

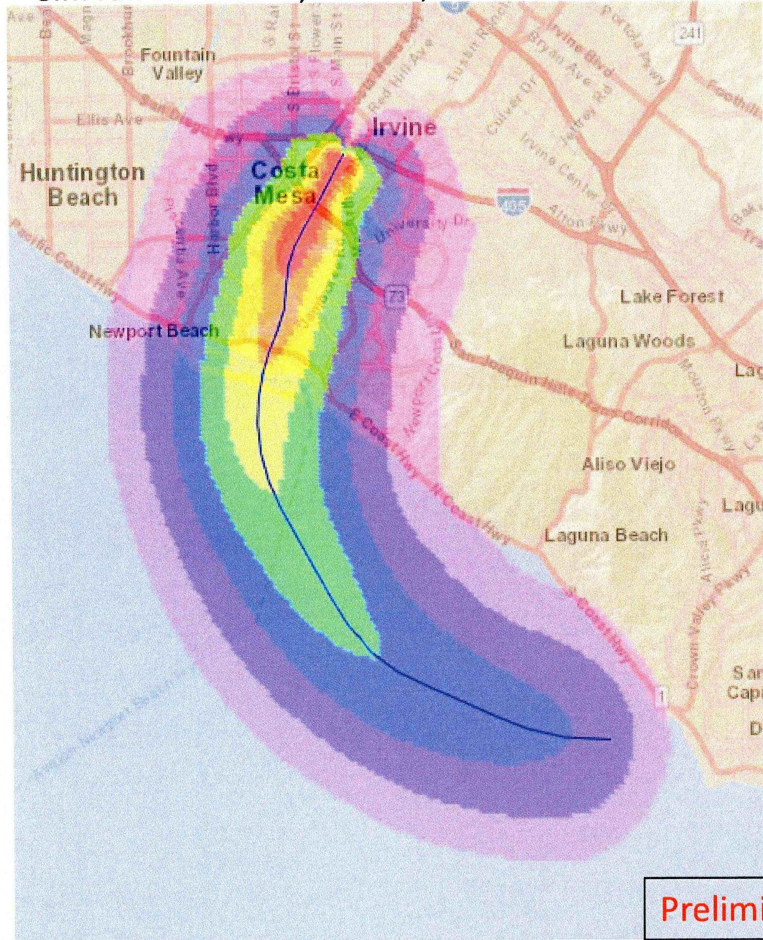
Example - Community Proactive Involvement in Addressing Change (Post NexGen) Commercial Airline Requested Departure Procedure Adjustments-

7 specific community requests to the airlines to mitigate noise at SNA

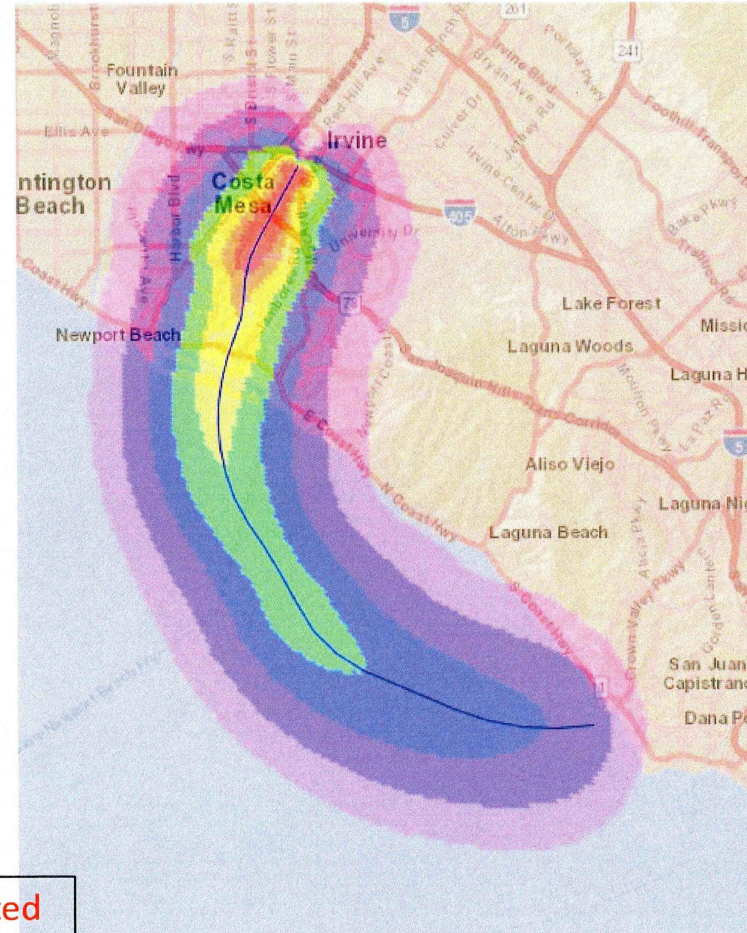
Community Request	Status and noise reduction estimates
1. Use the NADP-1 steep departure to reduce close in noise 2. Execute the departure track precisely as designed to overfly fewer homes 3. Fly community friendly preferred departure procedures 4. Cutback power post NADP-1 take-off at 1200'	• Six of seven airlines now depart using NADP-1 switching from NADP-2 prior to 2020. Noise reduction ≈ 1.2 db • Requires discipline on each departure- compliance is generally good • 2 turn Procedure- STAYY4- approved by FAA • Most airlines have adopted STAYY4 procedures for SNA • Most airlines complying
5. Requesting a further small reduction in power at 1200' altitude (after takeoff power)	• An airline began using this throttle cutback procedure April 2024 for new Airbus equipment. (Estimated noise reduction of ≈ 3.3 db)
6. Delay "auto-throttle" until 4000' 7. Fly new generation aircraft (MAX and NEO) to replace older nosier equipment (737-700 & 737 800's)	• Two airlines now delay climb throttle increases until shoreline (approx. 4000' altitude, + 5km distance) • Fleets are modernizing. MAX and NEO's are 4.5-7 db quieter than older aircraft on departures.

Estimated SEL Noise Contour Maps from Simulated Departures

Example of Airline Current Boeing 737-800 procedure
SIM run #1- STAYY3, NADP-1, 1200' throttle Cut Back



Scenario of possible alternative procedure option tested
SIM run # 5- note narrower contour footprints and shorter high db areas

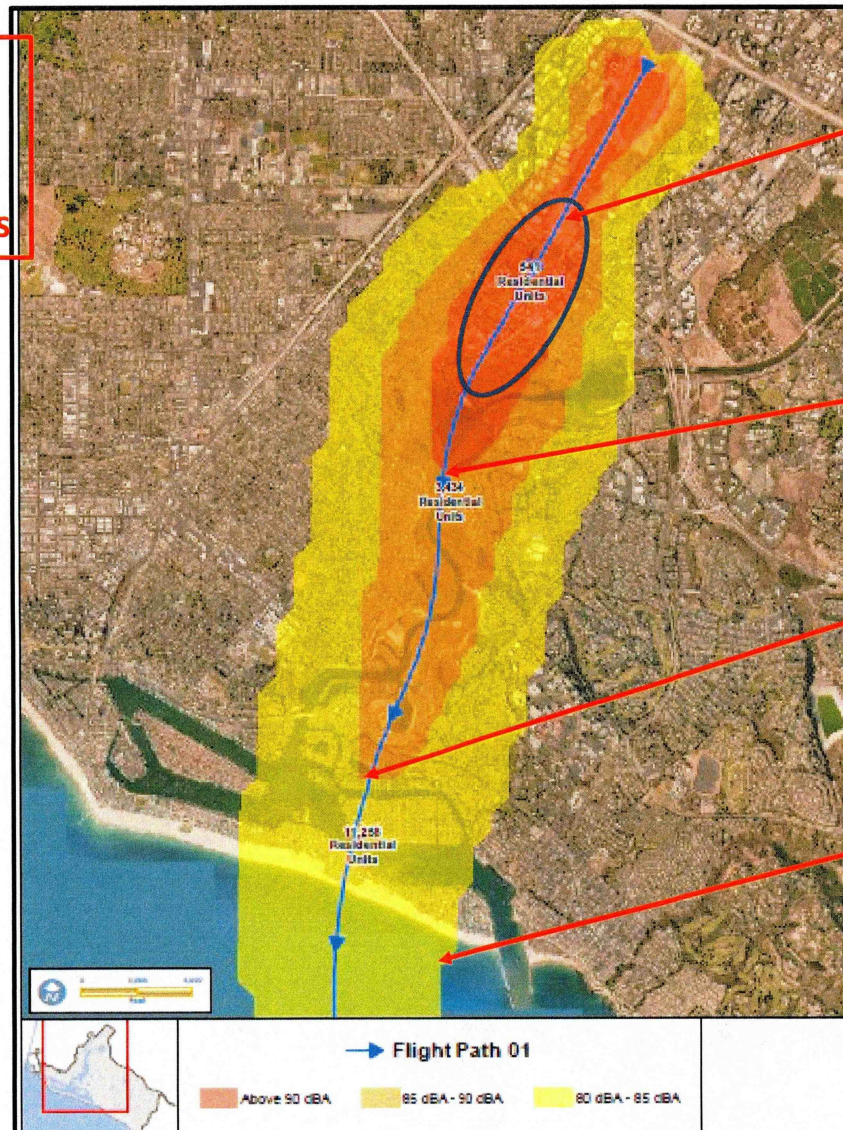


- ^ Symbology
- Below 60
 - 60-65
 - 65-70
 - 70-75
 - 75-80
 - 80-85
 - 85-90
 - Above 90
- 10

**Community Ask-
Focus on “single
event noise levels”
versus 24hr. DNL Contours**

Ex.-65 CNEL Issue at SNA

Illustration of
Current Commercial Airline
B737-800 SNA Departure
Procedure & Track Noise
Contours for SEL using FAA
AEDT- 3e tool
(generated using Simulator
Flight Management System
data based on
AWG parameters to
10,000 Ft AFE)



65 CNEL Contour approximation Q3 2023

Single Departure Event Noise Level
Contour Boundaries from Simulator Data

Above 90dB per AEDT -3e model
(Amber color ) boundary

Above 85 dB per AEDT -3e model
(Golden color ) boundary

Above 80 dB per AEDT -3e model
(Yellow color ) boundary

Community evaluation of emerging technologies

Impacted communities fully support key objectives defined by NASA

- Noise Reduction Technology Roadmap
- Stage 5 & beyond technology prioritization

But, how do we *validate* expected improvements and encourage adoption

Propose a comprehensive model for measuring community value & adoption

- ➡ Fully evaluate / analyze documentation from OE's and industry institutions , i.e., NASA, FAA, etc. on new technology value propositions
 - Will it deliver reductions in noise or emissions?
 - Request / get a community "seat at the table" for formal adoption reviews
- ➡ Where possible, have community participation in operational test scenarios of new equipment to confirm noise / emissions reduction value
- ➡ Estimate 65DNL contours (or hopefully, more community friendly new metrics for Part 150 / aircraft certification) over populated areas, but focus on single event noise improvement metrics, SEL, L_{eq} , L_{max} , NA (Number Above).

Community Organization Issues

- Holistic View on Opportunities of Impactful Change
- Community questions to address on new technology
 - With ANCA codified limitations on local airports and communities' ability to address equipment priorities, how can we encourage the adoption of new noise mitigating aircraft for local airports?
 - With the current DNL metric allowing broad latitude on operations growth, what parameters could be “pushed” to enforce early adoption of new equipment?
 - Due to known health issues from carbon exposure and sleep deprivation, can we get congressional support for new cleaner aircraft adoption incentives?
 - Can there be “true all stakeholder” partnership involvement in program rollout?

Community Organization Issues To Be Addressed on New Technology

- Holistic View on Push for Opportunities of Impactful Change
 - Address issues and change holistically - defined as the involvement of *all* stakeholders and their individual capabilities to contribute to a total solution
 - Regulatory- FAA, et al
 - Local Governments-Airports & Owning entities, cities and counties
 - Operators- airlines, charters, and large GA
 - OE's- powerplant manufacturers and airframe / integrators
 - Community orgs
 - Take a long term view approach- communities support decade long strategies but with incremental deliverables in reduced noise (retrofits?)
 - Address the dominant FAA noise metric issue problem- push for change in the existing DNL metric versus use of preferred single event noise measures
- Community questions to address on new technology

Community Perspective on How to Influence Adoption and Incorporate Favorable Technology

AWG *Airport Working Group of Orange County, Inc.*

Active Validation & Communication of Technology Improvement with Results

Lower noise average of -4.5 dB at noise monitor 6 at SNA for MAX8 aircraft vs. 737-800

Jan-Jun 2024	5S		6S		7S		Total Average GTOW
Aircraft Equipment	Senel No	PCA Altitude	Senel No	PCA Altitude	Senel No	PCA Altitude	
+ A20N	80.53	2135	82.45	2422	79.37	3281	141408
+ A220	79.92	2065	81.00	2297	77.87	3070	121312
+ A319	86.36	1962	86.98	2261	82.74	3183	135888
+ A320	85.64	2014	86.37	2223	82.79	3018	142238
+ A321	88.34	1959	88.51	2166	85.34	2971	167248
+ B38M	84.87	1805	85.67	2070	81.51	2969	155104
+ B737	85.76	1682	86.33	1888	83.75	2754	127377
+ B737-800	89.88	1730	90.20	1919	87.10	2681	147609
+ B752	88.11	2039	87.71	2302	84.21	3248	208206
+ A21N	82.53	2068	83.64	2402	80.16	3291	168500
Grand Total	86.18	1790	86.64	2015	84.21	2821	139730

Above table shows average noise monitor readings in equivalent dB for 6-month period in 2024 at John Wayne Airport (SNA)

Abbreviations – “B” = Boeing equipment, “A” = Airbus equipment, “SENEL” = single event noise exposure level, GTOW = TO weight

How We Operate on Behalf of the Community

Background – Our Holistic View on Addressing Opportunities of Impactful Change

AWG strategic and tactical actions are based on working with all stakeholders

Examples of collaboration-

- FAA & Airports-
 - Departure flight track design / modifications to avoid high density areas
 - Collaboration on departure noise analysis by operator, equipment type, season
- Airline operators
 - Support / push for Next Generation aircraft fleet additions (MAX & NEO)
 - Push for optimum execution of preferred noise mitigating departure procedures
 - NADP-1 vs. NADP-2 for SNA
 - Emphasize discipline on flying tracks to mitigate sound on residences (precise turns, altitude gain, etc.)
 - Request for proven crew procedures on takeoff, climb 1 – i.e. % Power cutback on engines post 1200 feet
 - Collaborative team efforts on gathering empirical data on each departure for study of alternate options
- Facilitate multi stakeholder workshops- Open format to collectively address ideas for noise mitigation
- Push for political support – ex., for incentives for capital acquisitions of new quieter efficient aircraft.

A little history- Who is AWG?

AWG was formed in 1983 to:

- *Preserve the residential character and quality of neighborhoods surrounding airports;*
- *Educate the public on socio-economic and environmental issues associated with airports; and*
- *Promote the economic growth of OC through continued search for adequate air transportation facilities.*

As a signatory to the John Wayne Airport Settlement Agreement, the Airport Working Group has the legal authority and therefore the responsibility for advocating for our rights by defending and enforcing the Agreement and to work towards ensuring its continuation in perpetuity for the benefit of Orange County