U.S. Department
of Transportation
**Federal Aviation
Administration**

Western-Pacific Region
Office of the Regional Administrator

777 S. Aviation Blvd., Suite 150
El Segundo, CA 90245

June 8, 2022

Mr. Denny Schneider
Chair, LAX/Community Noise Roundtable
c/o Los Angeles World Airports Noise Management
1 World Way
Los Angeles, CA 90009

Dear Chairman Schneider:

To follow up on our letter dated September 8, 2021, we wanted first to thank you for your patience as we worked on reviewing, analyzing, and responding to the Option B proposal (Proposal) contained in your letter dated July 16, 2021. After receiving your Proposal, the Federal Aviation Administration (FAA) conducted a preliminary assessment; this took some time because the Proposal encompassed a large area with numerous routes and air traffic volume. The Proposal requested that a portion of aircraft typically routed on the IRNMN arrival procedure inbound to Los Angeles International Airport (LAX) be rerouted to intercept a portion of the ANJLL arrival procedure.

Due to the complexity of the airspace involved in this proposal, FAA subject matter experts conducted an in-depth technical review of the Proposal as part of the preliminary assessment. Based on this more technical review, the FAA has determined that moving approximately 30% of traffic inbound on the IRNMN procedure to the ANJLL procedure would not align with the FAA's safety mission and is not feasible. The identified safety issues include sector saturation; non-standard high altitude, high airspeed opposite direction spacing and sequencing to a common point; and potential conflicts with military aircraft operating to/from/inside the Edwards Air Force Base R-2508 Complex and Twentynine Palms. Please refer to the two enclosed documents that provide more information on this determination. The first document, Attachment A, is a summary containing graphics and a detailed explanation of our findings. The second document, Attachment B, addresses additional information you provided in your Proposal regarding the IRNMN, HUULL, and RYDDR arrival procedures and the DAHJR waypoint. As previously committed in our letter dated March 16, 2022, the FAA will provide a briefing of this analysis at the July LAX/Community Noise Roundtable (Roundtable) meeting and will answer questions regarding Option B at that time.

We appreciate and thank the LAX Roundtable for your efforts in working with the local communities to address noise concerns. While we currently cannot offer any options to address the north downwind arrivals. The FAA is committed to providing you with technical assistance through our continued review of consensus recommendations. As technology and safety criteria evolve, there may be other opportunities in the future. The FAA's mission is to provide the

safest, most efficient aerospace system in the world. We will continually strive to improve the safety and efficiency of flight in this country. If we can be of further assistance, please contact my office at (424) 405-7000.

Sincerely,

Tamara A. Swann
Tamara A. Swann
Regional Administrator (A)

2 Enclosures
Attachment A - Option B Preliminary Assessment Summary
Attachment B – Additional Information within the Proposal

cc: LAWA

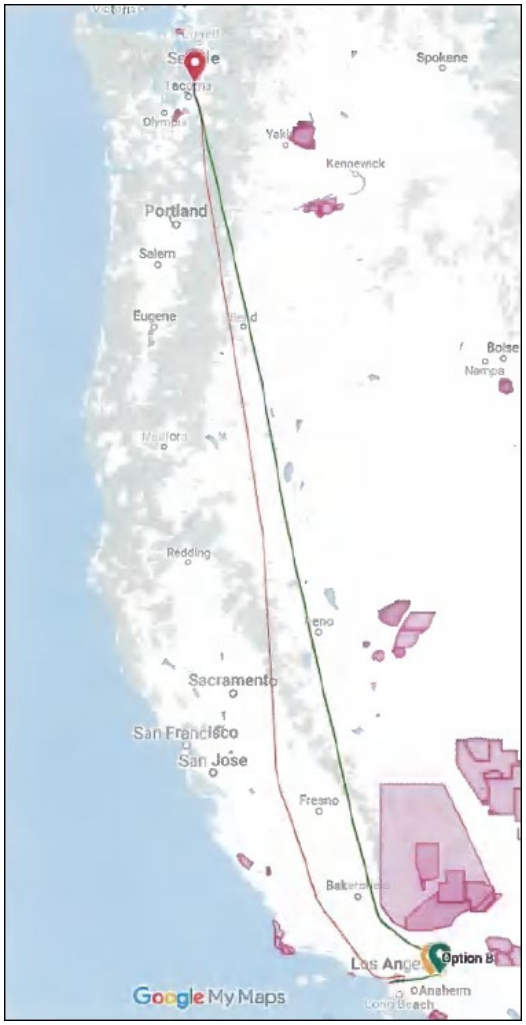
Enclosure 1

Option B Preliminary Assessment Summary

On July 16, 2021, the Los Angeles International Airport (LAX)/Community Noise Roundtable (Roundtable) submitted the Option B Proposal (Proposal) for consideration by Federal Aviation Administration (FAA) subject matter experts. The Proposal is for a new route that would move a portion of the air traffic from the IRNMN Standard Terminal Arrival (STAR) route to the ANJLL STAR. The route would be just west of the Edwards Air Force Base (AFB) R-2508 Complex and, once south of the special use airspace (SUA), would turn east to intercept the ANJLL STAR. Affected flights would generally be non-oceanic flights originating from states other than California; this would include airports in Alaska, Washington, Oregon, Idaho, Montana, parts of Nevada, and the western third of Canada.

The Proposal would move the aircraft inbound to LAX east of the current flight path by approximately 108 nautical miles (not including any departure airport routing requirements or radar vectors for arrival sequencing). Aircraft would then be sequenced with the ANJLL STAR traffic near the point where Los Angeles Air Route Traffic Control Center (ZLA) would hand off aircraft to Southern California Terminal Radar Approach Control (SCT). Typically, this sequencing is done by ZLA before the aircraft is transferred to SCT. Figure 1 was taken from page 12 of the Proposal. It shows the current flight path (red) and the Roundtable's proposed flight path (green).

Figure 1. Roundtable Map



Current flight path (red) and the Roundtable's proposed flight path (green).

After analyzing the request and reviewing flight track data, the FAA determined that the Proposal would compromise safety and efficiency. The FAA identified the following safety issues: sector saturation; non-standard high altitude, high airspeed opposite direction spacing and sequencing to a common point; and potential conflicts with military aircraft operating to/from/inside the Edwards AFB R-2508 Complex. The FAA also has environmental concerns because the review found an increase in flying miles and letters received from congresspersons and communities refer to possible noise and disproportionate impacts to low-income neighborhoods.

Southern California's airspace is very complex with many interrelated procedures. In most cases, the FAA is not able to simply change a procedure; most of the time, a change to one procedure results in a domino effect that requires changes to multiple procedures. As shown in this preliminary assessment summary, implementing the Proposal would require a cascade of other changes affecting both flight and air traffic control (ATC) procedures, some of which are counter to current safety and efficiency protocols. It may also require changes to both ATC and flight

procedures for additional airports not yet identified, which could potentially lead to another airspace redesign.

The percentage of use of the ANJLL and IRNMN STAR routes by aircraft arriving into LAX are within 2% of each other (less than 1% difference in 2019 and less than 2% difference in 2021). If the Proposal is implemented, ANJLL usage for LAX arrivals would increase from approximately 26–27% to 34–35%. Absorbing an approximate 30% increase of aircraft into an already highly used procedure poses safety and technical challenges, such as sector saturation, frequency congestion, and spacing and sequencing difficulties. Sector saturation means the track count (number of aircraft) is in excess of the established Sector Monitor Alert Parameter (MAP) metric. Once the Traffic Flow Management System (TFMS) determines that the MAP will be exceeded, the FAA Traffic Management Unit is required to begin offload gate swaps from the constrained area, which, more than likely, would place the aircraft back on the IRNMN STAR route, thereby creating additional Flight Management System programming workload for flight crews during the busy enroute-to-terminal transition and descent process. Sector saturation generally leads to delays. Once the delays reach a point where they cannot be mitigated via delay vectors or holding, ATC is forced to implement ground delays and, potentially, ground stops for inbound aircraft.

Even without sector saturation, spacing and sequencing difficulties would arise due to the incoming direction of the additional aircraft to the ANJLL STAR route. The basic tenet of the Proposal would create a non-standard, opposite direction, high-altitude sequencing blend not seen at any other major airport location within the National Airspace System (NAS)—outside of severe weather-related route swaps that are always supported by significant Traffic Management initiatives and controls such as ground stops, the establishment of a Flow Constrained Area, enhanced miles/minutes in-trail, or even enroute airborne holding (as a last resort).

Blending two streams of aircraft from opposite directions at higher altitudes may seem no different from blending two opposite direction streams between a final approach course (FAC) and an opposite direction parallel downwind. However, the physics of the flight operation at those two different altitude stratums greatly impact what ATC techniques can be safely leveraged to sequence aircraft.

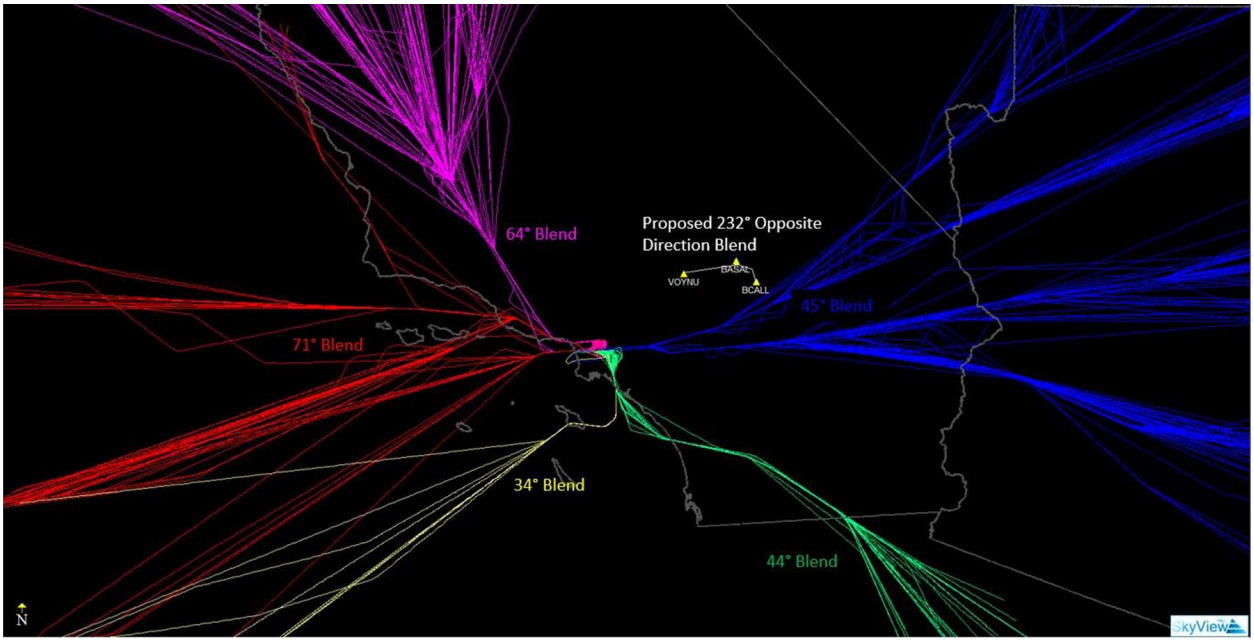
When aircraft are operating at lower altitudes, whether it be via their own navigation or via radar vectors to the FAC, the wing is configured with the deployment of high lift devices such as flaps and leading-edge slats. The use of these high lift devices allows the aircraft to slow to speeds where a standard rate turn can be accomplished within a relatively tight turning radius. Once a FAC expands beyond 12–15 miles from the airport, it is quite common to see assigned speeds of 170 knots indicated airspeed—sometimes even less—on the parallel downwind. Conversely, at higher altitudes, the aircraft's wing remains clean, and even standard rate turns can take several miles of turn radius to be fully realized due to the much higher speed of the aircraft. Moreover, the fleet mix, compounded by the higher altitude and speed, adds complexity since there would be a greater variation in turn radii. An aircraft turning at the standard rate at flight level (FL) 310 is significantly different than an aircraft at 6,000 feet and 210 knots indicated airspeed. The higher aircraft can take 20 nautical miles or more to complete a turn, while the lower and slower

aircraft typically turns within 2–5 nautical miles. This high-altitude variation would result in sequencing decisions needing to be made earlier, which could result in aircraft delays and inefficiency. The window for the assignment of speed control is also much smaller, as the stall speed of aircraft operating with a clean wing is significantly higher. The subject aircraft may be affected by jet stream wind changes, creating sudden large and unexpected changes in the aircraft's ground speed.

For this reason, sequencing in the enroute environment is typically handled via strategic ATC instructions; it can take several minutes to slowly develop a sequence with the required longitudinal or lateral separation. Enroute ATC has tools that allow them to recognize future ties between aircraft more than 100 miles out, while the affected aircraft are still laterally well separated and converging towards the common merge point. Indeed, in the enroute environment, radar vectors in excess of 30° left or right of the course are rarely issued. Within the terminal environment, the greatly reduced speed of the aircraft affords ATC the opportunity to pursue a more aggressive tactical approach for separation and sequencing. Larger angle radar vectors are an example of this distinct tactical advantage, as is a much larger window for the assignment of speed control.

Because the enroute environment relies on a more strategic approach, the blend angle that feeds the common merge point is typically a wedge, incorporating an angular difference between 45° and 90°. Figure 2 illustrates the approximate blend angle for the five core turbojet wedge flows into LAX, along with the blend angle of the Proposal. Again, this manner of opposite direction high altitude blend (232°) is not a standard operating procedure at any other busy location in the NAS—it simply cannot be expected to mirror the downwind-to-base-to-FAC track reversal at LAX.

Figure 2. Blend Angles of Core Turbojet Flows and Option B to LAX



(Blue–45°, Green–44°, Yellow–34°, Red–71°, Magenta–64°)

During the FAA's analysis, we found that adding an additional route to the current configuration would also have a negative impact on other procedures in the area. Figures 3–16 illustrate the conflictions identified with the potentially impacted procedures.

Figure 3 shows where LAX arrivals on the proposed route would need to be sequenced with other ANJLL arrivals. Joining the ANJLL procedure at this angle would most likely require radar vectors to safely sequence the off-loaded traffic.

Figure 3. Sequencing Point of Proposal and ANJLL STAR Route Arrivals

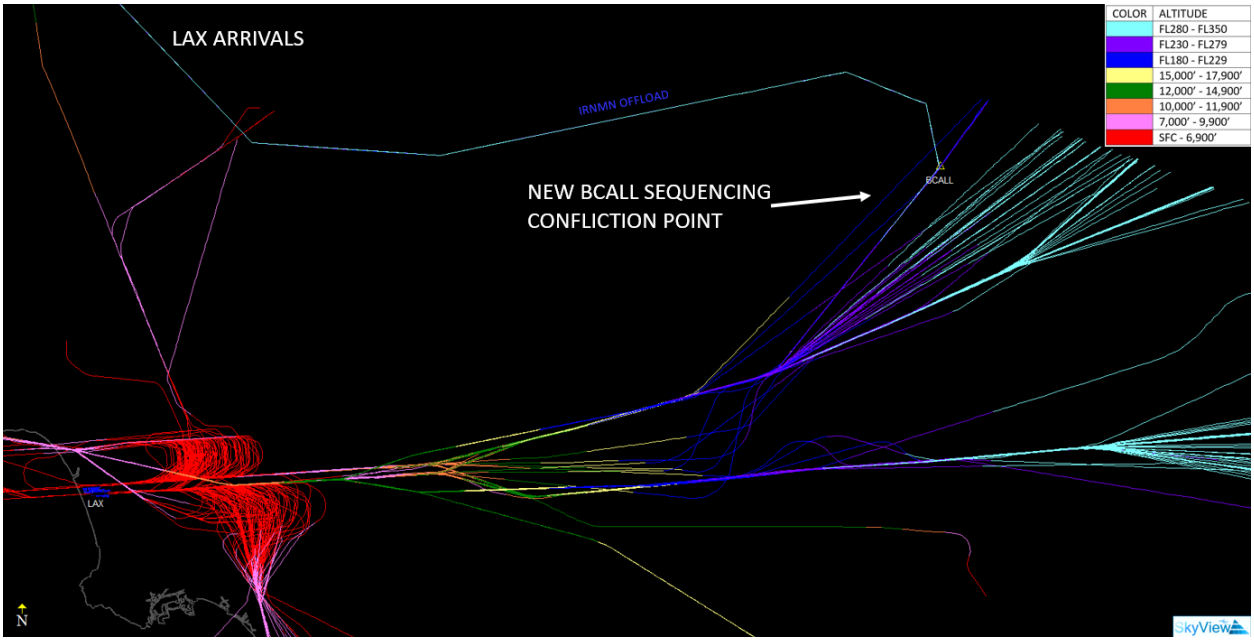


Figure 4 shows the proposed route conflicting with LAX departure aircraft at similar altitude stratums. Procedural separation would require that either arrivals cross VOYNU waypoint at a lower altitude to allow the departure traffic to get above the proposed route, or the departure procedures stop their climb at a lower altitude until clear of the proposed route.

Figure 4. Proposal and LAX Departures Confliction Point

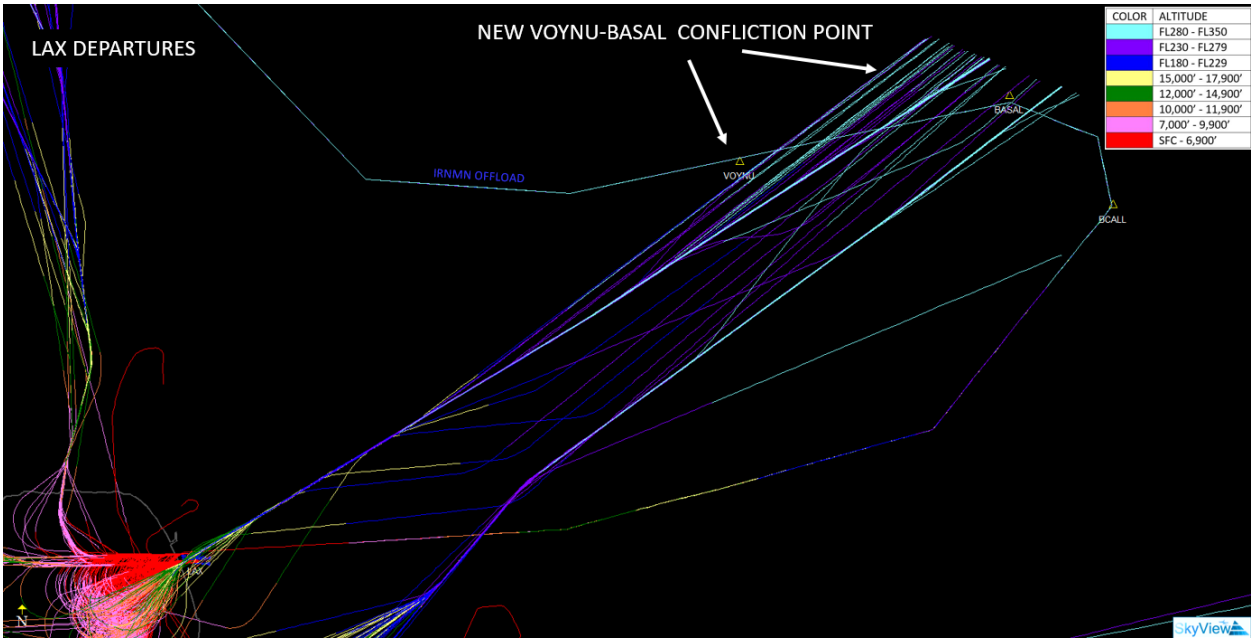


Figure 5 shows that Hollywood-Burbank Airport (BUR) arrivals currently remain north of ANJLL arrivals. The proposed route would place both those ANJLL arrivals and BUR arrivals in the same altitude stratum.

Figure 5. Proposal with BUR Arrivals

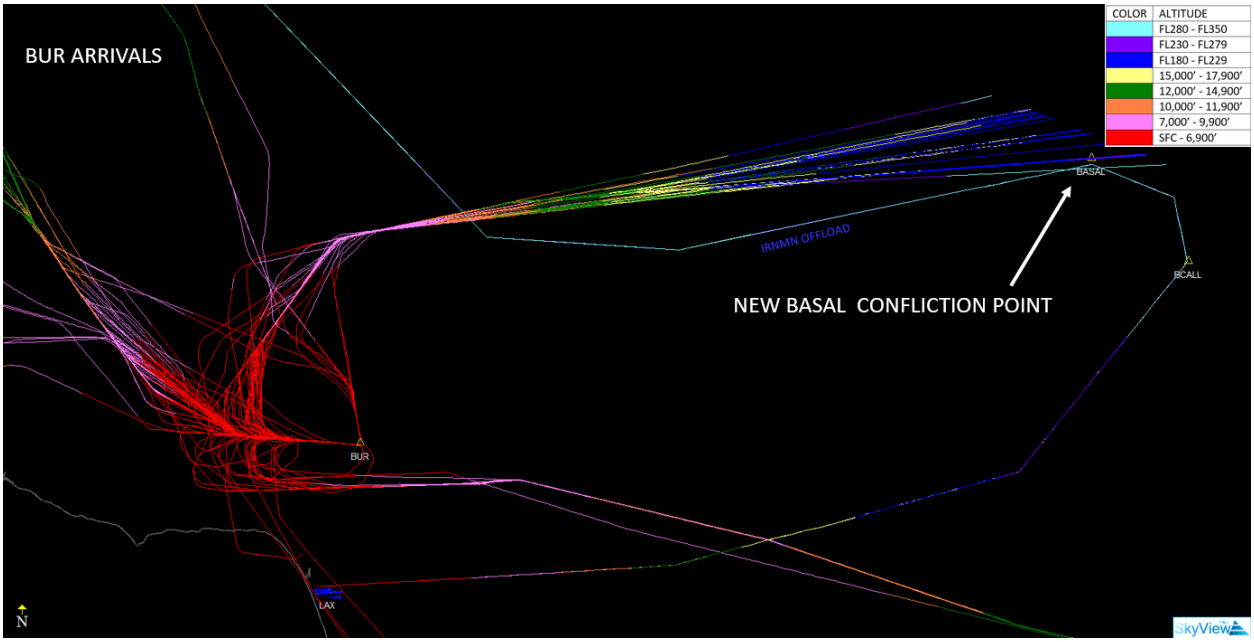


Figure 6 shows that BUR departures would cross the proposed route, necessitating a stop in their departure climb and a stop in the descent of aircraft on the proposed route.

Figure 6. Proposal with BUR Departures

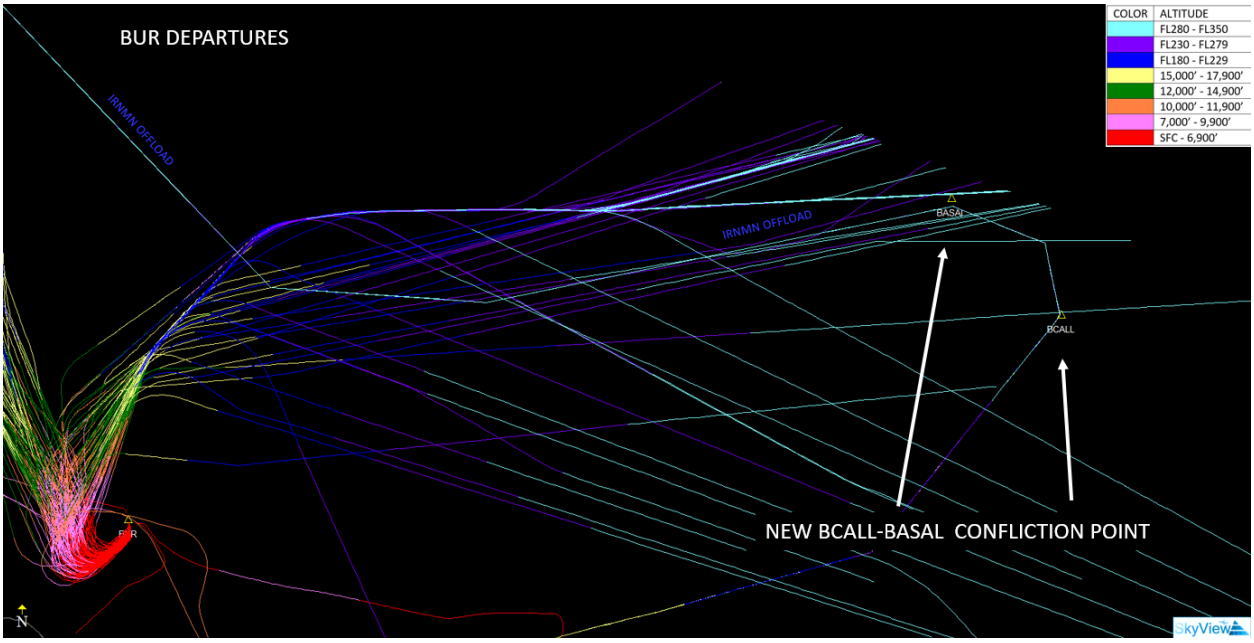


Figure 7 shows that Long Beach Airport (LGB) departures would need to be stopped below the proposed route, creating a potential conflict with BUR departures stopped at similar altitudes.

Figure 7. Proposal with LGB Departures

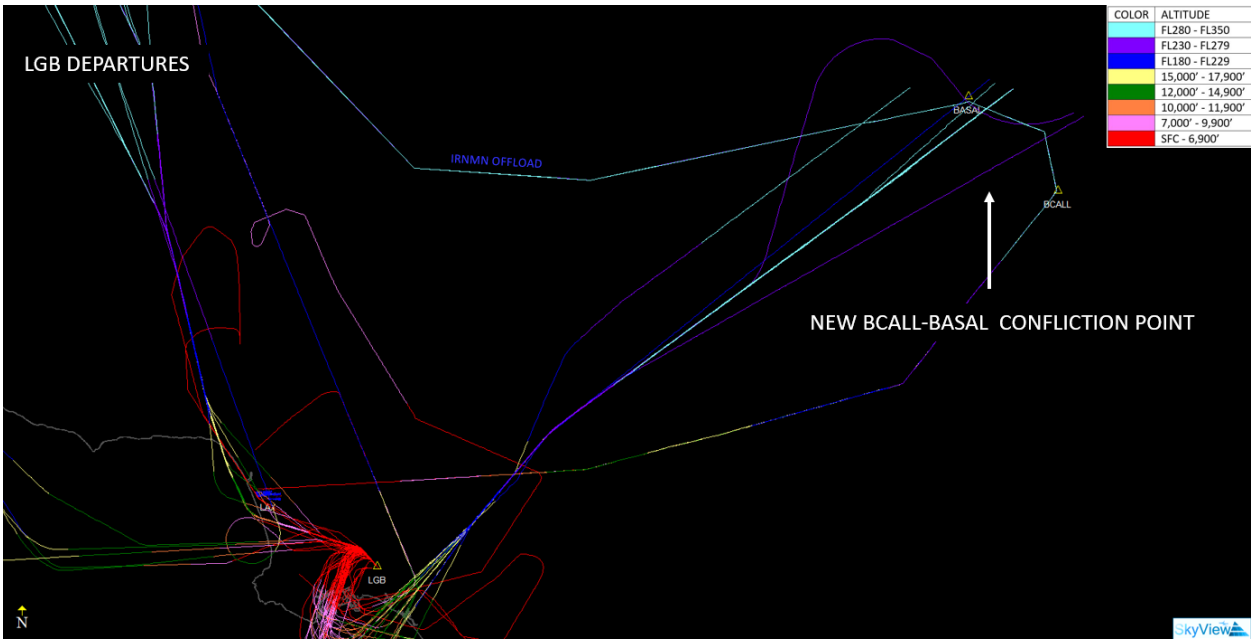


Figure 8 shows that Ontario International Airport (ONT) arrivals would need to be sequenced with the proposed route aircraft.

Figure 8. Proposal with ONT Arrivals

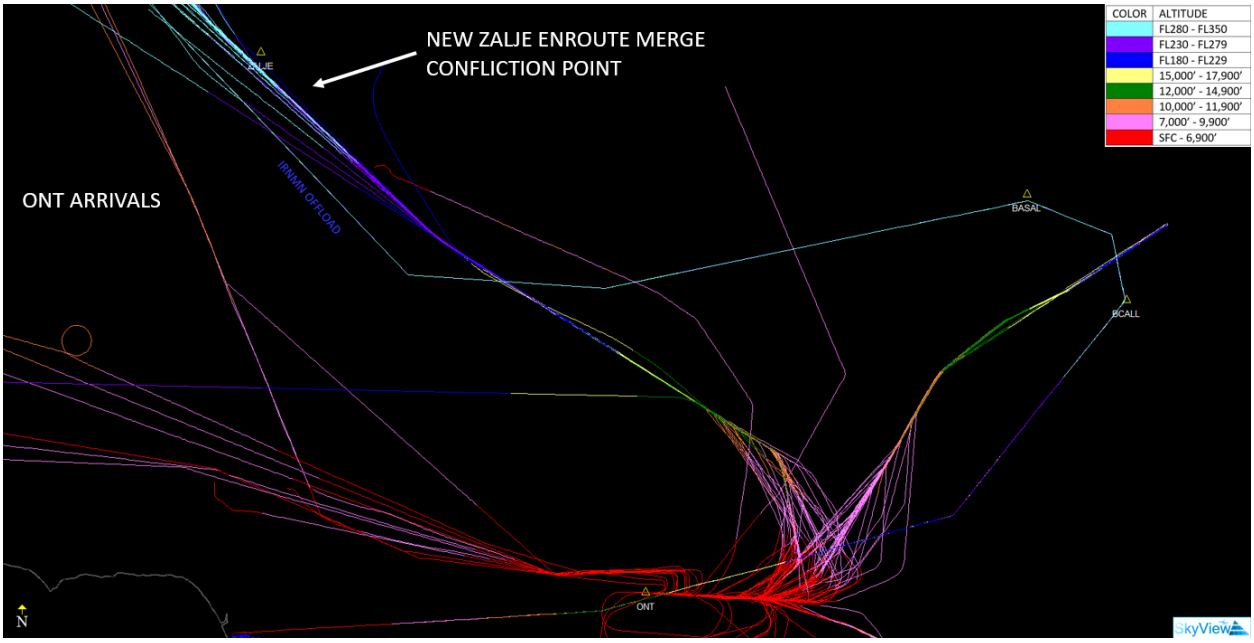


Figure 9 shows that ONT departures would need to be stopped below the proposed route aircraft at both the HURIM and VICVU confliction points. Other potential impacts are possible as a result of BUR and LGB departures being stopped at similar altitudes.

Figure 9. Proposal and ONT Departures

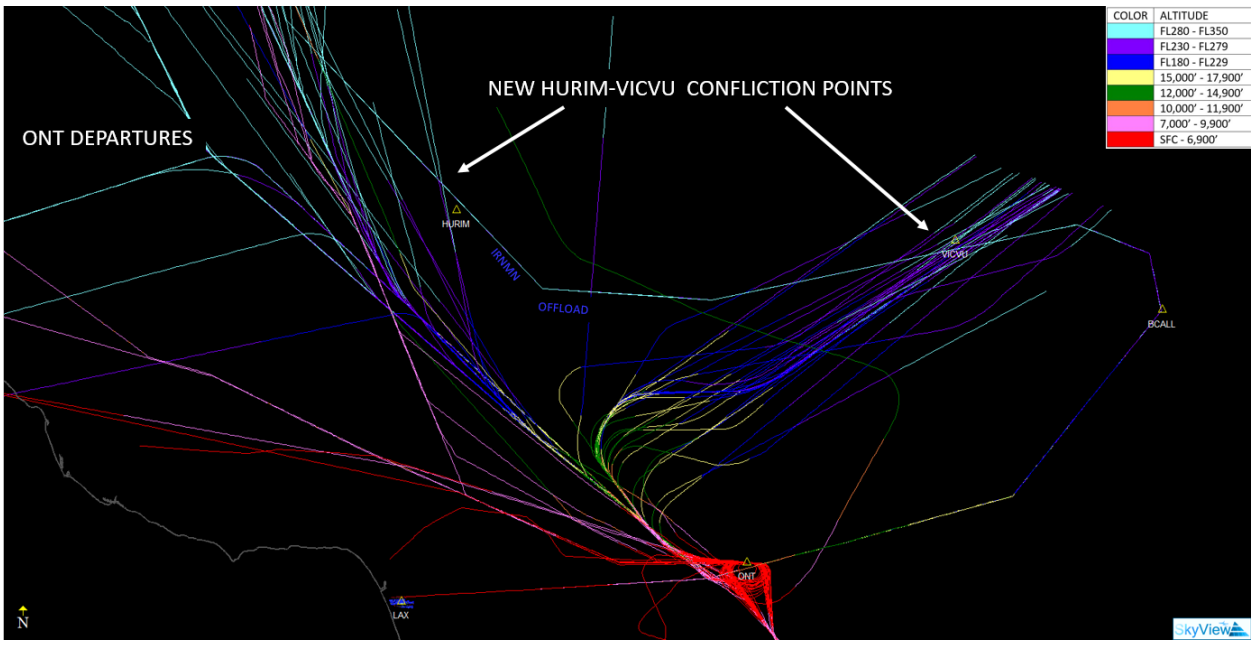


Figure 10 shows that conflictions with Palm Springs International Airport (PSP) arrivals near KAYDN would increase with the addition of aircraft on the proposed route.

Figure 10. Proposal and PSP Arrivals

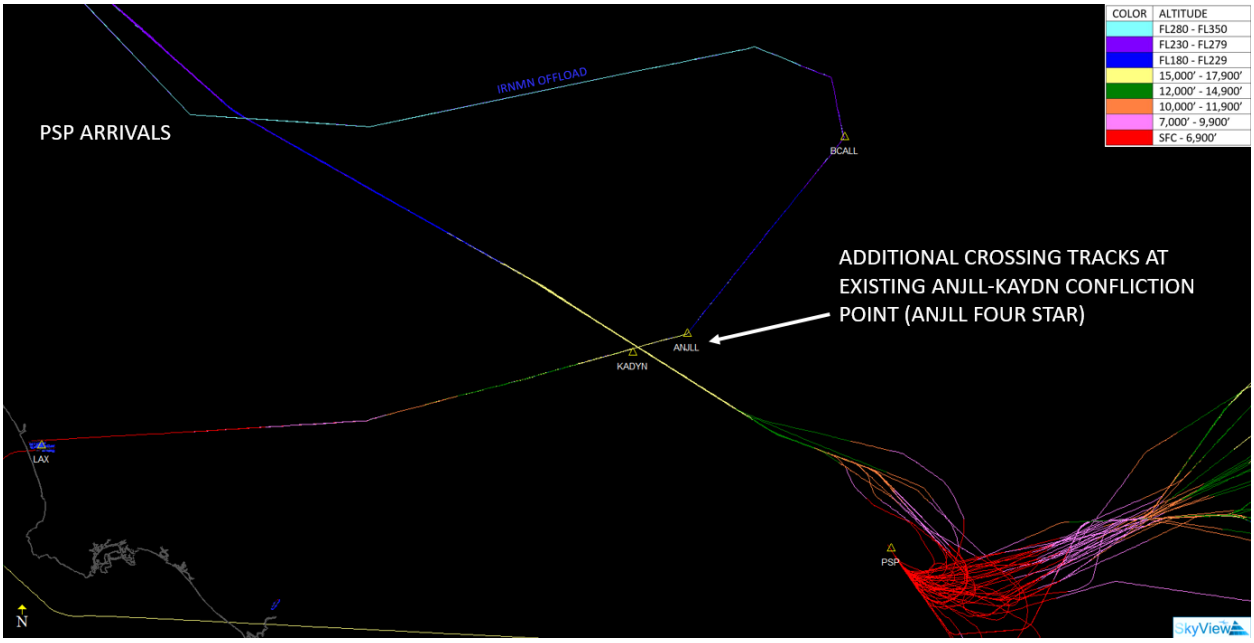


Figure 11 shows that PSP departures would need to be stopped for the proposed route aircraft. Additionally, the northern departure route may not be feasible due to inbound traffic crossing near BCALL.

Figure 11. Proposal and PSP Departures

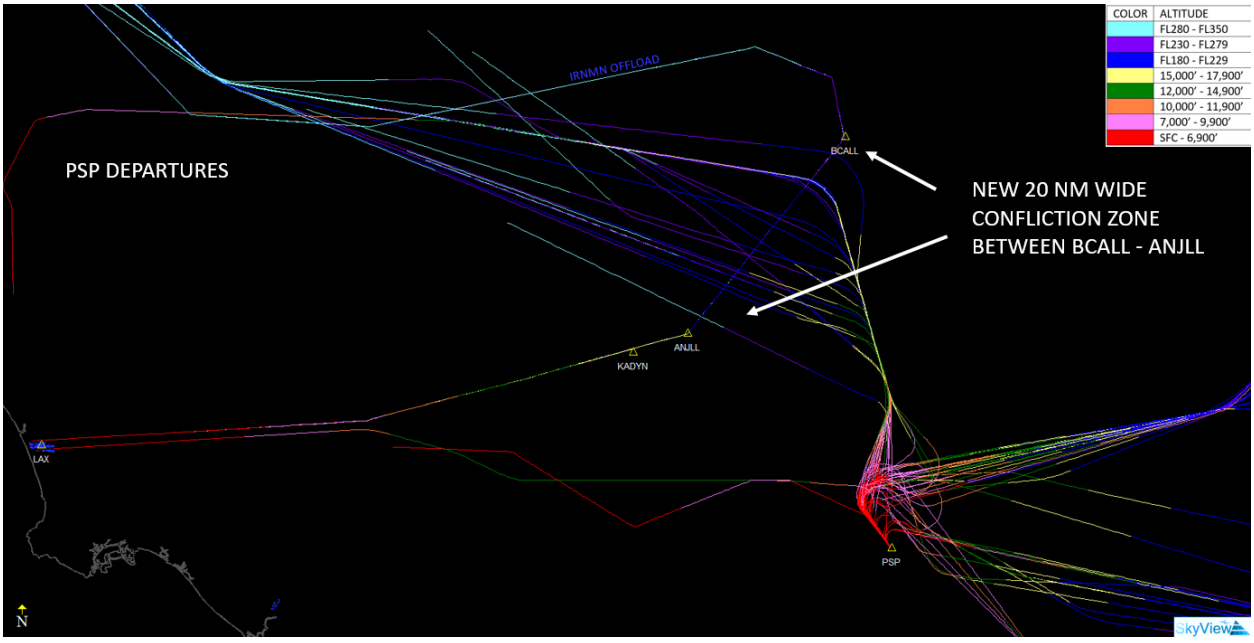


Figure 12 shows that San Diego International Airport (SAN) departures would need to be stopped at lower altitudes for the proposed route aircraft, potentially conflicting with BUR/LGB

departure traffic. SAN arrivals tend to be above LAX arrivals, however, and should have no significant impact as arrivals merge.

Figure 12. Proposal and SAN Departures

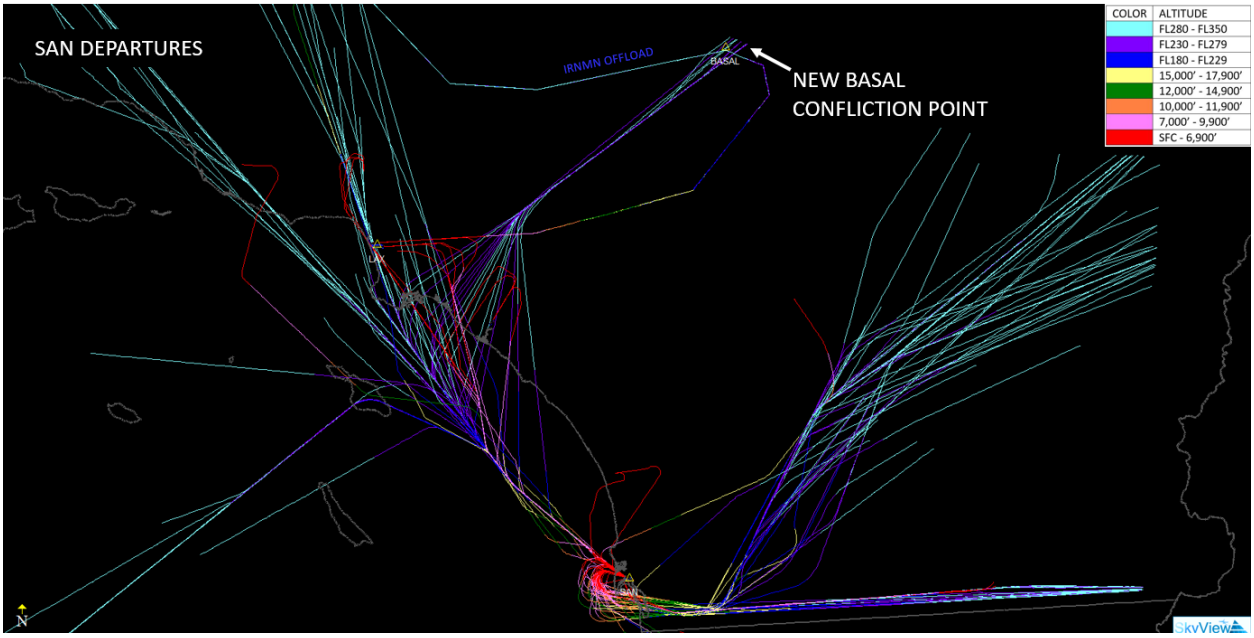


Figure 13 shows that San Bernardino International Airport (SBD) arrivals would need to be sequenced, to some extent, with the proposed route aircraft—they could be pushed lower, but then they would conflict with LGB/BUR/SAN departures. No new conflictions with SBD departures were identified with the proposed route aircraft, although there could be an issue with LGB/BUR/SAN departures stopped at lower altitudes.

Figure 13. Proposal and SBD Arrivals

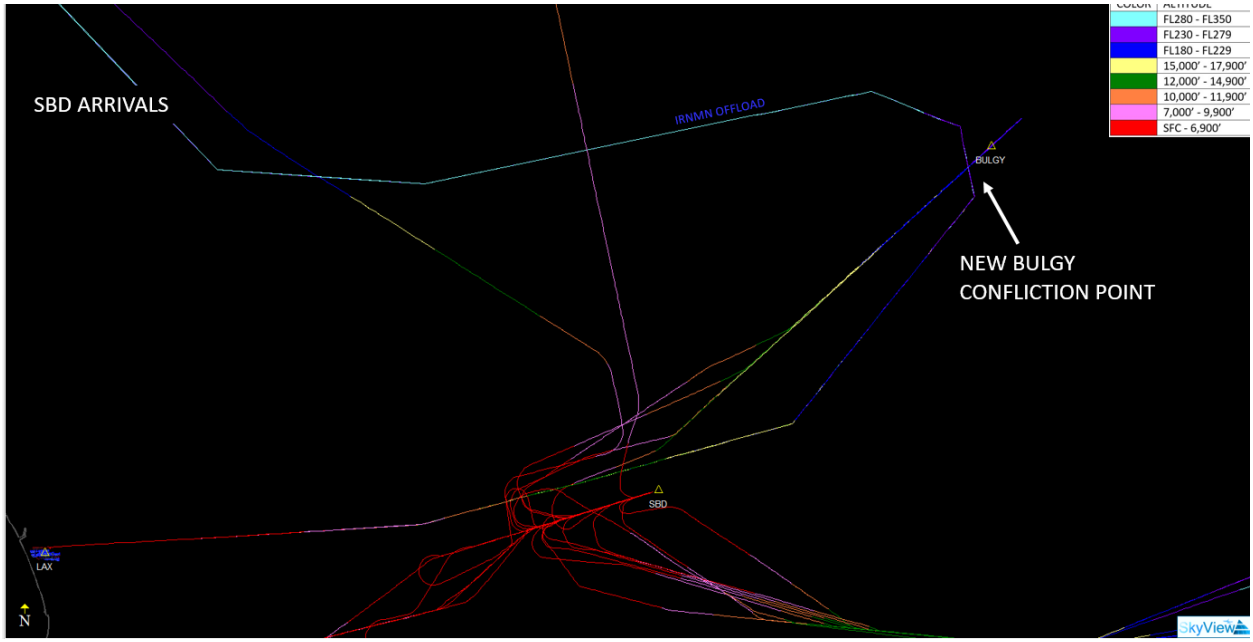


Figure 14 shows that some John Wayne/Orange County Airport (SNA) arrivals would need to descend earlier to ensure they are below the additional proposed route aircraft. LGB/BUR/SAN departures would need to be addressed, possibly by stopping LGB/BUR/SAN departure climbs at even lower altitudes or descending SNA arrivals significantly earlier to ensure they stay below the departure path.

Figure 14. Proposal and SNA Arrivals

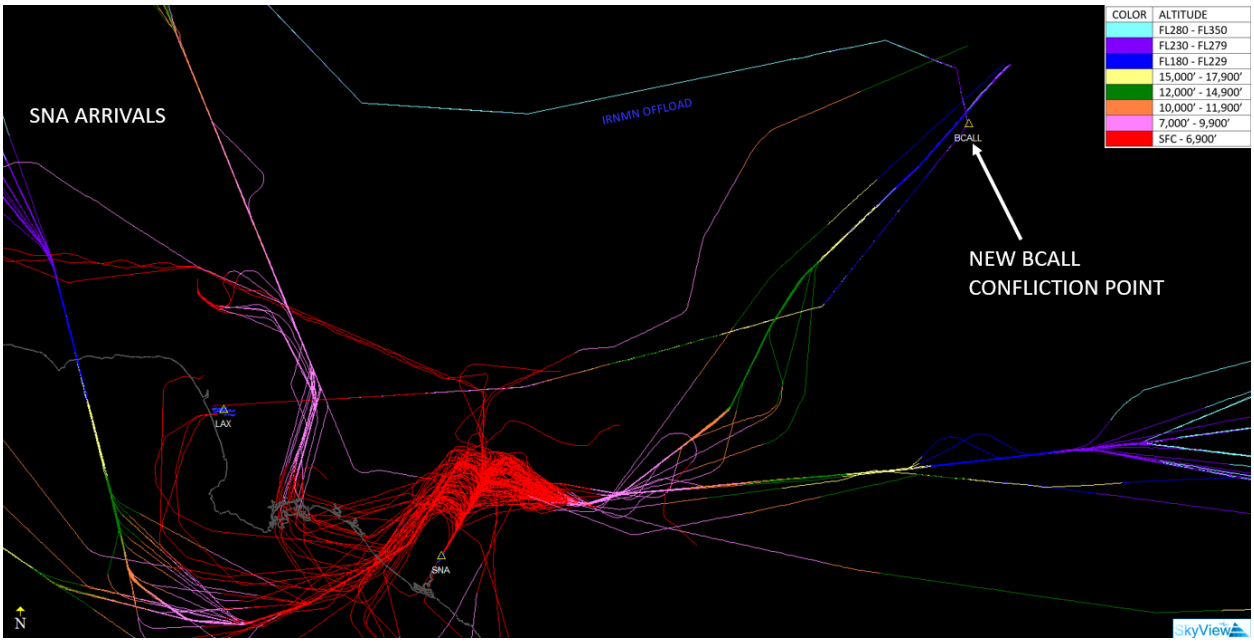


Figure 15 shows that SNA departure climbs would need to be stopped at lower altitudes, below the proposed route altitudes. LGA/BUR/SNA/SAN departures would need to be evaluated with the new inbound descending aircraft to optimize the movement of arriving and departing aircraft. Possible considerations—such as assigning departure restrictions to allow departure aircraft to climb above the inbound traffic, descending arriving traffic early, or leveling off of departure aircraft at all or some airports below the arriving aircraft—would need to be studied prior to the implementation of the Proposal.

Figure 15. Proposal and SNA Departures

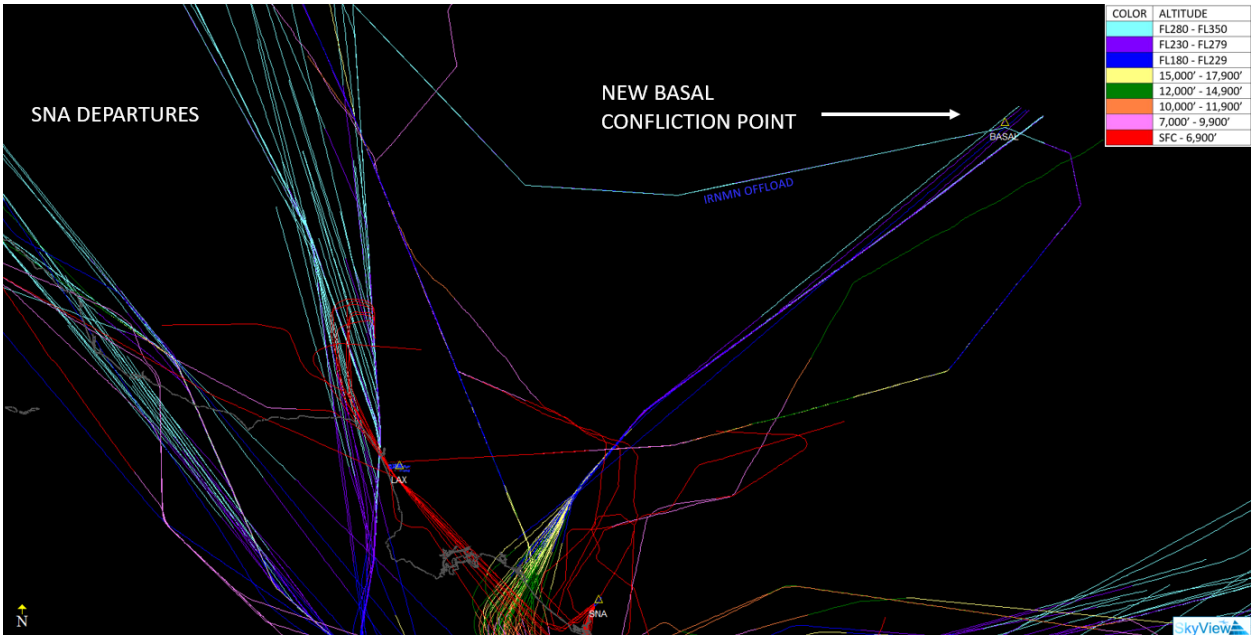
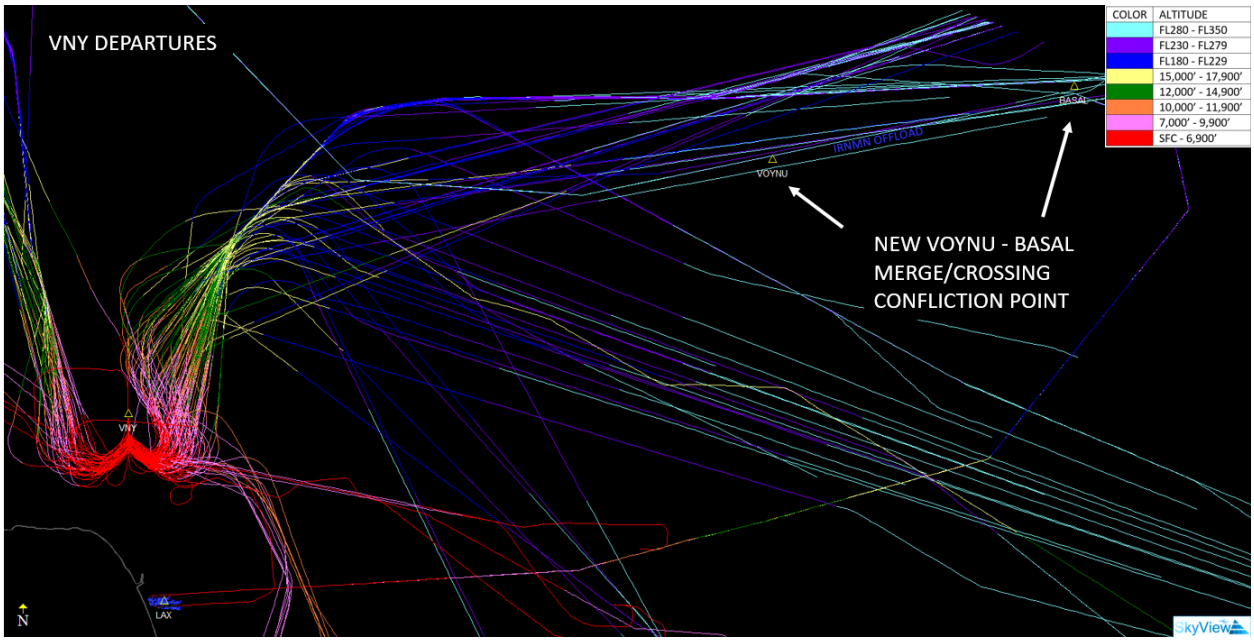


Figure 16 shows that Van Nuys Airport (VNY) departures would need to be stopped below the proposed route aircraft at similar altitudes as LGB/BUR/SNA/SAN departures. VNY arrivals would not conflict with the proposed route aircraft, but LGB/BUR/SNA/SAN departures being stopped at lower altitudes could impact VNY arrivals.

Figure 16. Proposal and VNY Departures



Additionally, over the last five to six years, the Department of Defense (DoD) has been working with the FAA to expand the lateral boundaries of Twentynine Palms SUA. This expansion has

been approved for use up to 60 days per year. The DoD has requested its activation on a permanent basis; evaluations of feasibility are based on current traffic flows. The impacts of the proposed route would need to be considered in conjunction with the proposed expansion of the SUA—along with potential adjustments to the ANJLL route proposal (moving it farther west), or the Twentynine Palms SUA expansion (reduction or rejection).

Figure 17 is a close-up graphic of the proposed route (blue) with the SUA expansion (magenta), followed by Figure 18, a zoomed-out graphic. If the expansion is approved, the new ANJLL route would need to be moved west of the SUA before turning southeast to join the arrival route.

Figure 17. Proposal and SUA Expansion

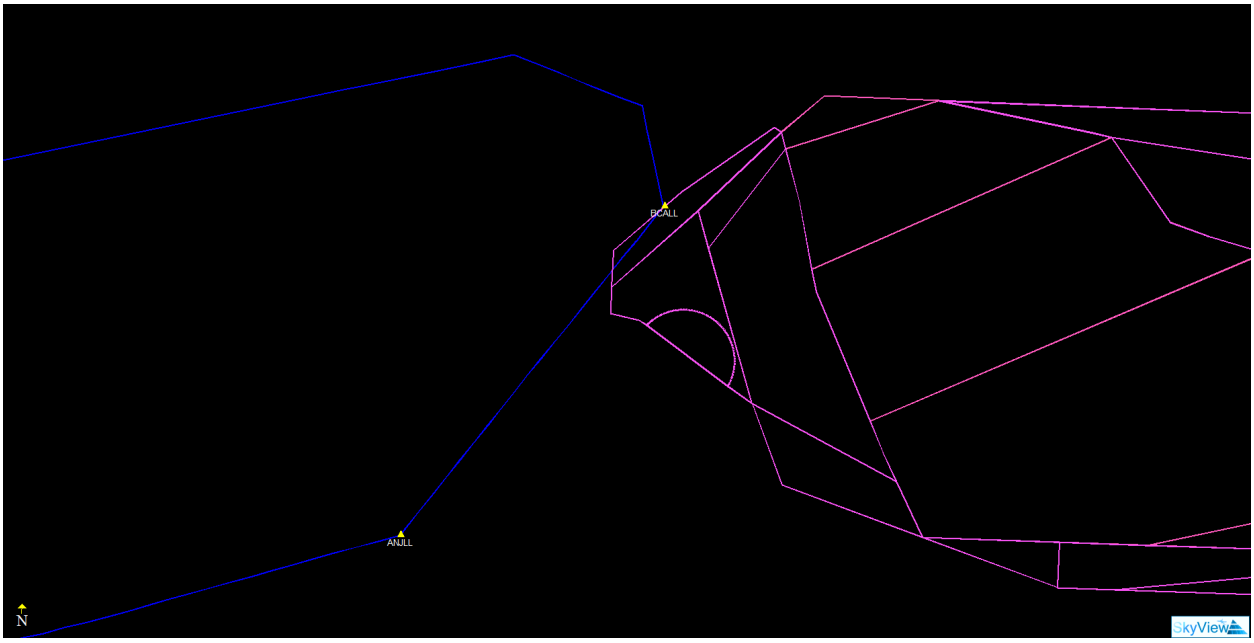
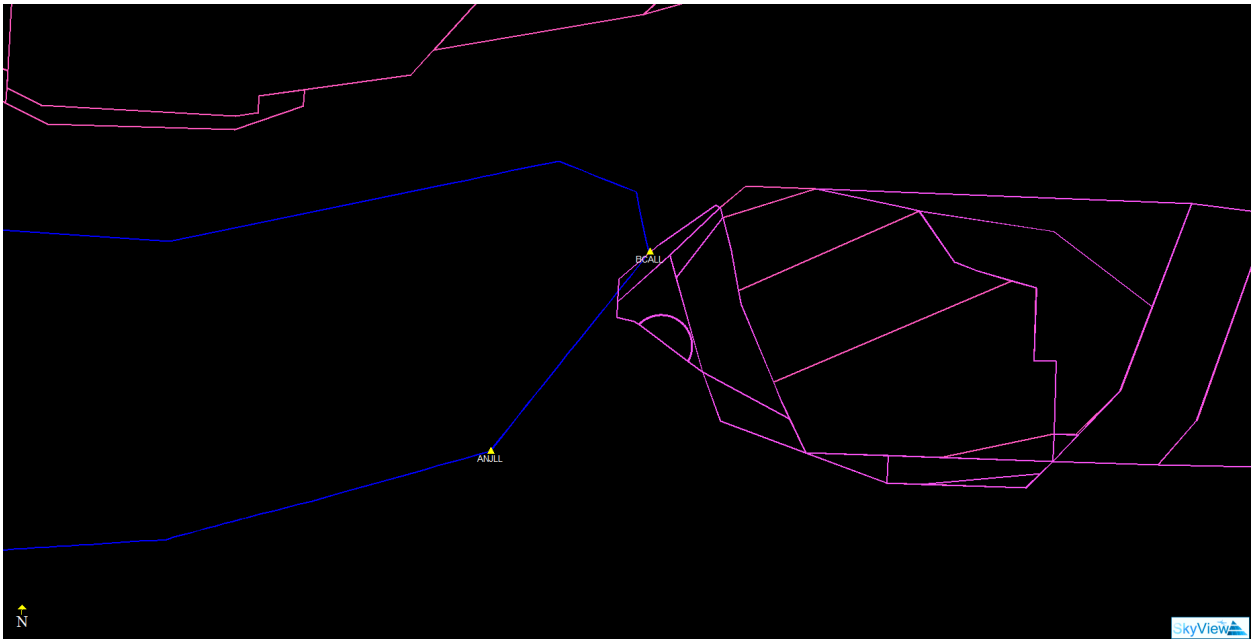


Figure 18. Proposal and SUA Expansion



Routing

From examining the graphics within the Proposal (see Figure 1), it appears that the Proposal had no particular routing of aircraft other than a direct line drawn to a point west of the Edwards AFB R-2508 Complex and east of the current path. There was no description of how this new routing would join the current ANJLL STAR. We utilized the graphic provided by the Roundtable and made our best conjecture, shown in Figure 19, as to how this route relocation could potentially be realized. To effectively assess the data within the Proposal, we broke the route into segments, as we found it easier to evaluate when presented in this way.

Figure 19. Proposal Route Based on Option B Information

The Proposal addresses the extra miles flown (an average addition of 74 flying miles to current routes). However, the Proposal does not mention any effort to obtain airline engagement or support; it appears that the potentially impacted airlines may be unaware of the increased flying miles and resulting carbon emissions. Alaska Airlines, in particular, would be disproportionately impacted, as it serves many of the routes that would be redirected.

For simplification of analysis, the FAA chose Seattle-Tacoma International Airport (SEA), Boise Air Terminal/Gowen Field Airport (BOI), and Reno-Tahoe International Airport (RNO) to

represent the changed flight paths. There are discrepancies between the Roundtable numbers and what we computed, which could be due to the use of statute versus nautical miles (NM). The FAA used nautical miles because it is standard in aviation. Analysis numbers were calculated by utilizing flightaware.com to ascertain existing routes and skyvector.com to evaluate the prospective routes and their associated mileages. The proposed routes used in the analysis would need to be vetted as the routes most likely to be assigned.

	LAX RT Mileage		FAA (OSG) Mileage	
	Current	Proposed	Current	Proposed
SEA-LAX	1008	1036	869	954
BOI-LAX	794	763	687	760
RNO-LAX	449	471	418	490

SEA to LAX
Existing: KSEA SUMMA2 SUMMA JINMO Q7 JOGEN Q7 JAGWA BURGL DOUIT CROWY MUPTT MDOTS GRIPR BIKNG RUNNN IRNMN SYMON BAYST JUUSE CLIFY DAHJR GADDO FOGLA KLAX. **Filed 869.0 NM.**
Proposed: KSEA SUMMA2 SUMMA J5 LKV FRA LANDO PMD LEMMN ANJLL JULLI KLAX. **Filed 954.5 NM.**

BOI to LAX
Existing: KBOI HYVAL REO J7 FMG FRA REBRG STADD DOUIT CROWY MUPTT MDOTS GRIPR BIKNG RUNNN IRNMN SYMON BAYST JUUSE CLIFY DAHJR GADDO JULLI KLAX. **Filed 686.7 NM.**
Proposed: KBOI HYVAL REO J7 FMG FRA LANDO PMD LEMMN ANJLL JULLI KLAX. **Filed 760.5 NM.**

RNO to LAX
Existing: KRNO PVINE3 CRDDZ FRA J7 REBRG STADD DOUIT CROWY MUPTT MDOTS GRIPR BIKNG RUNNN IRNMN SYMON BAYST JUUSE CLIFY DAHJR GADDO JULLI KLAX. **Filed 417.8 NM.**
Proposed: KRNO PVINE3 CRDDZ FRA LANDO PMD LEMMN ANJLL JULLI KLAX. **Filed 489.5 NM.**

Usage

Flight track data from 2019 and 2021 was analyzed to provide the usage information in the following chart. The data also showed that ANJLL had a higher percentage of use in the spring than in the fall.

Procedure	2019	2021	PERCENTAGE OF TOTAL LAX ARRIVALS FOR CY2019	PERCENTAGE OF TOTAL LAX ARRIVALS FOR CY2021	PERCENTAGE OF TOTAL IRNMN2 FOR CY2019	PERCENTAGE OF TOTAL IRNMN2 FOR CY2021
TOTAL LAX IFR ARR	344,078	252,418	N/A	N/A	N/A	N/A
TOTAL IRNMN2	93,685	67,048	27.23	26.56	N/A	N/A
OFF-LOAD[1] IRNMN2	29,806	21,928	8.66	8.69	31.82	32.70
TOTAL ANJLL4	93,655	62,758	27.22	24.86	N/A	N/A
TOTAL HLYWD1	77,930	62,408	22.65	24.72	N/A	N/A

We used data from both 2019 and 2021, since the COVID-19 public health emergency may have significantly impacted the numbers. Below are summaries of both years of data.

2019: Of the 93,685 IRNMN arrivals, approximately 32% (29,806) would move to ANJLL, thus reducing LAX arrival aircraft using IRNMN to **19%** (63,879). Annual ANJLL use would increase to **37%** of all LAX arrivals (from 93,655 to 123,461).

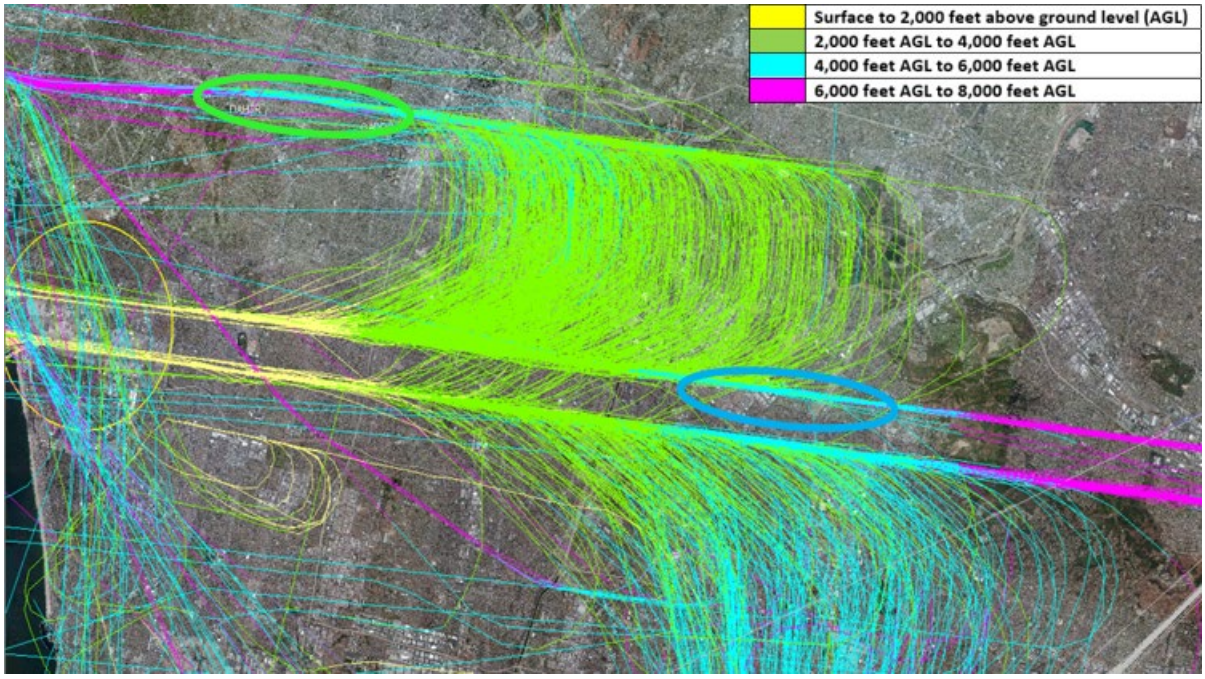
2021: Of the 67,048 IRNMN arrivals, approximately 33% (21,928) would move to ANJLL, thus reducing LAX arrival aircraft using IRNMN to **18%** (45,120). Annual ANJLL use would increase to **34%** of all LAX arrivals (from 62,758 to 84,686).

Shifting of Noise

Lastly, the Proposal would redirect aircraft over communities already overflown by aircraft from numerous airports in the area, including LAX. As shown in Figure 20, dispersion currently exists, with aircraft turning base leg from the LAX north downwind at different locations. Two areas of equal aircraft altitude are circled in green and blue. Approximately 30% of aircraft within the green circled area (DAHJR to GADDO) would be moved to the blue circled area.

[1] OFF-LOAD are aircraft are taken from one procedure to another to reduce the amount of traffic on a particular route. The following airport identifiers are where offloaded aircraft originated from: CYBL CYBW CYEG CYKA CYLW CYQF CYQR CYQU CYUL CYVR CYWL CYXX CYYC CYYD CYYF CYYJ CYYZ CYZT KBDN KBFI KBLI KBOI KBVS KBZN KCOE KDLS KDEW KEAT KEUG KGEG KGPI KGTF KHIO KIDA KJAC KKLS KLGU KLWS KMFR KMSO KMWH KOTH KNUW KPAE KPDX KPSC KPUW KPWT KRBG KRDM KSEA KSHN KSUN KSZT KTCM KTIW KTWF KUAO KYKM PAFA PAJN PAKN PAKT PANC.

Figure 20. Current Arrival Distribution with Altitudes



The Proposal does not mention any coordination with potentially impacted communities. Additionally, the FAA received a letter, cosigned by five members of Congress, asking the FAA not to endorse the Proposal. In this letter, they stated that the Option B proposal would impact thousands, “many of whom are vulnerable, low-income families” and it would reroute the noise over areas that already “bear a significant aircraft noise burden from nearby Ontario Airport and John Wayne Airport.” The FAA also received letters against the Proposal from the cities of Chino, West Covina, and Rancho Cucamonga.

Enclosure 2

Additional Information within the Proposal

Additional items contained in the Los Angeles International Airport (LAX)/Community Noise Roundtable's (Roundtable) Option B proposal (Proposal), not relevant to the implementation analysis, are addressed below. Some of these topics have been discussed with the Roundtable in the past—either via correspondence or at public Roundtable meetings.

Federal Aviation Administration (FAA) Interaction with the Roundtable

The FAA has attended all of the Roundtable's public meetings, responded in writing to address north downwind concerns, and—as stated on page three of the Proposal—has worked with the Roundtable to improve things such as the departure procedures and compliance with those procedures. As previously stated in a recent meeting, the FAA is committed to continue to provide technical support at future roundtables.

Moreover, in discussions with the Roundtable Ad Hoc Committee on February 13, 2019, the FAA agreed to require aircraft on the IRNMN, RYDRR, and HUULL Standard Terminal Arrival (STAR) procedures to cross the DAHJR waypoint at or above 6,000 feet mean sea level (MSL) between the hours of 1 a.m. and 5 a.m., effective April 2019. It is important to note that altitude restrictions may be negated by Air Traffic Control (ATC), who must sometimes direct or vector aircraft off the arrival procedures to maintain a safe and efficient flow of traffic in a highly dynamic environment. ATC is expected to use their best judgment when vectoring aircraft, taking into consideration factors such as traffic complexity, adverse weather conditions, and safety considerations. When an aircraft on a STAR is vectored or assigned an altitude by ATC, the aircraft's use of—and therefore compliance with—that STAR is cancelled. That aircraft no longer follows the STAR's headings and altitudes; ATC is then responsible to comply with other applicable altitude restrictions—again, not the STAR's altitudes.

The FAA conducted research and provided technical expertise and responses to multiple letters and briefing requests from Roundtable Chairman Denny Schneider. We also responded to numerous letters from the City Attorney's office regarding issues at LAX, such as charted visual approach reinstatement, Terminal Sequencing and Spacing (TSAS) deployment, and DAHJR waypoint usage between 10 p.m. and 6 a.m.

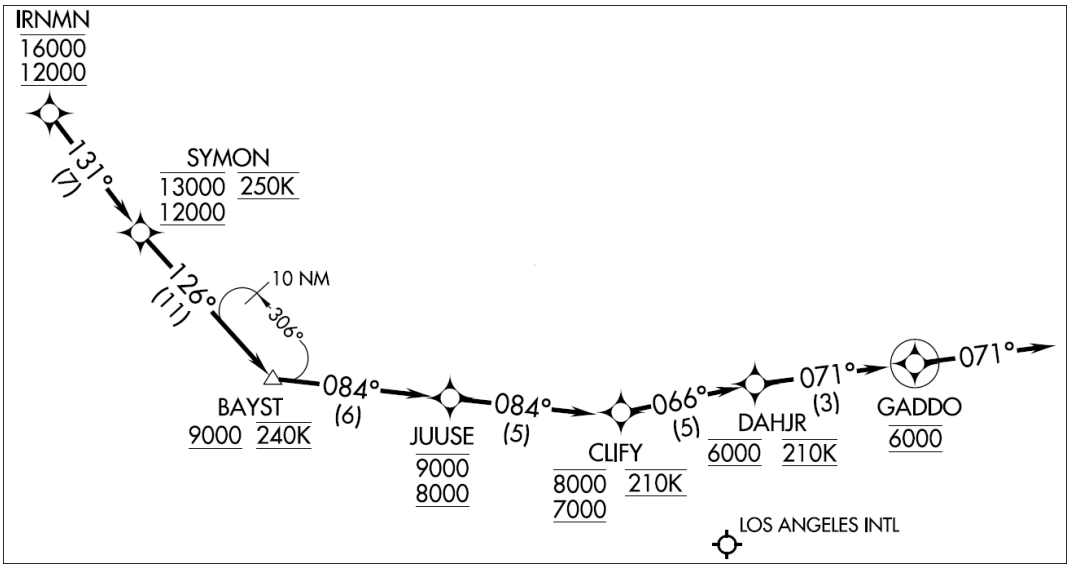
The Roundtable also mentioned in the Proposal that the FAA is not willing to give any meaningful consideration or response to any proposal to reduce noise. The City of Los Angeles legally challenged amendments FAA made to the IRNMN, HUULL, and RYDDR STARs and during the pendency of that lawsuit, the FAA was unable to discuss matters related to it.

NextGen Procedures

NextGen procedures are designed and intended to make the National Airspace System (NAS) inherently safer. The Metroplex NextGen procedures were set up to be procedurally separated,

which reduces controller workload by reducing reliance on radar and the need for controllers to provide vectors. Additionally, noise has been reduced under the outer noise contours of the formerly wider path.

Based on the information contained within the Proposal, it appears there is still confusion on NextGen procedures, specifically regarding the IRNMN, HUULL, and RYDRR STARs. For the purpose of this explanation, we will use the IRNMN arrival route as an example and will begin at the JUUSE waypoint. As shown in the graphic that follows, aircraft on the IRNMN procedure must cross the JUUSE waypoint between 9,000 feet and 8,000 feet MSL. The aircraft then proceed to the CLIFY waypoint, where the aircraft must cross between 8,000 feet and 7,000 feet MSL at 210 knots indicated airspeed (KIA). The aircraft then proceed to the DAHJR waypoint, where the aircraft must cross at 6,000 feet MSL and 210 KIA. Aircraft then continue to the GADDO waypoint at 6,000 feet MSL. All of these crossing altitudes listed on the procedure are mandatory, and any deviation from these altitudes while on the IRNMN procedure cannot be authorized.



The Proposal erroneously cited—numerous times—that aircraft on the IRNMN, HUULL, and RYDRR arrival routes are flying over the DAHJR and GADDO waypoints at altitudes well below 5,700 feet MSL. As noted in the Proposal, there is an allowed variance of 200 feet between the radar displayed altitude and the assigned or pilot-reported value. Hence, 5,700 feet would be the first reportable value to indicate a deviation from an assigned altitude of 6,000 feet. As we have stated previously, when an aircraft flying a STAR is issued a radar vector by ATC, **that aircraft is no longer on the STAR** and must then comply with the headings and altitudes assigned by ATC. Also, if an aircraft is given a visual approach clearance, the aircraft's use of the STAR is terminated, and the altitudes on the STAR are no longer in effect. Aircraft operating below the charted altitudes are **not** on the IRNMN, HUULL, or RYDRR STARs. Aircraft altitudes that are below the charted altitudes are a clear indication that the aircraft's navigation via the STAR **has been terminated**, and the subject aircraft is navigating via controller assigned

headings/altitudes and speeds. Although aircraft may still appear to be on a flight path similar to the lateral route of the STAR, that does not mean they are on the STAR.

It is also mentioned in the Proposal that "FAA controllers are giving direction to pilots to fly over the DAHJR and GADDO waypoints using FAA vectoring procedures and visual approaches the majority of the time." Vectoring procedures and visual approaches are tools available to air traffic controllers to provide a safe and effective flow of traffic into an airport or while transitioning through multiple air traffic control sectors. Visual approaches are also an option of the pilot-in-command and are accommodated when traffic and weather permit. Vectoring and visual approaches happen at all airports in the U.S. and are not specific to LAX. There are many reasons for this function to be available to controllers; for example, they may need to get the aircraft down lower so they can safely sequence the subject aircraft with traffic coming in from another direction.

The Proposal also stated, "…technology and implementation timelines for NextGen technology to fly prescribed heights at DAHJR and GADDO, RNAV, is not being used, not all airlines have fully adopted the technology, the FAA has no deadlines as to when they will be required to, and the agency has no strategy or plan to follow thru on promises made during public meetings the FAA conducted in advance of NextGen implementation to fulfill RNAV and RNP height minimums that promised quieter, more efficient aircraft operations." As the Roundtable is aware, technology is constantly being updated, and new types of procedures are being implemented throughout the NAS as we leverage these new technologies. While we understand there is frustration at the speed at which these changes are implemented, the FAA's primary mission is safety. Changes in technology take time, and these new advancements need to be thoroughly tested and vetted before we can safely move them forward within the NAS.

North Downwind during the COVID-19 Public Health Emergency

We reviewed flight track data for aircraft on the LAX north downwind from March 1, 2020, through February 28, 2021, and found that 83.17% of aircraft that were assigned either the IRNMN, HUULL, or RYDRR STARs from the enroute environment passed within the vicinity of the DAHJR and GADDO waypoints below 6,000 feet. Again, this indicates that the aircraft's own navigation via the STAR had been terminated by ATC. Because the COVID-19 public health emergency resulted in much lower traffic volumes, the length of the final approach course (FAC) shortened significantly on a day-to-day basis—this allowed controllers to vector aircraft for a 5–10-mile pivot point to the FAC rather than the normal 20-mile pivot point typically used prior to 2020 when traffic volumes were much higher. In order for the aircraft to be able to accept the shorter final, they must descend earlier to allow intercept of the FAC at or below the electronic visual glidepath. Aircraft must be allowed to conduct a safe and stabilized approach. Steep descents well in excess of three degrees are typically only supported when terrain and obstacle constraints exist.

Procedure	Number of Tracks	Number of Tracks Captured in Analysis Box 000B057	Percentage of Tracks Captured in the Analysis Box
IRNMN2	46,254	39,222	84.79%
RYDRR2	3,756	2,418	64.37%
HUULL2	380	273	71.84%
Total	50,390	41,913	83.17%