RICONDO®

San Diego International Airport
East County Flight Procedure Evaluation

ANAC Information Briefing

PRESENTED TO:
SDIA Airport Noise Advisory Committee

PRESENTED BY:
Stephen C. Smith

PRESENTED ON:
February 19, 2020

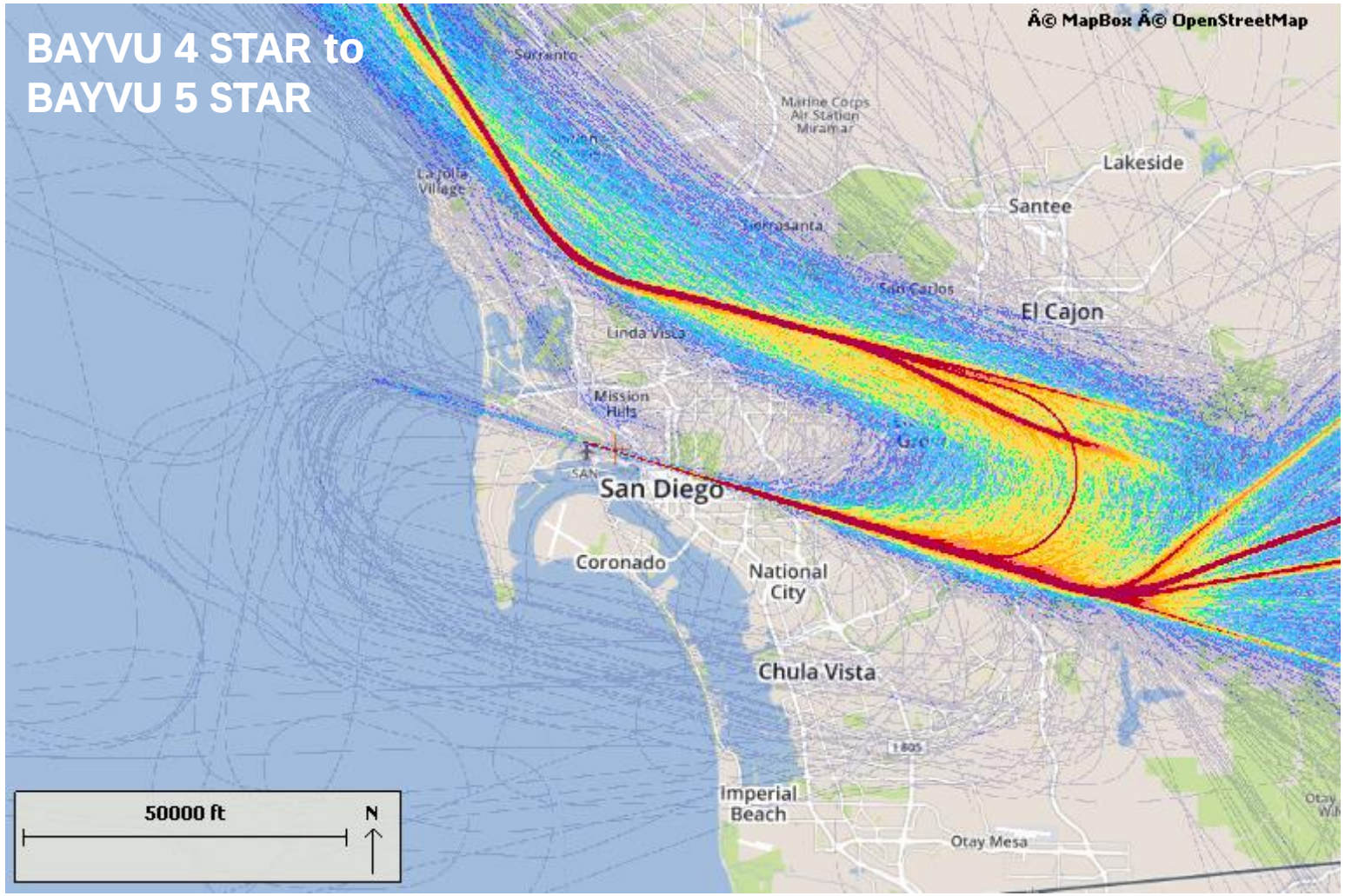
East County Working Group Input

- Conducted five meetings
- Provided the Authority and technical consultant input on aircraft noise concerns
- Reviewed existing and historic flight pattern data to assess and link noise concerns to flight patterns
- Reviewed and provided feedback to technical consultant on noise abatement flight procedure concepts
- Provided input to the Authority and the technical consultant on final design recommendations

Overview of Working Group Concerns

- Change in traffic patterns
- Hearing more noise early morning (6:30 a.m. to 11:00 a.m.) and at night (10:00 p.m. to 11:00 p.m.)
- Do not increase noise in other areas
- Low flying aircraft
- Increase in overflight frequency

Runway 27 Arrivals - Flight Track Density Analysis
San Diego Metropolitan Area - November 2016



Track Density Ranges
(count of operations)

1	4	< 1 per day
5	9	
10	15	
16	20	
21	25	
26	30	
31	50	1-2 per day
51	75	
76	100	2-5 per day
101	150	
151	13,950	>5 per day

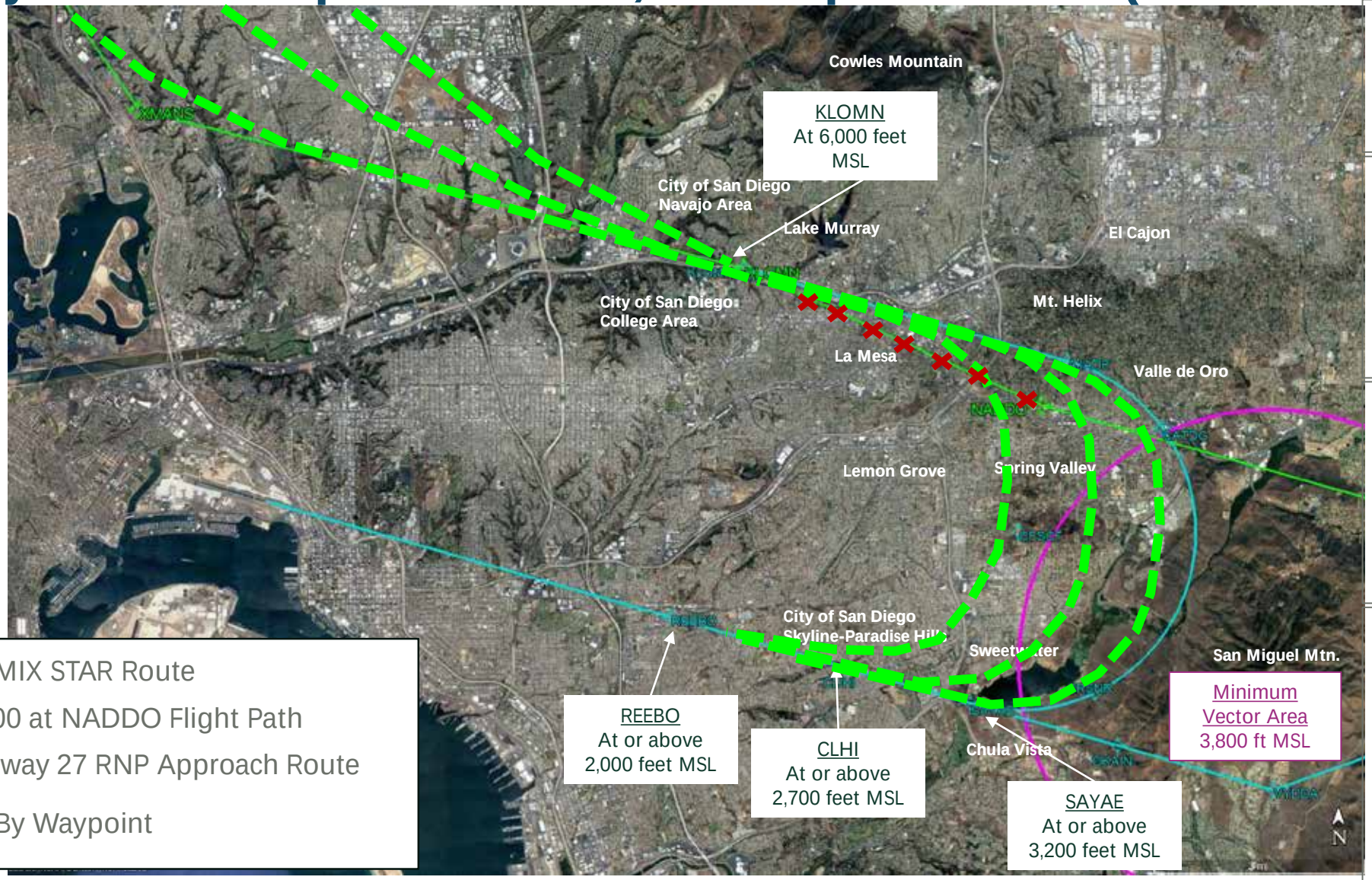
SOURCE: : San Diego County Regional Airport Authority Airport Noise and Operations Management System, November 2018.

Note: Total Runway 27 arrivals was 7,547 for November 2016

Working Group Objectives

- Maintain flight path dispersion
- Raise altitudes over populated areas
- Turn south to join final approach over less populated areas

Modify COMIX: Keep Arrivals at 6,000 ft up to KLOMN (Remove NADDO Route)



Intent: Reduce noise levels by raising jet arrival altitude, reduce closer turns to Airport and disperse traffic

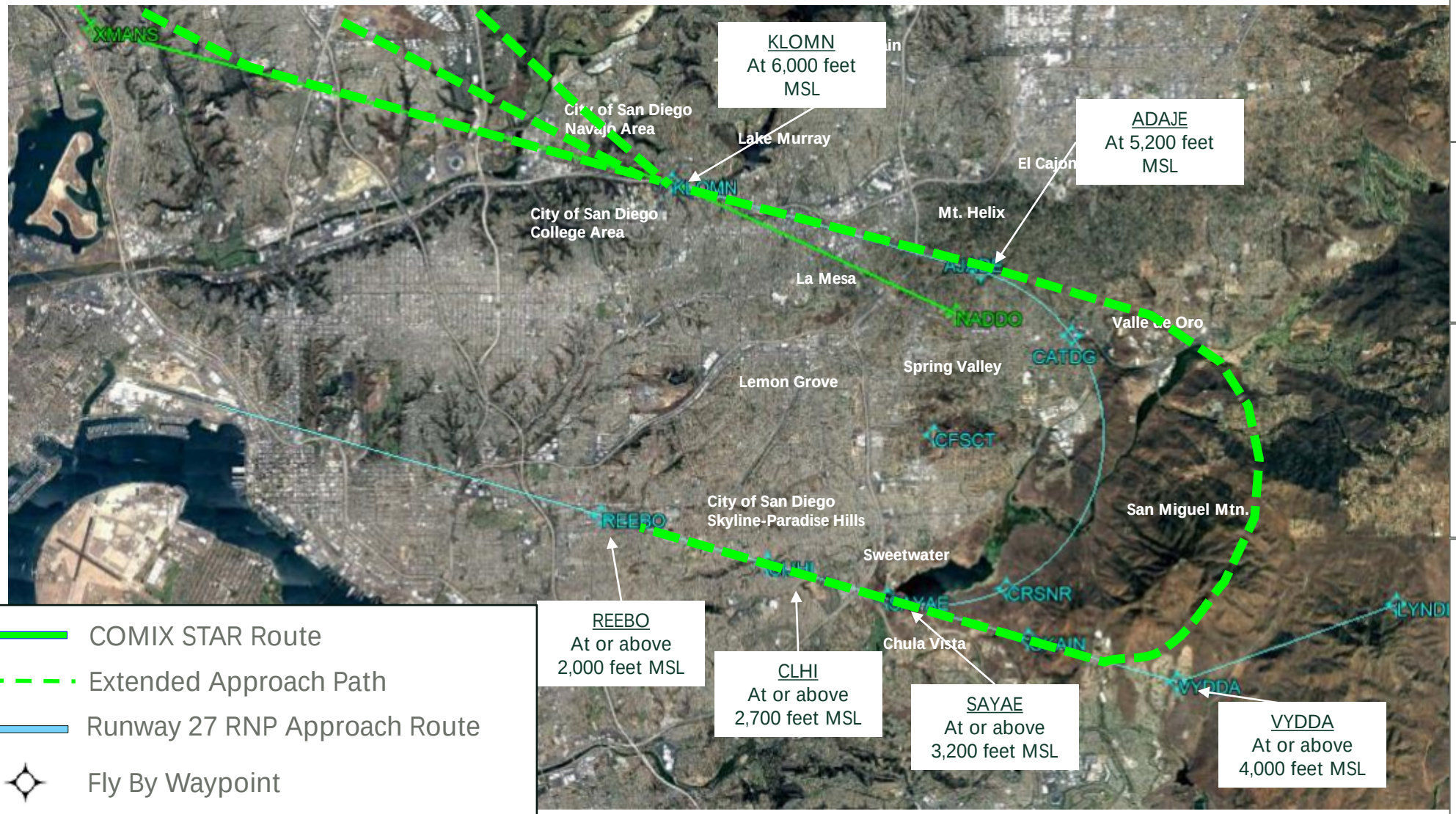
Concept: Remove route to NADDO and keep jet arrival altitude at 6,000 ft. MSL at KLOMN waypoint, thence descend to join final approach

Objectives:
1. Raise Altitude on Downwind: Yes
2. Maintain Dispersion: Yes
3. Turn South Over Less Populated Areas: No

Potential Limitations:
Limits area for FAA ATC to manage traffic to join the final approach. FAA may require the proposed Class B airspace be implemented prior to removing the KLOMN to NADDO route

NOTE: Mean Sea Level (MSL) – height above sea level; Above Ground Level (AGL) – height above the ground
SOURCE: Google Earth, April 2019 (aerial photograph); Federal Aviation Administration, November 2018 (COMIX STAR route, Runway 27 RNP Approach route, Minimum Vector Area); Ricondo & Associates, Inc., April 2019 (NADDO at 6,000 ft MSL concept).

New RNAV Approach: RNAV Approach from KLOMN to Nearby VYDDA



Intent: Reduce noise levels by raising jet arrival altitude and moving traffic further east

Concept: Keep jet arrival altitude at 6,000 ft. MSL at KLOMN waypoint, thence follow RNAV approach further east

Objectives:
1. Raise Altitude on Downwind: Yes
2. Maintain Dispersion: No
3. Turn South Over Less Populated Areas: Yes

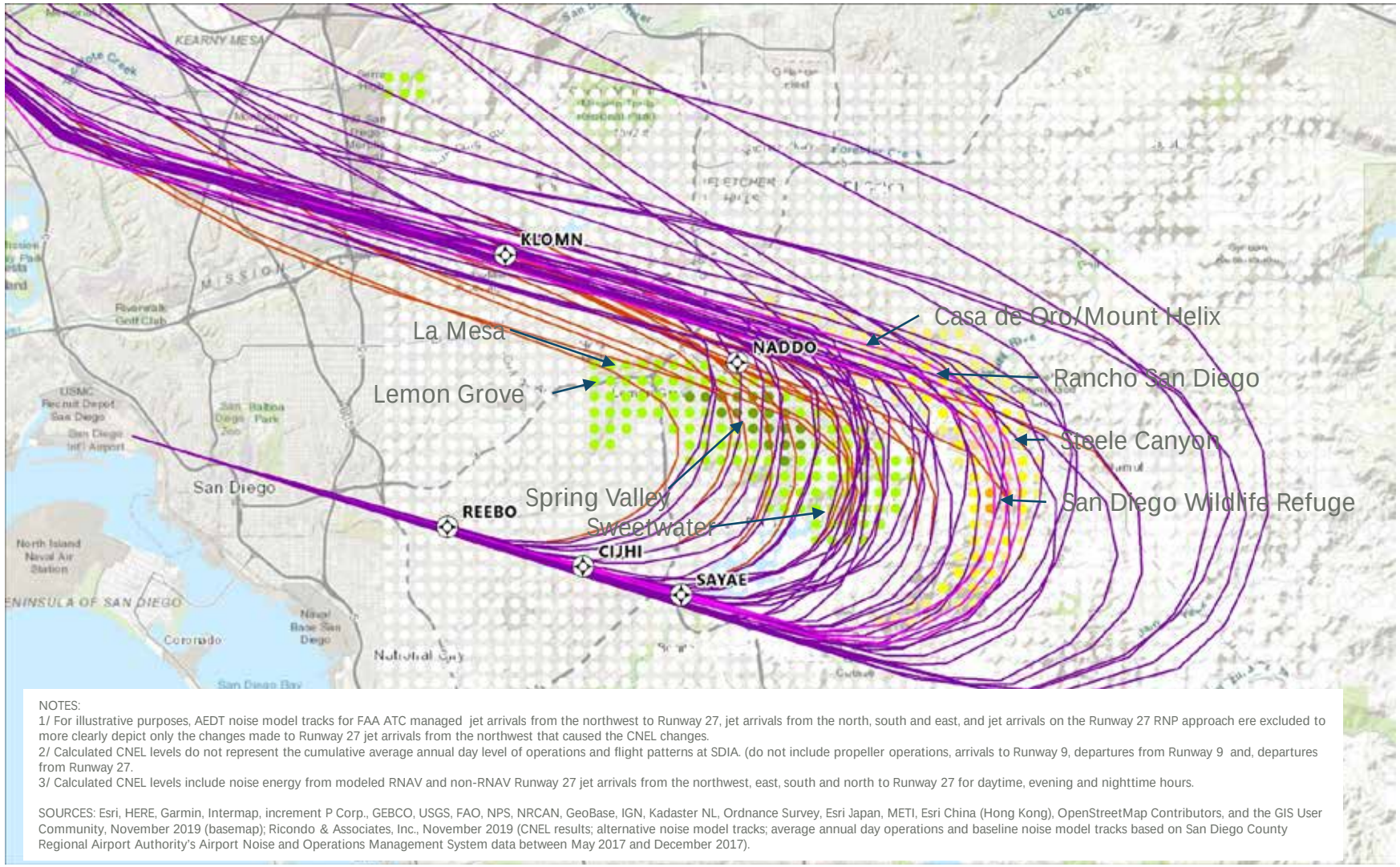
Potential Limitations:
Adds complexity to ATC and increases distance. May be applicable when demand levels are low during nighttime hours (11pm to 7 am). FAA acknowledged possible issues with conflicting traffic.

NOTE: Mean Sea Level (MSL) – height above sea level; Above Ground Level (AGL) – height above the ground
SOURCE: Google Earth, April 2019 (aerial photograph); Federal Aviation Administration, November 2018 (COMIX STAR route, Runway 27 RNP Approach route); Ricondo & Associates, Inc., July 2019 (proposed extended approach path).

Modeled Scenario

- Changes/Additions from Baseline
  - Modified COMIX RNAV STAR: all jet arrivals that operated between KLOMN and NADDO waypoints under the Baseline
  - Nighttime Runway 27 RNAV Approach: all jet arrivals between 11 p.m. to 7 a.m.
- Maintained from Baseline
  - Runway 27 RNP Approach
  - Turns to final prior to or at KLOMN waypoint
  - Arrival traffic from the north, east and south
- Scenario does not represent cumulative average annual day noise exposure levels

Aircraft Noise Screening - AEDT Alternative 1/Baseline Noise Model Tracks and CNEL Changes



LEGEND

Waypoints

Baseline Noise Model Tracks

Northwest Jet Arrivals from KLOMN to NADDO Waypoints

Alternative 1 Noise Model Tracks

Northwest Jet Arrivals to KLOMN Waypoint at 6,000 ft MSL

Nighttime Runway 27 RNAV Approach for Northwest Jet Arrivals (11 p.m. to 7 a.m.)

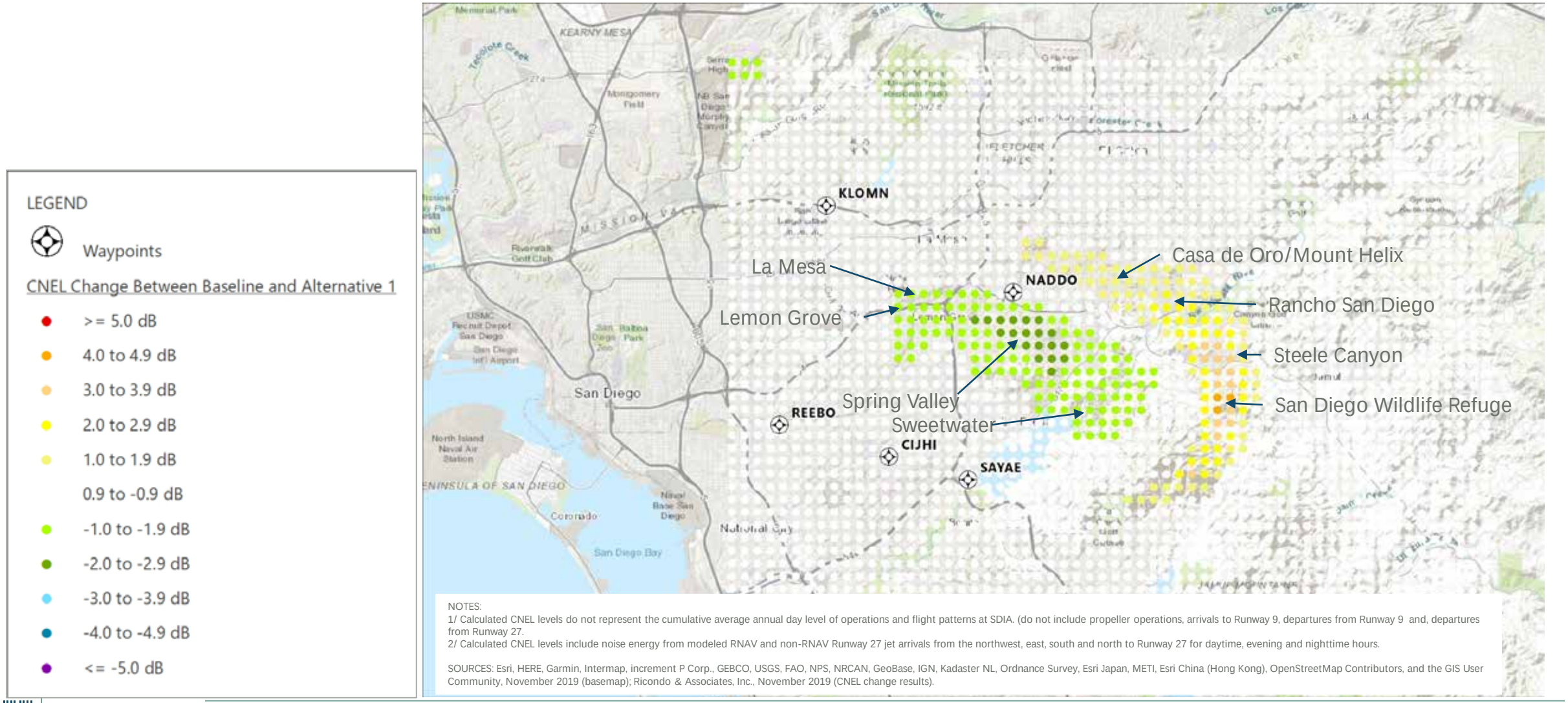
CNEL Change Between Baseline and Alternative 1

- >= 5.0 dB
- 4.0 to 4.9 dB
- 3.0 to 3.9 dB
- 2.0 to 2.9 dB
- 1.0 to 1.9 dB
- 0.9 to -0.9 dB
- -1.0 to -1.9 dB
- -2.0 to -2.9 dB
- -3.0 to -3.9 dB
- -4.0 to -4.9 dB
- <= -5.0 dB

NOTES:
1/ For illustrative purposes, AEDT noise model tracks for FAA ATC managed jet arrivals from the northwest to Runway 27, jet arrivals from the north, south and east, and jet arrivals on the Runway 27 RNP approach ere excluded to more clearly depict only the changes made to Runway 27 jet arrivals from the northwest that caused the CNEL changes.
2/ Calculated CNEL levels do not represent the cumulative average annual day level of operations and flight patterns at SDIA. (do not include propeller operations, arrivals to Runway 9, departures from Runway 9 and, departures from Runway 27.
3/ Calculated CNEL levels include noise energy from modeled RNAV and non-RNAV Runway 27 jet arrivals from the northwest, east, south and north to Runway 27 for daytime, evening and nighttime hours.

SOURCES: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), OpenStreetMap Contributors, and the GIS User Community, November 2019 (basemap); Ricondo & Associates, Inc., November 2019 (CNEL results; alternative noise model tracks; average annual day operations and baseline noise model tracks based on San Diego County Regional Airport Authority's Airport Noise and Operations Management System data between May 2017 and December 2017).

Aircraft Noise Screening – Alterative 1 CNEL Changes



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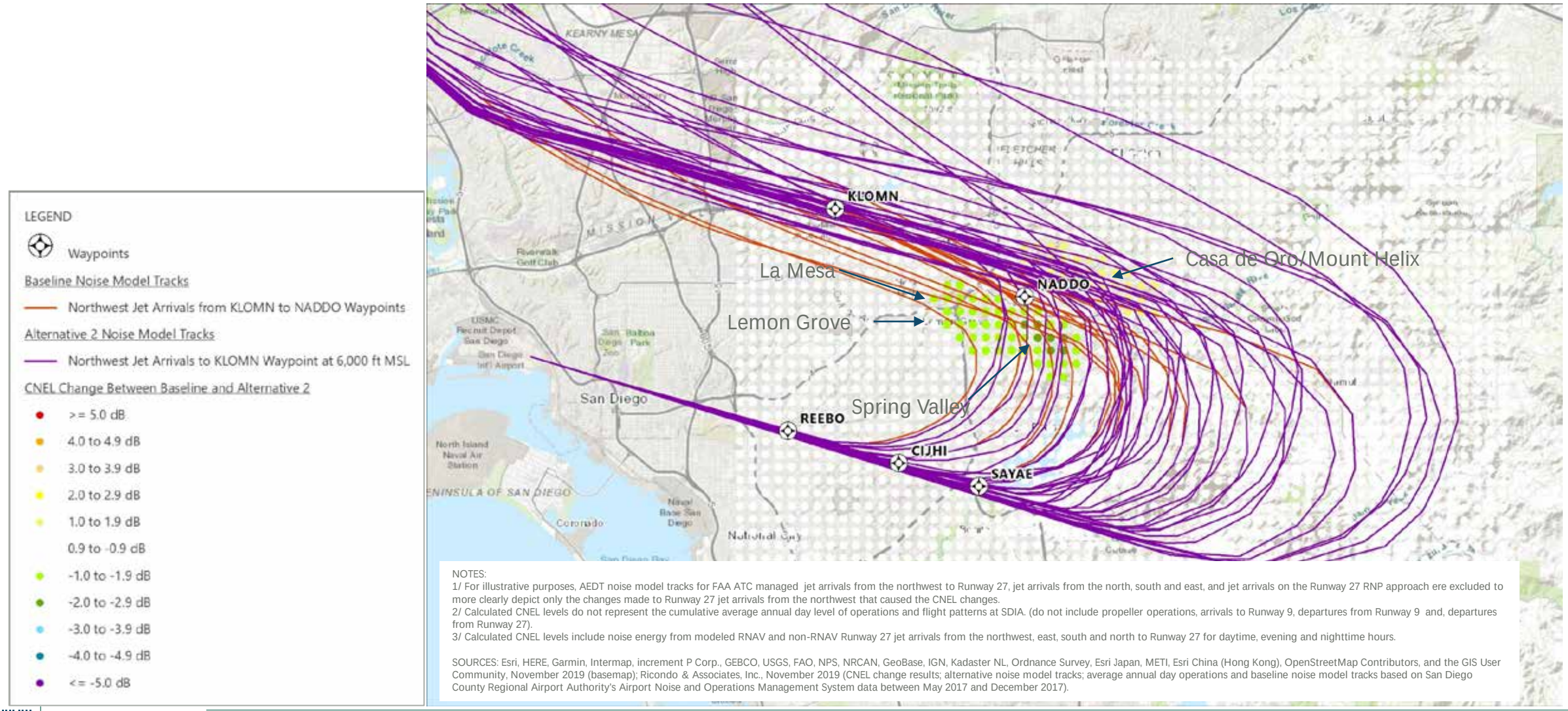
Aircraft Noise Screening - AEDT Alternative 2/Baseline Noise Model Tracks and CNEL Changes



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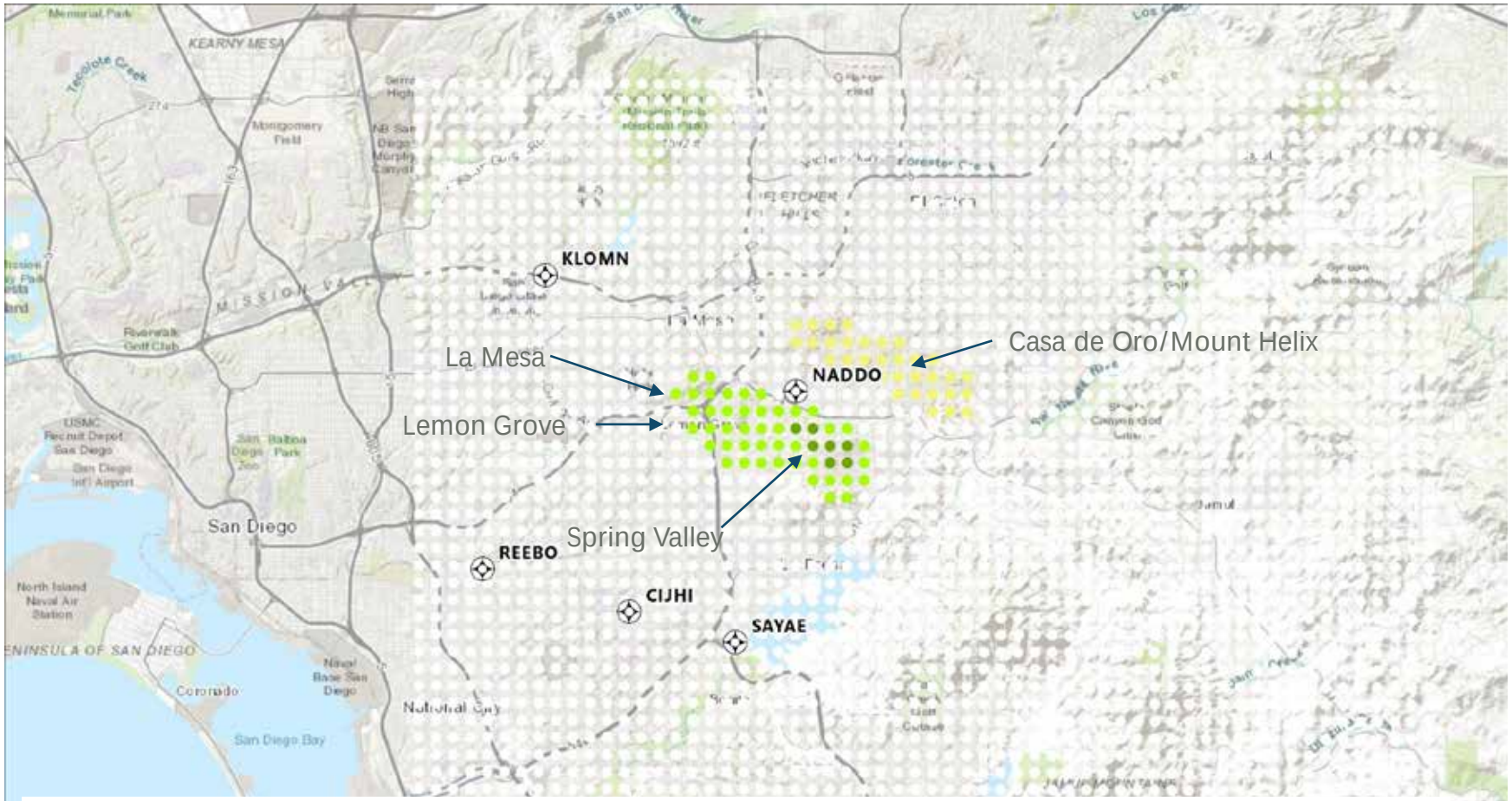
Aircraft Noise Screening – Alterative 2 CNEL Changes

LEGEND

Waypoints

CNEL Change Between Baseline and Alternative 2

- >= 5.0 dB
- 4.0 to 4.9 dB
- 3.0 to 3.9 dB
- 2.0 to 2.9 dB
- 1.0 to 1.9 dB
- 0.9 to -0.9 dB
- -1.0 to -1.9 dB
- -2.0 to -2.9 dB
- -3.0 to -3.9 dB
- -4.0 to -4.9 dB
- <= -5.0 dB



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Recommendations

- **Alternative 1 (Modify COMIX RNAV STAR and Nighttime RNAV Approach to Runway 27)**: Do not implement proposed nighttime RNAV approach procedure due to substantial increase in noise over areas such as Mount Helix, Rancho San Diego and Steele Canyon area

- **Alternative 2 (Modify COMIX RNAV STAR)**:
  - Based on initial parameters, do not recommend due to the increase in noise
  - ECWG feedback: concurred with technical consultant's recommendation due to potential noise increases

- Encourage FAA air traffic controllers use COMIX RNAV STAR as designed as much as possilbe
  - Keep jet arrivals at 6,000 ft. MSL at KLOMN waypoint while balancing efficiency
  - Evaluate and collaborate with FAA Southern California TRACON

Next Steps

- Send letter to FAA to:
  - Inform FAA of East County noise concerns related to jet arrivals to SDIA
  - Encourage FAA to keep aircraft at 6,000 feet Mean Sea Level at or near the KLOMN waypoint as frequently as possible