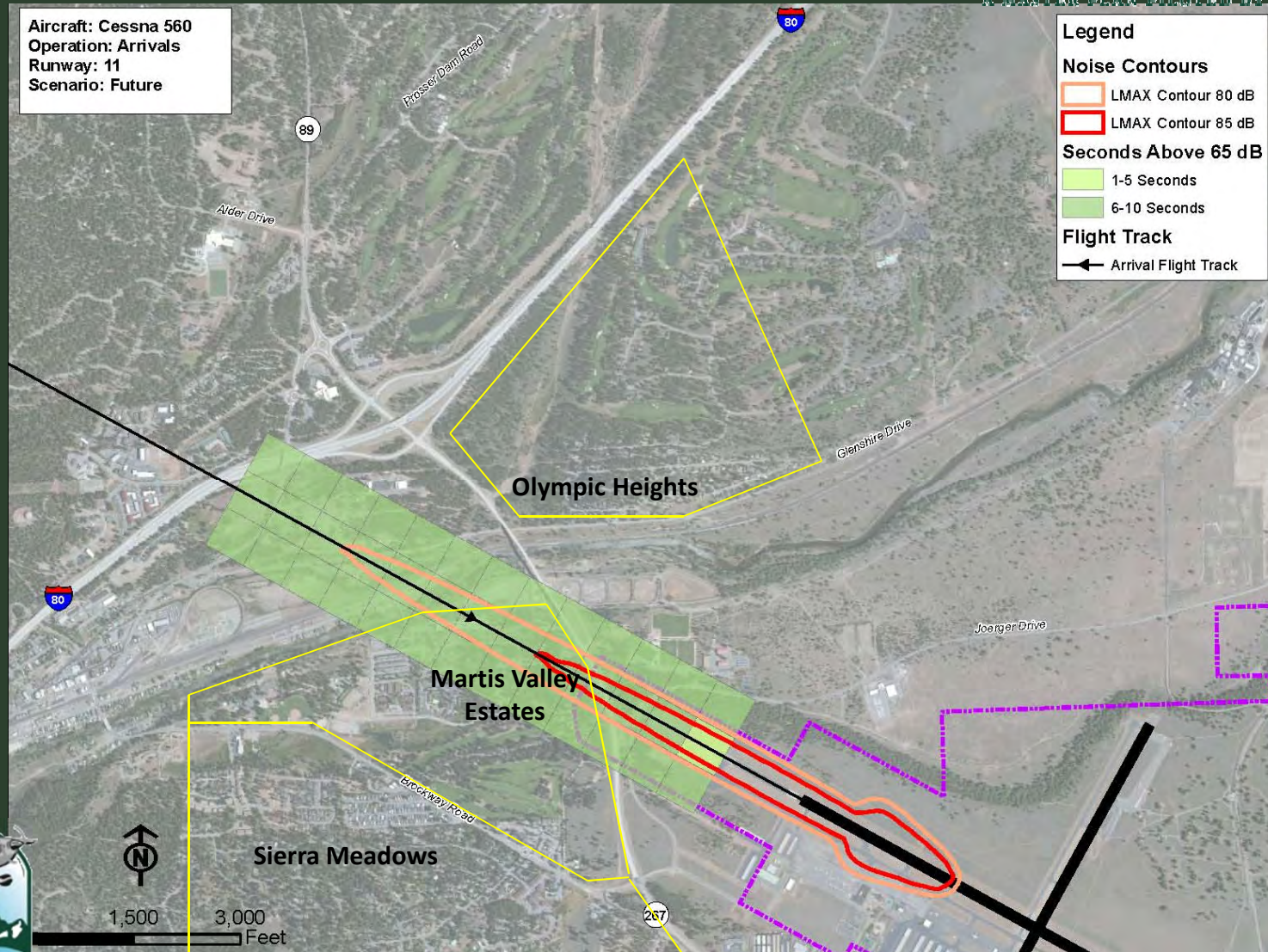
### Seconds Above 65 dB

□ 1-5 Seconds

□ 6-10 Seconds

### Flight Track

← Arrival Flight Track





# RW 11, Prop Arrival- Existing



A MASTER PLAN DEVELOPED BY THE COMMUNITY

Aircraft: Piaggio 180  
Operation: Arrivals  
Runway: 11  
Scenario: Existing

## Legend

### Noise Contours

LMAX Contour 80 dB

LMAX Contour 85 dB

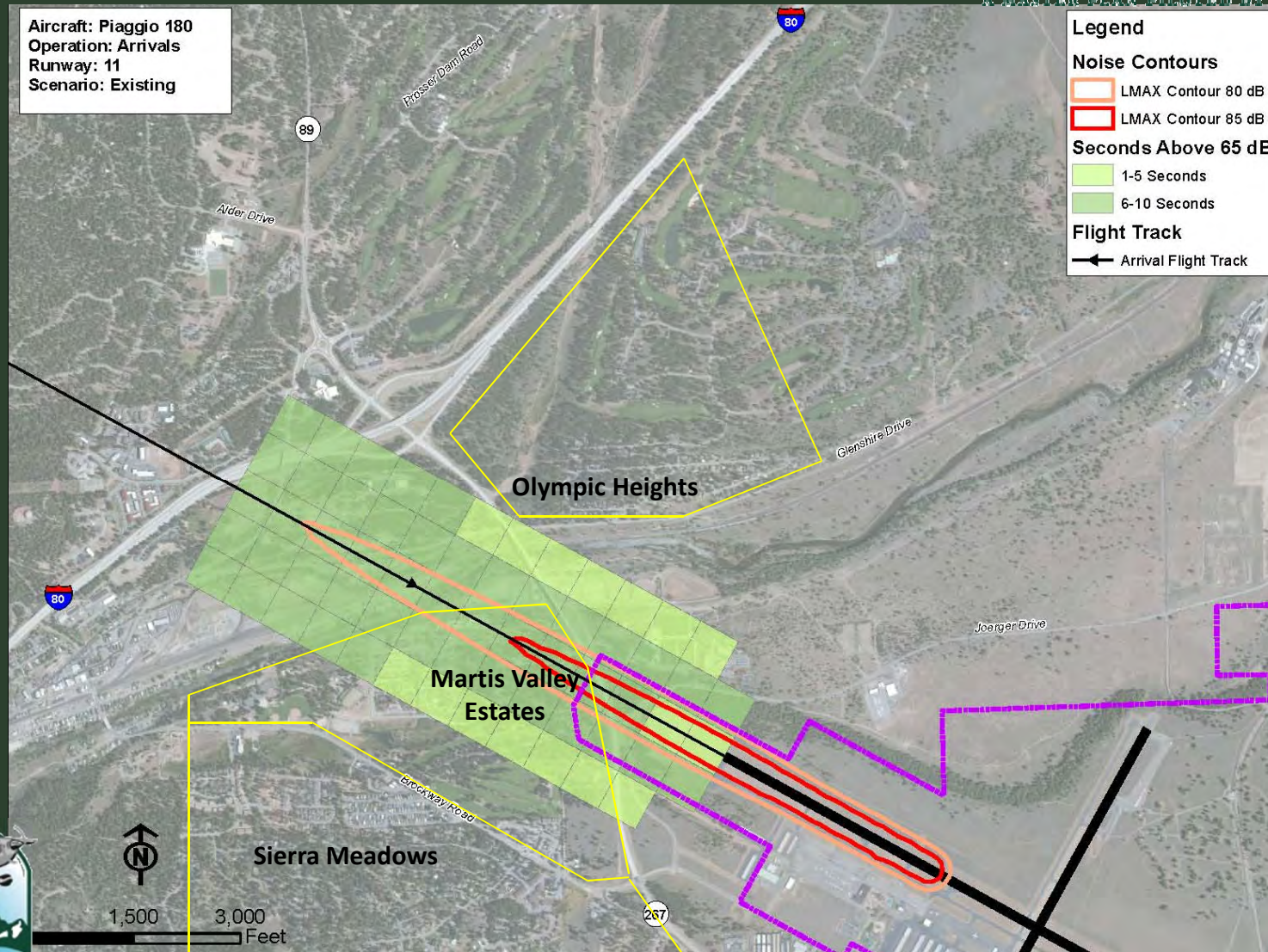
### Seconds Above 65 dB

1-5 Seconds

6-10 Seconds

### Flight Track

Arrival Flight Track





# RW 11, Prop Arrival- w/ Extension



A MASTER PLAN DEVELOPED BY THE COMMUNITY

Aircraft: Piaggio 180  
Operation: Arrivals  
Runway: 11  
Scenario: Future

## Legend

### Noise Contours

LMAX Contour 80 dB

LMAX Contour 85 dB

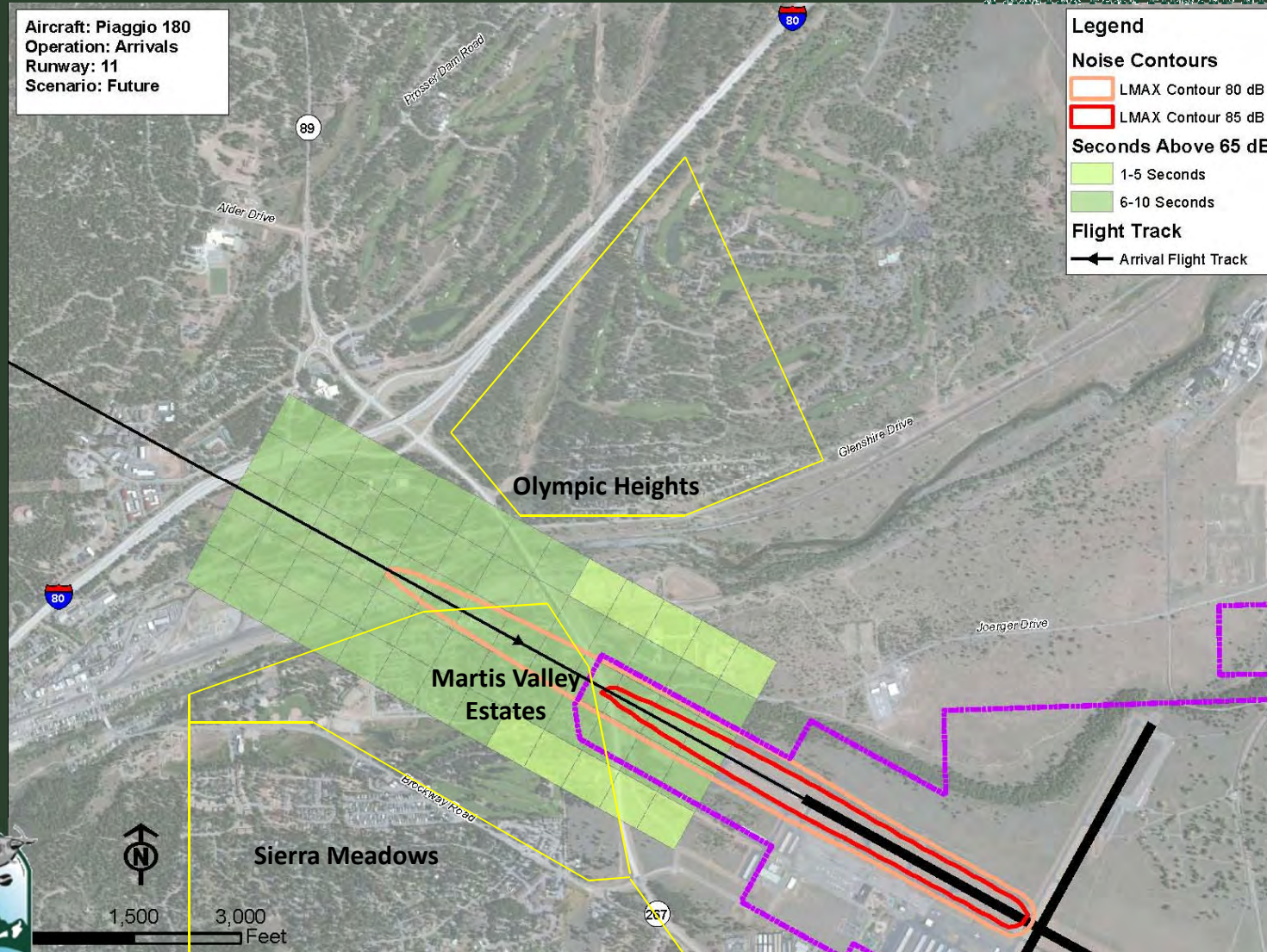
### Seconds Above 65 dB

1-5 Seconds

6-10 Seconds

### Flight Track

Arrival Flight Track





# Alternative 1: Runway 11-29



## OPINION

- No significant change to height or noise
- Remove from consideration



# Runway 2-20

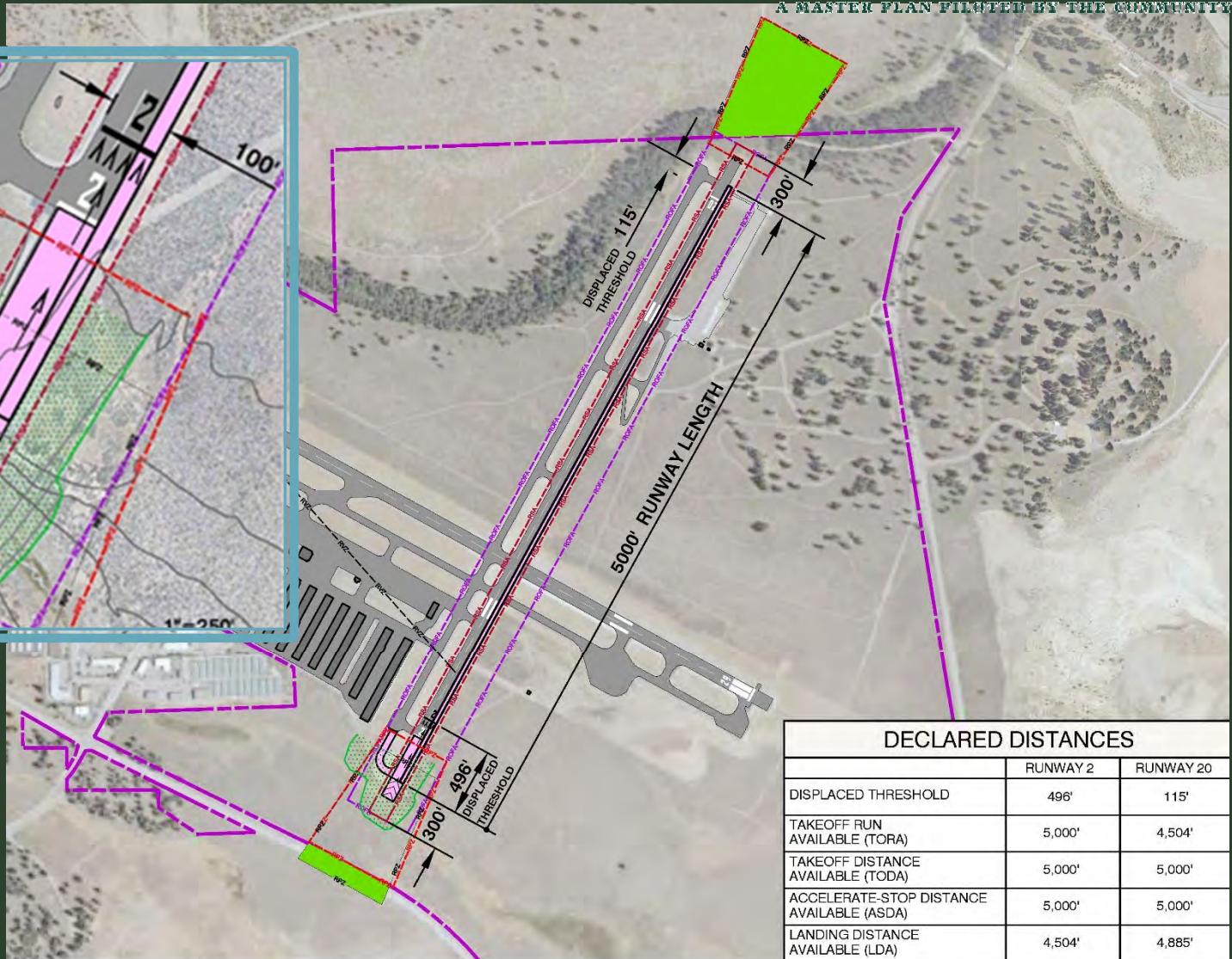
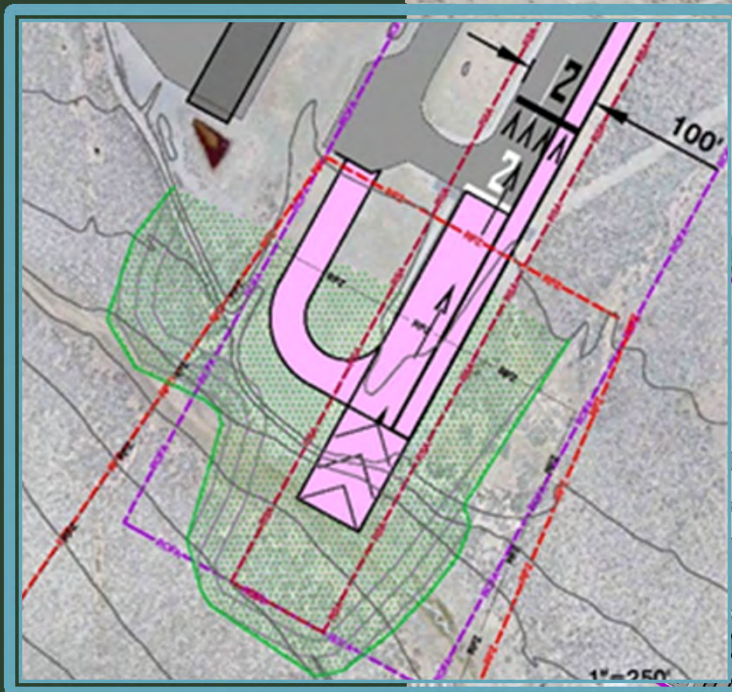


- Widen and/or extend Runway 2-20
  - Greater dispersion of runway utilization





# Alternative 2A: Runway 2-20



DECLARED DISTANCES		
	RUNWAY 2	RUNWAY 20
DISPLACED THRESHOLD	496'	115'
TAKEOFF RUN AVAILABLE (TORA)	5,000'	4,504'
TAKEOFF DISTANCE AVAILABLE (TODA)	5,000'	5,000'
ACCELERATE-STOP DISTANCE AVAILABLE (ASDA)	5,000'	5,000'
LANDING DISTANCE AVAILABLE (LDA)	4,504'	4,885'

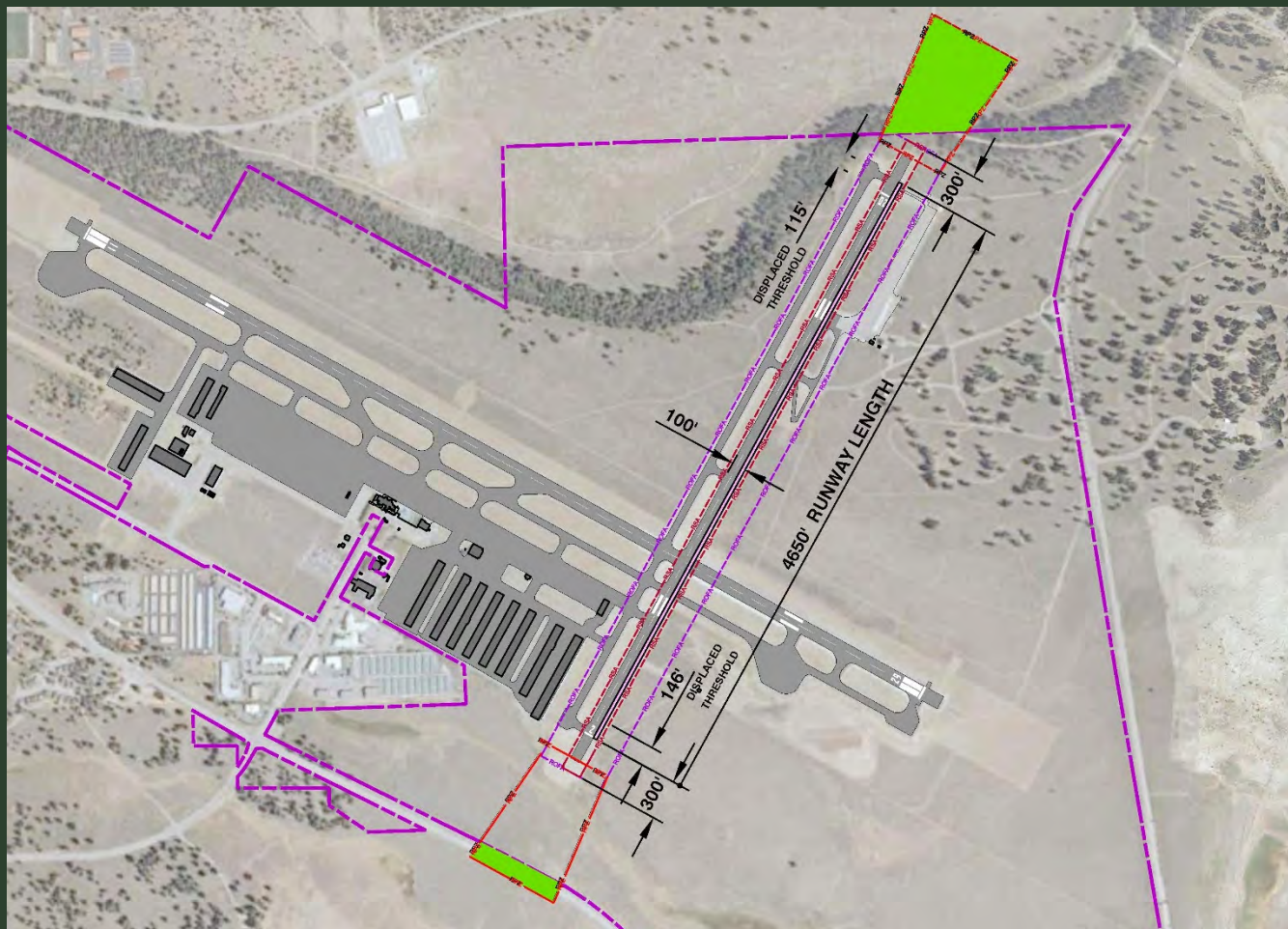




# Alternative 2B: Runway 2-20



A VISION PLAN DEVELOPED BY THE COMMUNITY



## Widen Runway Only





# CA-267 Eastbound View to NE



A MASTER PLAN DEVELOPED BY THE COMMUNITY



## Existing



# CA-267 Eastbound View to NE



A MASTER PLAN DEVELOPED BY THE COMMUNITY



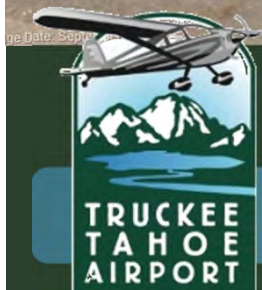
## With Extension



# CA-267 Westbound View to NW



A MASTER PLAN DEVELOPED BY THE COMMUNITY



## Existing

# CA-267 Westbound View to NW



A MASTER PLAN DEVELOPED BY THE COMMUNITY



## With Extension



# CA-267 Elevated View to NW



A MASTER PLAN PILOTED BY THE COMMUNITY



Existing

# CA-267 Elevated View to NW



A MASTER PLAN PILOTED BY THE COMMUNITY



## With Extension



# Runway 2-20 Utilization



## Factors Affecting Utilization / Direction

- Wind direction and velocity
- Runway length (adequate strength assumed)
- Local communication efforts
- Taxi distance
- On course / arrival direction
- Glider activity
- Runway width



# Runway 2-20 Utilization



		DEPARTURES			ARRIVALS		
		Existing	Alt 2A	Alt 2B	Existing	Alt 2A	Alt 2B
11	Piston	4%	No Change	No Change	4%	No Change	No Change
	Turboprop	4%	No Change	No Change	4%	No Change	No Change
	Turbo Jet	3%	No Change	No Change	3%	No Change	No Change
29	Piston	77%	58% ↓	No Change	66%	47% ↓	No Change
	Turboprop	88%	76% ↓	85.5% ↓	82%	64% ↓	72% ↓
	Turbo Jet	96%	88% ↓	95% ↓	94%	83% ↓	91.5% ↓
2	Piston	8%	16% ↑	No Change	8%	16% ↑	No Change
	Turboprop	2%	8% ↑	3% ↑	2%	8% ↑	3% ↑
	Turbo Jet	0.5%	6% ↑	1% ↑	1%	4% ↑	1.5% ↑
20	Piston	11%	22% ↑	No Change	22%	33% ↑	No Change
	Turboprop	6%	12% ↑	7.5% ↑	12%	24% ↑	15% ↑
	Turbo Jet	0.5%	3% ↑	1% ↑	2%	10% ↑	4% ↑



## Runway Utilization Splits



# Alternative 2: Runway 2-20



## OPINION

- Widening alone will not significantly disperse operations
- Extending and widening will disperse operations more effectively
- Views of Martis Valley not impacted significantly
- Retain for further analysis



# Alternative 3: Off-Airport



## GOALS

- Adds consistency with FAA methodology for reducing community noise exposure
- Advantages versus runway changes: lower total cost, phased implementation, greater overall success, and fewer construction impacts
- Inclusion may add credibility to the other alternatives

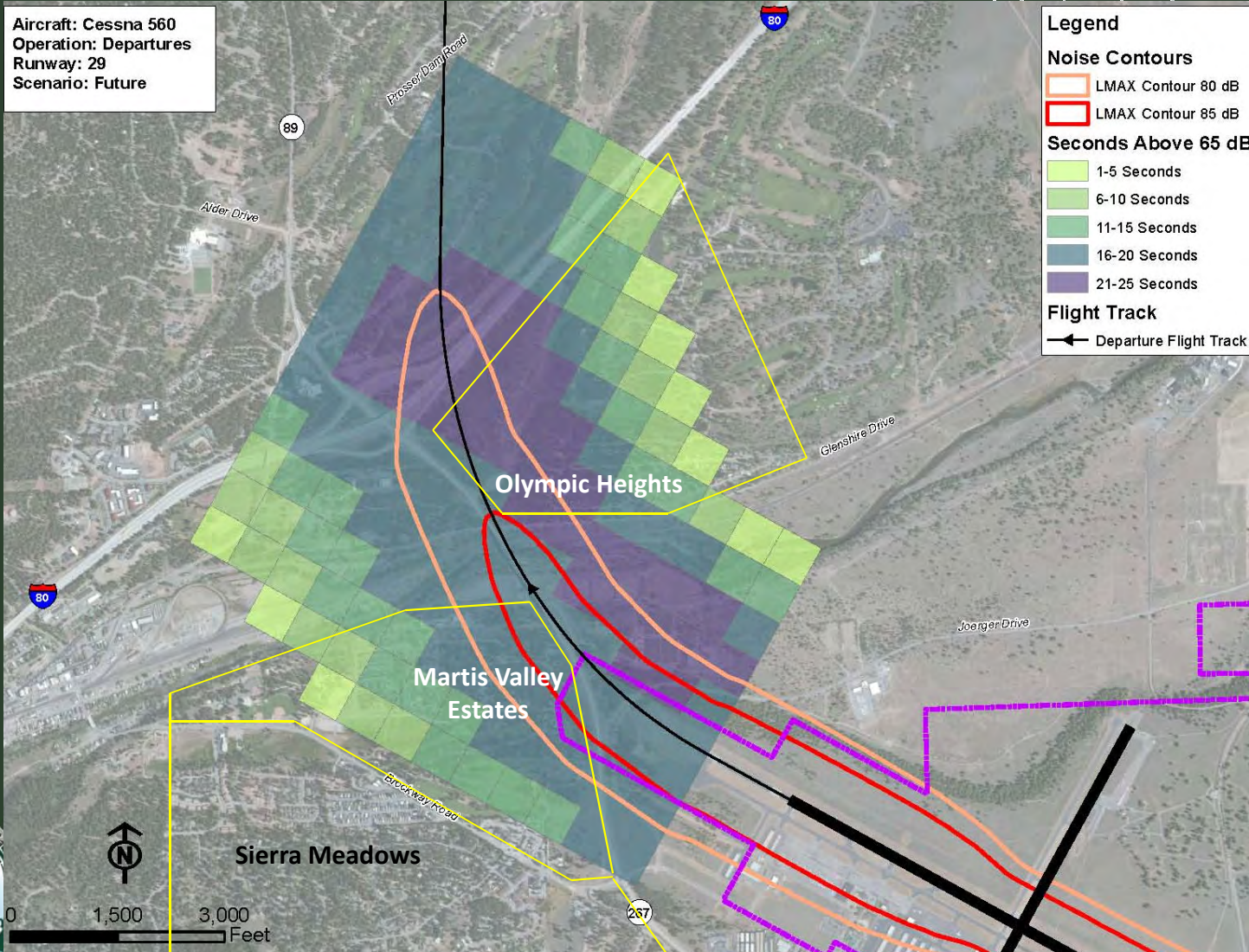




# RW 29, Jet Departure- TRUCK



A MASTER PLAN DEVELOPED BY THE COMMUNITY

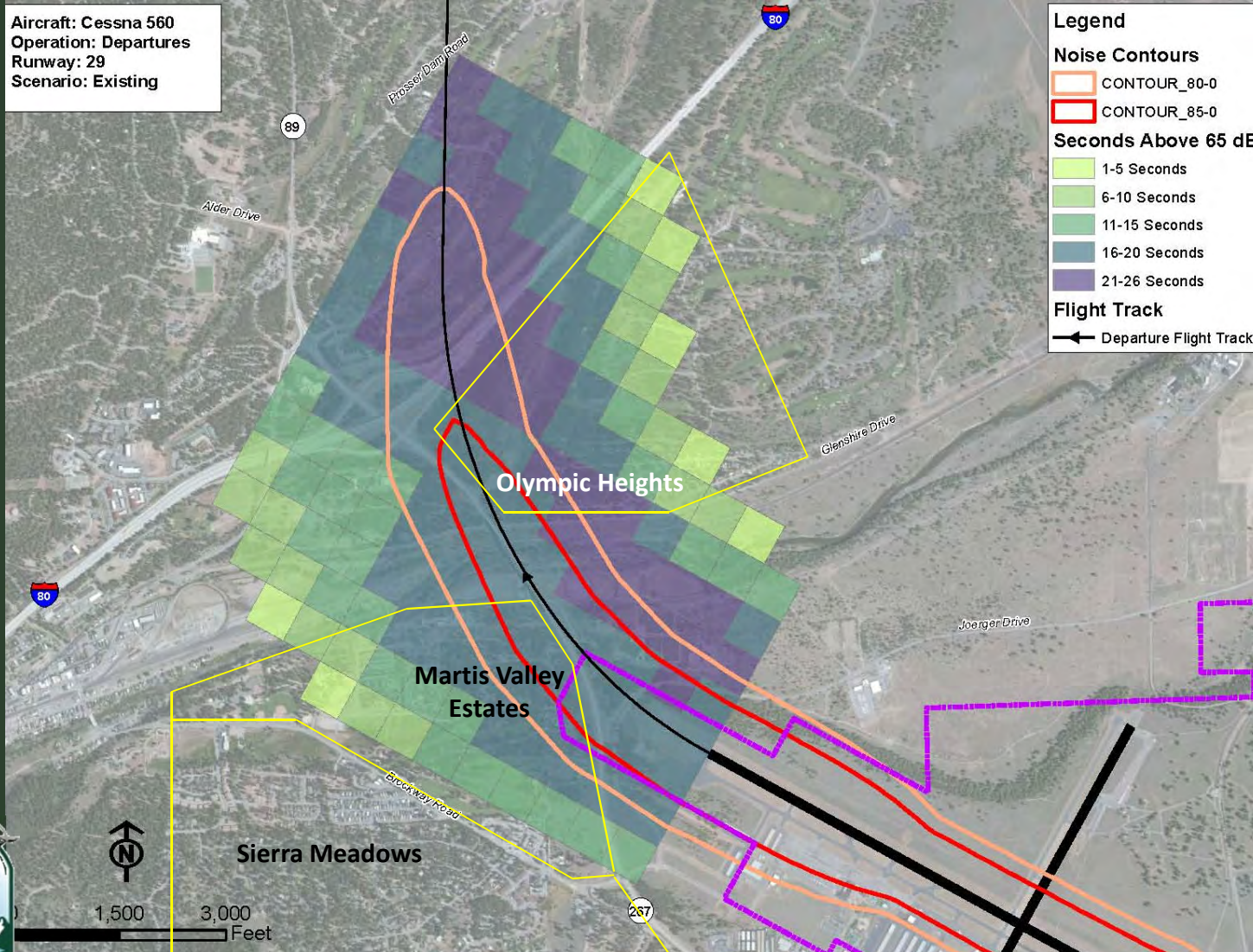




# RW 29, Piaggio Departure-TRUCK



A MASTER PLAN DEVELOPED BY THE COMMUNITY



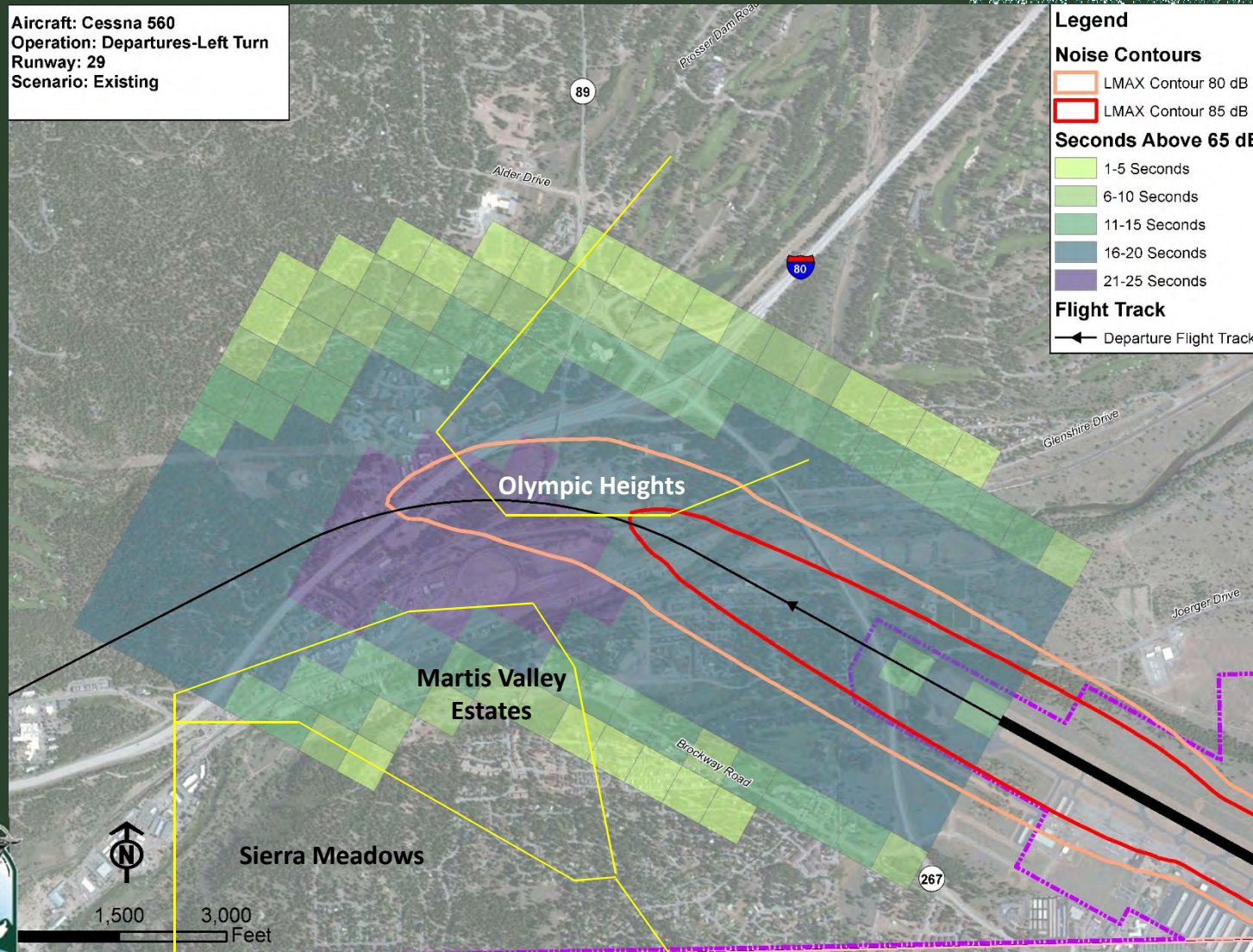


# RW 29, Jet Departure Straight/I80



A MASTER PLAN DEVELOPED BY THE COMMUNITY

Aircraft: Cessna 560  
Operation: Departures-Left Turn  
Runway: 29  
Scenario: Existing





# RW 29, C172 Departure-Bypass



A MASTER PLAN FOR THE CITY OF TRUCKEE

Aircraft: Cessna 172  
Operation: Departures-Left Turn  
Runway: 29  
Scenario: Existing

## Legend

### Noise Contours

□ LMAX Contour 80 dB

□ LMAX Contour 85 dB

### Seconds Above 65 dB

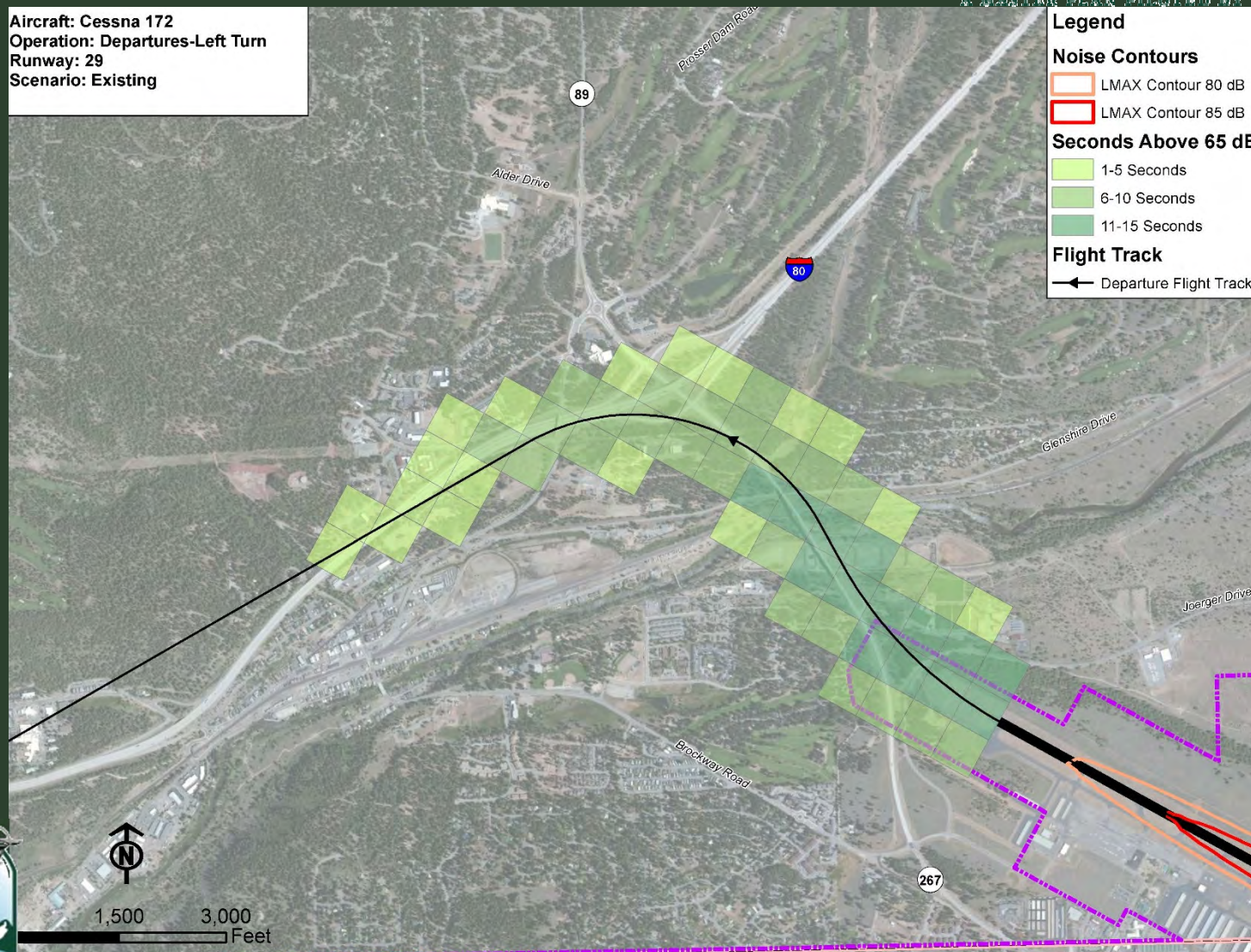
□ 1-5 Seconds

□ 6-10 Seconds

□ 11-15 Seconds

### Flight Track

← Departure Flight Track





# Alternative 3: Off-Airport



## OPINION

- Reduces residential impacts
- Retain for further analysis



# Next Steps



## Open House Meeting

- Determine level of support for finalist alternatives
- Master Plan comparison
- Finalize

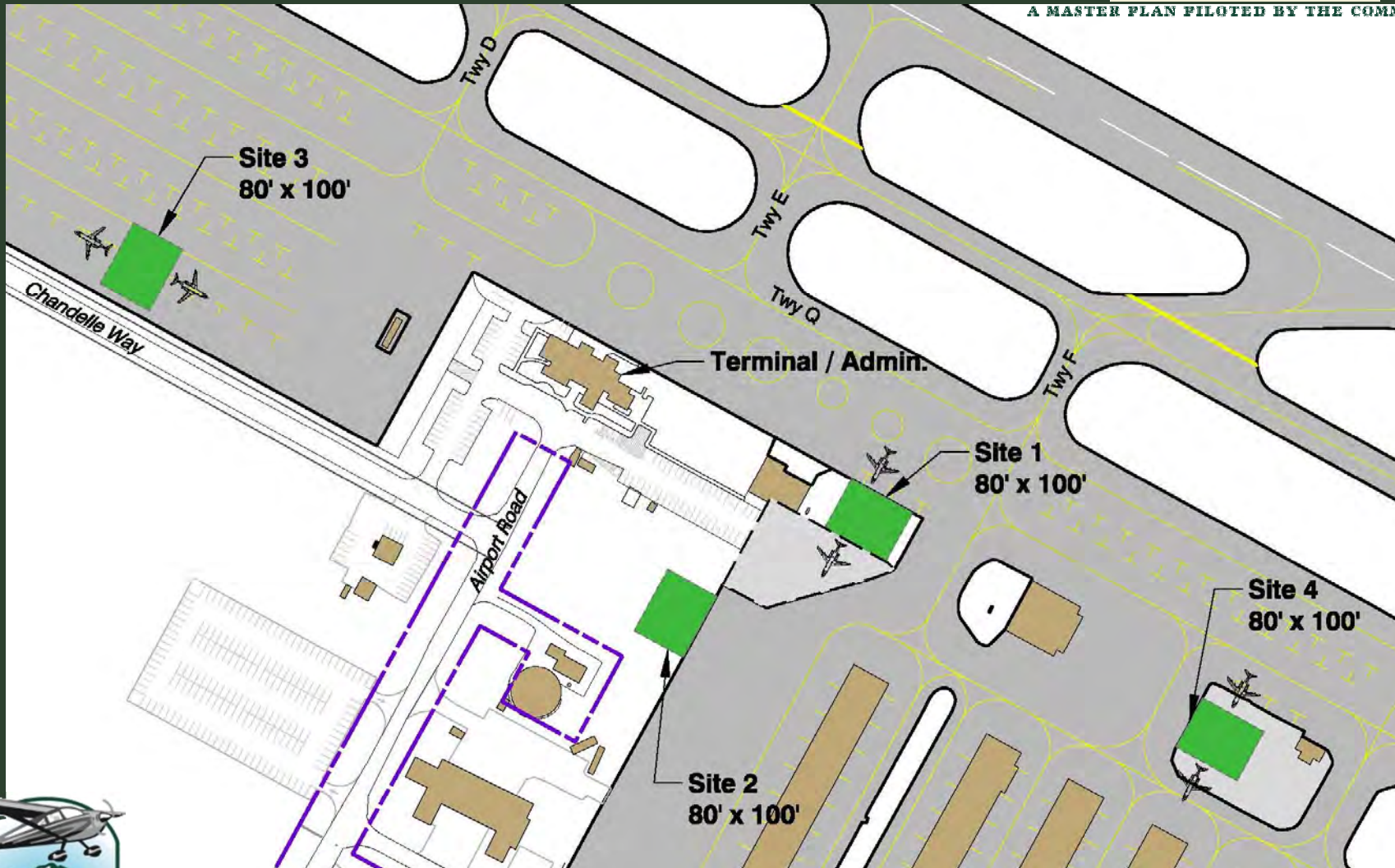




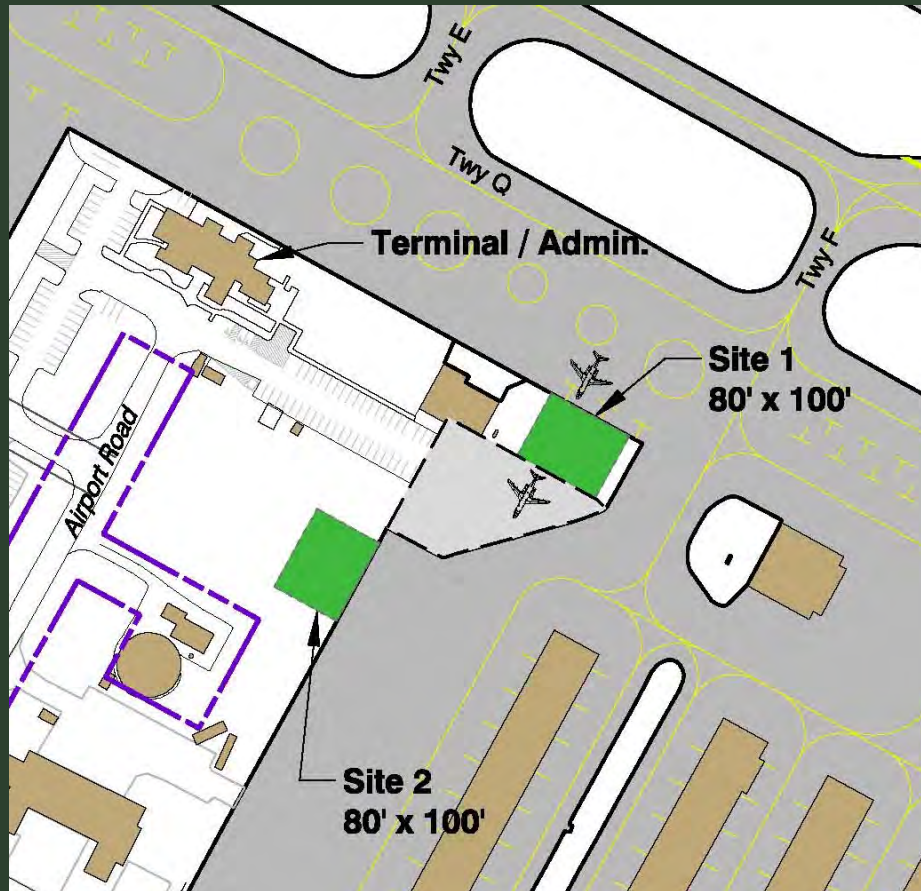
# Multi-Use Hangar Sites



A MASTER PLAN PILOTTED BY THE COMMUNITY



# Multi-Use Hangar Sites



## Site 1:

- Provides 'taxi-through' capabilities
- Provides immediate access to roads and parking
- Utilizes land near terminal apron

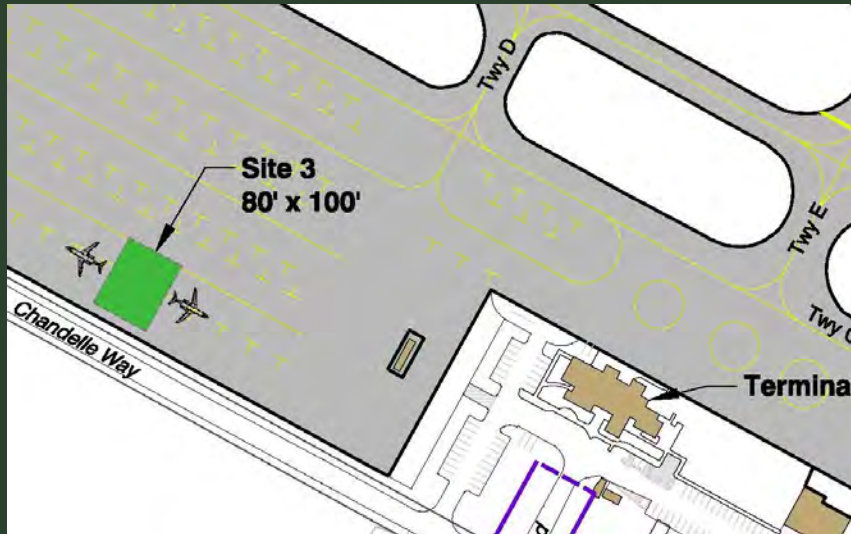
## Site 2:

- Provides immediate access to roads and parking
- Utilizes land near terminal apron
- Not able to accommodate taxi-through capabilities



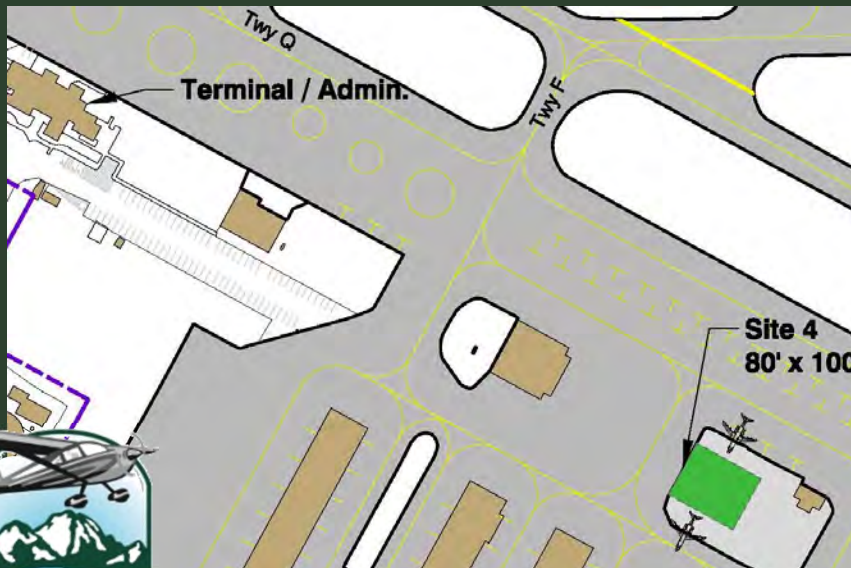


# Multi-Use Hangar Sites



## Site 3:

- Provides 'taxi-through' capabilities
- Immediate access to roads
- Would displace existing tie-downs



## Site 4:

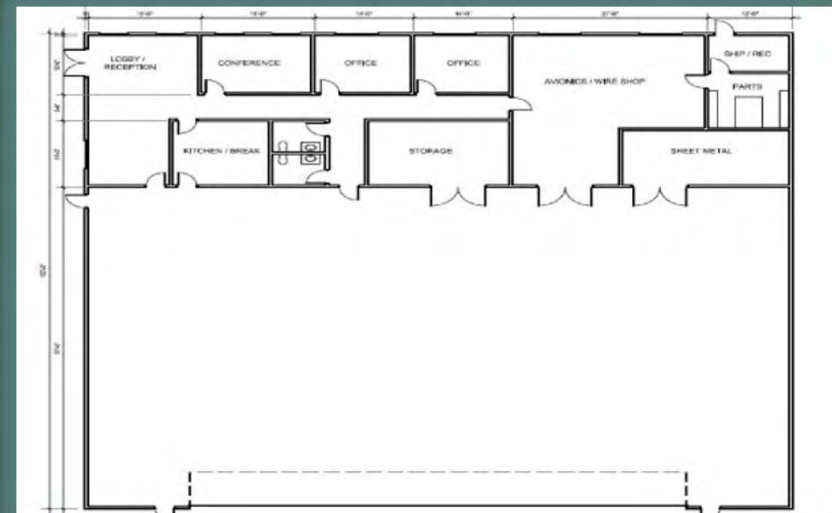
- Provides 'taxi-through' capabilities
- Utilizes unused land near runway intersection
- Poor access to roads and parking



# Multi-Use Hangar Examples



A MASTER PLAN PILOTED BY THE COMMUNITY

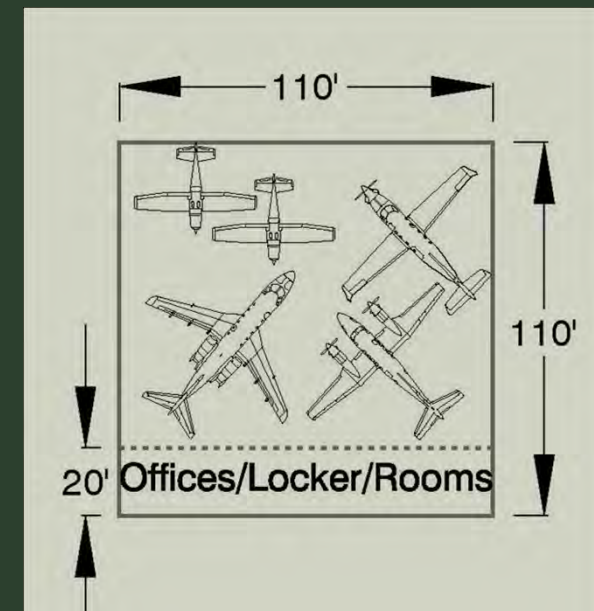
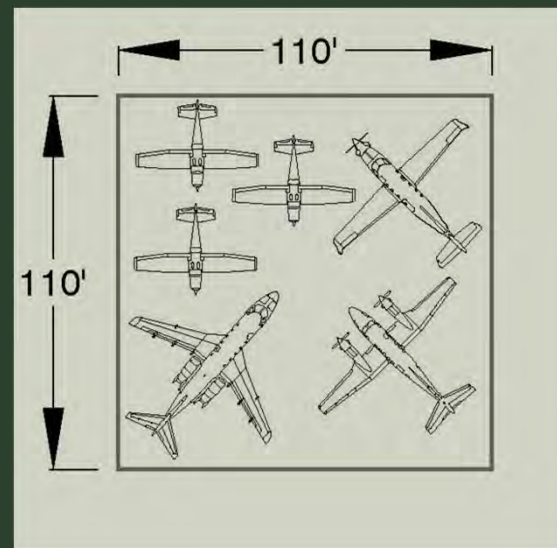
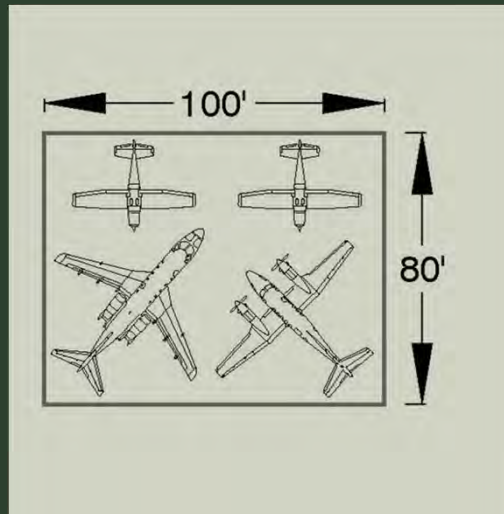




# Multi-Use Hangar Examples



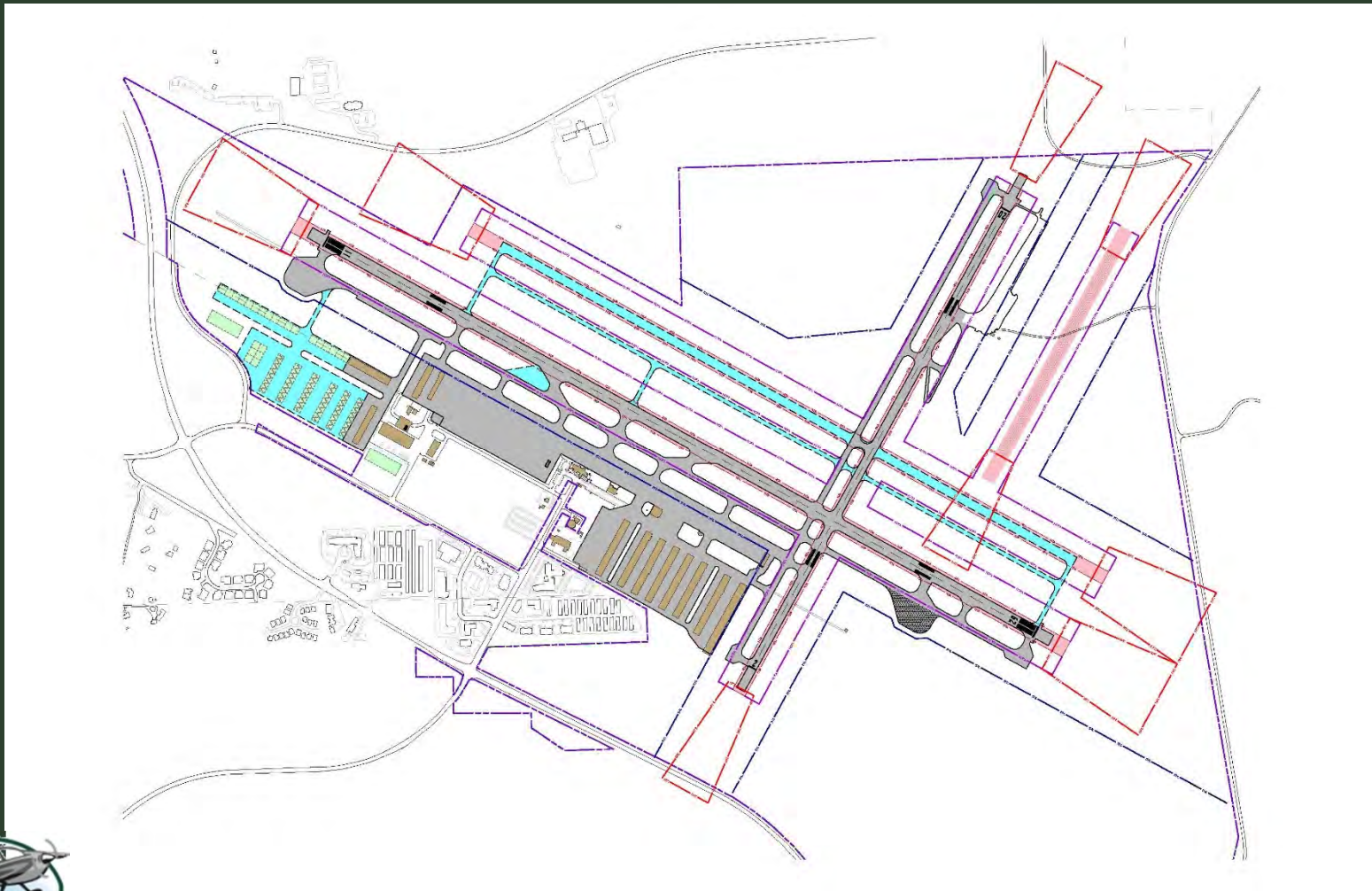
A VISION PLAN FOLLOWS BY THE COMMUNITY



# Future Vision (1998)



A MASTER PLAN DEVELOPED BY THE COMMUNITY



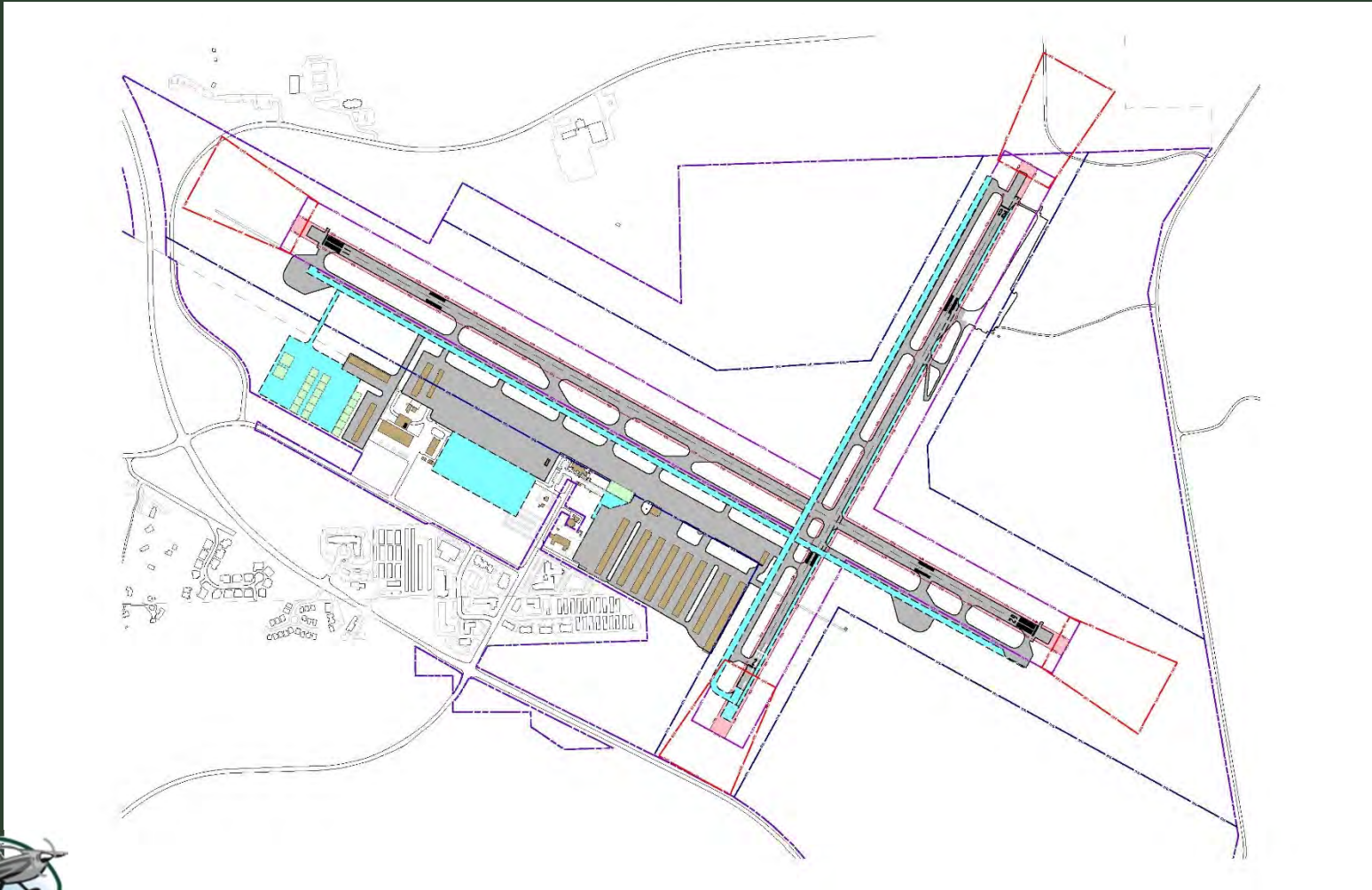
## 1998 Master Plan



# Future Vision (2013)



A MASTER PLAN DEVELOPED BY THE COMMUNITY



## Current Master Plan





TRUCKEE TAHOE AIRPORT

A MASTER PLAN PROJECT BY THE COMMUNITY



# THANK YOU