



North Downwind Option B Proposal

07.13.2021

Metroplex Ad Hoc Committee

LAX Community Noise Roundtable

1 World Way

Los Angeles, CA 90045

Our Organization

The LAX Community Noise Roundtable was established over twenty years ago in order to address aircraft-related noise issues due to flight operations at the Los Angeles International Airport. The Roundtable is composed of representatives from cities and communities around the LA basin with a common goal of reducing harmful exposure to loud noise emanating from aircraft. We are one of the first noise roundtable groups in the country and though problems related to noise have not dramatically changed, the concentrations and patterns have. As aviation technology continues to become more advanced, it is critical that the roundtable and other groups like it throughout the country maintain dialogue with airlines, federal agencies, and elected officials in order to alert these groups to the new challenges communities are facing with the goal of proposing solutions. It is in this spirit of collaboration that the LAX Community Noise Roundtable offers up this report.

NextGen

For nearly five years our Roundtable has taken new focus on the issues the Federal Aviation Administration (FAA's) NextGen Metroplex system has caused for residents living in close proximity to highly concentrated flight paths for aircraft arriving and departing the Los Angeles International Airport. Metroplex narrowed flight paths from previous widths of approximately three miles, to current widths of about a half mile. Prior to implementation of the system, FAA officials touted this new technology as a way to more safely navigate air traffic and reduce noise to nearby communities. The actual implementation of the technology five years on is still not complete. NextGen Metroplex requires the full implementation of a series of interdependent systems, technologies, and perhaps most importantly, FAA staff and airline procedural changes in order to realize the full benefits of the technology. That has not yet happened and so these highly concentrated flight paths have high percentages of aircraft not flying heights that FAA NextGen Area Navigation (RNAV) procedures call for. Attempts from our Roundtable to address these highly concentrated flight paths with aircraft regularly flying thousands of feet below prescribed procedures has been met with a bureaucratic malaise from FAA officials. Various organizational groups within the FAA have either pointed at each other, pointed to a lack of implemented technology, or pointed at airline companies as to why NextGen procedures cannot be flown at the proper heights called for by RNAV procedures, which if implemented, would offer at least partial relief to the constant concentration of noise communities below these paths cannot escape from.

Roundtable & SoCal Metroplex

As previously mentioned, once the FAA's NextGen system was fully implemented in the Southern California Metroplex, flight paths for commercial aircraft flying in the region dramatically narrowed. This was done using satellite-enabled waypoints (GPS) that are highly accurate compared to previous technology using ground-based navigation systems. Some of the flight paths in the region, when properly flown, actually did improve the quality of life for residents below the paths. In particular, departing flight paths out of LAX bound for destinations on the east coast of the United States or Europe were drawn up in such a way that honored commitments and fruitful work that the LAX Community Noise Roundtable had a hand in shaping. This LAX departing flight, starting out with aircraft taking off over the Pacific Ocean was once very poorly enforced meaning that commercial aircraft would take shortcuts in order to save time and fuel and would fly directly over hillside communities in the Palos Verdes peninsula. The Roundtable worked closely with the Los Angeles World Airports (LAWA), the City of Los Angeles department that runs LAX, and the FAA to ensure shortcutting was being monitored and air traffic control was directing pilots to not shortcut.

After NextGen was fully implemented a similar issue arose with this flight path, however, the impacts were felt in other parts of the Palos Verdes peninsula when pilots would shortcut over the eastern edge rather than the western. This caused noise issues for residents of San Pedro near the Port of Los Angeles, and Long Beach. The FAA worked closely with these communities via facilitation and communication of the LAX Noise Roundtable to positively impact these communities through better enforcement of flight paths.

Despite these successes, the LAX Community Noise Roundtable has made very little progress in our efforts to address Metroplex-related noise issues with the FAA for other NextGen flight paths. For four years the Roundtable has been focused on the North Downwind, three flight paths for arrivals into LAX known as HUULL, IRNMN, and RYDRR. The North Downwind carries approximately a third of the arrivals into LAX. The majority of flights still arrive from points east, with the fewest coming from points south. Though the North Downwind is not the busiest flight path coming into LAX, it has caused many of the complaints from communities impacted by low-flying planes flying over or turning over their communities. When NextGen took effect, planes that once flew a much wider path got narrowed into a highly concentrated one. Though heights prescribed for North Downwind arrivals by FAA procedures document a 6000 foot standard for craft flying over the DAHJR and GADDO waypoints along the North Downwind, approximately 40% of these large commercial flights come at or below 5700 feet at DAHJR and over 90% at GADDO, thereby exacerbating the already highly concentrated flights. Prior to the pandemic, residents near DAHJR and GADDO report that hearing aircraft overhead every three minutes or

so seems to be a new normal. To be clear however, that normal has meant a loss of peace and quiet, an inescapable constant drone of aircraft engines, and during the night, disrupted sleep patterns. Adding to the noise of these operations are the rate of speed that many of the aircraft flying the North Downwind fly, often much higher than what is prescribed in HUULL, IRNMN, and RYDRR. These aircraft also need to turn 180 degrees to point westward for their final descent into LAX. These turns create wind shear, throttled engines and wind disturbances on aircraft fuselage, often resulting in additional noise. There does not appear to be very much consistency on where the turns will occur either. Sometimes these turns occur close to Downtown LA, as documented in the procedures, other times aircraft are flying much further east, therefore exposing hillside communities there to additional noise and undercutting the original promises of NextGen which were: optimized descent profiles for landing aircraft resulting in reduced noise and increased fuel efficiencies.

North Downwind Monitoring

As previously mentioned, once the FAA's NextGen system was operationalized in the Southern California Metroplex, flight paths for commercial aircraft flying in the region dramatically narrowed. This was done using Global Positioning System (GPS) enabled waypoints which are highly accurate compared to previous technology using old radar systems. Some of the flight paths in the region narrowed from approximately three miles wide with more equitable distribution of planes exposing more people to fewer flights, to a half mile where fewer people are experiencing intense and unrelenting noise.

The LAX Noise Roundtable heard from individuals experiencing this intensity immediately after full Metroplex implementation in early 2017. Large community meetings were spearheaded by Congresswoman Karen Bass and hundreds of attendees wondered what changed, and what they could do about it. Unfortunately for their sake after four years little has changed. The Roundtable requested that LAWA staff focused on reducing aircraft noise begin regularly monitoring distribution and heights of all flights over the DAHJR and GADDO waypoints, including flights flying RNAV procedures, FAA vectoring procedures, and visual approach. This monitoring includes monthly summaries of flight operations spanning back to 2017 and has provided the LAX Noise Roundtable with valuable data to show FAA officials what residents have been complaining of: frequent, concentrated, and low aircraft. The monitoring of the North Downwind also drove the Roundtable to create an Ad Hoc Committee on Metroplex-related noise issues.

Metroplex Ad Hoc Committee

The Metroplex Ad Hoc Committee is composed of Roundtable members from both community groups and the staff of local and congressional political offices. It is this unique blend of technical

and professional backgrounds that began pushing for regular meetings with regional FAA representatives. Those representatives were often asked to bring FAA expertise from internal groups within that agency that interact with NextGen as part of their daily operations like the Air Traffic Control (ATC) group or the SoCal Metroplex design team in charge of designing the region's commercial airspace, including the aforementioned HUULL, IRNMN, and RYDRR procedures. The Metroplex Ad Hoc Committee remains focused on exchanging dialogue, ideas, and proposals that would reduce the most severe concentrations of noise for those living near low altitude (7500 feet and below) flight paths. Over the years the Committee has engaged with various levels of regional and national leadership at the FAA.

Metroplex Ad Hoc Goals

1. Inform and educate the general public experiencing Metroplex-related noise issues.
2. Develop realistic and attainable procedural and operational proposals to reduce the concentration and intensity of noise for those living close to flight paths.
3. Retain regular and thoughtful dialogue with FAA officials to develop these changes and remind the agency that noise concerns are not just complaints, they have deleterious health consequences for those living near higher decibel noise concentrations.

Metroplex Ad Hoc Results

Sadly, after nearly four years of engagement with the FAA, almost no progress has been made toward these goals, particularly 2 and 3. Though the Metroplex Ad Hoc Committee consistently reports numbers and informs the rest of the LAX Community Noise Roundtable members and the general public on issues related to NextGen noise, the development of procedural and operational changes to reduce aircraft noise for communities along the North Downwind has proven nearly impossible. This is not for a lack of trying. The Ad Hoc Committee has engaged all levels of FAA leadership regionally and nationally, written multiple official correspondence requesting help, enlisted the clout of federal elected officials, reviewed data with FAA subject matter experts including air traffic controllers who direct pilots flying over noise-impacted waypoints, requested detailed review of incidents where flights were thousands of feet below prescribed heights, and proposed means to better adherence to these prescribed heights with FAA leadership and air traffic controller labor union representatives present. All of these major efforts have been rebuffed. The bureaucracy of the FAA has pointed fingers and offered no meaningful solutions to the noise issues faced by communities under the North Downwind flight paths. This finger pointing has included the FAA admitting that they have no definitive timeline on when all the supporting technology required to fully implement Metroplex will be in place and required to be flown by commercial airlines and their pilots. It has included casting internal blame within the agency itself between various operational groups, as well as external blame for airlines having their craft equipped at differing levels of technology even though the FAA itself is the regulatory body that sets technical standards and requirements for commercial aviation. And most recently,

due to litigation filed by the City Attorney of Los Angeles against the FAA, it has meant a near total cessation of communication or collaboration with the Metroplex Ad Hoc Committee and FAA officials to try and address noise concerns that to this day remain largely unaddressed.

This has meant that an Ad Hoc Committee proposal to shift the North Downwind waypoint of JUUSE farther off the Pacific Coast to reduce noise for residents of the Pacific Palisades and Santa Monica has not been responded to by FAA officials for nearly two years since it was proposed. The Metroplex Ad Hoc Committee has also not met regularly for two years since the FAA ceased all meaningful communications with it. Any proposals to address noise, if answered by FAA officials, are not given any meaningful consideration or response. Response letters from the agency cite ongoing litigation with the City of Los Angeles as rendering the FAA completely incapable of responding to community concerns. It is clear the agency values protecting itself over the needs of the public experiencing intense noise from aircraft.

The only measure the Metroplex Ad Hoc Committee has had marginal success with is the reduction of low flying planes over the DAHJR and GADDO waypoints between the hours of 12 am and 6am. Flights are not normally routed over these waypoints due to the use of Over Ocean Operations, a flight procedure put in place decades ago pre NextGen that routes both arriving and departing traffic at LAX over the Pacific Ocean in the late night hours, weather and runway maintenance schedules permitting. So for the fraction of flights that do fly these waypoints when weather conditions or airfield maintenance require it, the FAA has managed to reduce, but not eliminate low-flying flights over the DAHJR and GADDO waypoints in late night hours. Even then, cargo and commercial flights flying well below 6000 feet, sometimes as low as 3500 feet over densely populated residential areas of Los Angeles are not uncommon.

Efforts from the Metroplex Ad Hoc committee to expand the time window of flights with more stringent height restrictions during nighttime hours beyond midnight to 6 am were rebuffed as infeasible by the FAA. The reason given is that LAX is a 24-hour facility and the only time the agency feels it can reliably limit commercial flights flying below 6000 feet are during times of the day with very little air traffic. This is consistent with other FAA reasons for why the DAHJR and GADDO waypoint height restrictions of 6000 feet are often not met. On average, approximately 45% of aircraft flying over DAHJR in a 24 hour period are below 5700 feet. For GADDO, closer to the final landing approach into LAX, the numbers are far worse. 90% of craft are below 5700 feet.

FAA Reasoning

The FAA maintains that the airspace in Southern California is simply too busy and congested to fly heights called for in North Downwind NextGen RNAV procedures since North Downwind traffic

must merge into higher amounts of air traffic already in alignment to land at LAX coming from the east and south. 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. In short, the 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.

The Covid-19 pandemic has further exposed inconsistencies in FAA reasoning around such high percentages of DAHJR and GADDO flights not flying at 6000 feet. Covid-19 is the worst crisis to face the commercial aviation industry since the first passenger flights began operations about a century ago. Air traffic plummeted globally as cities, regions, and countries went on hard lockdown to contain an infectious virus. LAX is still grappling with major reductions today, in particular for international flights. Through all these huge reductions in flights that decongested the world and Southern California's airspace dramatically, one thing has remained consistent: the percentage of flights flying over DAHJR and GADDO below 5700 feet at 45 and 90 percent respectively.

The LAX Community Noise Roundtable has asked FAA officials why these percentages have remained constant, appearing to undercut the agency's own reasoning regarding congested airspace. Answers to these questions remain unanswered by the FAA, who continues to cite ongoing litigation with the City of Los Angeles as the reason for lack of meaningful response.

Quiet Skies LA

It is within this context of near total cessation of meaningful dialogue with the FAA and continued long-term, unmitigated noise exposure from a constant flow of air traffic over their heads that community members under the North Downwind flight path near the DAHJR and GADDO waypoints decided to take matters into their own hands. Quiet Skies LA formed for many of the same reasons the Metroplex Ad Hoc Committee of the Roundtable formed, to develop proposals for operational changes to reduce the concentration and intensity of noise for those living close to flight paths and to retain dialogue with FAA officials to develop these changes that would positively impact the health and wellbeing of residents under concentrated flight paths. Quiet Skies, like the Metroplex Ad Hoc Committee has a variety of members, including individuals with aeronautical backgrounds.

Option A & Option B

Quiet Skies LA took a different approach than the Metroplex Ad Hoc committee in developing options to reduce noise over the DAHJR and GADDO waypoints. Rather than working within the confines of the existing HUULL, IRNMN, and RYDRR procedures of the North Downwind, Quiet Skies LA proposed making changes to the procedures themselves in what has come to be known as Option A, or routing existing air traffic currently using these procedures off of them on to other FAA-approved flight paths in a proposal known as Option B.

In 2019 LAWA, in collaboration with the LAX Community Noise Roundtable, hired aviation consultants to more fully study these options. At that time, Option A was the more fully developed proposal, while Option B had fewer operational details identified. Option A was considered infeasible by the aviation consultants due to the distance and length of time it would have added to aircraft operations flying a modified North Downwind. The procedure called for adding nearly 20 minutes of additional flight time in order to allow for aircraft flying over DAHJR and GADDO to do so at much higher heights in an effort to mitigate noise for nearby communities. Option A also potentially exposed new communities to noise by routing all North Downwind flights over much longer distances and communities farther from LAX.

Option B however offered many advantages that Option A lacked. Rather than requiring that all air traffic fly higher and longer over new communities, Option B proposed releasing pressure off of the North Downwind by routing only a portion of flights off of the North Downwind onto other approved FAA flight paths farther to the east and merging this Option B traffic into existing eastern origin traffic bound for final approach at LAX up thousands of feet higher than the North Downwind procedures call for. Reduction of traffic off the North Downwind would offer noise relief to communities that during normal, non-pandemic aircraft operations, were experiencing aircraft flying overhead at high percentages below prescribed heights roughly every three minutes. Option B could also positively affect communities that sometimes experience dramatic extensions of North Downwind procedures, resulting in noisy aircraft turning over their communities at low altitudes for final approach into LAX due to congested airspace and complicated aircraft merging protocols between North Downwind and eastern origin air traffic.

Unfortunately for Option B, the proposal was not fully developed. LAWA's aviation consultants, rather than asking for clarification or additional information from Quiet Skies in order to refine the proposal, also declared it infeasible. Faced with little to no prospect of resolving or mitigating the effects of HUULL, IRNMN, and RYDRR using the Metroplex Ad Hoc Committee's approach, and yet another dead end for proposals that from Quiet Skies seeking a more creative approach, the Metroplex Ad Hoc Committee decided to work closely with Quiet Skies LA to further develop Option B.

Our Imploration

Though both the Metroplex Ad Hoc Committee and Quiet Skies LA realize that proposing changes to the operational airspace of Southern California may seem drastic, we are doing so because we have exhausted all other options and have been met with a chorus of nos from the FAA when it comes to actually addressing the near constant drone of noise of communities under the North Downwind. The chorus of nos and its underlying bureaucracy at the FAA has been replaced with silence. Four years of working on this issue has yielded almost no meaningful results. We politely implore you to consider not only the work and proposal contained in this report, but the underlying reasons for our work: unmitigated, harmful, near constant low-altitude noise from aircraft our federal agencies regulate and are responsible for.

Option B Refined

As previously mentioned, Option B is a proposal to reduce severe noise exposure and concentrated flight traffic for communities living under the North Downwind arrival procedures for LAX by diverting a portion of existing flights off of the North Downwind. HUULL, IRNMN, and RYDRR are the three procedures that collectively form the North Downwind arrival into LAX. Option B does not propose any reductions in traffic to HUULL or RYDRR procedures. This is because both HUULL and RYDRR handle flights coming from over the Pacific Ocean. One of the primary reasons Option A was determined infeasible to implement, was the extra time and fuel that would have been required to fly higher and longer, particularly for aircraft already low on fuel after long-haul flights over the Pacific, our world's largest ocean.

HUULL and RYDRR aircraft already must fly east passing LAX to the south, just to turn west again for an aligned final descent into LAX due to prevailing winds at the airport and because of spatial constraints in the current SoCal Metroplex airspace. IRNMN, the North Downwind procedure handling flight points of origin for cities north of Los Angeles, does not have the same limitations as HUULL and RYDRR.

Points of Origin

IRNMN handles air traffic originating from the North American continent. Unlike Pacific flights, these are usually flights that don't require aircraft with extremely large fuel capacities. Flight points of origin flying the IRNMN procedure include places like Portland, Oregon -- Seattle, Washington -- and Vancouver, British Columbia. These places are all within North America and include no long-haul travel over the Pacific Ocean. Anchorage, Alaska is one of the farthest destinations that flies the IRNMN procedure into LAX, yet it is still shorter and faster than LAX to

JFK (New York) or LAX to BOS (Boston). These are also places where use of an existing FAA flight path inland to the east of IRNMN would result in little to no extra fuel use or distance to fly.

These two factors, fuel use and distance to fly are essential to whether a potential revision to flight paths into LAX are viable or feasible. Extra fuel and time in the sky cuts into the bottom line of air carriers and adds to the workload that various operational groups at the FAA have to handle when tracking the safe handling of passenger planes flying. The proposal included in this report takes these two factors into serious consideration. Proposing dramatically longer flight times or additional fuel burn for current flight patterns ultimately doomed Option A. It is not our intention to go through this level of additional analysis, only to propose an Option that will be dismissed due to these factors.

Data Analyzed

The Metroplex Ad Hoc Committee and Quiet Skies LA considered the integrity of data to be essential when developing a proposal to shift a portion of air traffic from one flight path to another. Los Angeles World Airports provided our groups with a strong data sample of North Downwind air traffic including flight origin information for planes flying this route. Seven months of data, from July 2019 to January 2020, were analyzed. This period of time accounts for seasonal variations and peak travel periods for both summer vacations, and winter holidays. This period of data also contained little or no influence from exceptional international and domestic air travel disruptions from the COVID-19 pandemic. Severe changes to travel patterns from Coronavirus began in February 2020, when the Trump Administration announced travel restrictions for foreign nationals coming from Asia. The data analyzed for this proposal, including the summations of these flights by point of origin and their groupings by point of origin that informed the proposed flight path changes is available and will be sent along with this report once it is formally submitted to the Federal Aviation Administration.

Determining Successful Points of Origin

Los Angeles International Airport is the fourth busiest airport in the world. It is also the world's busiest origin and destination airport, meaning that it hosts the most flights that originate and terminate at LAX, rather than act as a connection airport. This is not surprising given not only the size and population of the Los Angeles metropolitan area, but also the key position of LA and its other major connections to California (San Francisco), but also the western United States, the Pacific Rim, Latin America, and even Europe. Pre-pandemic it was the only airport with direct connections to six continents. As previously mentioned, more than half of the air traffic landing at LAX comes from points east, either the midwest and east coast of the United States and Canada, but also Europe.

It is critical that our proposal to divert existing air traffic arrivals into LAX take into consideration any additional distance or fuel burn, but also the actual volume or percentage of flights that would meet this criteria for flying efficiency. Managing air space for safety and efficiency is difficult and our proposal seeks to move a portion of traffic off of existing North Downwind flight paths to manage the relentless noise experienced by those on the ground. It is our hope that reduction in volume of flights will provide relief even if it will not eliminate the issue of noisy, low-flying craft.

We analyzed all flights flying the North Downwind between July 2019 and January 2020 and immediately ruled out any flights coming from points of origin involving long distance travel over the Pacific Ocean. For LAX this means any flight from Asia, Australia, Oceania, or Hawaii were immediately stricken from consideration. A small portion of flights flying the North Downwind are from destinations that ordinarily would fly the prevailing eastern route of which more than half of flights flying into LAX use. This included a few rerouted flights from Europe, the Middle East, and even the occasional Latin American flight. None of these points of origin are being considered for rerouting either. What remains therefore are flights from other cities in California, and the Pacific Northwest and Mountain West of the United States and Canada.

That vast majority of flights within California are from cities in close proximity to or on the Pacific Ocean. IRNMN is the most efficient route for these flights for both distance and fuel burn. California flights also comprise approximately forty-six percent of the traffic flying the North Downwind into LAX. A proposal to move this volume of traffic onto another route would not be realistic, especially considering other points of origin to the north and east of California cities offer better efficiencies for time flown and fuel burn. Therefore, cities in the Pacific Northwest and Intermountain West of the contiguous United States, Canada, and Alaska meet both the criteria of being efficient in terms of time flown in the sky and fuel burn, but also form approximately thirty percent of the traffic of existing North Downwind traffic. This is far from the majority of flights but would also represent a marked improvement for residents under the North Downwind who, outside of a pandemic, experience a high volume of flights.

Figure 1

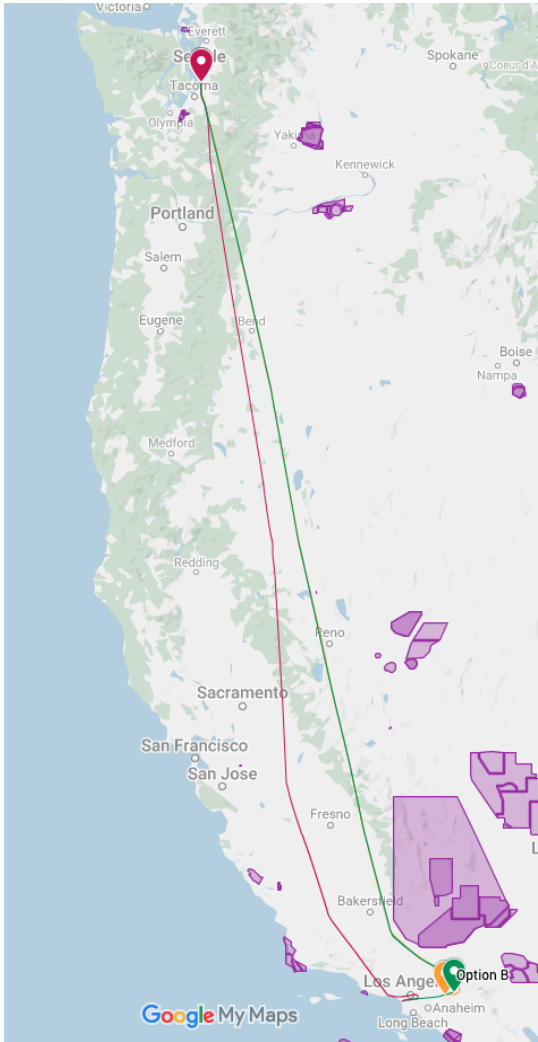
Origin ¹	Current (mi)	Proposed (mi)	Difference (mi)
Spokane, WA	1,029	1,042	+13 (+1.3%)
Seattle	1,016	1,035	+19 (+1.9%)
Vancouver, BC	1,145	1,168	+23 (+2%)
Portland	890	936	+46 (+5.2%)

¹ Figure 1 -- Source: Quiet Skies LA

Sacramento	424	459	+35 (+8.2%)
San Jose	347	416	+69 (+19.8%)
San Francisco	376	452	+76 (+20.2%)
Oakland	389	460	+71 (+18.2%)
Fresno	250	314	+64 (+25.6%)

As shown in Figure 1, the cities in this table represent a sampling of cities to the north of Los Angeles that currently fly the IRNMN procedure into LAX. The current distance to fly IRNMN is shown in the second column, while the distance to fly ANJLL, a procedure currently used for arrivals into LAX is shown in the third column.

Rerouting Traffic²



ANJLL is the proposed existing procedure that would be leveraged in Option B. This procedure, like IRNMN, is an arrival procedure into LAX. ANJLL is shown in Figure 2 to the left here in green, next to the existing IRNMN flight path in red.

Since many of the major population centers in California are closer to the Pacific Ocean, more distance is required to fly the ANJLL procedure for coastal California cities. Figure 1 is organized showing how cities closer to Los Angeles and closer to the coast, fly longer distances on ANJLL.

It is for this reason that Option B is proposing the use of ANJLL for flight points of origin for US states and Canadian provinces to the north and east of California. This would qualify Oregon, Washington, central and northern Nevada, Idaho, Montana, British Columbia, Alberta, the Yukon, and Alaska points of origin for the use of this procedure.

If we look more specifically at some of these proposed distances, we'll find that Portland is the

² Figure 2 -- Source: Quiet Skies LA

highest with a five percent change to flight distance. Each city above Portland in Figure 1 has increasingly shorter distances representing a two percent increase in distance or less. Cities like Reno could actually see flight distances and fuel burn decrease.

Proposed Airport Points of Origin³

Below is a list (Figure 3) of airports being proposed for the use of an Option B flight path that would merge up with ANJLL outside of Ontario International Airport for final descent into LAX.

Code	Point of Origin	% of Option B	% of N. DwnWnd	Code	Point of Origin	% of Option B	% of N. DwnWnd
ADQ	Kodiak, AK	0.01%	0.00%	PAE	Seattle, WA	3.05%	0.95%
ANC	Anchorage, AK	1.38%	0.43%	PDX	Portland, OR	18.02%	5.62%
BFI	Seattle, WA	0.42%	0.13%	PSC	Pasco, OR	1.00%	0.31%
BLI	Bellingham, WA	0.35%	0.11%	PUW	Moscow, ID	0.01%	0.00%
BOI	Boise, ID	4.59%	1.43%	PWT	Bremerton, WA	0.01%	0.00%
BVS	Burlington, WA	0.01%	0.00%	RDM	Redmond, OR	2.53%	0.79%
BZN	Bozeman, MT	0.15%	0.05%	RNO	Reno, NV	10.31%	3.21%
COE	Coeur d'Alene, ID	0.04%	0.01%	SEA	Seattle, WA	30.47%	9.50%
CXP	Carson City, NV	0.01%	0.00%	SUN	Sun Valley, ID	0.66%	0.21%
EIL	Fairbanks, AK	0.01%	0.00%	SZT	Sandpoint, ID	0.01%	0.00%
EKO	Elko, NV	0.01%	0.00%	TIW	Pierce County, WA	0.01%	0.00%
EUG	Eugene, OR	3.77%	1.17%	TWF	Twin Falls, ID	0.07%	0.02%
FAI	Fairbanks, AK	0.01%	0.00%	TRK	Tahoe, CA	0.12%	0.04%
GEG	Spokane, WA	1.35%	0.42%	UAO	Aurora, OR	0.01%	0.00%
GTF	Great Falls, MT	0.01%	0.00%	YBL	Campbell River, BC	0.01%	0.00%
LWS	Lewiston, ID	0.01%	0.00%	YEG	Edmonton, AB	0.51%	0.16%
HLN	Helena, MT	0.01%	0.00%	YKA	Kamloops, BC	0.01%	0.00%
MEV	Genoa, NV	0.05%	0.02%	YLW	Kelowna, BC	0.03%	0.01%
MFR	Medford, OR	3.83%	1.19%	YPK	Pitt Meadows, BC	0.01%	0.00%
MSO	Missoula, MT	0.41%	0.13%	YVR	Vancouver, BC	13.22%	4.12%
MWH	Moses Lake, WA	0.01%	0.00%	YYC	Calgary, AB	3.49%	1.09%
OLM	Olympia, WA	0.01%	0.00%	YYF	Penticton, BC	0.01%	0.00%
OTH	North Bend, OR	0.02%	0.01%	YYJ	Victoria, BC	0.04%	0.01%

³ Figure 3 -- Data Source: LAWA

Highlighted cities in Figure 3 comprise more than ninety percent of proposed Option B rerouted flights. These points of origin also comprise twenty-eight percent of the North Downwind traffic. All of these points of origin combined form approximately thirty one percent of all current North Downwind flights based on the data provided and analyzed. More detailed information regarding flight distance estimates between current procedures versus Option B proposed procedures can be found in Figure 6 in the Appendix at the end of this report. Maps of the approximate proposed routes can be found in Figure 7 and Figure 8, also in the appendix.

Option B Impacts

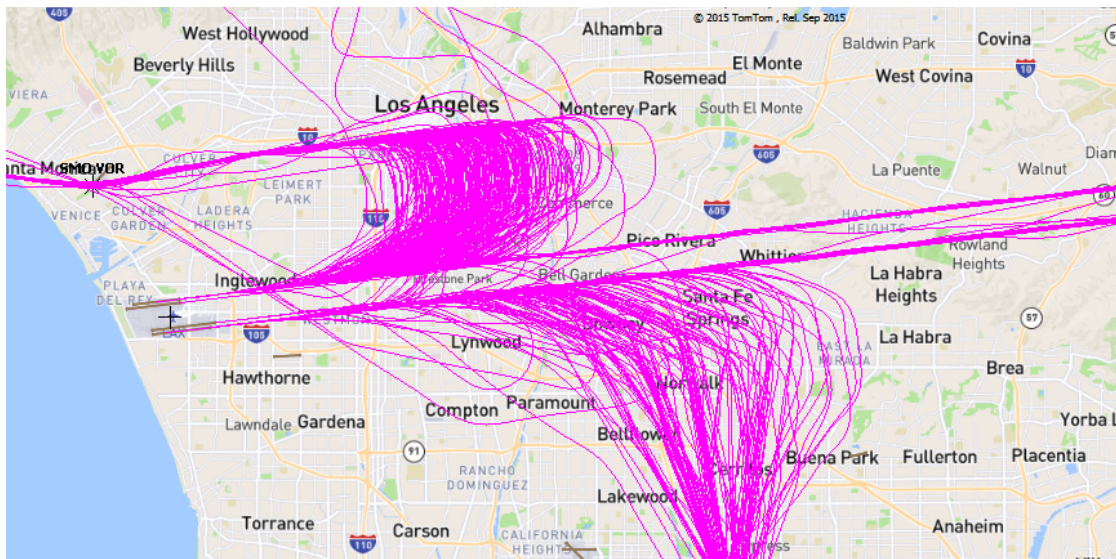
Expected Noise

The shifting of flights will mean some shifting of noise as a result. However, Option B actively considers those challenges and attempts to mitigate them by being thoughtful about the proposed heights flown for the ANJLL procedure, and the portion of flights that would be taken off the North Downwind.

One of the key challenges of the current amount of flights flying the HUULL, IRNMN, and RYDRR procedures is the 180 degree turn required to bring planes into final approach at LAX. It is this final turn, and the wide variance of its location that causes communities like Monterey Park to be impacted by low-flying flights, particularly on low-visibility days where visual approach landings into LAX often are not possible. In short, the majority of air traffic landing at LAX still comes from the east and it is this merging of traffic with North Downwind flights that are also turning sharp at low altitudes that causes noise issues for elevated communities like Monterey Park.

The moving of approximately thirty-one percent of this traffic off of this merge at an altitude of more than 6000 feet or higher than the current 180 degree turning traffic would most likely reduce noise for communities east downtown Los Angeles in this turn radius. This is visually illustrated in Figure 4 for the large area of pink lines located just below the words "Los Angeles" on the map.

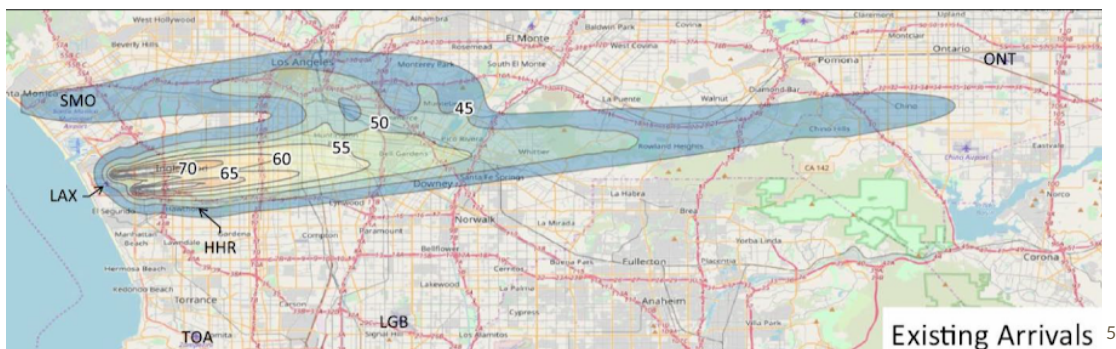
Figure 4



Option B traffic still needs to be merged into the majority of LAX arrivals traffic coming from the east. The proposal calls for this merge to occur between 10,000 and 14000 feet and at a less severe angle than the North Downwind, thus reducing wind shear and fuselage noise on the aircraft. We see this as a strong benefit to Option B and would welcome FAA analysis of Option B final routing into LAX using OPD (Optimized Descent Profiles) to reduce aircraft noise.

Figure 5 shows a modeling of existing noise patterns for arrivals at LAX. For Option B, we are assuming that the long blue portion noting 45 decibels of noise extending toward ONT would likely extend slightly farther from additional aircraft operations. In short, noise exposure may shift farther east, but more study is required. We would also expect the blue green area starting at SMO arching downward into the number 50 in Figure 5 would become smaller due to fewer planes (approximately 31 percent) flying the North Downwind.

Figure 5



⁴ Figure 4 -- Source: LAWA

⁵ Figure 5 -- Source: LAWA

Recommendations

FAA Collaboration

After years of working with the Federal Aviation Administration (FAA) to try and address impacts of concentrated aircraft noise for communities under the North Downwind arrival path at LAX, Quiet Skies LA, in collaboration with with LAX Community Noise Roundtable, has developed a proposal that would shift a portion of air traffic off of the North Downwind leveraging other flight paths in use within the SoCal Metroplex airspace. This proposal is known as Option B. Estimated flight distances and approximate heights have been included in this report. The LAX Community Noise Roundtable is calling on the FAA to work collaboratively with us to seriously consider this proposal, conduct their own analysis, and come back to us with options to implement this procedure or others that would lessen the concentration of low-flying air traffic over dense communities in Los Angeles.

Option B as a Starting Point

The LAX Community Noise Roundtable and Quiet Skies LA believe Option B is a realistic proposal that deserves serious consideration by our federal partners at the FAA, including detailed analysis. We need the FAA to come to the table and work with us since prior engagements on this issue have led to minimal outcomes or lasting improvements for communities and residents impacted by concentrated aircraft noise that NextGen procedures have created. Option B is a continuation of the dialogue established by the LAX Community Noise Roundtable on this issue. We need the FAA to recognize the need to engage and continue to do so.

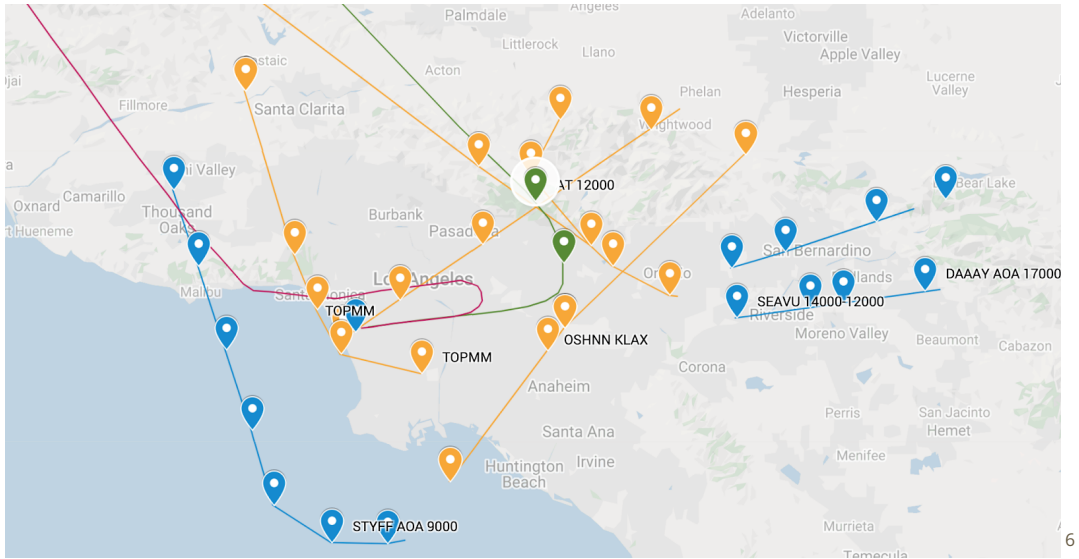


Figure 6 shows the IRNMN procedure in red, and the proposed Option B flight routing in green.

⁶ Figure 6 -- Source: Quiet Skies LA

Appendix

Figure 7 - Source: Quiet Skies LA

Flight distance difference between current procedures and Option B.

Code	Point of Origin	Current Arrival	Current Direct (mi)	Current Distance (mi)	Option B Arrival	Option B Direct (mi)	Option B Distance (mi)	Diff. (mi)	% Change
ADQ	Kodiak, AK	132	2,192	2,324	153	2,216	2,369	45	1.9%
ANC	Anchorage, AK	132	2,257	2,389	153	2,276	2,429	40	1.7%
BFI	Seattle, WA	132	884	1,016	153	889	1,042	26	2.6%
BLI	Bellingham, WA	132	969	1,101	153	976	1,129	28	2.5%
BOI	Boise, ID	132	662	794	153	610	763	-31	-3.9%
BVS	Burlington, WA	132	949	1,081	153	953	1,106	25	2.3%
BZN	Bozeman, MT	132	871	1,003	153	859	1,012	9	0.9%
COE	Coeur d'Alene, ID	132	899	1,031	153	892	1,045	14	1.4%
CXP	Carson City, NV	132	295	427	153	297	450	23	5.4%
EIL	Fairbanks, AK	132	2,355	2,487	153	2,369	2,522	35	1.4%
EKO	Elko, NV	132	457	589	153	445	598	9	1.5%
EUG	Eugene, OR	132	666	798	153	678	831	33	4.1%
FAI	Fairbanks, AK	132	2,380	2,512	153	2,394	2,547	35	1.4%

GEG	Spokane, WA	132	884	1,016	153	878	1,031	15	1.5%
GTF	Great Falls, MT	132	966	1,098	153	953	1,106	8	0.7%
LWS	Lewiston, ID	132	803	935	153	793	946	11	1.2%
HLN	Helena, MT	132	898	1,030	153	885	1,038	8	0.8%
MEV	Genoa, NV	132	280	412	153	279	432	20	4.9%
MFR	Medford, OR	132	547	679	153	560	713	34	5.0%
MSO	Missoula, MT	132	875	1,007	153	857	1,010	3	0.3%
MWH	Moses Lake, WA	132	850	982	153	846	999	17	1.7%
OLM	Olympia, WA	132	852	984	153	859	1,012	28	2.8%
OTH	North Bend, OR	132	638	770	153	656	809	39	5.1%
PAE	Seattle, WA	132	909	1,041	153	913	1,066	25	2.4%
PDX	Portland, OR	132	756	888	153	763	916	28	3.2%
PSC	Pasco, OR	132	784	916	153	780	933	17	1.9%
PUW	Moscow, ID	132	827	959	153	816	969	10	1.0%
PWT	Bremerton, WA	132	886	1,018	153	892	1,045	27	2.7%
RDM	Redmond, OR	132	651	783	153	655	808	25	3.2%
RNO	Reno, NV	132	317	449	153	318	471	22	4.9%
SEA	Seattle, WA	132	876	1,008	153	883	1,036	28	2.8%

SUN	Sun Valley, ID	132	655	787	153	632	785	-2	-0.3%
SZT	Sandpoint, ID	132	937	1,069	153	931	1,084	15	1.4%
TIW	Pierce County, WA	132	869	1,001	153	874	1,027	26	2.6%
TWF	Twin Falls, ID	132	590	722	153	578	731	9	1.2%
TRK	Tahoe, CA	132	303	435	153	306	459	24	5.5%
UAO	Aurora, OR	132	735	867	153	743	896	29	3.3%
YBL	Campbell River, BC	132	1,080	1,212	153	1,088	1,241	29	2.4%
YEG	Edmonton, AB	132	1,305	1,437	153	1,294	1,447	10	0.7%
YKA	Kamloops, BC	132	1,092	1,224	153	1,091	1,244	20	1.6%
YLW	Kelowna, BC	132	1,040	1,172	153	1,036	1,189	17	1.5%
YPK	Pitt Meadows, BC	132	1,002	1,134	153	1,006	1,159	25	2.2%
YVR	Vancouver, BC	132	1,005	1,137	153	1,010	1,163	26	2.3%
YYC	Calgary, AB	132	1,156	1,288	153	1,138	1,291	3	0.2%
YYF	Penticton, BC	132	1,005	1,137	153	1,000	1,153	16	1.4%
YYJ	Victoria, BC	132	970	1,102	153	976	1,129	27	2.5%

Figure 8 - Source: Quiet Skies LA

All proposed points of origin that could be routed on Option B are shown here on a zoomed out map.

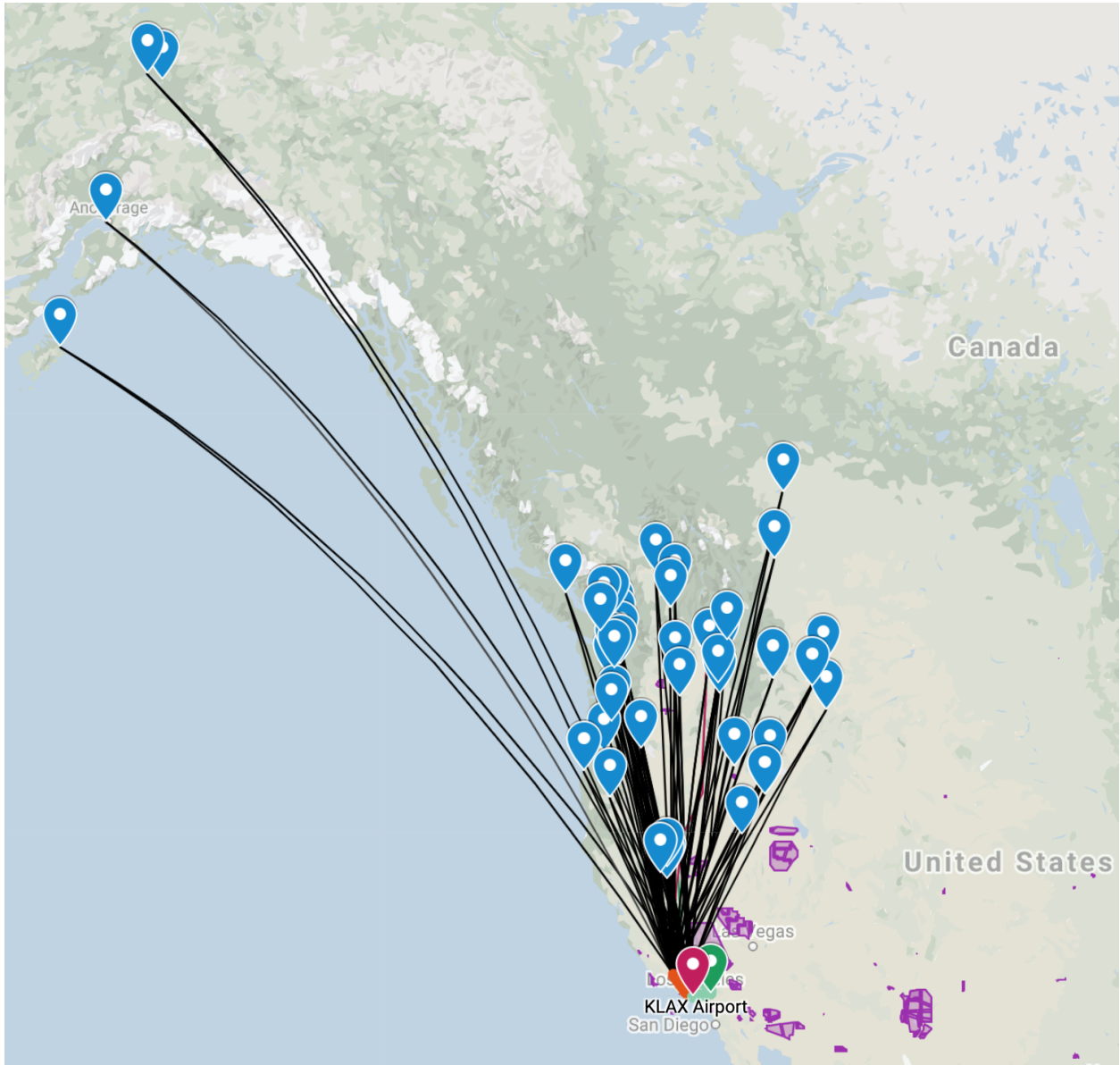


Figure 9 - Source: Quiet Skies LA

Points of origin that could be routed on Option B are shown there on a zoomed in map. The red line approximates the current IRNMN arrivals procedure into LAX. The green line approximates the proposed Option B arrivals into LAX.

