

La Jolla Noise Monitoring

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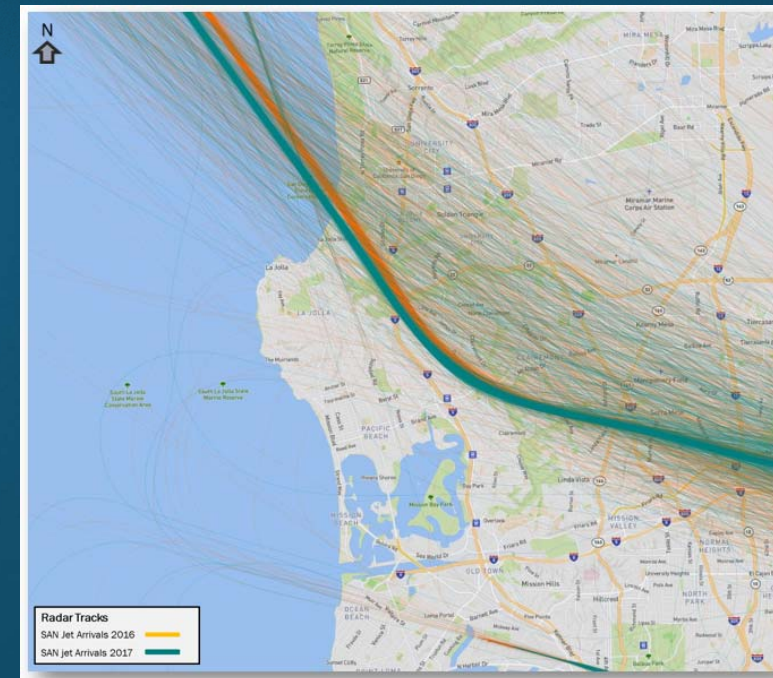
Presentation Outline

- Purpose
- Updated Scope
- Historical Perspective
- Measurement Locations
- Methodology
- Aircraft Operational Results
- Noise Measurement Results



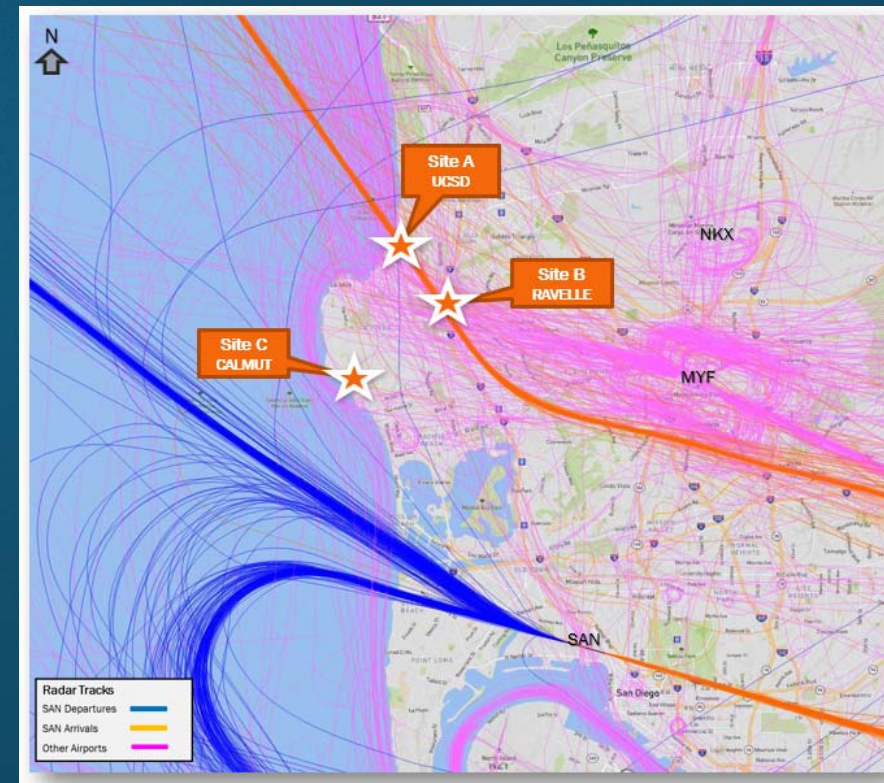
Purpose

- To better understand potential factors contributing to increased community noise complaints in La Jolla
- Evaluate the effect of the FAA implementation of the SoCal Metroplex (Metroplex) project for both departure and arrival operations near La Jolla
- Determine if there were measurable differences in noise or changes in operations related to the FAA's Metroplex implementation
- Quantify any other noise and flight track changes that may have occurred



Additions to Scope

- Added measurement sites and for longer durations
- Departure analysis
- Noise metrics
- Additional historical operations analysis
- Analysis of noise complaint information



Historical Perspective

- San Diego International Airport (SDIA) has experienced growth in jet activity, fleet mix evolution and time of day over the past number of years
- Metroplex was implemented in two phases (for SDIA). The first phase was in November of 2016, for Point Loma departures and the second in March of 2017 for departure and arrival procedures that fly near/over Mission Beach, Pacific Beach and La Jolla
- Noise complaints from La Jolla started to increase in October of 2016
- Noise monitoring was conducted for a two week period in October/November 2016 for "Pre-metroplex" and April/May 2017 for "Post-Metroplex"
- Additional Monitoring in Bird Rock and Muirlands was completed in September 2017

Measurement Locations

Site A- UCSD: Longer-term measurement location

- Selected for proximity to the SDIA arrival track proposed by FAA and to the shoreline
- Obtained two weeks of data **before** and **after** Metroplex implementation

Site B-Revelle: Short-term measurement location

- Selected for proximity to the SDIA arrival track proposed by FAA
- Obtained two days of data **after** Metroplex implementation

Site C-Calumet: Short-term measurement location

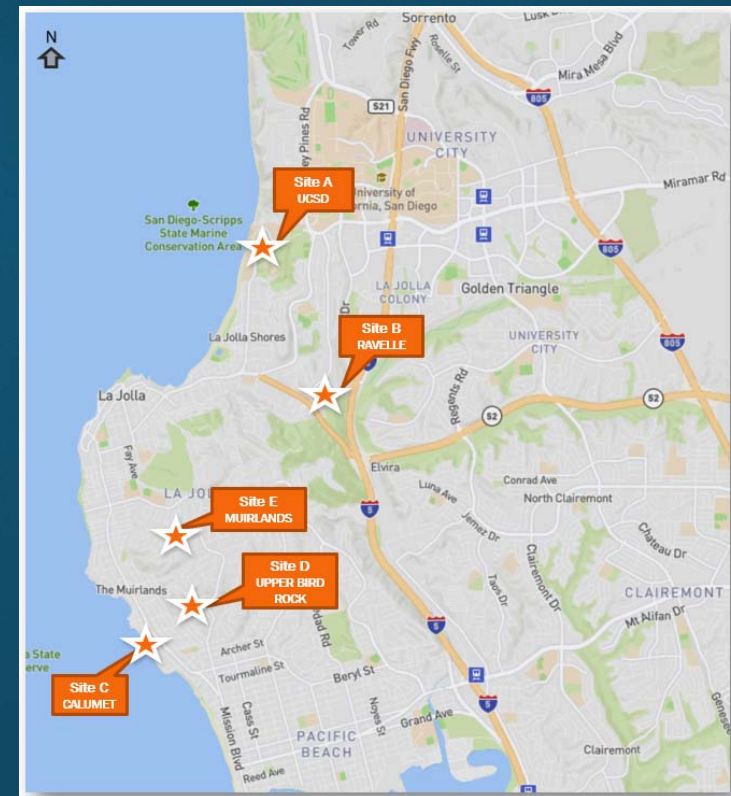
- Selected due to recent high volume of complaints in this area
- Obtained two days of data **after** Metroplex implementation

Site D-Upper Bird Rock: Longer-term measurement location

- Selected for elevated location exposed to SDIA departures
- Obtained 25 days of data **after** Metroplex implementation

Site E-Muirlands: Longer-term measurement location

- Selected for elevated location exposed to both SDIA departures and arrivals
- Obtained 25 days of data **after** Metroplex implementation

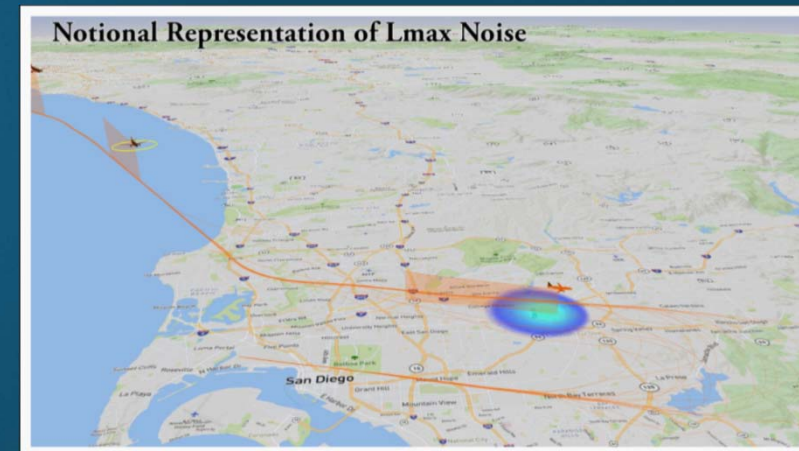


Methodology

Noise Measurements / Flight Track Analysis

- Collect continuous Time History of Noise
- Collect and analyze FAA Radar data (2014-2017)
 - Flight path and dispersion
 - Altitude
 - Type, time of day and number of operations
- Identify and correlate noise events to the aircraft causing the event and any associated complaints
- Determine noise metrics
 - Lmax noise
 - Durations
- Changes in noise for Site A
 - ✓ Have Lmax single event noise levels changed?

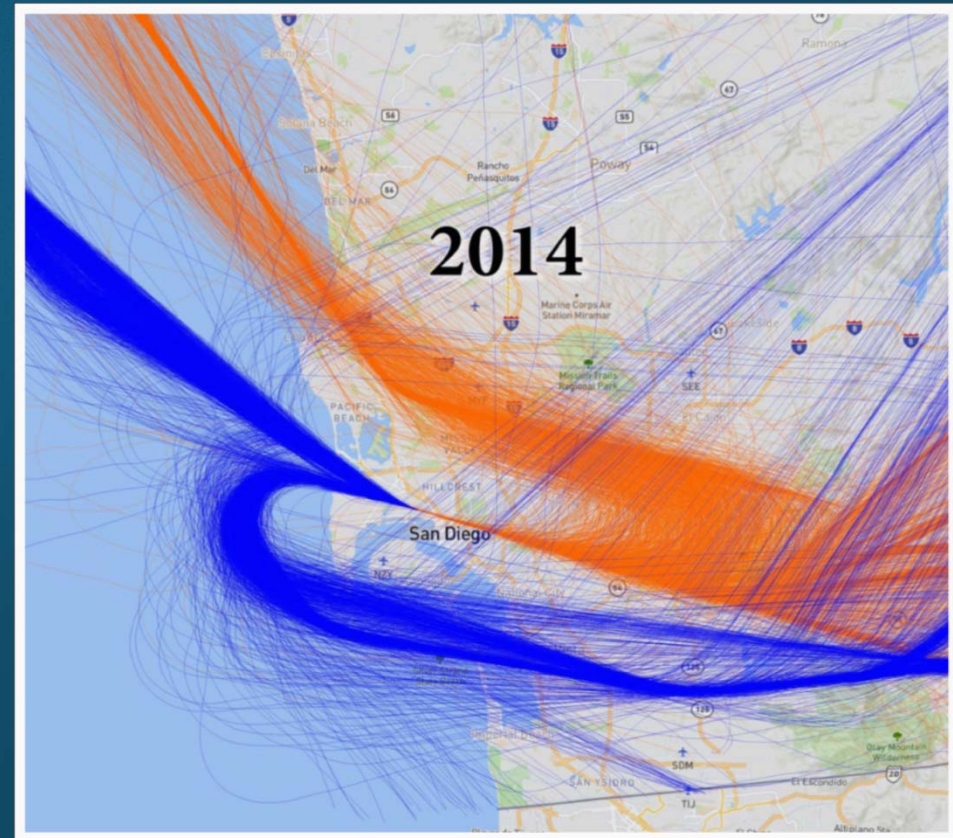
Notional Display of Lmax



Results

Flight Paths

- Reviewed over 1 Million FAA radar flight tracks from 2014 - 2017
- The arrival path shifted 1,200 feet to the south, the average altitudes of aircraft was 150 higher (on average 8,610 feet above the ground at the shoreline)
- Since 2012, aircraft are following a more precise and narrow concentrated flight path
- Nighttime departures sometimes turn aircraft over La Jolla instead of following published procedure



Results

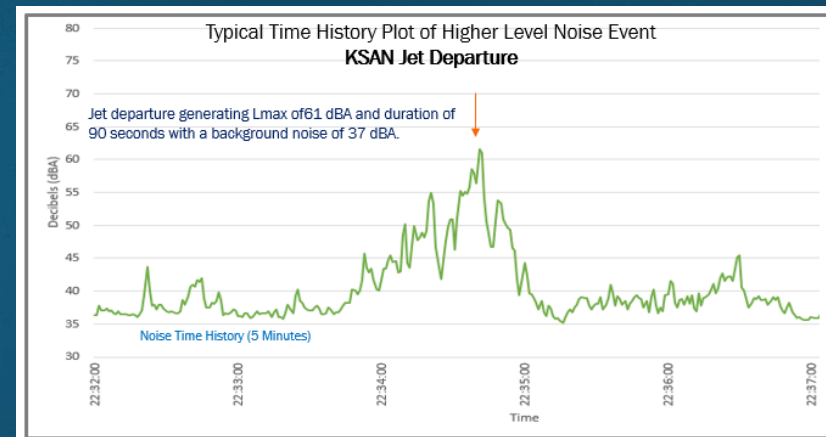
Noise Monitoring

- La Jolla is situated near a number of different airports that generate overflights
- Noise levels from SDIA operations on average were lower magnitude than non-SDIA aircraft operations, but started earlier and ended later in the day (when background noise is quieter)
- Pre and Post Metropolex measurements at the UCSD site did not result in a measurable change in the magnitude of the single event noise. However there are more jets generating these measurable noise events

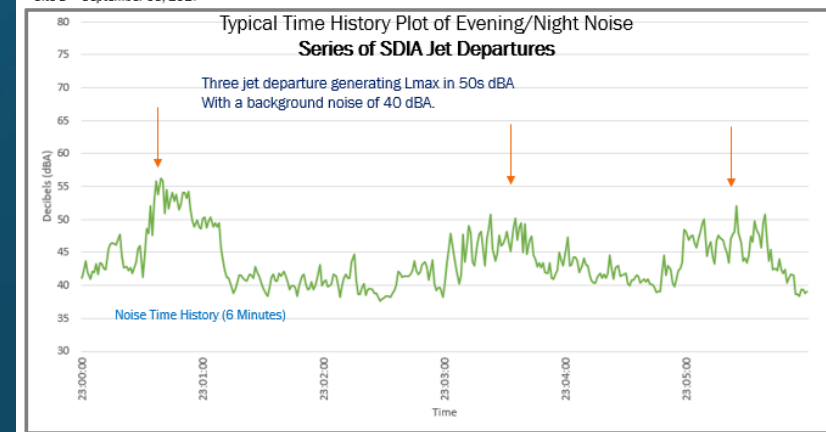
Results

Noise Monitoring (Cont.)

- La Jolla has low ambient levels resulting in measurable noise from all types of aircraft activity. There are times of the day that there is near continuous aircraft noise.
- Low ambient levels, elevated terrain, and over water propagation result in higher SDIA departure noise than typical conditions
- Late evening/night and early morning conditions are characterized by long duration events with little respite between events during busy periods



Site D - September 08, 2017



Site D - September 08, 2017

Results

Additional Factors

- Overall, operations at SDIA have increased by approximately 8%
- Turbo prop and small regional jets have been replaced with larger regional jets and narrow-body jets that are typically louder
- Combined effects of increased operations, late night hours of operation, louder fleet mix and narrower flight paths may result in louder areas
- Meteorological conditions, humidity, inversions, and water can increase noise propagation
- Airlines are bringing newer, quieter (Next generation) jet aircraft into their fleet, Southwest Airlines 737-MAX

Questions

