# Supplemental Proposals to Revising the Northern California Metroplex For Alameda County/Contra Costa County

**Oakland Airport-Community Noise Management Forum**
**January 2017**

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**ATTACHMENTS**

# INTRODUCTION

The airspace of Northern California is complex with traffic from multiple international and regional airports and military air activity. The interconnectedness of arriving and departing traffic from all are designed to maintain safety and efficiency. Arriving and departing flight paths and procedures for both Oakland International (OAK) and San Francisco International Airports (SFO) were significantly altered in the Federal Aviation Administration's (FAA) Next Generation program (NextGen) and have resulted in significant noise impacts negatively affecting multiple communities in Alameda County and Contra Costa County. With arriving and departing procedures from multiple airports being highly interdependent, they must be evaluated collectively. Aircraft noise issues for other counties in the Northern California Metroplex are being addressed independently from those in Alameda and Contra Costa Counties.

In response to significant noise concerns from residents and at the request of the FAA, the Oakland Airport-Community Noise Forum (Forum) accepted the task of working with its members and community noise groups to provide the FAA with recommendations and proposals to adjust and revise published procedures to mitigate NextGen noise concerns. In response, the FAA agreed to review such proposals and explore modifications to mitigate aircraft noise impacts that arose from NextGen in Alameda and Contra Costa Counties.

This document is written to supplement the Forum's request for revisions to procedures and operations as they currently fly from OAK and SFO in a letter submitted to the FAA on June 17, 2016 and contains the additional forthcoming proposals noted in that letter. It is formatted to provide general information on OAK and SFO airports and their air traffic, and continues by addressing requested changes first to OAK followed by SFO flight paths and procedures.

The Forum respectfully requests the FAA consider the supplemental proposals provided herein to address and mitigate the NextGen noise impacts on East Bay area communities. These proposals were produced by a special NextGen Subcommittee formed by the Forum. This subcommittee was tasked with considering and developing credible community-driven noise mitigation proposals that are reasonable, maintain aviation safety, as well as respect efficient fuel and airspace use. Proposed recommendations considered objective data about noise and population impact in order to mitigate the impact of air traffic concentration above "sacrificial communities" and bring about a fairer distribution of noise.

For any proposals that the FAA does not consider preliminarily feasible, the Forum requests the FAA provide specific reasons for such a determination. The Forum also welcomes any additional mitigation proposals or measures the FAA may introduce for consideration to address aircraft noise issues in Alameda and Contra Costa Counties.

The Forum appreciates that airspace in the Bay area is complex and a change to one aspect can negatively influence as well as positively affect other aspects. For this reason, the proposals in this document were developed to integrate positive effects for associated flight paths and procedures that could be affected.

Each of the requested changes includes the following sections:

**Description** – details the current aircraft departure and arrival procedures

**Primary Impacted Cities** – notes the cities that are most affected by the flight path(s) of the procedures being described.

**Noise Issues** – the primary existing noise issues due to the procedure as currently flown.

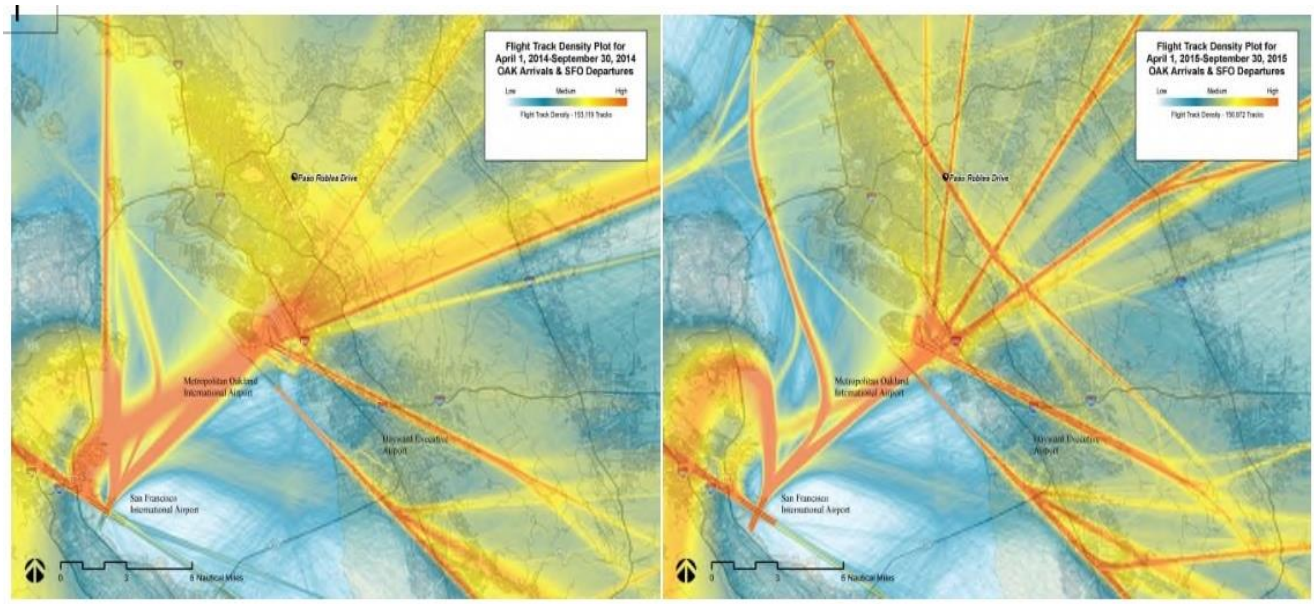
**OAK Noise Forum Request** – details what mitigation efforts the Noise Forum is requesting the FAA implement, either in the short or long term, depending on the detail of the request.

**Initial Requested FAA Research** – if applicable, requests the FAA research specific operational items related to the mitigation efforts.

## GENERAL INFORMATION

Arriving and departing flights from OAK and SFO airports affect Alameda and Contra Costa Counties, California. New RNAV flight corridors and procedures for both OAK and SFO published after NextGen implementation have significantly altered flight track geometry, dispersion, altitude, and relative frequency of flights over communities in Alameda, Oakland, Berkeley, San Leandro and other areas (Figure 1).

**<u>Figure 1</u>: OAK Arrival and SFO Departure Jet Traffic: Pre NextGen traffic April – September 2014 (left) and Post NextGen Traffic April – September 2015 (right). (*Montclair Flight Track Analyses*, HMMH Inc., Technical Memorandum HMMH Project Number 302551.004, March 30, 2016.)**



## Oakland International Airport Layout and Information

The two diagrams below illustrate the layout of OAK runways and the general parameters of the Oakland International Airport Fly Quiet program in a graphic format (Figures 2 and 3).

**Figure 2: OAK layout and runways configuration.**

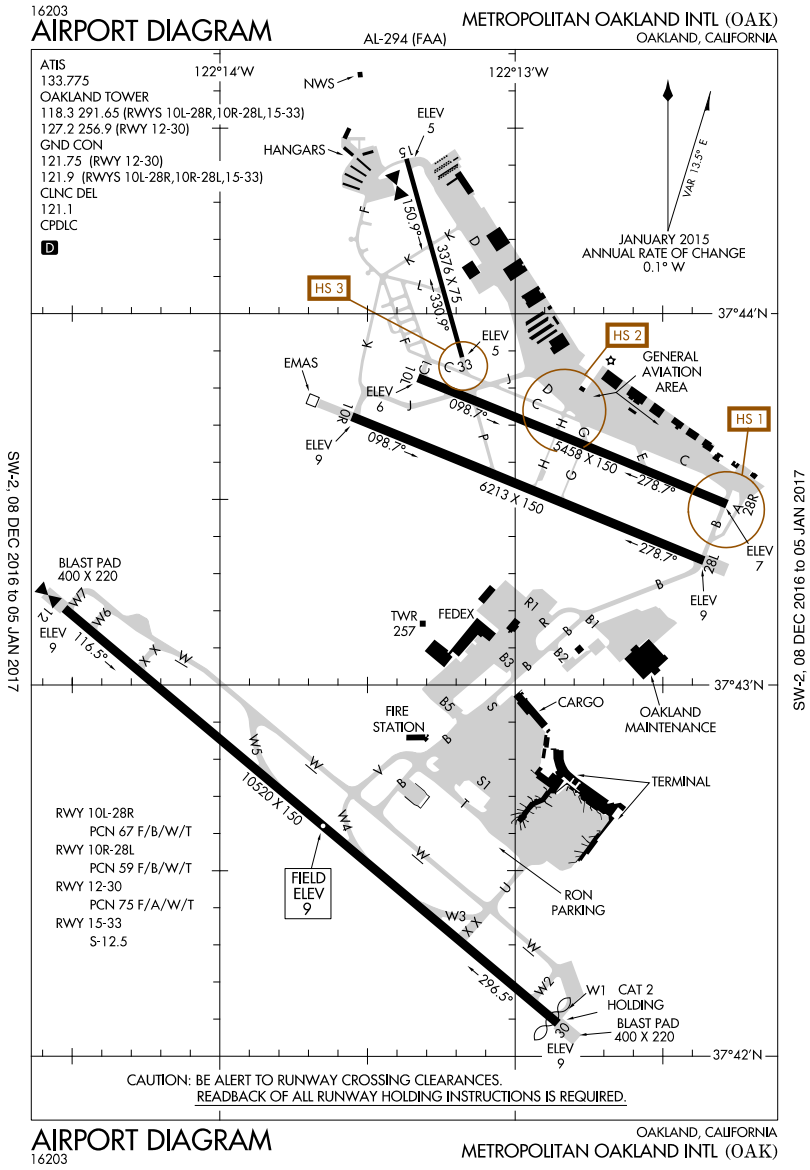
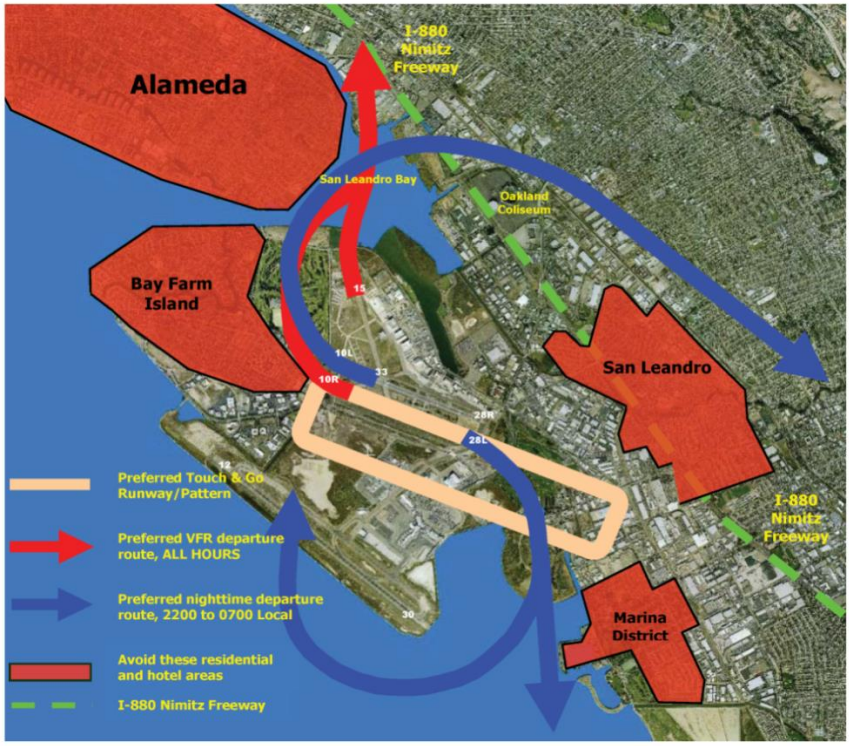


**Figure 3: OAK Noise Office Fly Quiet Program illustration.**




## Oakland International Airport NORTH FIELD
## Noise Abatement Procedures

**Safety permitting, avoid flying over nearby residential areas when arriving or departing OAK. Please follow these procedures when safety, weather, and ATC instructions permit.**

**NOISE ABATEMENT PROCEDURES, DAY AND NIGHT**

The following aircraft shall not depart Runways 28R/L, nor land on Runways 10R/L, except during emergencies. Use Runway 12/30.

- Turbo-jet and turbo-fan powered aircraft
- Turbo-props over 17,000 pounds
- Four-engine reciprocating powered aircraft
- Surplus military aircraft over 12,500 pounds

**AIRPLANES-DAYTIME, 7am - 10pm:**

**VFR DEPARTURES:**

**Runways 28R/L**

- Make right crosswind turn over San Leandro Bay until reaching I-880 (Nimitz Freeway) and continue per ATC instructions.
- No straight out departures.

**Runway 33**

- Make right northerly turn, overfly San Leandro Bay until reaching I-880 (Nimitz Freeway) and continue per ATC instructions.
- No straight out or left crosswind/downwind departures.

**VFR ARRIVALS:**

- Avoid flying over residential areas as much as possible.
- No straight in arrivals to Runway 15, unless required by safety or wind conditions.

**TOUCH-AND-GOES:**

**Runway 28L**

- This is the preferred touch-and-go runway. Fly standard traffic pattern and avoid residential areas.

**AIRPLANES-NIGHTIME, 10pm - 7am:**

**DEPARTURES:**

- Runway 10R is the preferred runway.
- Runway 28R is the preferred runway.
- No left turns from Runways 10R/L
- No straight out departures from Runway 10L
- All aircraft over 75,000 pounds are directed to use Runways 12/30
- Use only full-length departures from the chosen North Field Runway.

Pilots may choose between the following Noise Abatement procedures, wind and weather permitting:

1. VFR and SALAD IFR departures from Runway 28R
   - The VFR departure shall include a right crosswind or additional downwind segment avoiding Bay Farm Island and the island of Alameda.
   - The SALAD Instrument Departure Procedure was published in August 2000. Please consult ATC instructions. Note: Do not use the OAK 310 radial departure.
2. VFR and IFR departures from Runway 10R/L
   - For Runway 10R departures, use 180 departure headings when able for E/SE bound departures. Continue to use right turns over the airport for N/NE bound departures when able from Runways 10R or 10L.

**ARRIVALS:**

- Runway 28L is the preferred arrival runway.

**HELICOPTERS, DAY AND NIGHT**

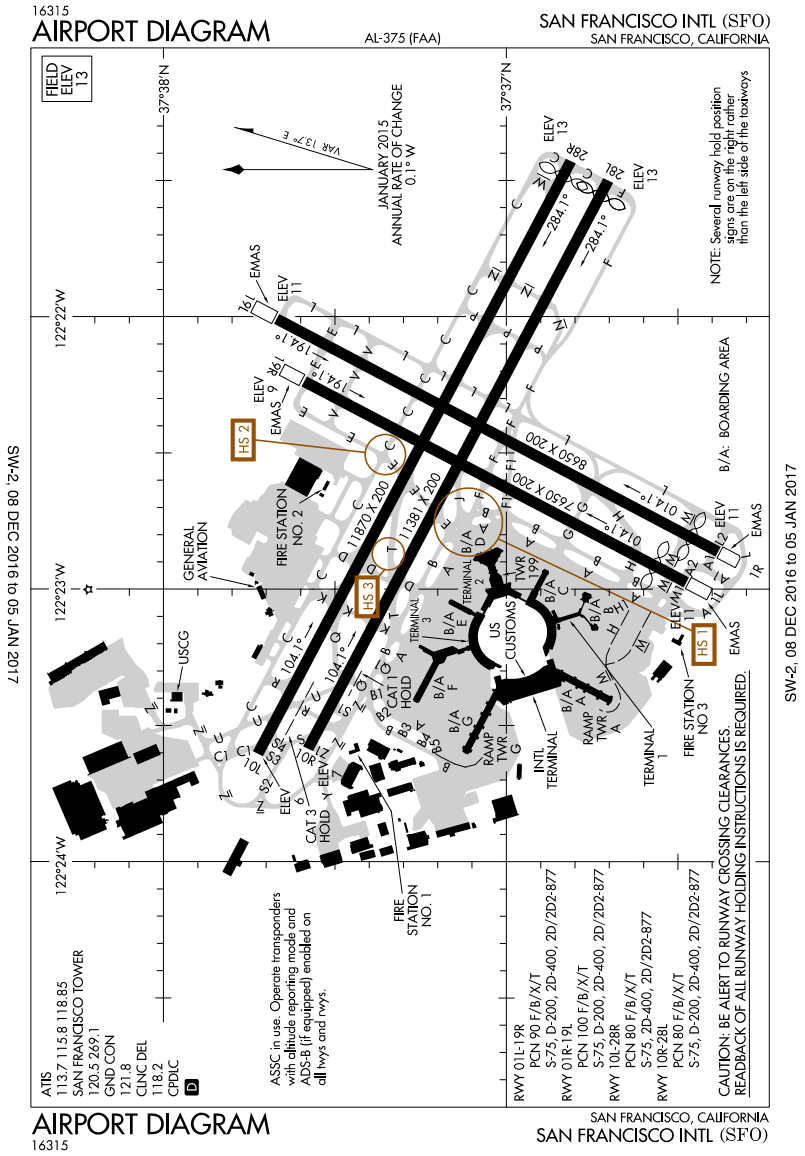
**DEPARTURES/ARRIVALS:**

Fly over freeways and water as much as possible to avoid flying over hotels and residential areas.

## San Francisco International Airport Layout

The diagram below illustrates the layout of SFO runways (Figure 4).

**Figure 4: SFO layout and runway configuration.**



# REQUESTED ROUTE AND PROCEDURE PROPOSALS

The Forum respectfully requests the FAA consider the following proposals to minimize noise impacts to affected East Bay communities.

## OAKLAND INTERNATIONAL AIRPORT PROPOSALS

### PROCEDURE: HUSSH TWO DEPARTURE

**Figure 5: Published HUSSH TWO departure off OAK.**

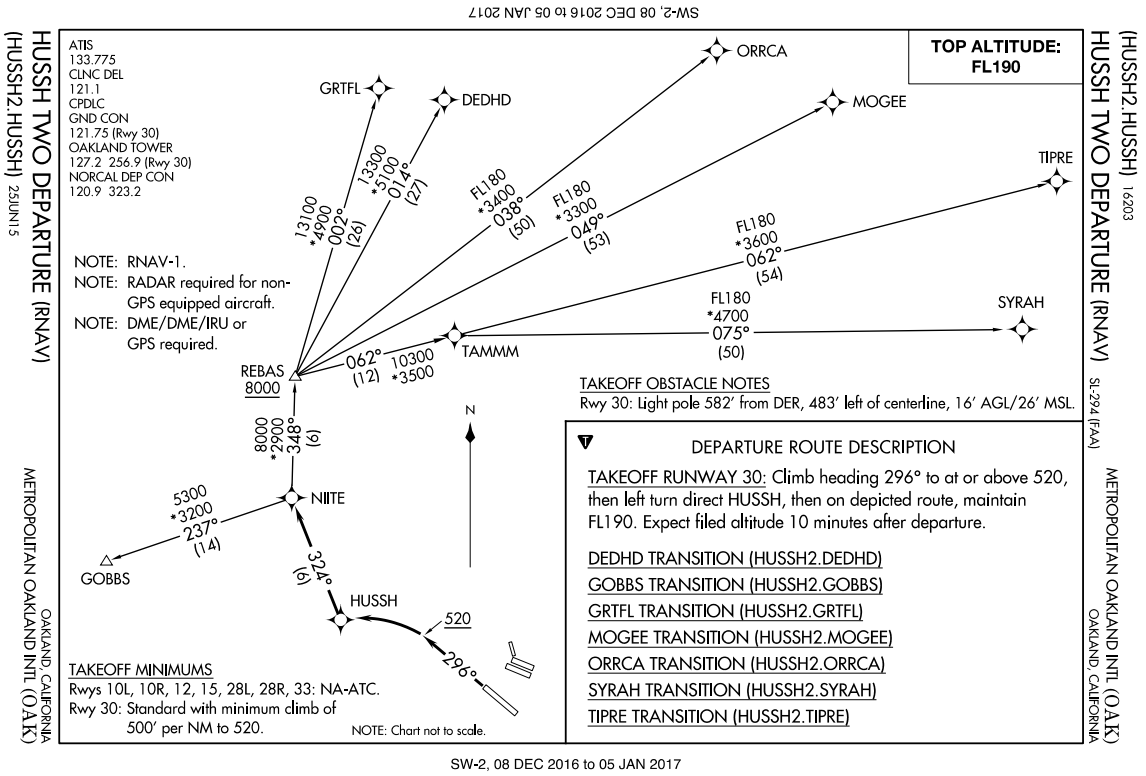
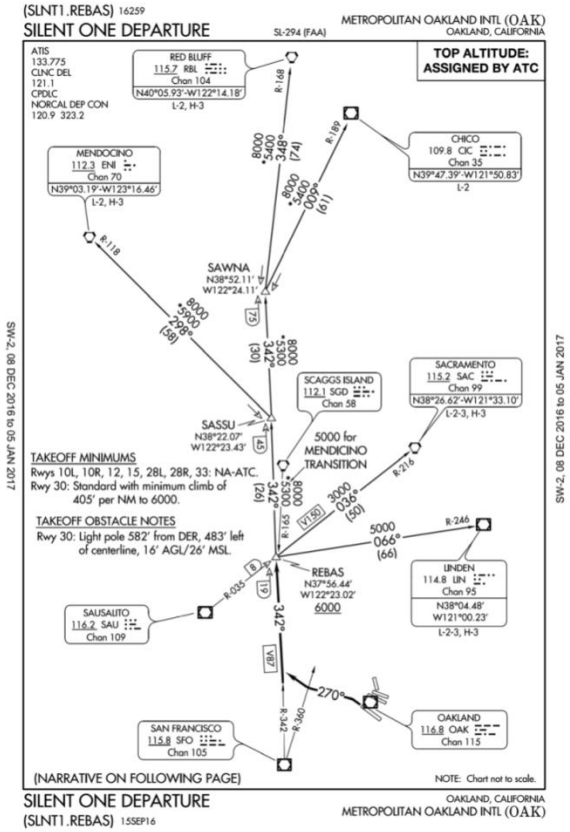


**Figure 6: Published SILENT departure off OAK.**





## HUSSH TWO DESCRIPTION:

The HUSSH departure (DP) is intended to reduce nighttime aircraft noise to communities from Alameda Island and northward along the eastern side of San Francisco Bay including Oakland, Berkeley and others (Figure 5). The HUSSH DP is used by aircraft departing OAK Runway 30. After takeoff, the aircraft climbs on a 296° heading over the Bay, then turns left to the HUSSH waypoint.

This procedure was intended to overlay, and replace, the prior SILENT departure procedure, which turned aircraft departing OAK Runway 30 away from Bay Farm Island (BFI) and Alameda and routed them over the San Francisco Bay as soon as practicable (Figure 6). It was designed for noise abatement purposes and was charted to have aircraft fly to the REBAS waypoint at Point Richmond to keep aircraft over the water as much as possible during the lower portion of the aircraft climb profile. The SILENT procedure, which provided a significant benefit to BFI/Alameda residents for decades by reducing nighttime departure noise, accomplished this by requiring flight crews to turn left to 270° after departure (Runway 30 heading is 296°) and then by having them following this heading until intercepting the 342° radial from the SFO VOR/DME. Significant nighttime benefit to

the hillside residential areas of Oakland, Berkeley, and northward was achieved by requiring that climbing aircraft remain over the Bay and not turn eastward until at higher altitudes at REBAS intersection over Point Richmond. The HUSSH procedure was developed to provide a similar nighttime benefit to BFI/Alameda and the hillside residential areas of Oakland, Berkeley, and northward by having aircraft, when at or above 520 feet, turn left direct to the HUSSH waypoint, which generally is located in the middle of the San Francisco Bay. After reaching HUSSH, aircraft generally follow a path that allows them to remain clear of both the west and east shorelines of San Francisco Bay until reaching a higher altitude when a turn over land is less disruptive to residents at the REBAS waypoint at Point Richmond. HUSSH replaced the SILENT Standard Instrument Departure ("SID").

**HUSSH TWOPRIMARY IMPACTED CITIES:**

City of Alameda, particularly Bay Farm Island, Oakland, Berkeley, El Cerrito, Richmond.

**HUSSH TWONOISE ISSUES:**

After analyzing flight tracks of aircraft on the HUSSH departure procedure as compared to the SILENT SID procedure (Figure 6), the Noise Forum has concluded that the HUSSH procedure is less effective at keeping aircraft away from BFI/Alameda as the initial turn over the San Francisco Bay occurs later and the turn itself is not as sharp. Because of this, aircraft departing OAK Runway 30 fly much closer to BFI/Alameda than they did previously under the SILENT. In the early morning and late night hours, aircraft noise is especially disruptive given the low ambient noise levels. Although the total number of nighttime flights may not seem high, the impact of these flights close to the shoreline throughout the night is very impactful to the residents.

To study the effectiveness of HUSSH departure, Oakland Airport installed a portable noise monitor at 551 Creedon Circle in Bay Farm Island and collected data for 44 days during the months of January and February of 2016.Varying weather conditions existed during the months of January and February of 2016. Data recorded by the Portable Noise Recorder showed no divergences in noise level between HUSSH and straight-out day time departures from Runway 30 at Oakland Airport (See Table1). The recorded data showed single noise events ranging from 70 dBA to 80.9 dBA for individual aircraft departing off Runway 30 at Oakland airport(See Tables 2, 3, and 4). These noise events are extremely disruptive to residents' sleep.

Analysis of aircraft flying HUSSH also demonstrates the overwhelming majority of flights are currently allowed early turns eastward over Oakland and Berkeley instead of flying the route as charted to REBAS. This places aircraft at least 1000 to 5000 feet lower in altitude during nighttime hours over densely populated areas in Oakland, Berkeley, and other areas. In the early morning and late night hours, aircraft noise is especially disruptive given the low ambient noise levels, which have been measured to drop as low as 29 dBA in the Montclair residential area of Oakland.

SILENT was designed for noise abatement and kept aircraft over the water during the lower portion of the aircraft climb profile to REBAS intersection. The NextGen HUSSH procedure eliminated the charted heavy line to REBAS that was published under SILENT. This elimination allowed greater discretion for early turns prior to aircraft reaching the REBAS waypoint and greatly undermining

noise abatement.

**Table 1: Comparison of noise levels for HUSSH and straight-out (day time) departures from runway 30 at Oakland Airport, showing no divergences in the noise levels. Data collected for 44 days by portable noise monitor installed at 551 Creedon Circle in Bay Farm Island, Alameda by Oakland Airport noise office.**

| Days No. | HUSSH Mean (dB) | No. of HUSSH Flights. | Straight out Mean (dB) | No. of Straight Out Flights | HUSSH SEL Mean (dB) | Straight out SEL Mean (dB) |
|---|---|---|---|---|---|---|
| | **71.92** | | **72.69** | | **82.74** | **83.41** |
| 2 | 74.52 | 29 | 73.48 | 143 | 83.78 | 84.20 |
| 3 | 72.57 | 15 | 72.59 | 96 | 82.54 | 80.91 |
| 4 | 71.46 | 19 | 73.5 | 127 | 81.64 | 83.48 |
| 5 | 73.10 | 27 | 72.91 | 140 | 82.92 | 83.27 |
| 6 | 69.87 | 28 | 73.37 | 150 | 78.09 | 83.15 |
| 7 | 72.16 | 29 | 73.13 | 126 | 82.57 | 82.90 |
| 8 | 71.34 | 28 | 72.39 | 134 | 80.25 | 81.61 |
| 9 | 73.78 | 22 | 72.96 | 159 | 83.33 | 83.62 |
| 10 | 69.75 | 25 | 71.76 | 133 | 78.01 | 80.36 |
| 11 | 73.65 | 16 | 74.15 | 147 | 83.04 | 84.39 |
| 12 | 72.63 | 26 | 73.24 | 132 | 83.70 | 83.30 |
| 13 | 72.41 | 27 | 72.69 | 144 | 82.73 | 83.28 |
| 14 | 69.79 | 25 | 74.11 | 173 | 77.94 | 83.56 |
| 15 | 73.08 | 28 | 69.67 | 94 | 82.15 | 76.79 |
| 16 | 70.04 | 17 | 73.68 | 230 | 80.43 | 83.89 |
| 17 | 71.67 | 31 | 72.19 | 130 | 82.28 | 82.98 |
| 18 | 71.71 | 30 | 72.56 | 145 | 81.43 | 83.03 |
| 19 | 71.57 | 31 | 72.80 | 138 | 82.33 | 83.29 |
| 20 | 69.57 | 19 | 72.74 | 753 | 79.47 | 83.32 |
| 21 | 72.58 | 20 | 74.14 | 126 | 82.71 | 83.42 |
| 22 | 71.88 | 17 | 72.93 | 91 | 81.64 | 83.37 |
| 23 | 72.66 | 7 | 72.66 | 123 | 79.87 | 82.57 |
| 24 | 72.68 | 13 | 72.21 | 125 | 82.83 | 82.31 |
| 25 | 72.53 | 29 | 72.53 | 121 | 82.85 | 81.53 |
| 26 | 72.35 | 28 | 72.74 | 149 | 82.46 | 83.19 |
| 27 | 72.02 | 24 | 72.86 | 178 | 82.66 | 82.42 |
| 28 | 71.45 | 25 | 72.45 | 178 | 82.1 | 82.64 |
| 29 | 70.62 | 15 | 72.11 | 119 | 80.66 | 82.20 |
| 30 | 72.96 | 37 | 72.90 | 144 | 81.30 | 82.08 |
| 31 | 71.91 | 25 | 72.82 | 226 | 82.48 | 81.87 |
| 32 | 71.30 | 27 | 72.08 | 149 | 81.60 | 80.10 |
| 33 | 71.42 | 27 | 72.35 | 143 | 81.34 | 83.04 |
| 34 | 71.33 | 21 | 72.03 | 155 | 82.15 | 82.64 |
| 35 | 72.24 | 27 | 72.10 | 142 | 83.10 | 82.96 |
| 36 | 70.82 | 14 | 72.63 | 94 | 81.81 | 80.71 |
| 37 | 71.37 | 9 | 71.40 | 110 | 81.13 | 81.96 |
| 38 | 71.35 | 25 | 71.71 | 140 | 81.06 | 82.32 |
| 39 | 69.70 | 7 | 72.59 | 142 | 78.17 | 82.86 |
| 40 | 74.64 | 30 | 71.13 | 126 | 84.25 | 79.00 |
| 41 | 73.60 | 21 | 74.88 | 162 | 83.20 | 84.41 |
| 42 | 72.31 | 23 | 72.01 | 124 | 81.84 | 81.16 |
| 43 | 71.39 | 16 | 72.78 | 98 | 81.38 | 83.00 |
| 44 | 70.16 | 17 | 72.70 | 127 | 80.20 | 83.26 |

**Table 2: HUSSH departure sample showing noise levels for individual aircrafts off runway 30 at Oakland Airport for January 16, 2016. Data collected by portable noise monitor installed at 551 Creedon Circle in Bay Farm Island, Alameda by Oakland Airport noise office.**

| Date Time | Location ID | Max Level | SEL | Duration | Classification | Flight Number | Tail Number | Aircraft Type | Airport Code |
|---|---|---|---|---|---|---|---|---|---|
| 1/16/2016 0:05 | 211 | 75.7 | 85.7 | 25 | 1 | JBU168 | N768JB | A320 | OAK |
| 1/16/2016 2:47 | 211 | 71.5 | 82.9 | 25 | 1 | VOI5907 | | A320 | OAK |
| 1/16/2016 2:53 | 211 | 74.7 | 85.8 | 28 | 1 | FDX1885 | | MD11 | OAK |
| 1/16/2016 3:11 | 211 | 76.5 | 87.7 | 33 | 1 | FDX169 | | MD11 | OAK |
| 1/16/2016 3:14 | 211 | 73.8 | 84.7 | 23 | 1 | FDX1857 | | MD11 | OAK |
| 1/16/2016 3:16 | 211 | 73.6 | 85.3 | 30 | 1 | FDX1859 | | A306 | OAK |
| 1/16/2016 3:34 | 211 | 77.4 | 86.8 | 27 | 1 | FDX25 | N892FD | B77L | OAK |
| 1/16/2016 4:21 | 211 | 78.9 | 88.6 | 29 | 1 | FDX20 | N601FE | MD11 | OAK |
| 1/16/2016 6:03 | 211 | 71.8 | 80.5 | 23 | 1 | CPZ5743 | N629CZ | E170 | OAK |
| 1/16/2016 6:09 | 211 | 69.5 | 79.9 | 18 | 1 | ASA345 | N477AS | B739 | OAK |
| 1/16/2016 6:11 | 211 | 69.3 | 78.2 | 17 | 1 | DAL1408 | N370NW | A320 | OAK |
| 1/16/2016 6:12 | 211 | 70.7 | 79.2 | 17 | 1 | NKS188 | N502NK | A319 | OAK |
| 1/16/2016 6:15 | 211 | 74.8 | 84.9 | 22 | 1 | SWA2342 | N486WN | B737 | OAK |
| 1/16/2016 6:16 | 211 | 77.1 | 85.4 | 17 | 1 | SWA892 | N359SW | B733 | OAK |
| 1/16/2016 6:19 | 211 | 73.2 | 80.5 | 22 | 1 | AAL406 | N678AW | A320 | OAK |
| 1/16/2016 6:20 | 211 | 69.9 | 77.7 | 15 | 1 | SWA3060 | N752SW | B737 | OAK |
| 1/16/2016 6:26 | 211 | 77.2 | 86.8 | 27 | 1 | FDX3671 | N68078 | B763 | OAK |
| 1/16/2016 6:39 | 211 | 75.4 | 85.1 | 28 | 1 | FDX3647 | N357FE | DC10 | OAK |
| 1/16/2016 6:41 | 211 | 71.1 | 80.7 | 17 | 1 | SWA2947 | N8607M | B738 | OAK |
| 1/16/2016 6:49 | 211 | 70.3 | 76.9 | 10 | 1 | SWA2835 | N278WN | B737 | OAK |
| 1/16/2016 6:50 | 211 | 77.2 | 86.9 | 27 | 1 | FDX831 | | MD11 | OAK |
| 1/16/2016 6:52 | 211 | 73.6 | 83.1 | 21 | 1 | SWA3665 | N925WN | B737 | OAK |
| | | 1623.2 | 1833.3 | | | | | | |
| | **Mean** | **73.78** | **83.33 db** | **22 Fls** | | | | | |

**Table 3: HUSSH departure sample showing noise levels for individual aircrafts off runway 30 at Oakland Airport for February 7 and 8, 2016. Data collected by portable noise monitor installed at 551 Creedon Circle in Bay Farm Island, Alameda by Oakland Airport noise office.**

| Date Time | Location ID | Max Level | SEL | Duration | Classification | Flight Number | Tail Number | Aircraft Type | Airport Code |
|---|---|---|---|---|---|---|---|---|---|
| 2/7/2016 22:00 | 211 | 77.8 | 86.1 | 17 | 1 | N23LT | N23LT | F2TH | OAK |
| 2/7/2016 22:02 | 211 | 69.5 | 76.6 | 10 | 1 | PXT499 | N499GB | C680 | OAK |
| 2/7/2016 22:08 | 211 | 67.6 | 74.1 | 7 | 1 | N601FR | N601FR | CL60 | OAK |
| 2/7/2016 22:11 | 211 | 85 | 91.8 | 18 | 1 | VHT11 | N111HC | GLF3 | OAK |
| 2/7/2016 22:12 | 211 | 67.1 | 72.8 | 6 | 1 | DPJ817 | N817LF | C56X | OAK |
| 2/7/2016 22:16 | 211 | 80 | 87.6 | 18 | 1 | XOJ557 | N557XJ | CL30 | OAK |
| 2/7/2016 22:18 | 211 | 67.9 | 75.6 | 9 | 1 | XOJ747 | | C750 | OAK |
| 2/7/2016 22:22 | 211 | 76.2 | 84.7 | 16 | 1 | N469MW | N469MW | GALX | OAK |
| 2/7/2016 22:24 | 211 | 80.8 | 88.6 | 21 | 1 | N702SS | N702SS | C650 | OAK |
| 2/7/2016 22:25 | 211 | 75.6 | 83.5 | 20 | 1 | PWA138 | N138BG | C680 | OAK |
| 2/7/2016 22:28 | 211 | 77.5 | 84.9 | 20 | 1 | CFDOL | | CL30 | OAK |
| 2/7/2016 22:29 | 211 | 73 | 81.3 | 13 | 1 | GAJ512 | N512UP | C56X | OAK |
| 2/7/2016 22:30 | 211 | 80.9 | 88.5 | 17 | 1 | CGWPB | CGWPB | GALX | OAK |
| 2/7/2016 22:33 | 211 | 78.4 | 85.9 | 18 | 1 | N815PA | N815PA | GL5T | OAK |
| 2/7/2016 22:38 | 211 | 74.7 | 83.3 | 16 | 1 | DJR8 | | C560 | OAK |
| 2/7/2016 22:43 | 211 | 74.6 | 81.8 | 17 | 1 | N1980Z | N1980Z | CL30 | OAK |
| 2/7/2016 22:57 | 211 | 68.9 | 78.9 | 17 | 1 | N770X | | LJ60 | OAK |
| 2/7/2016 23:13 | 211 | 67.5 | 76.2 | 13 | 1 | SWA8239 | N250WN | B737 | OAK |
| 2/7/2016 23:14 | 211 | 71.8 | 80.6 | 21 | 1 | SWA8240 | N448WN | B737 | OAK |
| 2/7/2016 23:28 | 211 | 69.1 | 79.6 | 22 | 1 | UPS2943 | | B763 | OAK |
| 2/7/2016 23:38 | 211 | 66.2 | 72.3 | 6 | 1 | JNY771 | N771AV | GLF4 | OAK |
| 2/8/2016 0:09 | 211 | 71.6 | 82.3 | 23 | 1 | JBU168 | N618JB | A320 | OAK |
| 2/8/2016 1:18 | 211 | 70.8 | 79.7 | 15 | 1 | VOI903 | | A320 | OAK |
| 2/8/2016 2:34 | 211 | 73.7 | 85.2 | 27 | 1 | EAL5001 | N280EA | B738 | OAK |
| 2/8/2016 4:23 | 211 | 67.1 | 74.2 | 8 | 1 | CFWKX | | F900 | OAK |
| 2/8/2016 4:57 | 211 | 70.1 | 80 | 17 | 1 | | | C650 | OAK |
| 2/8/2016 5:57 | 211 | 73.3 | 83.4 | 22 | 1 | SWA2672 | N394SW | B733 | OAK |
| 2/8/2016 6:04 | 211 | 76.1 | 84.3 | 24 | 1 | ASA345 | N590AS | B738 | OAK |
| 2/8/2016 6:10 | 211 | 71.1 | 78.5 | 13 | 1 | CPZ5743 | N619CZ | E170 | OAK |
| 2/8/2016 6:12 | 211 | 76 | 84.5 | 25 | 1 | SWA1692 | N658SW | B733 | OAK |
| 2/8/2016 6:13 | 211 | 74 | 82.4 | 18 | 1 | DAL1408 | N329NW | A320 | OAK |
| 2/8/2016 6:15 | 211 | 70.2 | 78.9 | 16 | 1 | AAL489 | N174US | A321 | OAK |
| 2/8/2016 6:34 | 211 | 66.5 | 75.6 | 12 | 1 | N619KS | N619KS | GALX | OAK |
| 2/8/2016 6:40 | 211 | 70.4 | 78.6 | 20 | 1 | SWA300 | N708SW | B737 | OAK |
| 2/8/2016 6:41 | 211 | 71.5 | 79.7 | 16 | 1 | SWA890 | N8305E | B738 | OAK |
| 2/8/2016 6:57 | 211 | 73.1 | 82.1 | 19 | 1 | SWA2640 | N345SA | B733 | OAK |
| 2/8/2016 6:59 | 211 | 73.9 | 84.1 | 22 | 1 | SWA2701 | N495WN | B737 | OAK |
| | | 2699.5 | 3008.2 | | | | | | |
| | Mean | 72.96 db | 81.30 db | 37 Fls | | | | | |

**Table 4**: **HUSSH departure sample showing noise levels for individual aircrafts off runway 30 at Oakland Airport for February 20 and 21, 2016. Data collected by portable noise monitor installed at 551 Creedon Circle in Bay Farm Island, Alameda by Oakland Airport noise office.**

| Date Time | Location ID | Max Level | SEL | Duration | Classification | Flight Number | Tail Number | Aircraft Type | Airport Code |
|---|---|---|---|---|---|---|---|---|---|
| 2/20/2016 22:01 | 211 | 66.5 | 73.1 | 7 | 1 | NKS510 | N508NK | A319 | OAK |
| 2/20/2016 22:26 | 211 | 74.5 | 83.6 | 24 | 1 | JBU168 | N587JB | A320 | OAK |
| 2/21/2016 1:12 | 211 | 69.7 | 75.2 | 7 | 1 | CMD8 | N838CS | HELO | OAK |
| 2/21/2016 1:21 | 211 | 70.4 | 78.9 | 18 | 1 | VOI903 | N512VL | A320 | OAK |
| 2/21/2016 1:37 | 211 | 73.9 | 85.2 | 33 | 1 | UPS947 | | B763 | OAK |
| 2/21/2016 3:36 | 211 | 69.5 | 81.9 | 26 | 1 | FDX79 | N883FD | B77L | OAK |
| 2/21/2016 4:03 | 211 | 73.8 | 85.3 | 28 | 1 | FDX845 | N613FE | MD11 | OAK |
| 2/21/2016 4:43 | 211 | 75.2 | 86.1 | 26 | 1 | FDX614 | | MD11 | OAK |
| 2/21/2016 5:58 | 211 | 74.2 | 85.8 | 26 | 1 | FDX690 | N566FE | DC10 | OAK |
| 2/21/2016 6:01 | 211 | 73.7 | 83.3 | 26 | 1 | FDX831 | N383FE | DC10 | OAK |
| 2/21/2016 6:07 | 211 | 68.8 | 79.2 | 18 | 1 | ASA345 | N493AS | B739 | OAK |
| 2/21/2016 6:09 | 211 | 68.8 | 77.5 | 17 | 1 | CPZ5718 | N608CZ | E170 | OAK |
| 2/21/2016 6:10 | 211 | 67.2 | 77.9 | 19 | 1 | DAL1408 | N377NW | A320 | OAK |
| 2/21/2016 6:11 | 211 | 71.1 | 80.5 | 19 | 1 | SWA1626 | N7750A | B737 | OAK |
| 2/21/2016 6:12 | 211 | 72.8 | 84.5 | 31 | 1 | FDX859 | N591FE | MD11 | OAK |
| 2/21/2016 6:56 | 211 | 72.2 | 84.1 | 30 | 1 | HAL23 | N379HA | A332 | OAK |
| | | 1142.3 | 1302.1 | | | | | | |
| | Mean | **71.39 db** | **81.38 db** | **16 Fls** | | | | | |

## HUSSH TWO — NOISE FORUMREQUESTS:

### Short Term

The current routing of the HUSSH TWO brings aircraft ground tracks closer to BFI, Harbor Bay, and Alameda resulting in increased noise. The short-term solution would be for Air Traffic Control to assign headings to aircraft departing OAK runway 30 that restore the initial SILENT ground track. Other issues with the HUSSH TWO departure and proposed solutions are detailed in this document and are addressed separately. Additionally, the FAA should ensure aircraft remain on their filed route and not turn prior to REBAS intersection.

### Longer Term

The Noise Forum is requesting FAA evaluate the HUSSH procedure and adjust it to replicate the SILENT SID ground track and require aircraft to fly to REBAS unless safety dictates otherwise.

The Noise Forum requests the FAA consider the following:

1. moving HUSSH waypoint southward as much as feasible to facilitate a sharper left turn by aircraft after departing OAK Runway 30; and

2. regulate and eliminate early turns off of HUSSH by issuing an FAA Air Traffic Control directive that aircraft fly the full HUSSH departure all the way to REBAS intersection for published noise abatement purposes unless safety dictates otherwise; and

3. modifying the location of REBAS closer to the Bay to better mitigate noise at Point Richmond; and

4. adjusting night time hours for noise abatement operations from the current 2200 – 0700 local time Monday through Saturday, 2200 to 0800 local time on Sunday to new night time hours of noise abatement procedures of 2100 – 0900 local time daily, seven days a week for relief as flight curfews are not an option; and

5. as OAK departures over Berkeley and Oakland are lower in altitude and significantly louder than SFO departures, implement the adjusted HUSSH procedure all the way to REBAS and then onto next fix for all northerly OAK departures from Runway 30 so that the HUSSH DP is in effect 24 hours a day for these flights instead of only at night to decrease the noise burden on the East Bay Hills areas.

**HUSSH TWO REQUESTED INITIAL FAARESEARCH:**

The Forum requests the FAA provide modeling or other tools to determine the effects of different waypoint location options.

## PROCEDURE: WNDSR TWO ARRIVAL

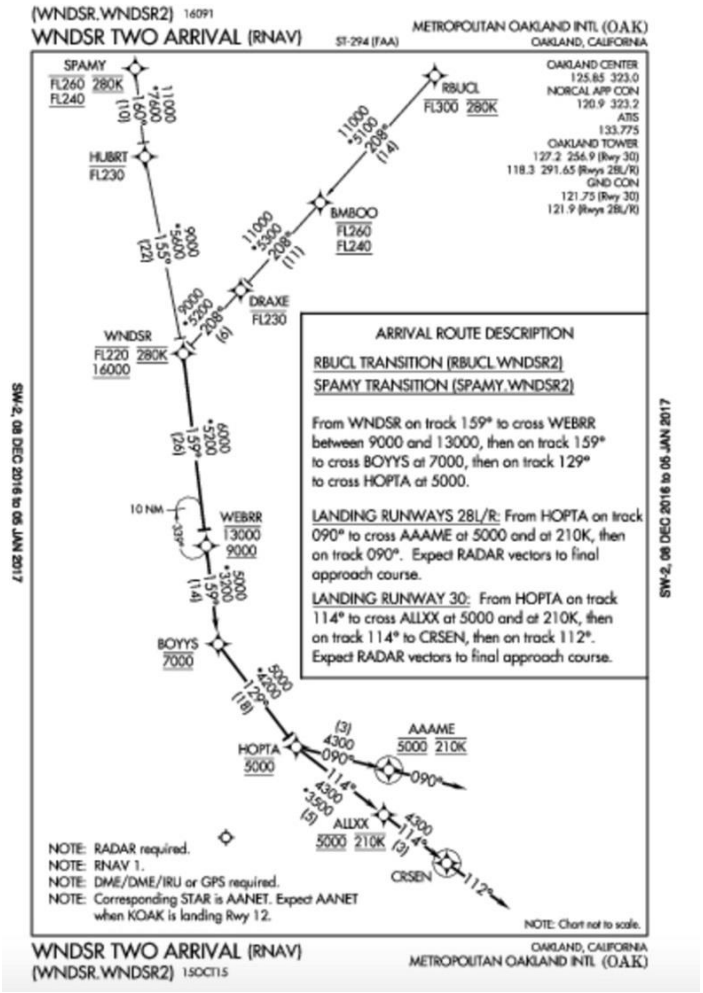
### WNDSR TWO ARRIVAL DESCRIPTION:

The OAK WNDSR TWO ARRIVAL is a new NextGen RNAV route used by all aircraft arriving from the north and northeast direction (including polar routes). Aircraft track from the WNDSR waypoint 159° to cross WEBRR between 9000 feet and 13000 feet then remain on track to cross BOYSS at 7000 feet, then on track 129° to cross HOPTA at 5000 feet with the remainder of the approach at 5000 feet on two different tracks to AAAME to land at Runway 28L/R or to ALLXX for a Runway 30 landing.

### WNDSR TWO ARRIVAL PRIMARY IMPACTED CITIES:

Berkeley, Oakland, San Leandro

**Figure 7: Published WNDSR TWO arrival into OAK.**



**WNDSR TWO ARRIVAL NOISE AND SAFETY ISSUES:**

OAK arrivals from the north were previously vectored over a seven-mile-wide corridor prior to NextGen. Creation of the WNDSR RNAV to handle this previously dispersed traffic shifted and concentrated all traffic to a corridor less than 0.5 miles wide over the topographically highest area of the East Bay Hills. This significantly impacted densely populated residential areas including Berkeley, Oakland, San Leandro and others. Daytime ambient monitored noise levels are less than 50dB and typically less than 45dB in much of these areas. Single aircraft noise levels over 78dB have been measured.

WNDSR TWO is designed for arriving traffic from the north and north east including polar traffic. This traffic must fly a considerable distance westward to pick up the WNDSR arrival and then subsequently fly eastward again to merge into the OAK arrival procedure. WNDSR lengthens flight paths and reduces efficiency.

The WNDSR TWO procedure requires level or nearly level flight under thrust for over 23 nautical miles at altitudes commonly down to 4000 feet MSL along the East Bay Hills which rise up to 1700 feet MSL. This causes excessive fuel burn and particulate emissions. Further, as the ridgeline under WNDSR TWO rises up to 1700 feet MSL, it also results in dramatically concentrated noise impacts. Moving WNDSR TWO would free airspace for departing OAK and SFO traffic and increases safety by reducing potential conflict with OAK arrivals. Moving WNDSR has additional benefits by allowing SFO departures to adopt fuel efficient and noise mitigating ascent profiles in the future that would not be possible with the restrictions that WNDSR imposes.

**WNDSR TWO ARRIVAL—NOISE FORUM REQUESTS:**

**Long Term**

The Forum requests that the current WNDSR TWO flight track be eliminated and the FAA consider options to replace this RNAV to another location that allows for geographically shorter flight paths and quiet, fuel efficient optimized descents into OAK. Moving WNDSR TWO has an additional significant advantage in that it frees airspace so that SFO and OAK departures can eventually use quieter and more fuel efficient continuous climbing procedures.

**NEW OAK ARRIVAL PROPOSAL ALTERNATIVE ONE (<u>PREFERRED</u>):**

The Forum requests the FAA consider establishing the preferred alternative of an OAK arrival RNAV from the Mendocino VOR direct to the Santa Rosa VOR direct RAGGS fix then airway V494 to EMBER towards the SHARR fix and joining the MADWIN SIX arrival or direct BANND/TOOOL waypoints for joining the OAKES TWO arrival (See Figures 8, 9 and 10). Crossover from the PYE navaid routing to the east towards SHARR or BANND/TOOOL waypoints can be accomplished further north in Oakland Center's airspace at their discretion. This routing will likely shorten flight time and flightpaths of arriving traffic from the north by eliminating the current deflection to the west to achieve BOYSS waypoint. Consider appropriate adjustments to avoid population centers such as Manteca and Sunol.

This routing allows aircraft to join established arrival routes from a high altitude (>10,000 feet) over areas with low population density and utilize a quiet, fuel efficient reduced power descent into Oakland Airport. Joining established arrival routing eliminates a new RNAV arrival having to be developed and implemented. It increases safety for SFO and OAK departures, due to reduced potential conflict with OAK arrivals. Another advantage is that it frees airspace so that SFO and OAK departures can eventually adopt quieter and more fuel efficient continuous climbing procedures.

**Figure 8: Preferred alternative to current WNDSR TWO overlaying *2012 USA Population Density Map* (ESRI, ArcGIS, https://www.arcgis.com/home/item.html?id=302d4e6025ef41fa8d3525b7fc31963a, accessed December 18, 2016.). The darker the color is, the denser the population. Shaded area indicates a generalized flight path corridor the proposed route could be established within to eventually join the established OAK arrivals for illustration purposes only. It is anticipated research would likely modify and identify appropriate adjustments to the final track to avoid population and better achieve flight track efficiency and quiet descent procedure.**

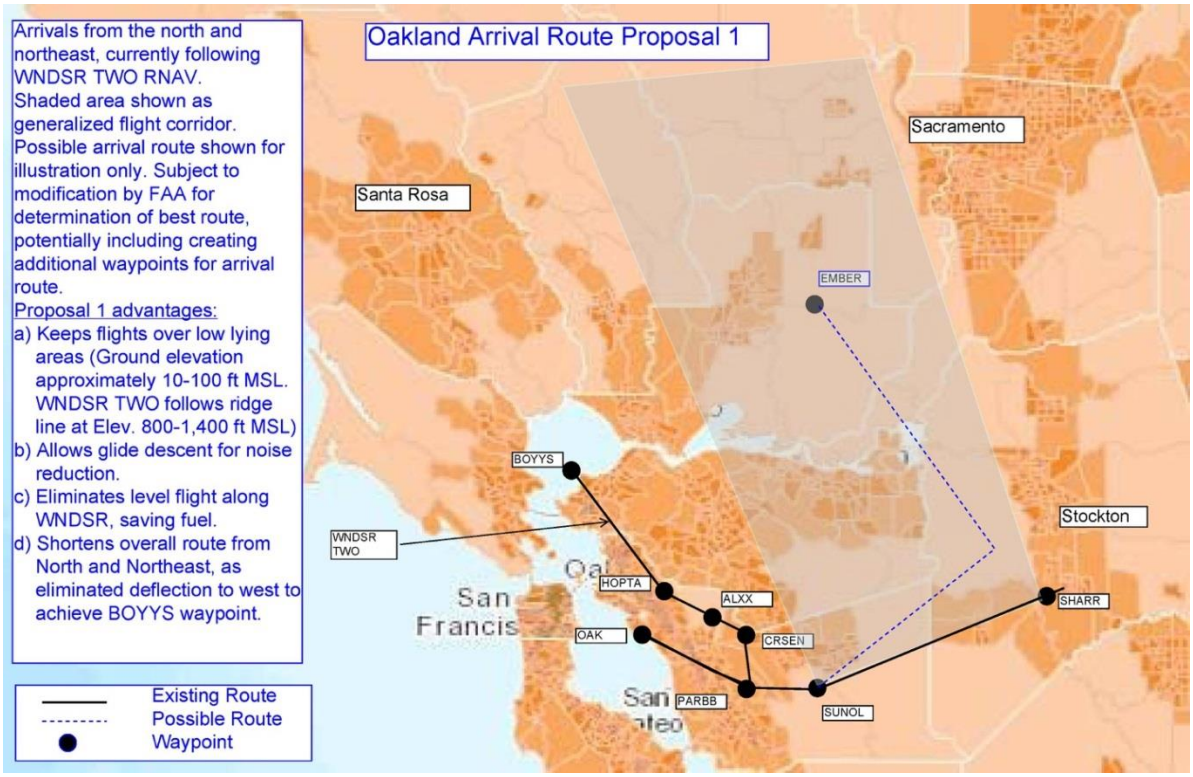


**Figure 9: Published OAKES TWO arrival into OAK.**

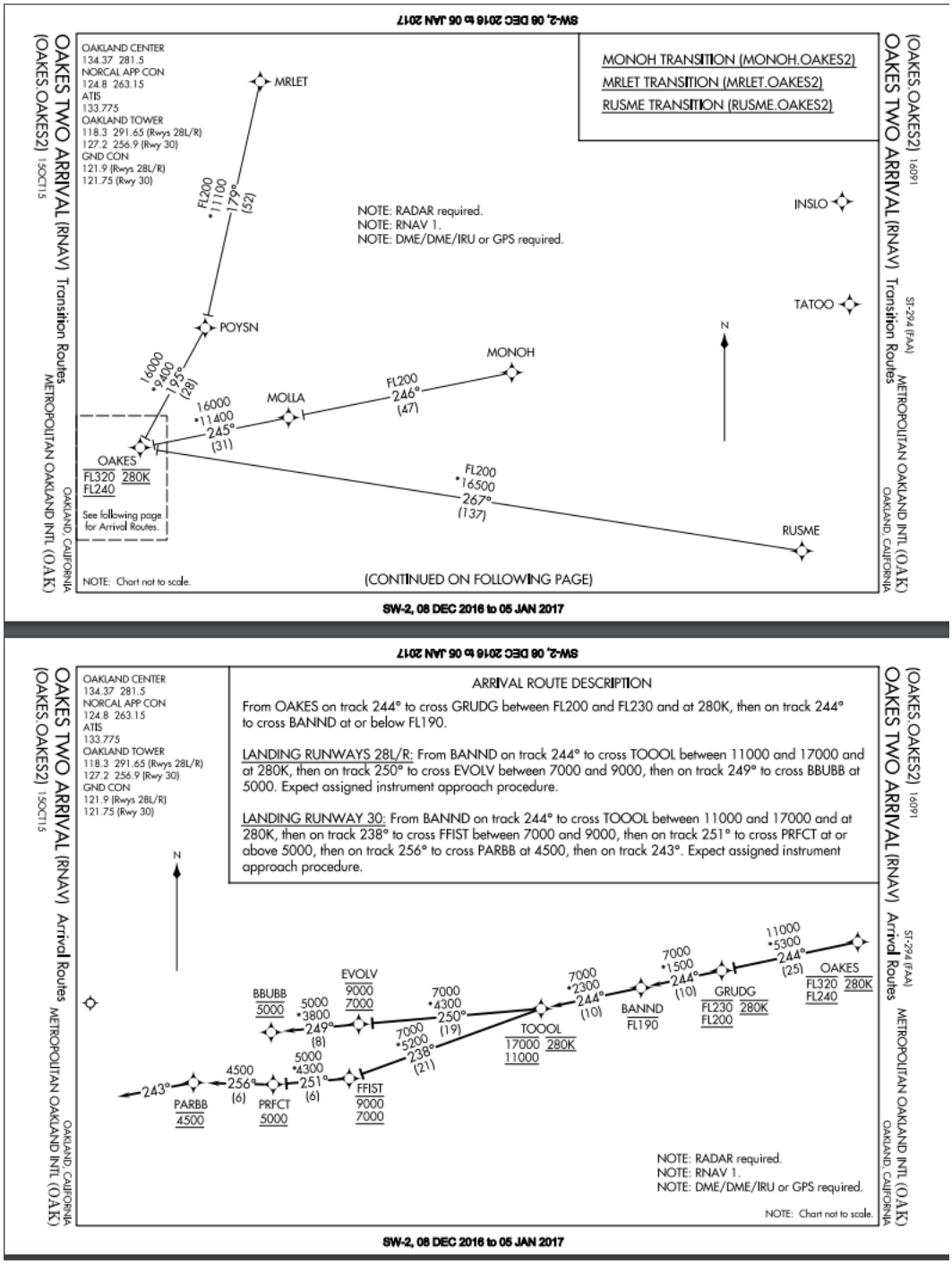
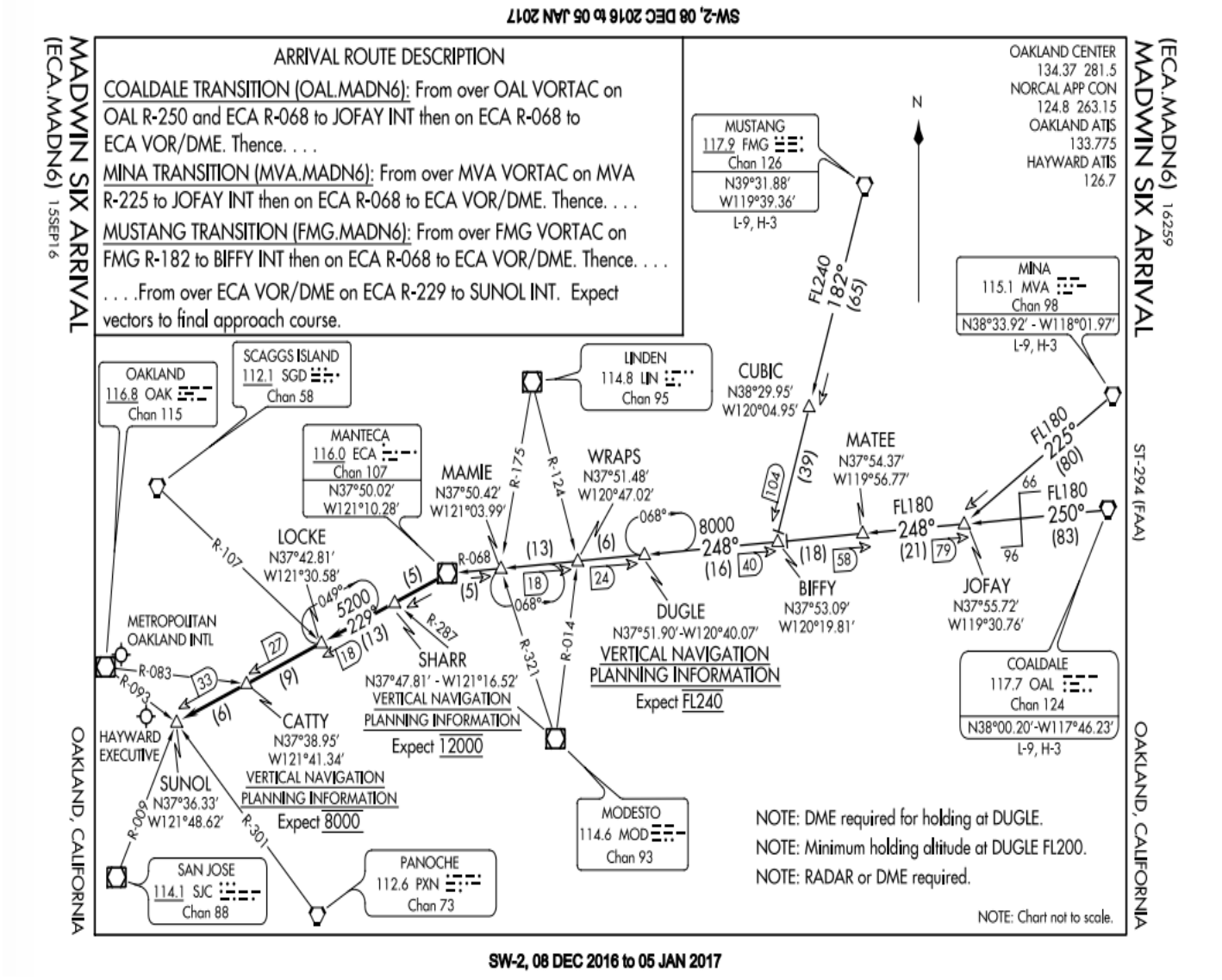


**Figure 10: Published MADWIN SIX arrival into OAK.**



**REQUESTED INITIAL FAA RESEARCH FOR OAK ARRIVAL ALTERNATIVE ONE:**

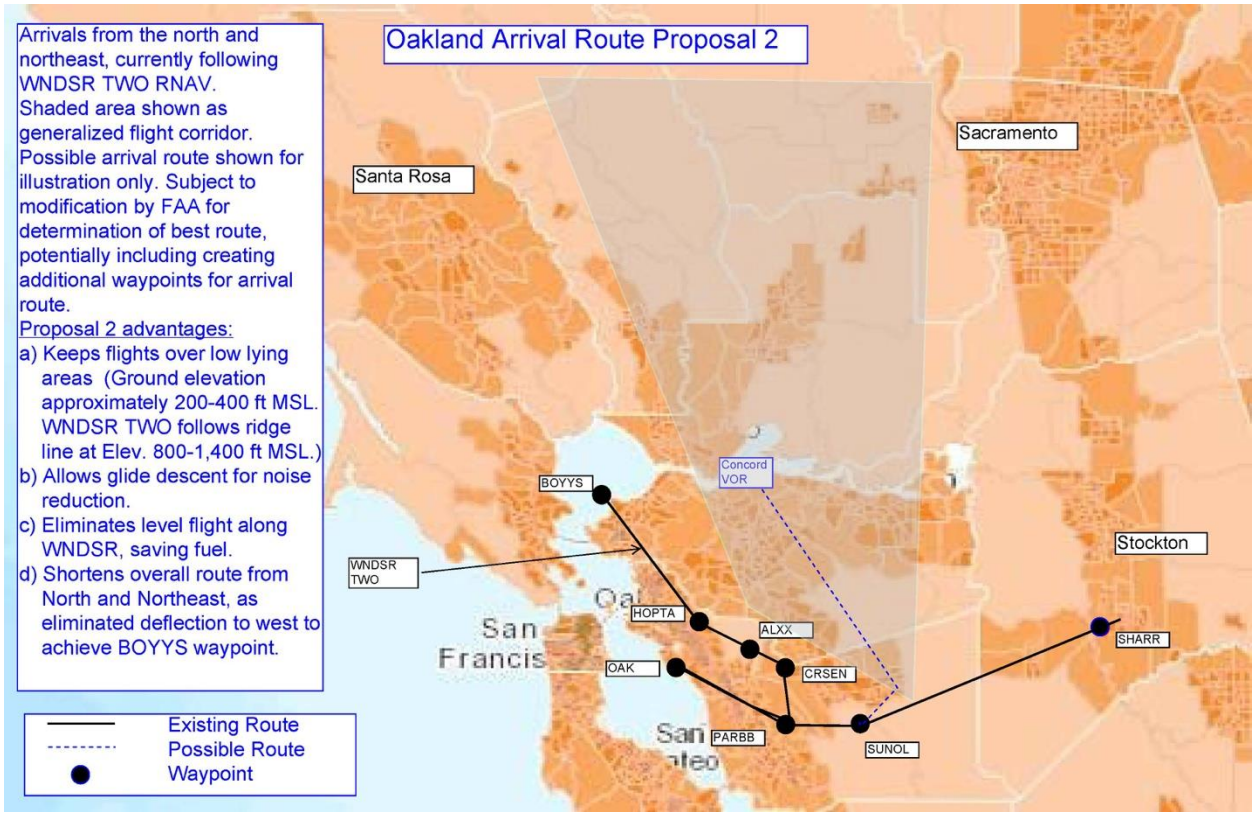
The Forum requests the FAA research and identify appropriate adjustments to avoid population and better achieve a quiet descent procedure into OAK.

**NEW OAK ARRIVAL PROPOSAL ALTERNATIVE TWO:**

The Forum requests the FAA consider establishing an OAK arrival RNAV routing of traffic to the Mendocino VOR direct to the Santa Rosa VOR towards the Concord VOR crossing Concord VOR at 10,000 feet and then routing down the California Interstate 680 highway corridor to the Oakland Runway 30 final approach (approximating the CCR 155 or 150 degree radial) (Figure 11). Establish routing to stay on the California Interstate 680 highway corridor at high altitude to enable a fuel efficient, quiet, reduced power descent approach to OAK. An alternative modification could use the initial WNDSR TWO arrival or Mendocino VOR to Santa Rosa VOR (or abeam it) toward Concord VOR at 10,000 feet.

This routing allows aircraft to be kept high for fuel conservation, a quiet, reduced power descent, and Class B airspace protection from VFR aircraft starting at the CCR VOR. This routing and higher altitude follows the industrial areas and California Interstate 680 highway corridor and makes good use of compatible overflight land for noise abatement instead of placing flights over densely populated residential areas in topographically higher areas. It increases safety for SFO and OAK departures, due to reduced potential conflict with OAK arrivals. Another advantage is that it frees airspace so that SFO and OAK departures can eventually adopt quieter and more fuel efficient continuous climbing procedures.

**Figure 11: Alternative to current WNDSR TWO overlaying *2012 USA Population Density Map* (ESRI, ArcGIS, https://www.arcgis.com/home/item.html?id=302d4e6025ef41fa8d3525b7fc31963a, accessed December 18, 2016.). The darker the color is, the denser the population. Shaded area indicates a generalized flight path corridor the proposed route could be established within to join the established OAK arrivals for illustration purposes only. It is anticipated research would likely modify and identify appropriate adjustments to the final track to avoid population and better achieve flight track efficiency and quiet descent procedure.**

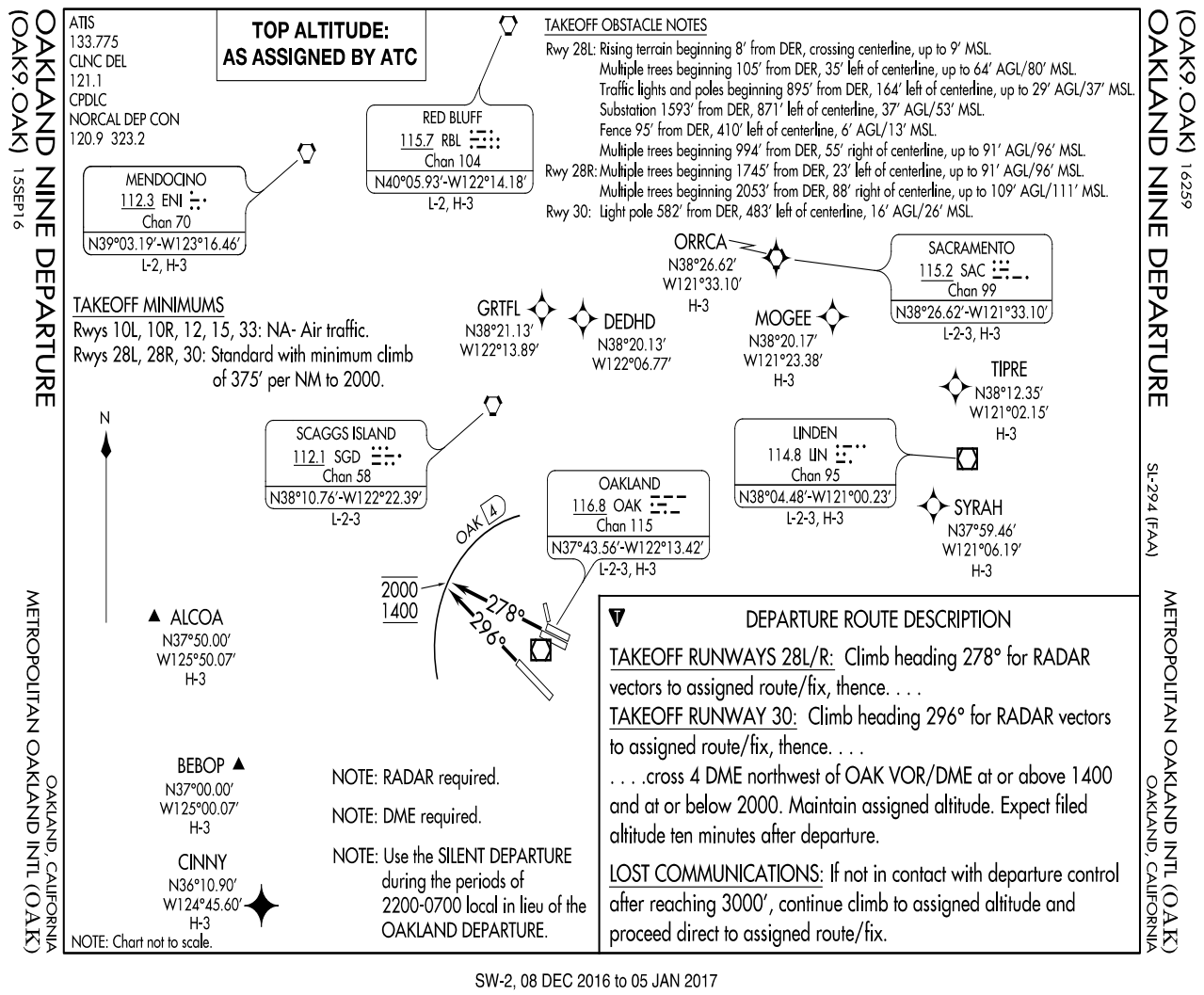



## REQUESTED INITIAL FAA RESEARCH FOR OAK ARRIVAL ALTERNATIVE TWO:

The Forum requests the FAA research and identify appropriate adjustments to avoid population and better achieve a quiet descent procedure into OAK.

## PROCEDURE: OAKLAND NINE DEPARTURE

**Figure 12: Published OAKLAND NINE departure from OAK.**



**OAKLAND NINE DESCRIPTION:**

The OAKLAND NINE SID is typically used by aircraft departing OAK Runway 30 and OAK Runways 28L/R. From OAK Runway 30, after takeoff, the aircraft climbs on a 296° heading to 2000 feet for RADAR vectors to its assigned route.

From OAK Runways 28L/R, after takeoff, the aircraft climbs on a 278° heading to 2000 feet for RADAR vectors to its assigned route.

Additionally, current ATC procedures for noise mitigation direct controllers to not turn aircraft eastbound until leaving 3000 feet.

**OAKLAND NINE PRIMARY IMPACTED CITIES:**

City of Alameda, particularly the community of Bay Farm Island, Berkeley, Oakland

**OAKLAND NINE NOISE ISSUES:**

The imprecise nature of the OAKLAND NINE departure creates excessive noise for BFI, Alameda, and East Bay communities. Aircraft departing the Oakland Airport that are flying headings and receiving vectors do not fly a specific and consistent ground track that reduces noise. The implementation of NextGen technology and procedures as they apply to this departure can be leveraged to provide a solution and bring noise relief to East Bay communities.

**OAKLAND NINE — NOISE FORUM REQUESTS**

**Short Term**

The Forum requests that, in the short term, the FAA assign headings to aircraft after takeoff that direct aircraft turn left to a heading of 280° until reaching the OAK 4 DME arc, then proceed on the published departure.

The Forum requests that aircraft departing on the OAKLAND NINE not be turned eastbound until leaving 5000 feet (as opposed to 3000 feet in the current ATC directed noise mitigation procedures).

**Longer Term**

The Forum requests that the FAA evaluate the OAKLAND NINE (daytime departures) and adjust it so that the ground track is further away from BFI/Alameda. This could be accomplished by directing aircraft departing OAK Runway 30 to turn left to a heading of 280° until reaching the OAK 4 DME, then proceed on the published departure. The proposed adjustment would alleviate noise from aircraft flying too close to the BFI/Alameda shoreline. We also request the FAA consider creating an

RNAV departure that replicates the newly proposed OAKLAND NINE above.

It appears that as long as the 2000 foot hold down restriction remains in-place, this proposed change would not create a conflict with SFO departures.

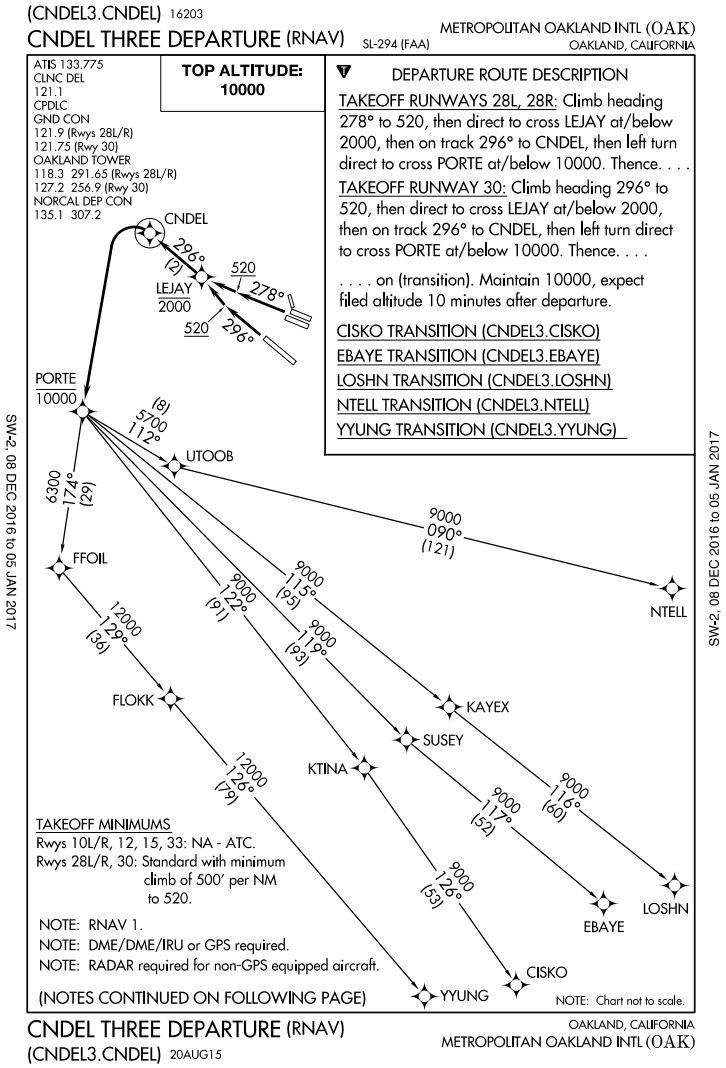
The Forum requests that aircraft departing on the OAKLAND NINE not be turned eastbound until leaving 5000 feet (as opposed to 3000 feet in the current ATC directed noise mitigation procedures).

**OAKLAND NINE REQUESTED INITIAL FAA RESEARCH:**

We request the FAA demonstrate that any proposed changes will result in noise reduction.

## PROCEDURE: CNDEL THREE DEPARTURE

**Figure 13: Published CNDEL THREE departure out of OAK.**




### CNDEL THREE DESCRIPTION:

The CNDEL RNAV departure is typically used by aircraft departing to the west from the Oakland Airport for southerly destinations. After take-off, the aircraft climbs on a 296° heading for runway 30 and a 276° heading for runways 28L and 28R. At 520 feet, these aircraft turn west to fly over the LEJAY waypoint at or below 2000 feet then on an RNAV track to CNDEL waypoint, followed by a left turn to cross PORTE at or below 10,000 feet.

**CNDEL THREE PRIMARY IMPACTED CITIES:**

City of Alameda, particularly the community of Bay Farm Island, Alameda.

**CNDEL THREE NOISE ISSUES:**

Aircraft ground tracks for this departure come significantly close to BFI and Alameda shorelines. A change to this departure as part of any Metroplex revisions would greatly reduce the noise impact of these flights.

**CNDEL THREE — NOISE FORUM REQUESTS:**

Consider adjusting CNDEL THREE departure so that the ground track for this departure is further away from BFI/Alameda. This could be accomplished by directing aircraft departing OAK runway 30 to turn left to a heading of 280° until reaching the OAK 4 DME arc. This OAK 4 DME arc could replace the LEJAY intersection. This requested change would direct aircraft away from the BFI/Alameda shoreline sooner, which would reduce noise to residents.

**CNDEL THREE REQUESTED INITIAL FAA RESEARCH:**

We request the FAA demonstrate that any proposed changes will result in noise reduction.

# SAN FRANCISCO INTERNATIONAL AIRPORT PROPOSALS

## PROCEDURE: NIITE THREE DEPARTURE

### NIITE THREE DESCRIPTION:

The NIITE DP (Figure 14) is intended to reduce nighttime aircraft noise to communities along the western and eastern side of San Francisco Bay including Alameda, Oakland, Berkeley and others. The NIITE DP is used by aircraft departing SFO primarily to destinations to the north and northeast.

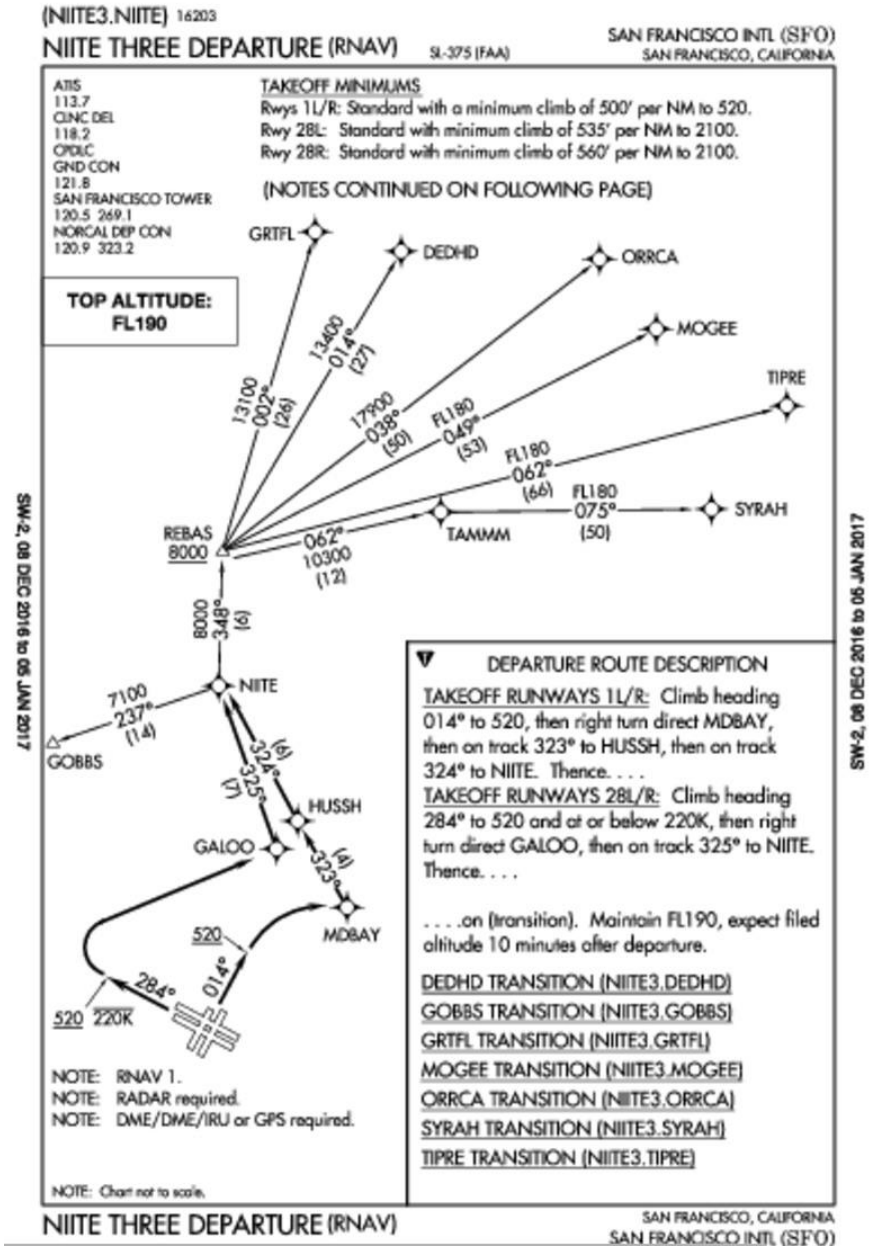
This procedure was intended to overlay, and replace, the prior QUIET DP (Figure 15). It was designed for noise abatement purposes and was charted to have aircraft fly to the REBAS waypoint at Point Richmond to keep aircraft over the water as much as possible during the lower portion of the aircraft climb profile. The QUIET procedure, provided significant nighttime benefit to the hillside residential areas of Oakland, Berkeley and northward was achieved by requiring that climbing aircraft under full thrust remain over the Bay and not turn eastward until at higher altitudes at REBAS intersection by Point Richmond.

The NIITE procedure was developed to provide a similar nighttime benefit by overlaying the legacy QUIET procedure. SFO departing aircraft track to HUSSH and from there, track 324° to NIITE thence are charted to track to REBAS at Point Richmond and cross at 8000 feet. This route has aircraft following a path that allows them to remain clear of both the west and east shorelines of San Francisco Bay until reaching a higher altitude, when a turn over land is less disruptive to residents at the REBAS waypoint at Point Richmond.

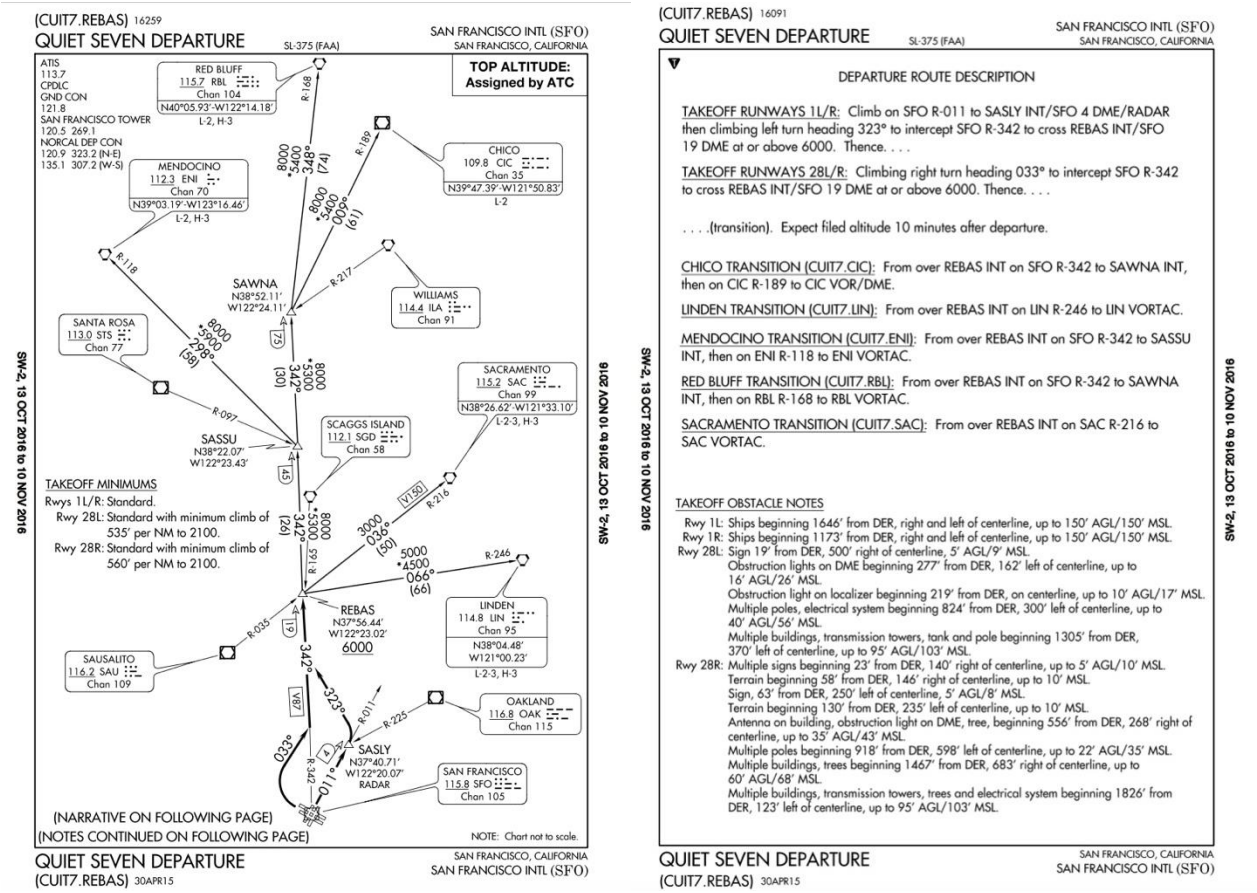
### NIITE THREE DEPARTURE PRIMARY IMPACTED CITIES:

City of Alameda, Oakland, Berkeley, El Cerrito, Richmond

**Figure 14: Published NIITE THREE departure out of SFO.**



**<u>Figure 15</u>: Published QUIET SEVEN departure out of SFO.**




## NIITE THREE DEPARTURE NOISE ISSUES:

QUIET was designed for noise abatement and kept aircraft over the water during the lower portion of the aircraft climb profile. The current SFO NIITE procedure eliminated the charted heavy line to REBAS that was published under QUIET. The elimination may have allowed greater discretion for early turns prior to aircraft reaching the REBAS waypoint and greatly undermining noise abatement.

Analysis of aircraft flying NIITE shows the overwhelming majority are currently allowed early turns instead of flying the route as charted to REBAS. This places aircraft at least 1000 to 5000 feet lower in altitude during nighttime hours over densely populated areas in Oakland, Berkeley, and other communities. In the early morning and late night hours, aircraft noise is especially disruptive given the low ambient noise levels which have been measured to drop as low as 29 dBA in the Montclair residential area in the hills of Oakland.

**NIITE THREE DEPARTURE —NOISE FORUM REQUESTS:**

The Forum requests that the FAA restore the requirements of the nighttime noise abatement flight procedure as charted under SFO QUIET to SFO NIITE. Restore the heavy charted lines from NIITE to REBAS to indicate this is the charted route to fly unless safety dictates otherwise.

The Noise Forum requests the FAA consider:

1. regulating and eliminating early turns off of NIITE by issuing an FAA Air Traffic Control directive that aircraft fly the full NIITE departure all the way to REBAS intersection for published noise abatement purposes unless safety dictates otherwise; and

2. modifying the location of REBAS to better mitigate noise at Point Richmond; and

3. adjusting night time hours for noise abatement operations from the current 2200 0700 local time Monday through Saturday, 2200 to 0800 local time on Sunday morning to new night time hours of noise abatement procedures of 2100 – 0900 local time daily, seven days a week for relief as flight curfews are not an option.

**REQUESTED INITIAL FAA RESEARCH:**

None at this time.

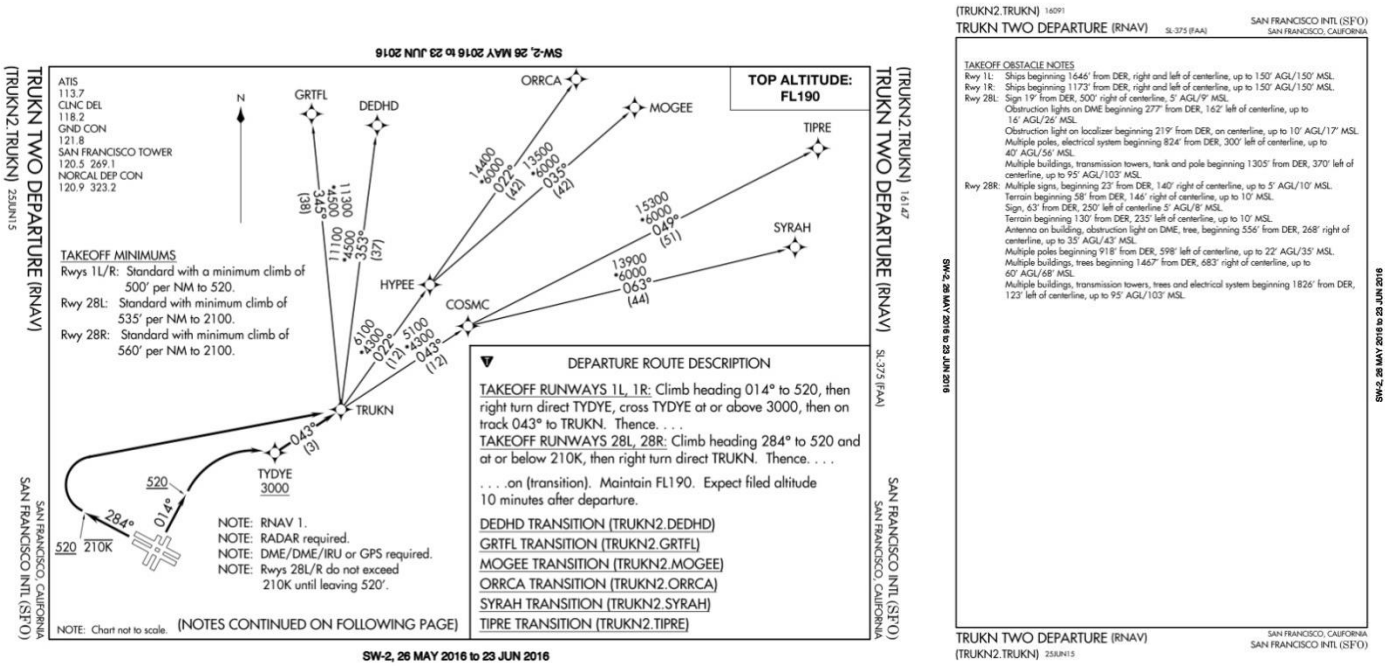
## PROCEDURE: TRUKN TWO DEPARTURE

### TRUKNTWO DESCRIPTION:

TRUKN TWO is a new NextGen RNAV departure for eastward bound traffic from SFO. Aircraft from Runways 1L and 1R take off heading 014° to 520 feet in altitude then turn right direct to and cross TYDYE at or above 3000 feet. Aircraft departing off Runways 28L and 28R climb heading 284° to 520 feet in altitude then turn right direct to TRUKN at Oakland Airport. From TRUKN, traffic transitions to GRTFL, DEDHD, HYPEE or COSMC (FIGURE 16).

Prior to NextGen, SFO eastward bound departures were vectored over a wide corridor from Emeryville and southward to San Leandro. However, flight paths indicate there were some legacy concentrations. NextGen created the new waypoint TRUKN at OAK together with four tracks splayed eastward from the TRUKN waypoint called (from north to south) GRTFL, DEDHD, HYPEE, and COSMC. Creation of the TRUKN RNAV tracks to handle previously dispersed traffic maintained some of the historical concentrations that residential areas grew and developed under, but significantly shifted and concentrated portions of SFO traffic to new tracks over the topographically highest area of the East Bay where there had previously been no concentration and very little SFO traffic. This significantly impacted densely populated residential areas including Berkeley, Oakland, and San Leandro. Daytime ambient monitored noise levels are less than 50dBA and typically less than 45dBA in many of these areas.

**Figure 16: Published TRUKN TWO departure out of SFO.**



**TRUKNTWO PRIMARY IMPACTED CITIES:**

Berkeley, Oakland, San Leandro

**TRUKN TWO NOISE ISSUES:**

It is useful to examine TRUKN in two sections – a northern area currently encompassing GRTFL and DEDHD and an eastern area encompassing HYPEE and COSMC. In this document, they will informally be referred to as TRUKN North and TRUKN East.

Prior to NextGen, SFO traffic in TRUKN North was vectored over a wide corridor from the San Francisco Bay to the Oakland Hills with the dominant majority of traffic concentrated over an almost due north corridor from Alameda and northward over West Oakland, the City of Piedmont, Berkeley and northwards (Figures 17, 18, and 19.) The turn northward after departure from SFO was further west over the Bay relative to the current TRUKN waypoint and kept traffic more westward than the current concentrated flight paths along GRTFL and DEDHD(compare Figures 18 and 19). The new procedure turned aircraft at TRUKN and shifted traffic from the Bay eastward. The new NextGen procedure also resulted in the lower altitude portions of the climb occurring over land and communities in Alameda, East Oakland and San Leandro instead of the Bay (Figure 17b).

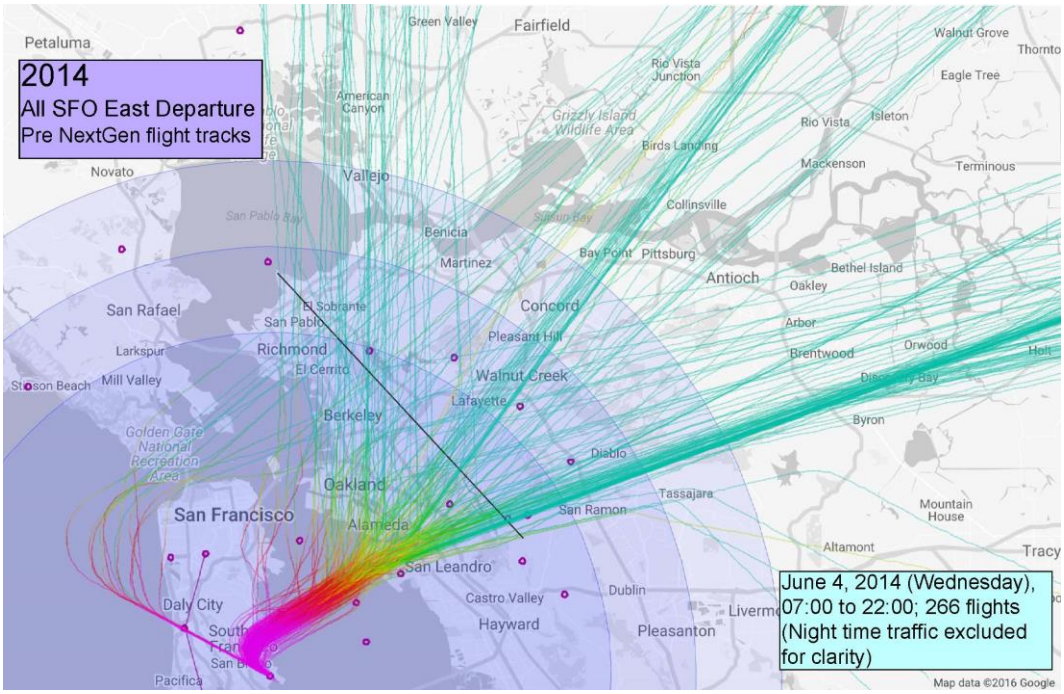
The publication of GRTFL and DEDHD shifted traffic eastward from its historical pattern and concentrated it on two new RNAV tracks over the topographically higher areas of Berkeley and Oakland. These areas now experience dramatic increased aircraft noise resulting from concentrated traffic on these new RNAV tracks where it did not exist prior to NextGen.

Examination of TRUKN East shows that prior to NextGen, SFO departing traffic was concentrated in two distinct corridors roughly corresponding to the NextGen HYPEE and COSMC RNAV tracks. However, there was a significant shift southeastward and concentration of traffic along HYPEE when it was published. This shifting concentrated traffic one mile south, and significantly increased noise for residential areas there.

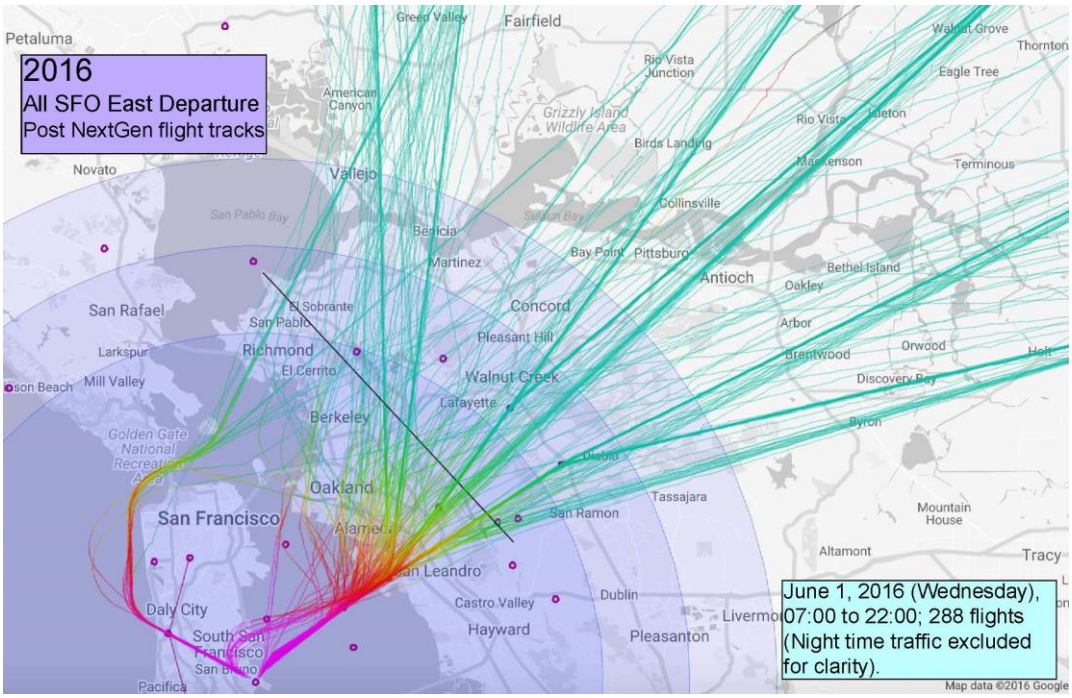
An additional consideration for both TRUKN North and TRUKN East is the proposal in this document to move WNDSR eastward, which has the additional benefit of allowing SFO departures to adopt fuel efficient and noise mitigating ascent profiles in the future that would not be possible with the restrictions that the current WNDSR route imposes.

**<u>Figure 17</u>: Sample daytime TRUKN North and East SFO departures Pre NextGen (a.) compared to Post NextGen (b).Pre NextGen traffic was vectored over the area, but does show legacy concentrations to the south (a). Post NextGen traffic in the northern area was shifted eastward and concentrated over East Oakland and the topographically higher East Bay Hills along the new GRTFL and DEDHD tracks. Gradation of color in flight tracks from magenta to red to yellow and then blue represent generalized increases in aircraft altitude. Note: comparing Figure a. to Figure b. indicates that aircraft altitude has decreased over OAK for Post NextGen operations when compared to Pre NextGen operations. This apparent change to the procedure shifted the lower portion of the climb profile from the Bay to communities in Alameda, East Oakland and San Leandro.**

**a.**




**b.**



**<u>Figure 18</u>: Detailed view of example TRUKN North Pre NextGen flight paths from June 4, 2014. Pre NextGen traffic shows legacy concentration west of Highway 13 and very little traffic east of Highway 13.**

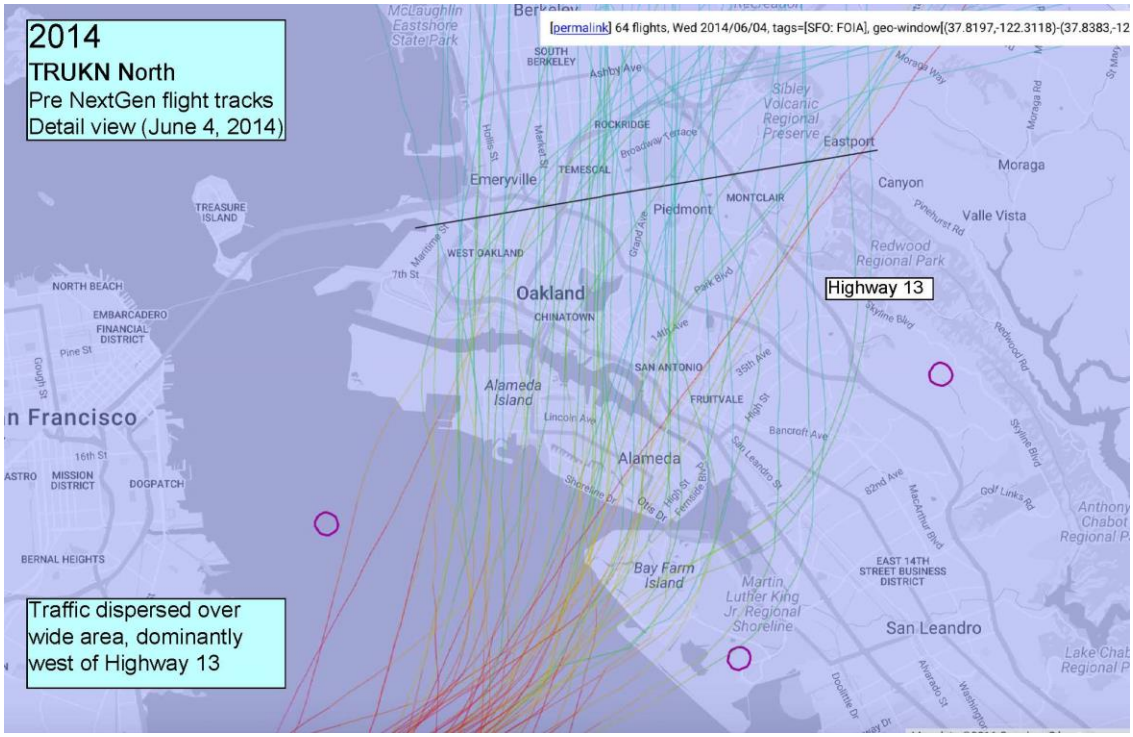
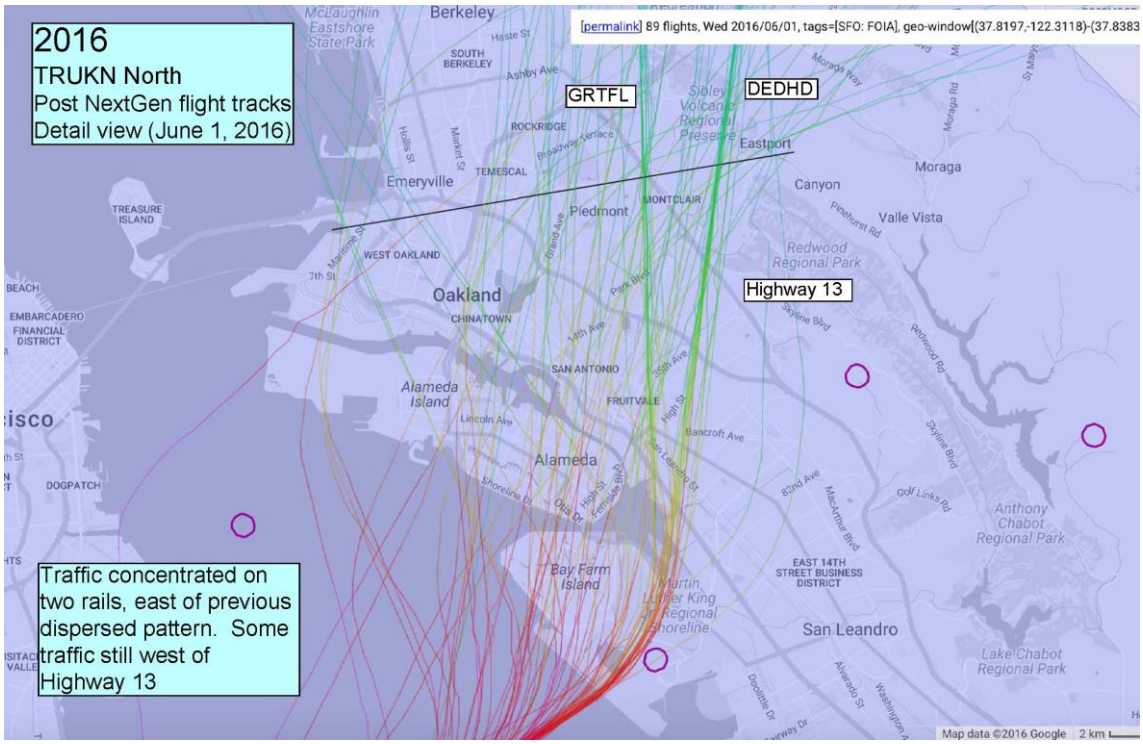



**Figure 19: Detailed view of example TRUKN North Post NextGen flight paths. Post NextGen traffic pattern shows new GRTFL and DEDHD RNAV tracks significantly shifted and concentrated air traffic to East Oakland and to the topographically higher areas east of Highway 13 where it did not exist before prior to NextGen.**



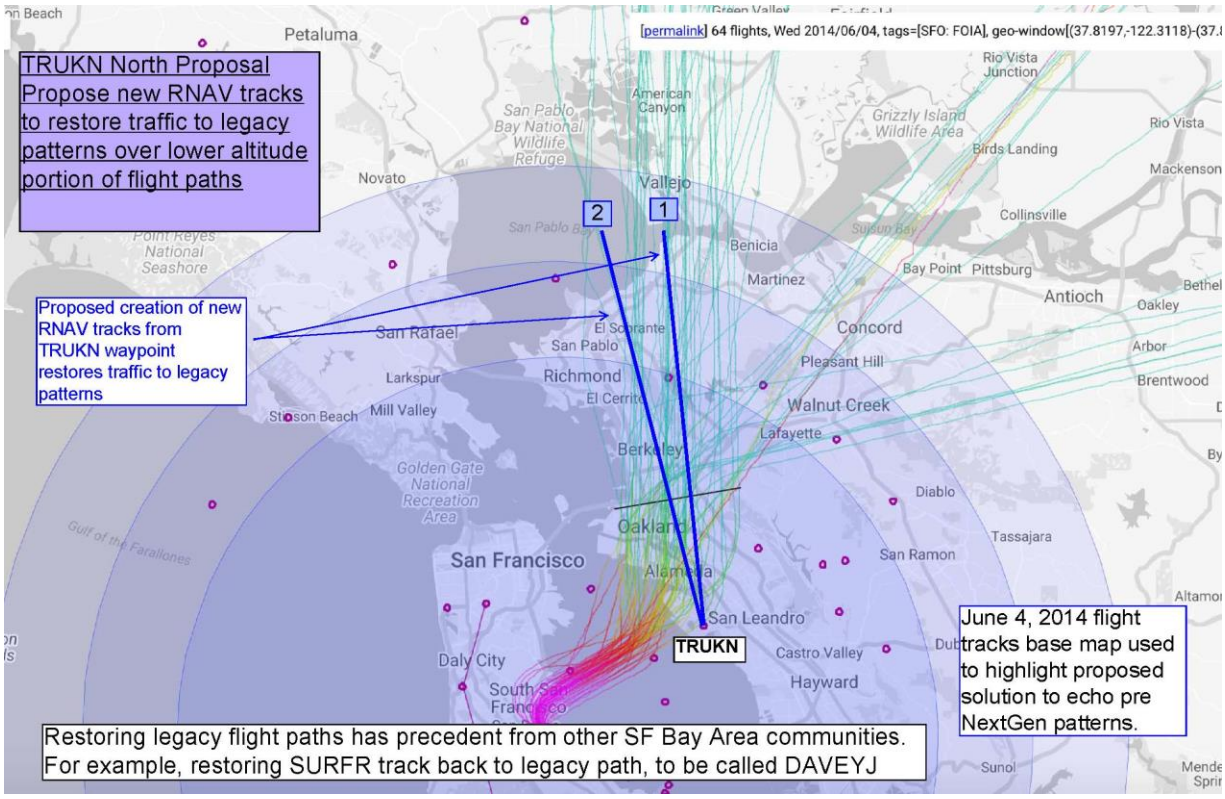
**TRUKN TWO—NOISE FORUM REQUESTS:**

The Forum requests the FAA consider TRUKN proposals in two sections as detailed above – TRUKN North and TRUKN East. The Forum also requests the FAA consider the WNDSR proposals above as part of overall noise mitigation for TRUKN. As detailed above, moving WNDSR TWO has additional significant advantage in that it frees airspace so that SFO and OAK departures can eventually use quieter and more fuel efficient continuous climb procedures.

**TRUKN TWO NORTH REQUEST:**

The Forum requests that the FAA restore the historical traffic concentrations in the topographically lower areas where it existed prior to NextGen and that communities grew and developed under. To accomplish this, the Forum requests the FAA move the current GRTFL and DEDHD tracks westward of Highway 13 and East Oakland to reestablish and better restore historical patterns of SFO departing traffic in this area as the proposed mitigation (Figure 20). The Forum also requests the FAA adjust the TRUKN waypoint to better restore the legacy earlier turn northward over the Bay and keep the lower altitude portions of the climb occurring over water instead of communities in Alameda, East Oakland and San Leandro.

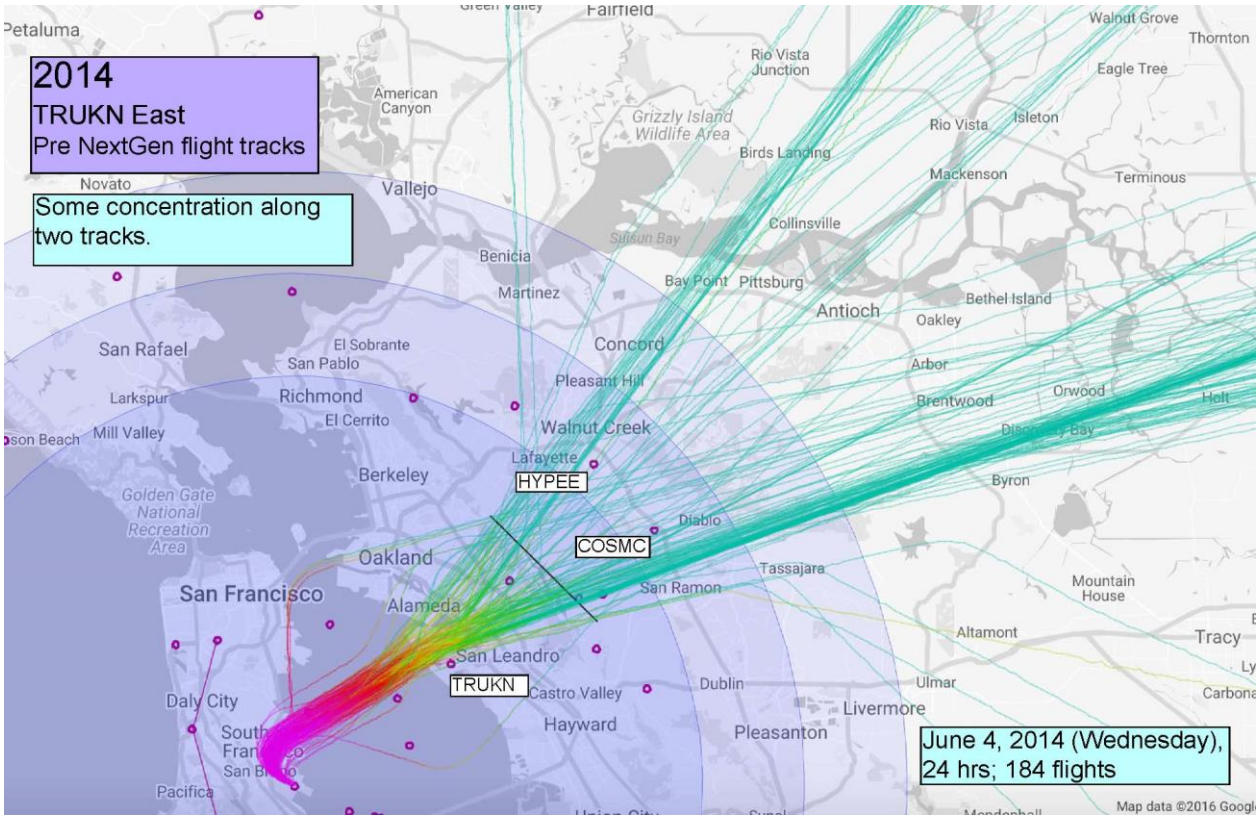
**<u>Figure 20</u>: Preferred mitigation proposal to restore traffic patterns to TRUKN North. Figure shows traffic restored by sample adjustment of tracks westward to echo where traffic was prior to NextGen and under which communities developed and grew. Sample Pre NextGen 2014 flight paths shown to exemplify restoration of previous traffic pattern. Prior to NextGen, aircraft turned northward further west over the Bay which kept traffic over the water during the lowest part of the climb. TRUKN shifted traffic from the water to communities in Alameda, East Oakland and San Leandro.**



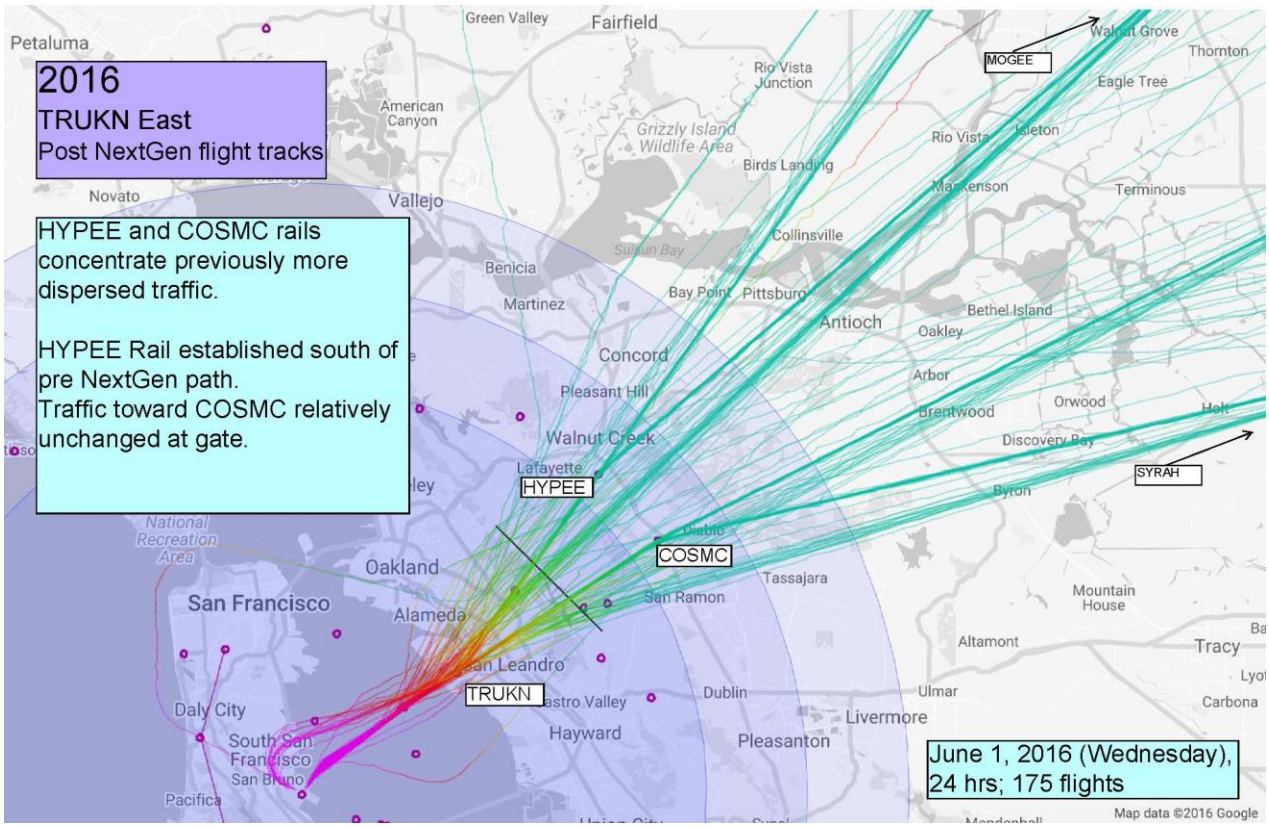
## TRUKN TWO EAST

The Forum requests the FAA restore historical traffic concentration where it existed prior to NextGen and where communities grew and developed under (Figures 21 and 22). To accomplish this, the Forum requests the FAA consider adding a track to the area of the existing COSMC and HYPEE tracks and adjust to better echo legacy concentrations. The Forum additionally requests that the FAA direct Air Traffic Control to vector traffic along all resulting tracks in the TRUKN East area to better echo and restore historical concentration and dispersion of SFO departing traffic.

**<u>Figure 21</u>: Sample daytime Pre NextGen east SFO departures in what would become TRUKN East after NextGen was implemented. Legacy concentrations did exist prior to NextGen. Current waypoints are shown for comparison.**



**<u>Figure 22</u>: Sample daytime TRUKNEast SFO departure traffic patterns (Post NextGen). Legacy concentrations did exist, however, Post NextGen traffic was shifted and concentrated about one mile southward along the new HYPEE track (noted as a "rail" in figure). Gradation of color in flight tracks from magenta to red to yellow and then blue represent generalized increases in aircraft altitude. Note altitudes appear to have decreased over OAK Post NextGen when compared to Pre NextGen operations (See Figure 20).**




## TRUKN TWO REQUESTED FAA RESEARCH:

The Forum requests the FAA investigate for both TRUKN North and TRUKN East:

1. Can the TRUKN waypoint at OAK be adjusted to allow northward turns that better echo Pre NextGen operations, which kept aircraft over the water and away from Alameda and BFI?
2. The reason for the apparent decrease in altitude over TRUKN and whether higher altitudes can be restored.
3. Modeling how proposed changes will result in noise reduction.

## CONCLUSION

The Forum looks forward to a collaborative commitment with the FAA to developing flight path and procedural alternatives to mitigate NextGen noise impacts on the East Bay.

Based on the outcome of the initial analysis and feasibility determinations for NextGen noise mitigation, it is understood that modifications may be made to the proposed procedures and/or airspace or operating procedures. Such analyses may identify additional procedures and/or issues to be addressed. Progress will require ongoing dialogue; therefore, the Forum respectfully requests some level of input and engagement in conversations regarding modifications, amendments and/or new procedures that are determined to be initially feasible and operationally acceptable to mitigate aircraft noise in the East Bay. The Forum requests that modifications and information requests be communicated expeditiously to keep the process moving forward as quickly as possible.

In the event that the Forum identifies additional community concerns during this process, the Forum will address any such concerns during this planning process in supplemental letters and documents to the FAA. The Forum further respectfully requests:

1. specific direction from the FAA for how the process is anticipated to move forward; and

2. an estimated timeline for the process; and

3. information on the means the FAA will employ to evaluate approved flight tracks and procedures for noise impacts on the communities over which they will fly.

Community outreach and education efforts for feasible proposals are still to be determined.

# ATTACHMENT A

**Alameda County/Contra Costa County Proposals Summary Table**

# Alameda County/Contra Costa County Proposals Summary Table

## *for* Oakland Airport-Community Noise Management Forum Supplemental Proposals to Revising the Northern California Metroplex for Alameda County/Contra Costa County

**ST = Short Term Task**
**LT = Long Term Task**
**OAK= Oakland International Airport**
**SFO = San Francisco International Airport**
**Forum = Oakland Airport/Community Noise Management Forum**
**BFI = Bay Farm Island**
**ATC = Air Traffic Control**

| PROCEDURE | LT/ ST | REQUESTED CHANGE | COMMENTS |
|---|---|---|---|
| OAK HUSSH DP | ST | The Forum requests that the Air Traffic Control assign headings to aircraft departing OAK runway 30 that restore the ground track of the prior SILENT SID. | The current routing direct HUSSH brings aircraft ground tracks closer to BFI, Harbor Bay, and Alameda resulting in increased noise. The short-term solution would be for ATC to assign headings to aircraft departing OAK runway 30 that restores the initial SILENT ground track. Other issues with the HUSSH departure and proposed solutions are addressed separately in this summary table and detailed in the *Supplemental Proposals* document. |
| CONTINUES | | | |

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|---|---|---|---|
| OAK<br>HUSSH DP | LT/ST | The Forum requests that the FAA evaluate the HUSSH procedure and adjust it to replicate the SILENT SID ground track and require aircraft to fly to REBAS unless safety dictates otherwise.<br><br>The Forum requests the FAA consider the following:<br>- moving the HUSSH waypoint southward to facilitate sharper left turns for departures from OAK Runway 30;<br><br>-eliminate early turns off of HUSSH by issuing an FAA Air Traffic Control directive that aircraft fly the full HUSSH departure all the way to REBAS intersection for published noise abatement purposes unless safety dictates otherwise;<br><br>- modifying the location of REBAS closer to the Bay to better mitigate noise at Point Richmond;<br><br>- adjusting night time hours for noise abatement operations to new night time hours of noise abatement procedures of 2100 – 0900 local time daily, seven days a week;<br><br>- implement the adjusted HUSSH procedure all the way to REBAS and then onto next fix for all northerly OAK departures from Runway 30, so that the HUSSH DP is in effect 24 hours a day for these flights instead of only at night to decrease the noise burden on the East Bay Hills areas. | These long-term solutions would enable RNAV equipped aircraft to proceed direct to HUSSH without increasing noise exposure for BFI, Harbor Bay and Alameda residents. In addition, the proposals reduce the significant noise burden during night- time hours that the current ATC routine of early turns prior to REBAS places on East Bay Hills. |

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| OAK WNDSR ARRIVAL | LT | The Forum requests that the current WNDSR TWO flight track be eliminated and the FAA consider options to replace this RNAV to another location that allows for geographically shorter flight paths and quiet, fuel efficient optimized descents into OAK.<br><br>**Alternative One** (Preferred): consider establishing the preferred alternative of an OAK arrival RNAV from the Mendocino VOR direct to the Santa Rosa VOR direct RAGGS fix then airway V494 to EMBER towards the SHARR fix and joining the MADWIN SIX arrival or direct BANND/TOOOL waypoints for joining the OAKES TWO arrival. Crossover from the PYE navaid routing to the east towards SHARR or BANND/TOOOL waypoints can be accomplished further north in Oakland Center's airspace at their discretion.<br><br>**Alternative Two**: consider establishing an OAK arrival RNAV routing of traffic to the Mendocino VOR direct to the Santa Rosa VOR towards the Concord VOR crossing Concord VOR at 10,000 feet and then routing down the California Interstate 680 highway corridor to the Oakland Runway 30 final approach (approximating the CCR 155 or 150 degree radial). Establish routing to stay on the California Interstate 680 highway corridor at high altitude to enable a fuel efficient, quieter, reduced power descent approach to OAK. | The WNDSR TWO procedure requires level or nearly level flight under thrust for over 23 nautical miles at altitudes commonly down to 4000 feet MSL along the East Bay Hills, which rise up to 1700 feet MSL. This requires excessive fuel burn and creates excessive particulate emissions. Further, as the ridgeline under WNDSR TWO rises up to 1700 feet MSL, it also results in dramatically concentrated noise impacts to residents of Berkeley and Oakland. Moving WNDSR TWO would free airspace for departing OAK and SFO traffic and increases safety by reducing potential conflict with OAK arrivals. Moving WNDSR has additional benefits by allowing SFO departures to adopt fuel efficient and noise mitigating ascent profiles in the future that would not be possible with the restrictions that WNDSR imposes. |
| CONTINUES | | | |

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| OAK<br>OAKLAND NINE DP/ | ST/ LT | The Forum requests that the FAA consider adjusting the OAKLAND NINE SID so that the ground track for this departure is further away from BFI/Alameda. This could be accomplished by directing aircraft departing OAK Runway 30 to turn left to a heading of 280$^{o}$ until reaching the OAK 4 DME arc, then proceeding on the published departure. The Forum requests that aircraft departing on the OAKLAND NINE not be turned eastbound until leaving 5000 feet (as opposed to 3000 feet in the current ATC directed noise mitigation procedures). We also request the FAA consider creating an RNAV departure that replicates the newly proposed OAKLAND NINE above. | The imprecise nature of the OAKLAND NINE departure brings aircraft closer to the BFI/Alameda shoreline than previously and creates excessive noise for BFI, Alameda, and other East Bay communities. The implementation of NextGen technology and procedures as they apply to this departure can be leveraged to provide a solution and bring noise relief to East Bay communities. This proposed adjustment would move aircraft ground tracks and noise contours away from the BFI/Alameda shoreline. It appears that as long as the 2000 ft. hold down restriction remains in place this change would not create a conflict with SFO. departures. |
| OAK<br>CNDEL THREE DP | ST/ LT | The Forum requests that the FAA consider adjusting the CNDEL THREE departure so that the ground track for this departure is further away from BFI/Alameda. This could be accomplished by directing aircraft departing OAK runway 30 to turn left to a heading of 280$^{o}$ until reaching the OAK 4 DME arc. This OAK 4 DME arc could replace the LEJAY intersection. | This RNAV departure, along with the recent designation of this runway from 29 to 30, is bringing departing aircraft closer to the BFI/Alameda shoreline. This proposed adjustment would move aircraft ground tracks and noise contours away from the BFI/Alameda shoreline. It appears that as long as the 2000 ft. hold down remains in place this change would not create a conflict with SFO departures. |
| SFO<br>NIITE THREE DP | ST | The Forum requests that the FAA eliminate early turns for flights off of NIITE and direct planes to fly the full NIITE departure all the way to REBAS intersection only for published noise abatement purposes. | This procedure was designed for noise abatement and keeps aircraft over the water during the lower portion of the aircraft climb profile during nighttime hours. The overwhelming majority of planes are currently allowed early turns, which place planes at least 1000 to 5000 feet lower in altitude during nighttime hours over densely populated Berkeley, Oakland and others areas. |
| CONTINUES | | | |

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| SFO TRUKN DP | | The Forum requests the FAA consider TRUKN proposals in two sections informally defined as – TRUKN North (encompasses GRTFL and DEDHD) and TRUKN East (encompasses HYPEE and COSMC).<br><br>**TRUKN North:** The Forum requests that the FAA restore the historical traffic concentrations in the topographically lower areas where it existed prior to NextGen and that communities grew and developed under. To accomplish this, the Forum requests the FAA move the current GRTFL and DEDHD tracks westward of Highway 13 and East Oakland to reestablish and restore historical patterns of SFO departing traffic in this area as the proposed mitigation. The Forum also requests the FAA adjust the TRUKN waypoint to better restore the legacy earlier turn northward over the Bay and keep the lower altitude portions of the climb occurring over water land instead of communities in Alameda, East Oakland and San Leandro if this would result in less noise impact.<br><br>**TRUKN EAST:** The Forum requests the FAA restore historical traffic concentration where it existed prior to NextGen and where communities grew and developed under. To accomplish this, the Forum requests the FAA consider adding a track to the area of the existing COSMC and HYPEE tracks. The Forum additionally requests that the FAA direct Air Traffic Control to vector traffic along all resulting tracks in the TRUKN East area to better echo and restore historical concentration and dispersion of SFO departing traffic. | TRUKN North Comments - Prior to NextGen, SFO traffic in TRUKN North was vectored over a wide corridor from the San Francisco Bay to the Oakland Hills with the dominant majority of traffic concentrated over an almost due north corridor from Alameda and northward over West Oakland, the City of Piedmont, Berkeley and northwards. The turn northward after departure from SFO was further west over the Bay relative to the current TRUKN waypoint and kept traffic more westward than the current concentrated flight paths along GRTFL and DEDHD.<br><br>TRUKN East Comments - Prior to NextGen, SFO traffic in the TRUKN East area was concentrated in two distinct corridors roughly corresponding to the NextGen HYPEE and COSMC RNAV tracks. However, there was a significant shift southeastward and concentration of traffic along HYPEE when it was published. This shifting and further concentration of traffic one mile south significantly increased noise for residential areas there. |
| END | | | |

# ATTACHMENT B

**Resolution No. 86331 C.M.S. Resolution of the Oakland City Council Requesting the Federal Aviation Administration Address Increased Aircraft Noise in Oakland**

Approved as to Form and Legality

City Attorney's Office

# OAKLAND CITY COUNCIL

## RESOLUTION NO. 86331 C.M.S.

INTRODUCED BY VICE MAYOR ANNIE CAMPBELL WASHINGTON AND PRESIDENT PRO TEM LARRY REID

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**RESOLUTION OF THE OAKLAND CITY COUNCIL REQUESTING THE FEDERAL AVIATION ADMINISTRATION ADDRESS INCREASED AIRCRAFT NOISE IN OAKLAND.**

**WHEREAS**, the Federal Aviation Administration (FAA) is implementing a planned transition to the Next Generation Air Transportation System (NextGen) to standardize arrival and departure routes through the use of GPS-based technologies in 21 identified metroplexes, which are regions with multiple airports serving major metropolitan areas where heavy airport activity and environmental constraints combine to hinder the efficient movement of air traffic; and

**WHEREAS**, the Northern California Metroplex is comprised of four commercial airports, San Francisco International Airport (SFO), Oakland International Airport (OAK), Mineta San Jose International Airport (SJC), and Sacramento International Airport (SMF); and

**WHEREAS**, as part of the transition to NextGen, the FAA recently changed the flight paths followed by commercial aircraft flying into and out of SFO, OAK, and SJC, as well as other airports in the Northern California Metroplex under a project the FAA calls the Northern California Optimization of Airspace and Procedures in the Metroplex (NorCal OAPM); and

**WHEREAS**, according to the FAA, the NorCal OAPM consists of new procedures and technologies to establish more direct flight routes intended to improve safety, efficiency, and reduce fuel burn and carbon emissions; and

**WHEREAS**, modernizing air space using a sophisticated satellite-controlled system and precision flying can embrace FAA goals alongside minimizing and equitably distributing noise impacts experienced on the ground; and

**WHEREAS**, on July 31, 2014, the FAA issued a Finding of No Significant Impact that NorCal OAPM would not have any significant noise impact on communities and surrounding areas based on sound metrics which did not reflect the true disturbance to the communities on the ground; and

**WHEREAS**, rather than acting to take advantage of geography and equitably distributing and minimizing the cumulative noise impacts over neighborhoods, the FAA has created great disturbance of certain areas in failing to consider noise and environmental impacts on a per flight basis; and, instead, developing the flawed Net Noise Reduction Method; and

**WHEREAS**, the new flight paths out of SFO, entitled TRUKN, GRTFL, DEDHD, HYPEE, and COSMC, the new flight path into OAK, entitled WNDSR, and increasing vectored OAK departures are primarily impacting residents of the City of Oakland, in areas including but not limited to Montclair, Piedmont Pines, Merriwood, Forestland, Forest Pool, Shepherd Canyon, Upper Rockridge, Panoramic Hill, Hiller Highlands, Claremont, Allendale, Redwood Heights, Sequoyah Hills, Grand Lake, Laurel, Dimond, Millsmont, Ridgemont, Trestle Glen, Seminary, and Lake Merritt due to the considerable increase in the number of flights overhead each day from narrowed flight corridors, lower flight altitudes, and powered descent procedures resulting in a significant increase in the amount of aircraft noise experienced on the ground; and

**WHEREAS**, significant environmental impacts created by the new flight paths adversely impact the enjoyment, preservation, and protection of natural, cultural, and scenic resources of the East Bay Regional Park District parklands, trails, and open spaces; and

**WHEREAS**, as evidenced by the increasing number of complaints received by the City of Oakland City Council and staff, as well as the complaints received by the SFO and OAK Noise Abatement Offices, the new routes have created noise impacts that appear to be far more adverse than those of the former routes for our residents; and

**WHEREAS,** in February 2015, SFO received an average of 12 noise complaints from Oakland residents, from 12 complainants, but by February 2016, the number of complaints had increased to 1,768, from 17 complainants, and in February 2015, OAK received an average of 6 noise complaints from Oakland residents, from 3 complainants, but by February 2016, the number of complaints had increased to 3,485 from 89 complainants; now, therefore be it

**RESOLVED**: That the Oakland City Council requests the FAA immediately mitigate the increased aircraft noise at ground level in Oakland caused by the NorCal OAPM project by expeditiously identifying all short- and long-term solutions and the expected timetable for their implementation and directs the City of Oakland's federal lobbyists to take action in furtherance of the goals stated in this resolution; and be it

**FURTHER RESOLVED**: That the Oakland City Council requests the FAA, as part of the above analysis of aircraft noise mitigation measures, consider the immediate solutions of raising altitudes on the SFO departure flight paths from TRUKN, vector a portion of SFO departures from TRUKN to disperse flights more equitably, vector a portion of OAK arrivals along WNDSR to echo previous dispersed flight paths, reduce OAK departures over the East Bay hills, work to reduce cargo flights over the East Bay

hills as these operations use noisier aircraft, and, as part of the longer-term solutions, consider a redesign of the flight paths within the Northern California Metroplex to disperse flights equitably, minimize single-event overflight noise, use continuous descent approaches, and take advantage of the Bay as a flight corridor provided, however, that such efforts shall not include "noise shifting," i.e., simply moving the noise from one community to another; and be it

**FURTHER RESOLVED**: That the Oakland City Council requests that the Congress of the United States amend the FAA Modernization and Reform Act to eliminate the availability of a categorical exclusion and bar the presumption of no significant impact on the quality of the human environment that currently applies to navigation performance and performance based navigation (PBN) procedures; and be it

**FURTHER RESOLVED**: That the Oakland City Council requests that the Congress of the United States implement statutory changes to the FAA that require more robust and substantive community engagement before flight paths are changed, more accurate measures using updated metrics and full spectrum acoustic impacts of aviation noise experienced on the ground and independent research on the health and environmental impacts of aviation noise, and requirements that the FAA take such research into account when making decisions regarding airspace design; and be it

**FURTHER RESOLVED**: That the Oakland City Council requests that the FAA continue to meet in good faith with community representatives and impacted residents from Oakland to further discuss and address these matters; and be it

**FURTHER RESOLVED**: That copies of this resolution be distributed to the offices of the members of the Bay Area Congressional Delegation, the Oakland Airport Community Noise Management Forum, and the offices of United States Senators Dianne Feinstein and Barbara Boxer.

IN COUNCIL, OAKLAND, CALIFORNIA, JUL 26 2016

PASSED BY THE FOLLOWING VOTE:

AYES - BROOKS, CAMPBELL-WASHINGTON, GALLO, GUILLÉN, KALB, KAPLAN, REID AND PRESIDENT GIBSON MCELHANEY - 8

NOES – 0

ABSENT – 0

ABSTENTION – 0

ATTEST: LaTonda Simmons
LATONDA SIMMONS
City Clerk and Clerk of the Council of the
City of Oakland, California

# ATTACHMENT C

**Resolution No. 67,692-N.S. Requesting the Federal Aviation Administration to Address Increased Aircraft Noise in Berkeley**

RESOLUTION NO. 67,692–N.S.

REQUESTING THE FEDERAL AVIATION ADMINISTRATION TO ADDRESS INCREASED AIRCRAFT NOISE IN BERKELEY

WHEREAS, the Federal Aviation Administration (FAA) is implementing a planned transition to the Next Generation Air Transportation System (NextGen) to standardize arrival and departure routes through the use of GPSbased technologies in 21 identified metroplexes, which are regions with multiple airports serving major metropolitan areas where heavy airport activity and environmental constraints combine to hinder the efficient movement of air traffic; and

WHEREAS, the Northern California Metroplex is comprised of four commercial airports, San Francisco International Airport (SFO), Oakland International Airport (OAK), Mineta San Jose International Airport (SJC), and Sacramento International Airport (SMF); and

WHEREAS, as part of the transition to NextGen, the FAA recently changed the flight paths followed by commercial aircraft flying into and out of SFO, OAK, and SJC, as well as other airports in the Northern California Metroplex under a project the FAA calls the Northern California Optimization of Airspace and Procedures in the Metroplex (NorCal OAPM); and

WHEREAS, according to the FAA, the NorCal OAPM consists of new procedures and technologies to establish more direct flight routes intended to improve safety, efficiency, and reduce fuel burn and carbon emissions; and

WHEREAS, modernizing air space using a sophisticated satellite controlled system and precision flying can embrace FAA goals alongside minimizing and equitably distributing noise impacts experienced on the ground; and

WHEREAS, on July 31, 2014, the FAA issued a Finding of No Significant Impact that NorCal OAPM would not have any significant noise impact on communities and surrounding areas based on sound metrics which did not reflect the true disturbance to the communities on the ground; and

WHEREAS, rather than acting to take advantage of geography and equitably distributing and minimizing the cumulative noise impacts over neighborhoods, the FAA has created great disturbance of certain areas in failing to consider noise and environmental impacts on a per flight basis; and, instead, developing the flawed Net Noise Reduction Method; and

WHEREAS, the new flight paths out of SFO, entitled TRUKN, GRTFL, DEDHD, HYPEE, and COSMO, the new flight path into OAK, entitled WNDSR, and increasing vectored OAK departures are impacting residents of the City of Berkeley, especially along the Berkeley hills due to the considerable increase in the number of flights overhead each day from narrowed flight corridors, lower flight altitudes, and powered descent procedures resulting in a significant increase in the amount of aircraft noise experienced on the ground; and

WHEREAS, significant environmental impacts created by the new flight paths adversely impact the enjoyment, preservation, and protection of natural, cultural, and scenic resources of the East Bay Regional Park District parklands, trails, and open spaces; and

WHEREAS, as evidenced by the increasing number of complaints received by the City of Berkeley City Council and staff, as well as the complaints received by the SFO and OAK Noise Abatement Offices, the new routes have created noise impacts that appear to be far more adverse than those of the former routes for our residents.

NOW THEREFORE, BE IT RESOLVED by the Council of the City of Berkeley that it hereby requests the FAA immediately mitigate the increased aircraft noise at ground level in Berkeley caused by the NorCal OAPM project by expeditiously identifying all short and long-term solutions and the expected timetable for their implementation.

BE IT FURTHER RESOLVED that the Berkeley City Council requests the FAA, as part of the above analysis of aircraft noise mitigation measures, consider the immediate solutions of raising altitudes on the SFO departure flight paths from TRUKN, vector a portion of SFO departures from TRUKN to disperse flights more equitably, vector a portion of OAK arrivals along WNDSR to echo previous dispersed flight paths, reduce OAK departures over the East Bay hills, work to reduce cargo flights over the East Bay hills as these operations use noisier aircraft, and, as part of the longer-term solutions, consider a redesign of the flight paths within the Northern California Metroplex to disperse flights equitably, minimize single event overflight noise, use continuous descent approaches, and take advantage of the Bay as a flight corridor provided, however, that such efforts shall not include "noise shifting," i.e., simply moving the noise from one community to another.

BE IT FURTHER RESOLVED that the Berkeley City Council requests that the Congress of the United States amend the FAA Modernization and Reform Act to eliminate the availability of a categorical exclusion and bar the presumption of no significant impact on the quality of the human environment that currently applies to navigation performance and performance based navigation (PBN) procedures.

BE IT FURTHER RESOLVED that the Berkeley City Council requests that the Congress of the United States implement statutory changes to the FAA that require more robust and substantive community engagement before flight paths are changed, more accurate measures using updated metrics and full spectrum acoustic impacts of aviation noise experienced on the ground and independent research on the health and environmental impacts of aviation noise, and requirements that the FAA take such research into account when making decisions regarding airspace design.

BE IT FURTHER RESOLVED that the Berkeley City Council requests that the FAA continue to meet in good faith with community representatives and impacted residents from Berkeley to further discuss and address these matters.

BE IT FURTHER RESOLVED that copies of this resolution be distributed to the offices of the members of the Bay Area Congressional Delegation, the Oakland Airport Community Noise Management Forum, and the offices of United States Senators Dianne Feinstein and Barbara Boxer.

The foregoing Resolution was adopted by the Berkeley City Council on September 27, 2016 by the following vote:

Ayes: Arreguin, Capitelli, Droste, Maio, Wengraf, Worthington and Bates.

Noes: None.

Absent: Anderson and Moore.

Tom Bates, Mayor

Attest:
Mark Numainville, City Clerk