

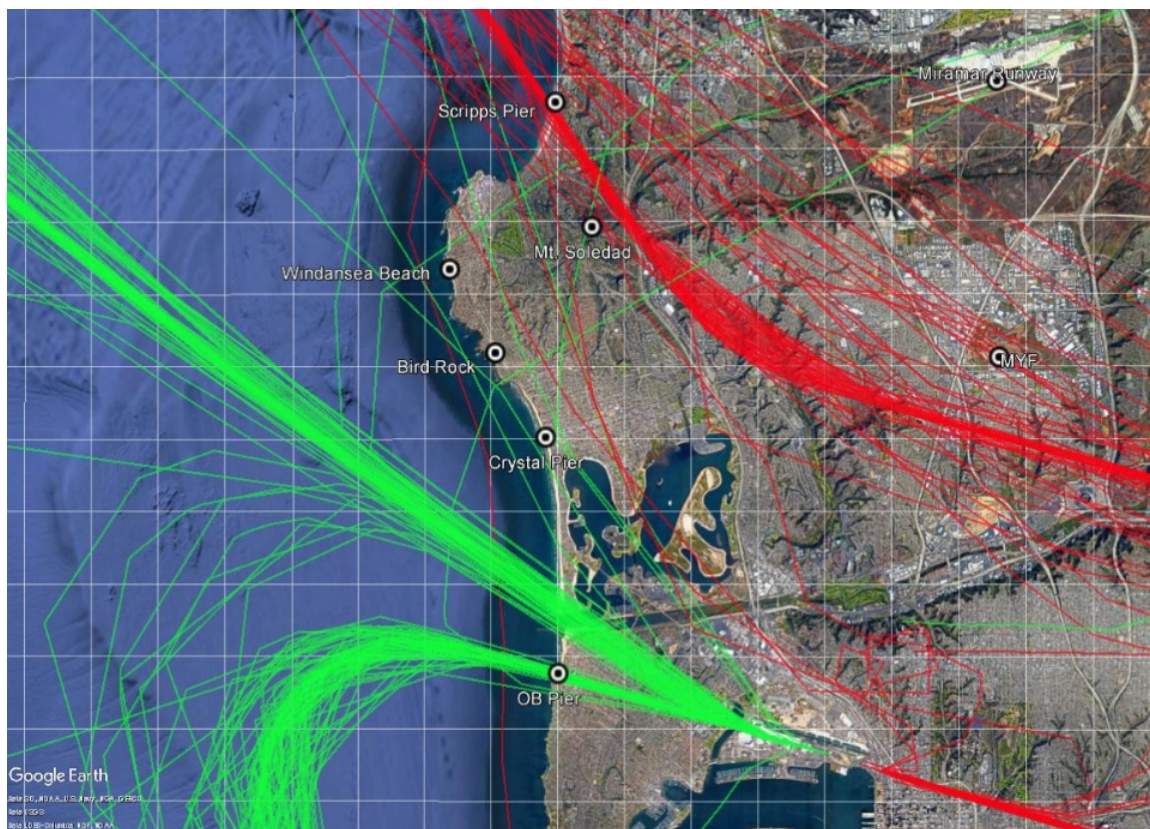
## Technical Solutions for San Diego Noise Issues

### Current situation

Over the past year residents of La Jolla have experienced a significant increase in the noise level from aircraft traversing our skies. Where previously an occasional jetliner was an interesting occurrence, lack of aircraft noise is now the exception.

**Figure 1** below displays 24 hours of San Diego International Airport (SAN) departures (green) and arrivals (red). Each box on the grid is approximately 1 mile by 1 mile.

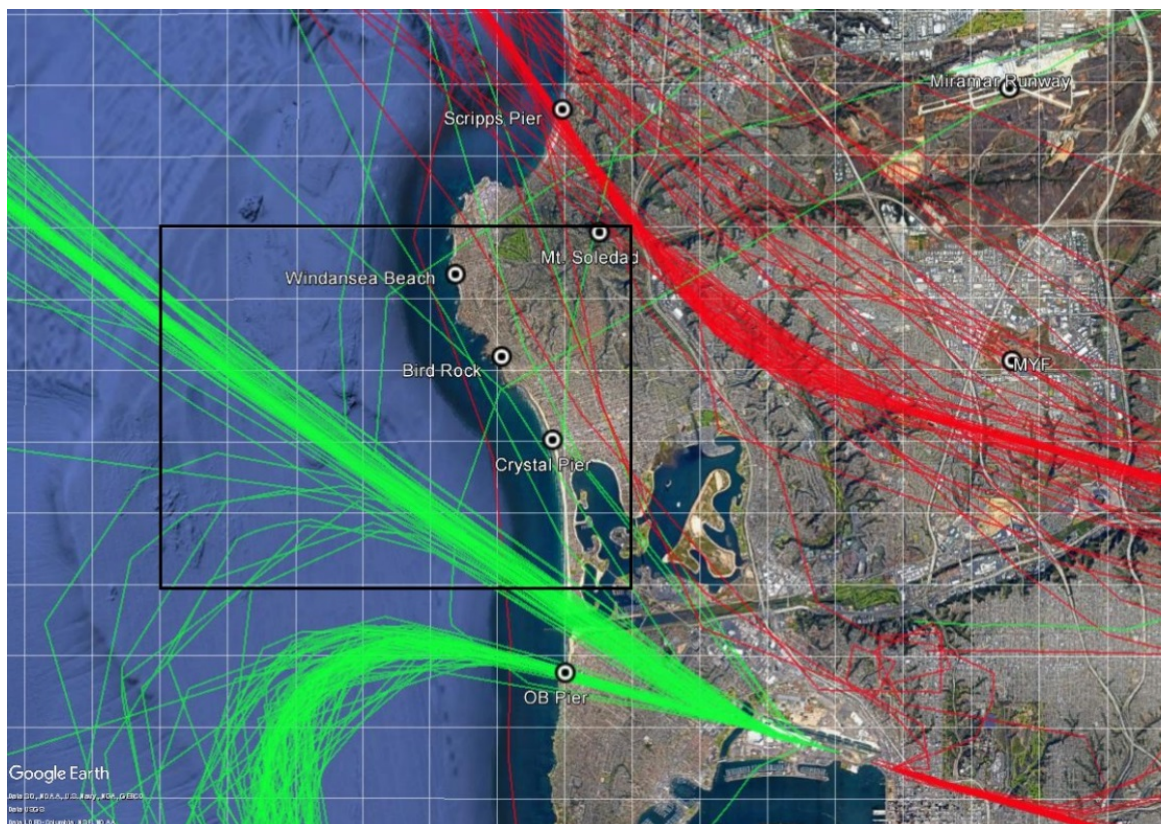
As can be seen, coastal La Jolla is now between two main flight paths, those aircraft departing to the north and those arriving from the north. Even aircraft that eventually head south (lower left), are now frequently heard by residents of Birdrock and the Muirlands.



## Primary Problem Areas and Candidate Solutions

### Northern Departures

At all hours of the day, these flights (within the highlighted box) are now heard by coastal residents. As can be seen in Figure 2 **Error! Reference source not found.**, most aircraft heading north follow a path (the PADRZ SID) that keeps the aircraft close to shore. Fortunately, there is a solution to this problem; make better use of the airspace above the ocean, where no residents reside.



**Figure 3** shows the existing PADRZ departure procedure (in white), and a proposed alternate path (in green). It includes a new potential waypoint called BROCK. Note BROCK is just a general concept for a new departure waypoint. Heading directly west (rather than NW as is shown) or going further west before turning north should also be examined.



Initial study of the proposed track indicates that it would:

- 1) Significantly increase the distance of aircraft from the shoreline
- 2) Have no impact on the required separation between north heading and south heading flights. This is because the separation is established by the time gap between takeoffs.
- 3) Incurs less than a mile additional distance to PADRZ. This is because PADRZ is sufficiently west of the coast.
- 4) Have no impact on simultaneous reverse operations (landing in one direction and departing in the opposite direction) since the separation of normal departures and reverse arrivals is still easily achieved by the existing process of “grouping” take-offs and landings.

## Northern Arrivals

It is well known that implementation of RNAV/Metroplex has formed the compressed super highway of air traffic over LJ Shores, lowered the altitude of planes when they cross the coast and populated areas, and shifted the route to the south. The new COMIX STAR is shown in **Figure 4** below. The altitude at the LNTRN waypoint is 1,000' lower than the same waypoint on the original BAYVU5 arrival.



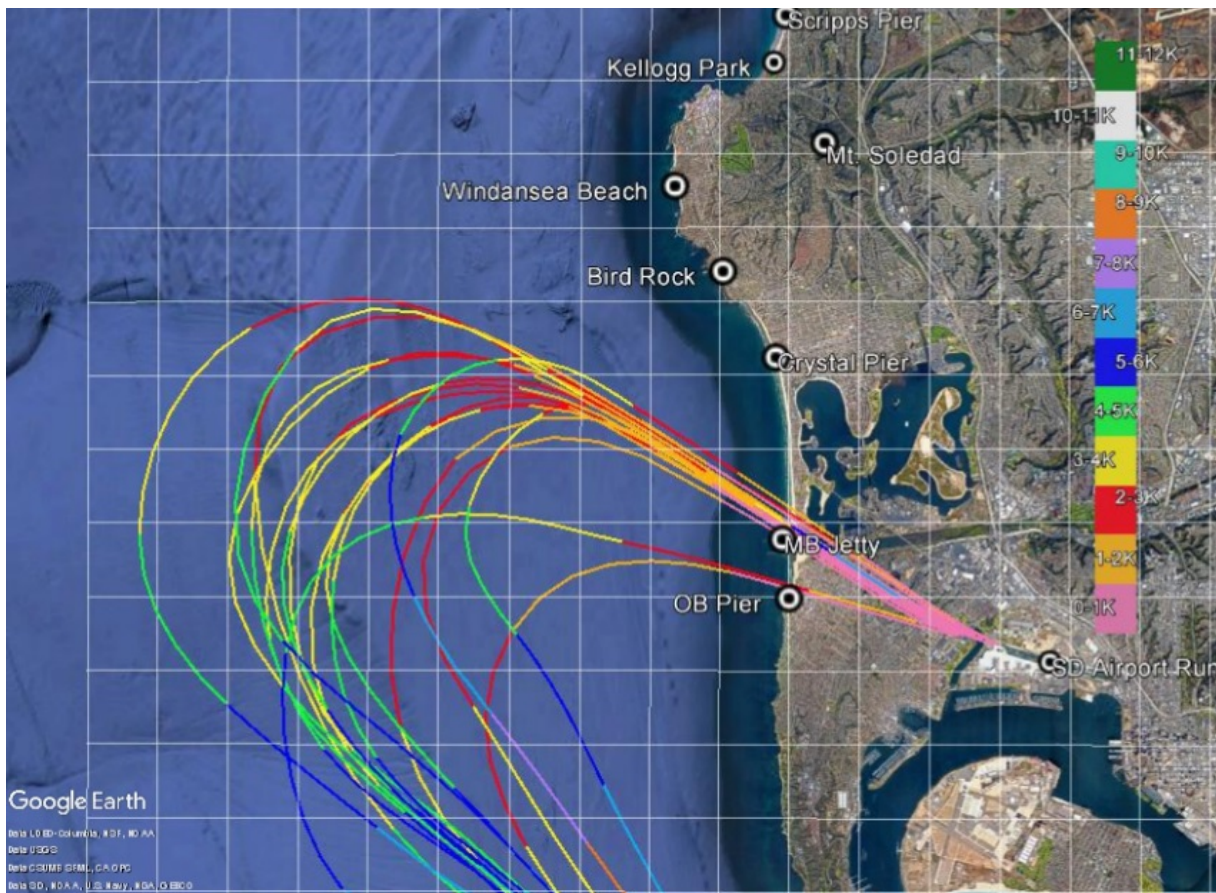
The noise from these flights has steadily grown over time, and in addition to the La Jolla Shores areas, those flights are now being heard frequently on the coast, in the Village of La Jolla, Birdrock, and in the Muirlands - areas where they were never heard before.

Returning to the ground track and altitudes of the original non-RNAV BAYVU5 arrival would help significantly.

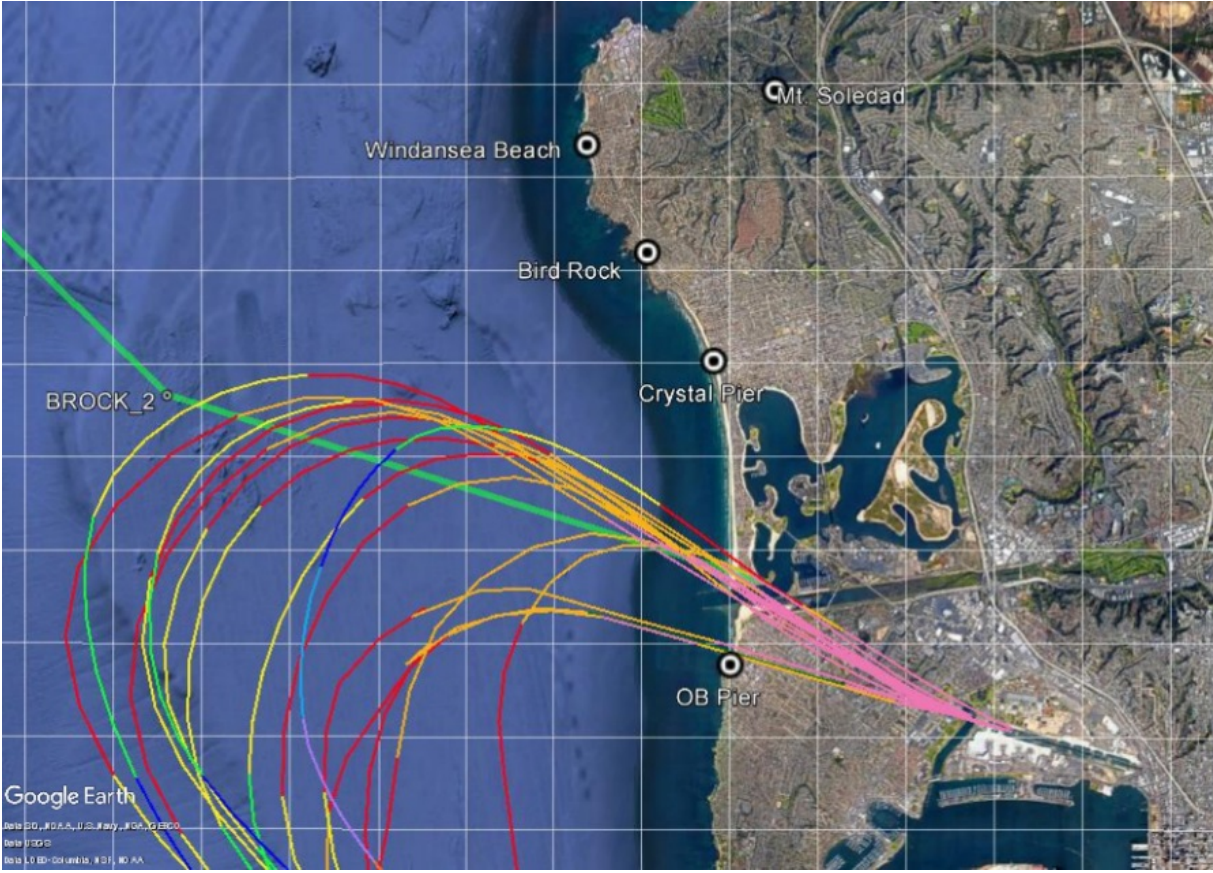
## Additional Problems

### Southern ZOOO Departures

Error! Reference source not found. **Figure 5** provides an example of east bound aircraft (on the ZOOO departure) flying far north abeam Birdrock before turning south. Residents of Birdrock and the Muirlands report hearing these departures twice, once as they head North, and then again as they turn South.

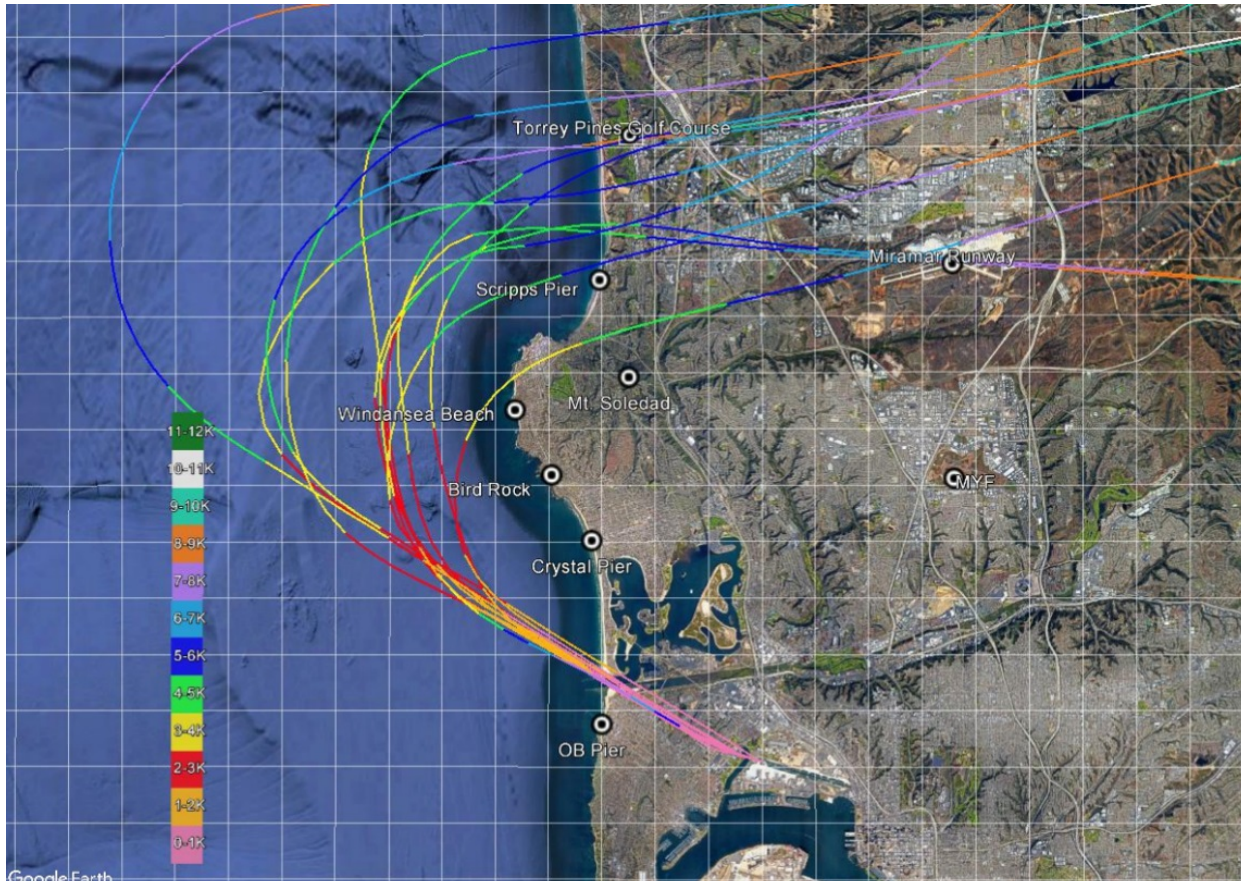


The BROCK waypoint routing shown previously would also address this problem by having aircraft further west before heading south. This routing takes air traffic west over the ocean, more perpendicular to the coast to avoid noise in all coastal areas. For clarity, BROCK path is shown in green in **Figure 6**.



## Eastern Departures Turning North over La Jolla

The departure pattern shown in **Figure 7** occurs in the late evening, with aircraft often at low altitudes. These flights typically file a flight plan with the ZZOOO departure SID, but instead are allowed to take this path to the east.



These aircraft are at relatively low altitudes and at full power when they pass over La Jolla, subjecting residents to unacceptable and completely avoidable noise late at night. These aircraft should follow the proposed BROCK path until they reach sufficient altitude and northern latitude before they turn east.

## Composite Recommendations to Reduce Noise in Point Loma and La Jolla

1. Return to pre-RNAV arrival routing provided by the BAYVU5 STAR in lieu of the COMIX STAR.
2. All KSAN departure separation be limited to the 275-290 degree magnetic historical vectors for LNSAY, BORDER, PEBLE and ZZOOO, etc., as well as for all new Metroplex SIDs; Prohibit departure headings between 250 to 265 degrees, except for Runway 27 Missed Approaches
3. Revise westbound Runway 27 Missed Approach climb procedure to a minimum altitude to 4,000' (consistent with Runway 9)
4. Incorporate FAA Noise Dot waypoint locations into current and future KSAN SID's as formal procedures
5. Reposition FAA Noise Dot #1 from its current position to its original position at 290 degrees from end of SAN Runway 27 and 1.5 miles off of the coast
6. Reposition FAA Noise Dot #4 from its current location (west of Fort Rosecrans) to coincide with the ZZOOO waypoint
7. Create a new FAA Noise Dot #6, located 7.5 nautical miles due north of JETTI, and east of CLSTR, at N 32 52.2 W 117 18.7 (equidistant to ZZOOO)
8. Incorporate BROCK as a flyby waypoint into PADRZ and ZZOOO departures
9. Move the WNFLD and LANDN waypoints due south (0.3-0.5 miles) to lie 287 degrees magnetic from the end of Runway 27, and 1.5 miles off of the coast, so as to align (with slight southerly cushion) with the relocated Noise Dot #1 at 290, and designate as "Flyover" waypoints in their respective SID's