SAN DIEGO COUNTY
REGIONAL AIRPORT AUTHORITY

AIRPORT NOISE ADVISORY COMMITTEE (ANAC)

MEETING AGENDA
Wednesday, October 18, 2017, 4:00 p.m.

UPSES Portuguese Hall
2818 Avenida De Portugal, San Diego, CA 92106

---

1. Welcome and Introductions
2. Presentation Items
    - La Jolla Aircraft Noise and Flight Track Analysis – Paul Dunholter, BridgeNet International
3. Public Comment
4. Action Items
    - ANAC Subcommittee Recommendations
    - Approval of June 21, 2017, Meeting Minutes
    - Approval of August 16, 2017, Meeting Minutes
5. Next Meeting: December 20, 2017
6. Adjourn

SAN DIEGO INTERNATIONAL AIRPORT
LET'S GO.

DRAFT MINUTES

Airport Noise Advisory Committee

Date|Time 6/21/2017 4:00 p.m.

Meeting called to order by: Heidi Gantwerk

In Attendance

Name	Affiliation	In Attendance
Captain (Ret.) Jack Bewley	Airline Pilot (Retired)	Yes
Lee Steuer	Representative for Congresswoman Susan Davis	Yes
Lazaro Herrara	County of San Diego	No
Bruce Williams	Representative for San Diego City Council, District 2	Yes
Carl "Rick" Huenefeld	MCRD	No
Susan Ranft	Downtown Community Planning Council	Yes
Kirk Hansen	Community at Large	Yes
David Swarens	Greater Golden Hill Community Planning Committee	Yes
Deborah Watkins	Mission Beach Precise Planning Board	Yes
Fred Kosmo	Peninsula Community Planning Board	Yes
Tom Gawronski	Ocean Beach Planning Board	Yes
Victoria White	City of San Diego, Planning Department	Yes
Rick Savage	FAA	Yes
Andrea Ortega	FAA	Yes
Kiera Galloway	Representative for Congressman Scott Peters	Yes
Chris Cole	Uptown Planners	Yes
Justin Cook	Acoustical Engineer	Yes
Vacant	Commercial Airline Pilot Representative	No
Danny Melgoza	Representative for San Diego County Supervisor Greg Cox	Yes
Randall LaRocco	Midway/Pacific Highway Community Planning Board	No
Melissa Hernholm-Danzo	Peninsula Steering Committee	Yes
Sjohnna Knack	Authority Staff	Yes
Heidi Gantwerk	Facilitator	Yes
	*Members contacted staff ahead of time and are considered excused.	

1. Welcome and Introductions

Heidi Gantwerk, facilitator for the Airport Noise Advisory Committee (ANAC), opened the meeting at 4:00 p.m. Introductions were made around the table. She outlined the agenda.

Presentation Items

Note: A copy of the information in the presentation can be found via our website using the following link:

http://www.san.org/Airport-Authority/Meetings-Agendas/ANAC?EntryId=10566

Quieter Home Program Update – Craig Mayer, Deputy Program Manager, Quieter Home Program (Program), provided an update on the Program's status. Mr. Mayer said there are 1,400 homes on the wait list; none completed since last meeting, but they hope to complete 20 by end of calendar year. The FAA has approved a contract template, and have given approval on Project 8.12, with contract expected to be awarded in early July. Approval to move forward with Project 9.1 is expected. There is a backlog of around 150 homes. He indicated they are waiting for results of reviews on 8.10 and 9.1. It seems that momentum has been built in the process of working with FAA, and there is anticipation of good things moving forward.

Question from ANAC: Fred Kosmos asked whether air conditioning would be included in the new contract.

Mr. Mayer stated that based on the conversation with the FAA today, Project 8.10 will answer that question; included in Project 8.10 was air conditioning as a part of the ventilation package for homes included in that project group. The official response has not come back, but we are designing for single-family homes and condos with air conditioning. By all accounts, the FAA has acknowledged the need for air conditioning and their willingness to approve those designs.

Question from ANAC: Fred Kosmos asked if there are any recommendations for the board for things that the board can do to help push Quieter Home Program forward.

Mr. Mayer states that he believes we're already moving in the right direction, and believes we are getting back to a normal pace of 300-350 units a year.

Curfew Violation Review Panel (CVRP) Statistics – Sjohnna Knack, Program Manager, Airport Planning and Noise Mitigation, gave a review of the curfew violations.

Ms. Knack stated that looking at year-over-year statistics and violations are slightly higher this year than they were at this time last year. Last year there were 15 and this year there are 18. She addressed the concern about not punishing the airlines enough with fines assessed. This time last year, around $60,000 had been collected. Through the end of May this year, $130,000 has been collected. She explained how the multipliers work, and stated that she believes that the fines are enough to cause operators to stop violating. She reiterated that the Panel looks at every single violation independently and collects a comprehensive package of information on each one before making a determination.

Question from ANAC: Fred Kosmos asked about the multiplier; how did it get created, and do we have the authority to change or increase it?

Ms. Knack said that it was quite a complex process that had to be vetted not only by our legal department, the Airport Authority Board and the FAA.

Question from ANAC: Fred Kosmos asked if, other than fines, is there anything else we're doing to encourage airlines to not break curfew?

Ms. Knack explained the Fly Quiet Program, which is not a monetary penalty, but approaches the carriers to emphasize to them that this is an impact to our community. We have worked with several carriers that, because of their low scores, have worked with the Airport Authority to improve their score.

Missed Approach Statistics - Ms. Knack explained the definition of missed approaches. She clarified that a missed approach is done for safety reasons and cannot be influenced by the Airport Authority.

Ms. Knack stated that statistics have trended slightly upwards in May. They were down a little bit in April. But we did have significant weather in May caused the increase. Weather plays a big part into the amount of missed approaches. The majority of the missed approaches are still compliant with the FAA's noise dot. Total arrivals thus far through the end of May are 40,747 with less than one percent of those are missed approaches. She said the trend is slightly down for those aircraft that are non-compliant, or turning early.

Question from ANAC: Victoria White stated that at the last meeting, there was a lot of concern from Mt. Soledad residents with regard to increased noise. She questioned if, based on the complaints that you received over the last few months, if you know that the complaints that are received in the Mt. Soledad area are flights that are coming into San Diego or departing San Diego?

Ms. Knack stated that there are not that many complaints received from Mt. Soledad, but the ones that do come in are in regards to arrivals into San Diego.

Early Turns – Ms. Knack explained the difference between early turns and missed approaches. Early turns in essence are flights that are not compliant with the FAA noise dots.

Ms. Knack stated that early turns are trending downwards. In March of 2016, there were 121 and in March of 2017 there were 21. In April, we saw another significant decrease; only a small decrease in May, but overall, we are trending down for early turns. Most violators are general aviation. She stated that staff calls all the general aviation pilots and has a conversation with them to explain our noise dots, to try and educate the pilots. It's more challenging, with generally aviation because they don't operate in and out of San Diego frequently.

Ms. Knack clarified that general aviation are flights that are not commercial. She said the Airport Authority is working with the fixed base operator, Signature Aviation, which is where all the private jets operate out of, to see if there can be more signage about flying quietly out of San Diego. On May 7th, there was significant rain, thunderstorm cells, right off the coast. The new FlightTracker site has Doppler radar. Many of the early turns are connected to weather. The majority of the decreases to the right were were related to the implementation of the new SoCal Metroplex procedures. Those procedures were designed to stay within the FAA's noise dots.

Question from ANAC: Deborah Watkins asked regarding the large number on the graph for pending investigations, what it represents.

Ms. Knack stated that not all, but most are private jets.

Question from ANAC: Victoria White asked if information might be distributed to general aviation pilots through staffing agencies.

Ms. Knack stated that could be looked into. *Note: Staff has contacted the aircraft owners and pilots association (AOPA) to provide fly quiet literature.*

Question from ANAC: Ms. White asked if a notation can be made of waypoints in addition to noise dots, for a comprehensive overview of everything that's going on.

Andrea Ortega from the FAA stated Air Traffic Controllers do not control what the pilot needs to do to get to an altitude. They are given the climbing instruction to turn, not rate of climb.

Mr. Bewley, retired pilot, gave a perspective from the pilot's point of view, stating that it depends on aircraft configuration, weight, passenger load, cargo load, etc. It may seem that an airplane is loitering overhead, but a lot of factors going on in cockpit to exercise a missed approach. It's not something that occurs rarely, but pilots are trained for it. Most pilots anticipate going around San Diego on approach because there are so many factors involved. A single runway, you have to get off of it very quickly.

Mr. Cole said that since so many of these are general aviation, that kind of makes it difficult. He said it seems obvious to him, looking at early turns and breakdowns, particularly annoying flights to people on the ground, not knowing whether those are general aviation or what they are, but if one plane on early turn can get to altitude, or even head out to sea and make its early turn over water, he doesn't understand why others can't also.

Question from ANAC: Justin Cook, acoustical engineer, recommended that maybe the early turn slides could be broken out between GA and commercial, so you could see the tracks and see how the quantity might be more useful that way.

Ms. Knack said she thinks that can be done. Often general aviation aircraft are required to turn early because they are slower than commercial jets.

Mr. Savage stated general aviation aircraft are not very noisy. AOPA is going to have a large influence on educating that part of the population, but somewhat limited. They may not be very familiar with noise concerns, Point Loma and La Jolla concerns.

Question from ANAC: Fred Kosmo said he looked at numbers and sees 242 through May, which averages out as 581 for the year, and only 200 in 2013. Other than Roman calling, is there some other kind of plan to try to get numbers back down closer to 200? There seems to be an incremental creep, and it should be our job to lower the numbers, so is there some kind of plan we could consider? Should we fine people for early turns?

Ms. Knack clarified that numbers have been going down. She believes the FAA's procedure implementation of Metroplex procedures have helped keep the aircraft on published routes. Also it is a very small percentage of total operations. She believes going to the FBO and putting more signage to educate on noise-sensitive community and reaching out to AOPA is something the airport can do.

Noise Complaints Statistics – Ms. Knack reminded everyone that last ANAC meeting the new web-based FlightTracker was introduced, as well as a new noise complaint process. She presented statistics about how it's going. The goal is to obtain accurate and relevant information from noise complainers, so that we can have something we can use with AOPA, with FAA. The new system automatically inputs the noise complaints, reducing data entry time, which frees up staff time to do research and investigation. Some observations are that the system is functioning as intended in that we are receiving more noise complaints of value to us. We still have some work to do in obtaining relevant data in the complaints.

Ms. Knack reported that a La Jolla community member, based on frustrations that it's too complicated, has created a one-click app. Some complaints from this app do not provide the relevant data necessary to work with stakeholders. We need some information that can be used in discussions with AOPA, the FAA, and the airlines, to try and make incremental improvements on noise.

During months of May and April, analysis shows half of residents who filed a complaint used the San Diego Airport Authority's Flight Tracker, with the other half submitting complaints using the non-Authority sponsored app. One concerns seen is that a large amount of complaints from the app have conflicting information that is automatically populated. The creator of the app sits on the Subcommittee. He was unable to be here tonight. We'll be talking after he returns from vacation, so we can get more relevant information. The other big thing is that there are quite a few noise complaints being submitted from aircraft operating at other airports—number one is Montgomery Airport. All of those have their own noise management programs. We have met with them and are going to invite them to FAA meeting, and we are communicating to those residents, sending information that it's not a San Diego operation and how to lodge a complaint.

Question from ANAC: Ms. White asked regarding helicopters in La Jolla, do they take off from Montgomery Field?

Ms. Knack stated they're typically Navy helicopters coming off North Island.

Question from ANAC: Mr. Cole asked if noise complaints pertaining to Montgomery Field have been purged?

Ms Knack said no, they have not. Time constraints made it impossible to do so. We are working with the vendor to automate that, so that information can be pulled out. She reiterated that they do reach out to those when feasible, but can't dictate to other airports how they run their noise management. She provided two examples of complaints; one that doesn't give necessary information, and one that is exactly what is needed. Information from complaints that have relevant information go directly into Curfew Violation Reports, and also utilized with Fly Quiet Program.

Ms. Knack then demonstrated in detail what it takes to lodge a complaint on FlightTracker website. She realizes that it's more than one click, but believes that the extra clicks give the information needed to have potential to reduce noise impacts.

Question from ANAC: Ms. White stated that it was valuable to know you can go backward in time in Flight Tracker.

Ms. Caroline Becker, Noise Mitigation Specialist, explained her presentation of noise complaints by month. Over the last two months, complaints have been collected from 103 households, a 32 percent decrease in the number of households reporting complaints. She noted that we do have the new complaint system, and are in the early development stages of that system, and that may be one of the reasons for the fewer complaints. There was also a downtrend of complaints at this time last year.

Ms. Becker noted that the new process of looking at households allows the Noise Office time to investigate on a case-by-case basis, and trend by neighborhood, giving the noise office a lot more information than we were getting by reporting on solely number of complaints. Ms. Becker also noted that this frees up the household from having to report hundreds of complaints, but just report one time in two months, and your household counts. Whether picking one to report or thousands, you are counted in that graphic.

Ms. Becker said that as requested, they will continue to break down what the reasons are for complaints. Loud aircraft continues to be number one complaint. The non-sponsored app only allows the user to select "loud aircraft" as the reason for the complaint. Email complaints for Low and Loud were still being accepted at this time, so a lot of people wrote low and loud rather than choosing one or the other. That will decrease. Next meeting there will be a couple less categories; more uniform reasons for complaints.

Ms. Becker said there is not the top five slide this time because there was not an event that happened which had more than four households complaining. They will continue to look for the top five in the coming ANAC meetings.

Ms. Becker said by switching to new complaint system, it freed up more of their time and they were able to respond to 82 households only in May, compared to March when only 38 were responded to.

Question from ANAC: Melissa Hernholm Danzo asked if on the noise complaint statistics, two separate complaints from the same address at different times are still considered one?

Ms. Becker explained it's considered one household.

Ms. Danzo explained that there may be several people in a household at different times of day making complaints, but by measuring it this way, you would never know that all those complaints were registered, just that the household registered once.

Victoria White noted for the public, to make sure everyone is understanding that we do care about all of these complaints, but there was a time when there were certain households who were submitting a very significant number of complaints, and clearly they were an expression of anger or frustration, and that's also difficult in terms of problem solving, and getting at the household number was an attempt to zero in on the things where a cause could be identified rather than just acknowledging feelings of angst, and maybe there's another way to do it so that everyone feels acknowledged, in addition to being able to problem solve. She believes it would be helpful to have on the noise complaint breakdown, the reason for the complaint by area, and provide helpful information.

Fred Kosmos stated that Google Chrome wouldn't allow him to log onto the system.

Ms. Becker said that if people are having that issue, there's a fix on the website that lists out instructions about what you need to change in computer settings, otherwise people are free to contact the office for further support.

Fly Quiet Report –

Ms. Knack presented the second Fly Quiet Report for 1st Quarter 2017. Compared to 4th Quarter of 2016, no significant amount of change was seen. However, there were less curfew violations in 1st Quarter 2017, so carriers like Sun Country, Allegiant, and Southwest Airlines that did have violations in 4th Quarter did not in 1st Quarter, so their score went up. The higher the score, the quieter the operator.

Ms. Knack discussed that JetBlue, American, and Frontier increased their overall score by reducing both their number of curfew violations, as well as early turns. And on a negative side, Compass Airlines had a lower score because they had a higher number of early turns. There were a few carriers that had an increase that will impact their score. March 2nd was PADRZ implementation date for SoCal Metroplex, which reduced early turns to the right significantly.

Ms. Knack reminded everyone that Fly Quiet Program is a report card, taking elements that currently are most impactful to the community—curfew, early turns, and also the type of aircraft operators are using, or fleet—scoring those three elements and rating them; the higher the score, the quieter the operator. She explained in detail the scoring process and how points are awarded for curfew violations.

Ms. Knack pointed out that highest score for curfew violations 1st Quarter was American Airlines, with no curfew violations, and they cancelled one flight. She pointed out that the report shows that curfew violations went down. Last report, there were scores of one to three, so they did increase overall, but there is still room for improvement.

Ms. Knack pointed out that starting with 2nd Quarter 2017, early turns requested by Air Traffic Control, those flights will be pulled out of this score because it's not fair to penalize the airline for being directed by Air Traffic Control for safety reasons.

Ms. Knack stated that probably the most challenging score is fleet, or type of aircraft a carrier is using. Every operator at San Diego is reached out to, looking at model of aircraft, what series it is, what engine it uses, maximum gross takeoff weight, which all impacts how quickly they depart. The formula is utilized in other Fly Quiet programs in the nation. It's the only element that the playing field is evened, and their score is multiplied by the percentage of operations. This is only one that is equalized for operations. She stated that there was no real significant change in fleet. Fleet changes are very gradual. Airport Authority cannot dictate to a carrier what type of aircraft, but it is hoped that by publishing these numbers, it will be an incentive.

Question from ANAC: Ms. Danzo asked since our job is to mitigate noise, what is asked what ANAC could do to get Southwest to do better? She stated we're here to do something, and would like to know what the panel can actually do.

Fred Kosmo seconded Melissa's comment, and pointed out the chart that shows out of the 21 airlines, Southwest is 20th, and 44.8 percent of operations, and it would make a dramatic increase if Southwest could improve. He stated that if you add United, Delta, and American to Southwest, that's 75 percent of the operations, and those airlines rank 17th, 18th, 19th, and 20th out of 21. He asked what can we do as a board to have Southwest improve?

Ms. Knack pointed out that we will continue to work with Southwest and convey the information, that as a panel member, communicating concerns is important. She said when they reached out to Southwest, they said they fly the published procedure, except for weather or traffic separation, which is safety-related. Because they have so many flights, their early turns and high number is based on that. She feels like maybe we should equalize the early turn graphic to show the percentage of operations because it's hurting the numbers, and unduly penalizing Southwest Airlines. Fleet is different; that's a challenge because you can't dictate to Southwest what aircraft to fly. The message can be conveyed, but from early turn perspective, that's an even bigger challenge because they're going to fly the published procedure, and she feels like that graphic should be redone and multiply it times their percentage of operation, and their score will skyrocket.

Mr. Swarens said that there's a summary report in the packet, and would like to see a presentation and more discussion on that in the future.

Ms. White suggested regarding influencing fleet choices, that they could be invited to come to the meetings, and let them hear people's complaints. She wonders in regards to new Compass, if something the operations team can do to convey information regarding fleet choice not helping San Diego community.

Ms. Knack clarified that Compass is not new, but a small feeder airline for Delta, and that she works with both operations and air service assuring them that new air service is valued in the community, but also want to balance with environmental consequences, in this case noise.

Kirk Hanson asked for clarification on the Fly Quiet score, to ask if it's basically equipment, and doesn't count early turns or curfew violations? He stated he was shocked because he didn't realize that they're 48 percent of operations, which is huge number, and flying the loudest aircraft. He suggested there is the power of the purse to control the gates and encourage quieter equipment. He asked if Southwest has a fleet mix, where it could put a different fleet mix into San Diego?

Ms. Knack said we cannot prohibit or block interstate commerce because we receive federal funds, and by blocking gates, the FAA would prohibit that. We can go to Southwest and say this is where you rank, and is there anything you can do? She pointed out the score is low, but not the lowest, but closer to middle of pack of what other operators are using. She said we have to work within our confines that we have the ability to work in.

Ms. Knack said the subcommittee is going to be looking at a recommendation to review their noise abatement departure procedures. It wouldn't be the exact one used at John Wayne, but a version of it.

2. Public Comment

Ms. Gantwerk opened the public comment period. She reminded the public that each speaker would have three (3) minutes to speak and would not be able to go over the allotted time, to ensure all speakers get an opportunity.

Sjohnna Knack introduced Ms. Kim Becker as new CEO and welcomed her.

Ms. Becker thanked everyone for their time and effort and introduced herself.

Bill Edwards lives in Le Mesa, Helix areas. He said the planes that are affecting him are arrival planes. He said in the past two months he has heard a difference in the frequency and noise of planes over Mt. Helix. He said it seems the planes are taking a route that is closer to going over Mt. Helix than the other route, which would take them down to intersection 125 and East 84 Mt. Luther Freeway. He said the issue is that Mt. Helix is at 1,300 feet to 800 feet. If you take the area over Martin Luther King Freeway and East 94, you not only have fewer residents there; the elevation is much lower; the noise impact is much lower, and in terms of the fact that the planes are trying to take a shorter distance for fuel economy and disturb fewer people, the flight going over Mt. Helix negates both of those issues. He said he does not understand and would like to find out more information about it. He asked if someone could contact him, or tell him who to contact to find out this information.

Matthew Price presented on behalf of La Jolla community. He referred to the goals of the committee, and read the mission statement from the website. He stated there has been an undeniable dramatic increase in the negative impact of commercial aircraft noise in La Jolla, reflected in the data presented at this committee, as well as over 300 petitions signed by La Jolla residents also submitted to committee. He stated that the negative impact is a systemic problem, not just due to early right turns. He said there has been no material action by the committee or Airport Authority to fulfill its mission and address the issues. He said despite profound negative impacts detailed by committee, and clear need for mitigation, La Jolla continues to have no representation on this committee. He said 53 percent of households at this session complained from La Jolla, majority in the San Diego area. He stated that a motion to add a La Jolla representative was voted down in a previous meeting after a statement was made that all members must be from communities within the 65 dB CNEL. He said according to the criteria of this committee posted on the website, that is false, as they have no representation here. He presented three things he feels must be addressed. First, the southern shift in lower altitude of arrivals from COMIX Star, compared with prior star procedure, which he believes is also impacting Mt. Helix. Second, the new PADRZ procedures and waypoints for northbound departures. Third, the systemic deviation from nighttime noise abatement procedures, resulting in all eastbound departures after 10 p.m., flying more north and closer along the La Jolla shore. He said he realizes that to date, the concept of noise mitigation for the committee has been to monitor the number of early turns, the curfew violations, the home refurbishments, the noise from the different airlines, etc. He said addressing new problems may be hard; doesn't fit easily into what's been done before, but is the mission of ANAC to address them. He said he still hasn't been able to get his settings on Chrome to be able to use the new complaint system. He said what is needed is action now.

Gillian Ackland said that despite contention that missed approaches and early turns are improving, if you look at item 9 and 12, the chart does show it worsening, not improving. Her main concern is that the change in the software, the demo that was shown earlier is very similar to old one. She said she doesn't see any advantage to the new system. She has not used it, and is probably one of the people that has stopped making complaints, and is part of the 32 percent decrease. She said it is not a decrease in noise. She said if she hears an aircraft once a day, and complain once, she is counted as only one person, and yet, I hear 100 aircraft a day, and yet, they're not interested in the fact that she hears it 100 times a day. She said there is an ocean at her front door, and noise comes from low altitude. She said nowhere in the discussion here is there any consideration of altitude of aircraft. She said if aircraft are higher, they hear them less, and ocean is where aircraft can safely climb and make a turn at a higher altitude. She said discussion of early turns and other things are simply not getting to heart of matter. She asked that new procedures be looked at, and see why the ocean is not being used; it's part of the Fly Quiet program that is being used in San Francisco, and could certainly be used here.

Karen Lund lives in Birdrock. She's says she's never heard such noise in her life and she wants the committee to see the faces that it's affecting. She said she sleeps with swimmer earplugs. She said in 2013, she had to put in an air conditioning unit, which she usually doesn't use, but she can't sleep at night and it is affecting her health. She said she's hearing planes at night at 12:15, then again 6:15 a.m., and sometimes at 5:45, 5:30 a.m. She asked if she's supposed to sleep five hours because I purchased a home where wanted to live? She said she was aware of noise problems near the airport, but she can't afford to put in double pane windows. You need to inform the public; you can't bury it away. She's been on Nextdoor Birdrock for two years and never seen any reports of any hearings, any kind of changes in flight patterns. She said you can't get on the internet because the planes actually

interfere with the internet. She asked that the committee listen, make it fair, and put out statistics correctly, and give them the information they need to get the problem solved.

Lila Schmidt said that a pilot that doesn't know the length of a runway should not fly into San Diego or out of San Diego. She said it makes her not want to fly out of San Diego at all. She said it is unsafe. She said with GPS, you know where those planes are, how high they are. She said she heard that there is GPS on planes. She said she stopped complaining in September, and she complained with every plane she heard, not out of angst, she thought she was trying to help. It sounds like she's being required to be at home 24/7. She said that's like saying all the cars in San Diego that are parked will not get a parking ticket unless someone complains. She asked what is the job of traffic control? She said this is your job to mitigate. She said she hears there's a downward trend of violations, but she said it's like her saying she beat you 500 times last year, this year I'm only beating you 400 times; that's good, a downward trend. She said La Jolla is complaining the most because they've got the effects most recently. She said people in Point Loma are exhausted. They get no feedback and not seeing action. She said she has double pane windows, and can still hear it.

Martha Gonzalez said she is here at ANAC and treated like air traffic navigation experts, but is not. She is here to complain about the air assault which is taking aware peace and quality of life. She said La Jolla has a new systemic air noise problem; every airplane rumbling and roaring, not due to early turns or navigation errors, and this is where miscommunication starts. She said it is every flight taking off or landing, as a result of changes that have been implemented. She said it is new and recent. She said there was a huge negligence in the design of the procedure, which is that people from La Jolla have ears and can hear, too. She said planes are flying lower, closer, frequently and loud, which was not happening before. She said she used to live in an island of silence, sleeping with windows open. She said they ask ANAC to stop treating them as a statistic or air patrols, that it is not their job to patrol the sky, or provide numbers for statistics. She said they are affected citizens and ask that the noise problem be recognized as new, grave, and urgent. She said they are not a problem as a result of navigation errors.

Tony Stiegler lives in La Jolla for 30 years. He said there has never been a more dramatic impact on the quality of life. He said the issue began when the FAA implemented NextGen. Since then, he said they see commercial air traffic flying much closer to the coast, and hear it regularly, starting from 6:30 in the morning, continuing through 11:30 at night. He thinks the notion that this is an early turn issue is a misnomer. He thinks there was a lapse or failure to conduct an appropriate analysis of the environmental impact of the increased noise, prior to implementation of NextGen. He recognizes that there are data and issues that are being addressed, but to a lot of the people in the room, and who have spoken, and the community, it's a focus on the wrong issue. He said the FAA needs to be petitioned to roll back NextGen, and take the flights back offshore; take them out over the ocean, turn right; don't fly near the coast.

Sandy Valone said she comes to as many meetings as she can over the last couple of years. She is from Point Loma Heights/Fleetridge. She said she has friends who live two blocks south of the Quieter Home Program, which is set up with a band of the 275 Corridor. She said when she first started complaining, she went to ANAC and was told when NextGen starts working, it will be a benefit. She said when Barry has come to meetings, he has said that the FAA is directing flights on the 275, and yet the early turn statistics still say 265. She lives south of 265, and is regularly still hearing and seeing planes fly south of that 275 band. She asked if the Quieter Home program can be offered to all the new affected houses that currently don't qualify? She said it's unfair that people on the 275 are laughing, when their houses have been retrofitted, and there's a whole community affected by planes flying south. She said there is clearly a second pattern that nobody is willing to admit. She said they tried to get noise monitors in the area to prove their point, and nothing has been done. She feels sorry for La Jolla residents, but she feels like she's made no impact for two years. She wonders why everybody is here on the panel, and if anybody really cares about what's going on. She said she's worn out, so there are not complaints from her household. She can't keep complaining because the website is very cumbersome, not easy, and takes too much time.

Marilyn Jaseniuk said she is a new home owner in South Mission. She said when they bought it, there was not very much noise at all, and then all of a sudden, within the last couple of months, it's been more and more jets. She said she's not familiar with flight pattern, but it seems like all the flights are going over her head, low and noisy, early morning, 11:30, 11:45 at night. She asks has that takeoff flight pattern changed recently? Does every flight out of San Diego come over her house? She looked at green lines on early turn statistics for the right turns,

they were right over her condo. She said she's not going to sit outside on the patio and watch every aircraft and write down time, and figure out flight; it's not just one, it's many that are low, noisy, and affecting her life.

James Linlott lives in Loma Portal, close to Liberty Station. He said he's lived in Point Loma for 60 years, and he said it's getting a lot louder. Where he lives, the planes come in from the east that are landing, and they hit the brakes, throw it in reverse, and it's creating a lot of noise. He thinks when they put the new terminal in, it's all glass, and they hit the brakes, make a turn, and it reflects off the glass and is louder than the areas where Quieter Homes replaces windows. He thinks Quieter Homes ought to re-evaluate some of those areas, like west side of Point Loma. He said it's really, really loud on the landing.

Urs Baumann said he spoke last meeting, and nothing has changed. It's still very noisy since November-December last year, lots more noise, a lot closer to the shores, and closer and lower to Mt. Soledad coming in over the La Jolla Shores. He said for him, the question is, is this committee really pushing hard enough to the FAA? He thinks the main problem is the FAA, who changed the procedure, and now they have to deal with it. He said there has to be more push towards the FAA and say go further out, go higher up, and go over Miramar. He said sometimes they go further in and it's a lot less noise over Miramar Airport. He said he sees beautiful statistics, but doesn't change anything. He said people are complaining the noise is here, and also there were some where La Jolla was not even on it. He reported early turns at night, right over the village, and not very high, very loud.

Beatrice Pardo talked about the button that Chris McCann developed. She said it's a dream and there are some glitches, but she thinks those can be worked out, and it would benefit ANAC and the citizens if they could work together to get an accurate readout of what's happening. She showed her weekly digest from air noise from June 12 through 19th, she had 233 complaints when she was home. She said with the button, when she hears an aircraft, early in the morning or late at night, she pushes it and every readout she has are all aircraft from San Diego Airport. She said she has a list that she would be happy to show anyone. She thinks problems should be worked out with Chris on the app because it will make it easier for people to report exactly what's happening out there. She said the FAA has to do something. She wonders why they can't be sent out a few miles over the ocean, and then move them on to the waypoints, like PADRZ or ZZOOO.

3. Approval of April 17, 2016 Minutes

Ms. Gantwerk called to motion of approval of the February 27, 2016 meeting minutes. Chris Cole approved the motion and Susan Ranft seconded the motion.

Mr. Swarens said he noted that on page six under approval of the February minutes, Victoria White's name is not capitalized, and it should be.

Motion to approve minutes was passed.

Mr. Swarens said that following the February meeting, a member of the public who is a regular attendee, who owns property on Granada near Cedar, asked about some specific concerns they had. Staff Caroline and Craig did research that, so they have a formal response, but they're still not here. He said he doesn't know them, but he wanted to commend staff for being responsive, but he hasn't had a way to get that information to that individual.

4. Information Items

Ms. Gantwerk suggested that Airport Authority Update can be emailed.

Subcommittee Update – Ms. Watkins reported that Subcommittee met on May 17 to review potential for procedure modifications to limit or prevent early turns and missed approaches, and to review FAA noise dots and applicability. There were two presenters, Mr. Barry Davis, FAA Manager of SoCal TRACON, and Grady Boyce, current airline pilot and flight procedure expert.

The day before meeting, several members of subcommittee emailed a list of eight proposed procedure changes to discuss. It was intended on being a starting point for conversations. The proposal included review of a noise abatement departure procedure, movement of FAA noise dots, modification of the nighttime noise departure procedure, and additions or relocations of waypoints to avoid noise sensitive areas.

Grady Boyce discussed the lengthy, complex process of flight procedure implementation, and talked about complexities of the San Diego airspace, and was able to answer many questions about the procedures from subcommittee members. It was mentioned that in order for a recommendation to move a noise dot, a flight procedure change would need to be recommended. Barry Davis indicated that he will not be able to attend all the meetings. He did commit that the FAA will have someone attending both ANAC and ANAC Subcommittee meetings in the future. Next meeting will be held on Wednesday July 19th at 4:00 p.m. at the Airport Noise Office at Liberty Station. Work topic includes discussions regarding curfew violation review process, including fine structure, policies for issuing fines, use of revenues in the community, the Quieter Home Program, overview of eligibility, and changes in the regulations, noise monitor location costs, and results from the portable monitors. Presenters will include airport staff and legal counsel, and an acoustical consultant dealing with noise contours and sound insulation programs.

Mr. Kosmo said his understanding is the Subcommittee is working on a series of recommendations to improve issues, and that's scheduled for September?

Ms. Watkins said it's changed from September 20th to September 27th. She said if recommendations come out at the meetings, they implement those. They will be going through work plan and coming up with recommendations to bring back to ANAC for approval.

Mr. Cole asked if it is okay for ANAC members to attend a subcommittee meeting?

Ms. Watkins said yes, everyone welcome to attend; there's no public comment, just working members.

Mr. Kosmo said there are some concerns from people that the Subcommittee is going to be disbanded after a year and asked if there have been discussions about that?

Ms. Watkins said this particular subcommittee is the first subcommittee that the Airport Authority put together, and is only a one-year term, and whether they decide to bring back another one she doesn't know; that would be up to the Airport Authority. She said their term is over in September.

Ms. Knack said she wanted to address the bigger issue, which is the Subcommittee was set up to be a dialogue for members of the community. It was a deeper dive to dialogue with stakeholders, which you can't do at ANAC. She said any recommendations out of that meeting have to be vetted at ANAC, and recommended to Airport Authority Board. She said she didn't want to discourage attendance, but wants it clear that if there are concerns about Quieter Home program, ANAC is the place to discuss that.

Mr. Swarens said he's glad to hear that, and from the beginning, he's been asking for an opportunity to focus on that through subcommittee or other format, and ANAC has not had the opportunity to review what those changes might be, and how it could be improved. He said that's been a central concern for him. He asked what the appropriate way to engage in that is.

Ms. White suggested that in the ANAC October meeting, there could be a condensed agenda for the updates on that meeting, maybe just send them out beforehand.

Mr. Cole said he requested last meeting, some meaningful statistics on the approaches, and is making the same request again, and a second request that the flights with NextGen that formerly went over Point Loma that now go over La Jolla, and also with the NextGen flight pattern changes that have impacted La Jolla specifically.

Ms. Knack clarified that the first is he wants to have a statistic added to updates that shows altitude at specific locations where complaints are received, for arrivals, looking at various locations. She clarified also that he wants to know what the changes in flight procedures were as a result of the SoCal Metroplex.

Ms. Knack said she would have to request that one through the FAA since it wasn't an initiative done by the Airport Authority. She said they will give an update if they're unable to do it prior to the meeting.

5. New Business

There was no new business.

6. Next Meeting/Adjourn

The next meeting is scheduled for August 16 at 4:00 p.m. location to be at Portuguese Hall.

DRAFT MINUTES

Airport Noise Advisory Committee

Date|Time 08/16/17 4:00 p.m.

Meeting called to order by: Heidi Gantwerk

In Attendance

Name	Affiliation	In Attendance
Captain (Ret.) Jack Bewley	Airline Pilot (Retired)	Yes
Jessica Mier	Representative for Congresswoman Susan Davis	Yes
Lazaro Herrara	County of San Diego	No
Bruce Williams	Representative for San Diego City Council, District 2	Yes
Carl "Rick" Huenefeld	MCRD	Yes
Susan Ranft	Downtown Community Planning Council	Yes
Rob Bates for Kirk Hansen	Community at Large	Yes
David Swarens	Greater Golden Hill Community Planning Committee	Yes
Deborah Watkins	Mission Beach Precise Planning Board	Yes
Jay Lohla for Fred Kosmo	Peninsula Community Planning Board	Yes
Tom Gawronski	Ocean Beach Planning Board	No
Victoria White	City of San Diego, Planning Department	No
	FAA	No
Kiera Galloway	Representative for Congressman Scott Peters	Yes
Chris Cole	Uptown Planners	Yes
Justin Cook	Acoustical Engineer	Yes
Vacant	Commercial Airline Pilot Representative	No
Danny Melgoza	Representative for San Diego County Supervisor Greg Cox	No
Vacant	Midway/Pacific Highway Community Planning Board	No
Chris McCann for Melissa Hernholm-Danzo	Peninsula Steering Committee	Yes
Sjohnna Knack	Authority Staff	Yes
Heidi Gantwerk	Facilitator	Yes

*Members contacted staff ahead of time and are considered excused.

1. Welcome and Introductions

Heidi Gantwerk, facilitator for the Airport Noise Advisory Committee (ANAC), opened the meeting at 4:00 p.m. Introductions were made around the table. She outlined the agenda.

Presentation Items

Note: A copy of the information in the presentation can be found via our website using the following link:

http://www.san.org/Airport-Authority/Meetings-Agendas/ANAC

Ms. Gantwerk introduced Airport Authority Board Chair April Boling, who asked to speak to the committee.

Ms. Boling spoke about a concern that she (as Chair) and the rest of the Board have regarding the noise complaints staff receives. Lately, staff has been receiving profane and threatening communications. She asked that ANAC members take an active role letting people know that the Airport Authority has been working on aircraft noise issues for a long time and wants to continue working in a proactive and constructive way with the community. She asked for help in keeping conversations civil, and to focus on getting things done. Chris McCann, representative for an ANAC member, asked the reasons behind the increasingly negative tone. Ms. Boling said she realizes there is frustration, but there's an appropriate and inappropriate way to vent that, and profane and threatening complaints are not appropriate.

Quieter Home Program Update – Craig Mayer, Deputy Program Manager, Quieter Home Program (Program), said stats haven't changed since last meeting. He reported that the program is moving forward; they've awarded one contract, project 8.12, currently underway, with treatment of 84 non-historic multifamily units. The Program has also received written authorization from the FAA on project 9.1, 35 non-historic units. They are in the process on two additional projects, 8.10 and 8.11, each with 13 historic single-family and 48 non-historic units. There are more projects pending that they anticipate submitting to FAA for approval, totaling approximately 120 units on backlog to get through before starting a new group. They anticipate project 9.5 starting on September 5th, with initial meeting to get that underway.

Missed Approach Statistics – Roman Lanyak, Noise Specialist, explained the definition of missed approaches. He clarified that a missed approach happens for safety reasons and cannot be influenced by the Airport Authority.

Mr. Lanyak stated that for the month of June and July 2017, there was a reduction in missed approaches from previous reports with 76 in June and 74 in July. Overall, missed approaches total 0.7% of all arrivals. Most missed approaches are noise dot compliant. For missed approaches that are non-compliant with FAA noise dots, the number is also down, with 20 in June, and 17 in July. These are not classified as early turns because they are arrivals, not departures.

Early Turns – Mr. Lanyak explained the definition of early turns. He reported a significant reduction in early turns, 25 for June, and 25 for July, compared to the high 50s last year in June, and mid-40s for July. The reduction is attributed to the new FAA post-Metroplex departure procedure called ZZOOO ONE, where aircraft stay much better aligned with noise dots and fly farther away from the coast. Turns to the left over Point Loma dropped from 29 to 14 in each June and July this year, most of them are general aviation aircraft.

Early turns to right also decreased to 11 in June and July, about a third of last year's total. This is attributed to new FAA post-Metroplex departure procedure called PADRZ ONE, in which aircraft are better able to correct for the wind, making for more precise navigation, and flying just south of noise dot #1, which puts them farther away from the coast.

He reviewed the reasons behind many early turns over Point Loma and the Airport Authority Staff's efforts to work with Signature Aviation to make improvements in the number of early turns by GA Aircraft.

He showed that early turns over Mission Beach where about 32% were within 1,500 feet of noise dot; 23% were attributed to weather, or the contra flow operations. Specifically, on June 16th, 20th, and 21st there was very bad weather, low visibility, and ATC controllers had to turn aircraft away from arriving aircraft traffic.

He stated that they reached out to the Aircraft Owners and Pilots Association (AOPA), and they have agreed to distribute our materials.

Finally, he reported on San Diego International Airport aircraft altitudes, which was a request from the last ANAC meeting. The study reviewed data from four days in 2016, two in June, two in July, and four days this year, in the post- Metroplex environment, and it showed that average altitudes remain about the same for Mission Beach and Point Loma, and increased a little bit over La Jolla—about 400 feet.

Question from ANAC: Chris McCann asked when the post-Metroplex measurement was done.

Mr. Lanyak said in June 3rd and 25th, and July 3rd and 25th; two days in each month.

Question from ANAC: Chris McCann asked why navigational waypoints on new arrivals are 1,000 feet lower?

Mr. Lanyak said he's not sure how that arrival profile looks, but from where they measure it flying through the gate, that is the average. Some aircraft actually do fly lower. This is for arrivals, La Jolla specifically.

Question from ANAC: Chris Cole said he'd like raw numbers of arrivals over La Jolla in those time periods.

Mr. Lanyak said that daily there are about 500 to 600 operations all together; half are arrivals, over La Jolla and from the east, with La Jolla a little over 100 per day.

Question from ANAC: Rob Bates asked what the time period was for the pre- Metroplex data.

Mr. Lanyak said it was the same, 3rd and 25th of June and July both years. Both June and July of '16 were prior to any of the new procedures; 2017 is post-Metroplex environment.

Question from ANAC: Jerry Lohla said he doesn't understand why pilot deviation and equipment error are combined.

Mr. Lanyak said most of those are related to equipment.

Question from ANAC: Jerry asked if there's a way, after the fact, to make sure it was equipment error?

Mr. Lanyak said he does reach out to pilot in command to get more information.

Question from ANAC: Chris Cole said he takes sitting on this panel very seriously, and tries to focus on those things over which you have control to make changes. He said he would like to apologize to the staff for whatever they've been getting because every time he's asked for anything, staff has gone out of their way to get it.

Question from ANAC: Deborah Watkins said that she is impressed with numbers for early turns, and wants to publicly commend Airport Noise Office because they pick up the early turns even if residents aren't complaining, and numbers are accurate.

Question from ANAC: Justin Cook suggested that staff might follow up with pilots and see if there are any updates or changes that they see coming with the flight management system that could be shared.

Curfew Violations – Caroline Becker, Noise Specialist, said that since last meeting, there have been 38 curfew violations, comparable to last year, when there were 36. However, fines assessed have increased considerably, jumping from $124,000 to almost $300,000, due to the multiply placed on repeat violators.

She said last Curfew Violation Review Panel meeting was August 2nd, where they reviewed 11 curfew violations on three separate days that were due to weather and contra flow operations. Three violations weren't penalized due to "no-go" maintenance items. They had two other violations during that time, and those will be heard at October meeting.

She showed a sample of what airlines have been fined. They collected $166,000 for eight curfew violations at the August 2nd meeting. jetBlue was fined $100,000 for two violations. Frontier Airlines was fined $40,000 for one violation. She said they are seeing that the multipliers work. British Airways and Air Canada are no longer on the list. Last year, they were the heavy hitters in curfew violations. Once they get to a certain multiplier, they start canceling flights. Staff is seeing a record number of curfew cancellations.

Noise Complaints – Ms. Becker reported that 157 households had submitted complaints over last two months, which is up from 103. The increase may be due to increased familiarity with the new complaint system.

Per ANAC request, she showed a breakdown per household; 39% of complaining households report loud aircraft; 21% curfew violations, 14% suspected off-course, (usually a flight over their home which is not in flight path). Households can be in multiple categories because each household can submit multiple complaints.

She showed noise complaints by neighborhood, with 57% of households in Point Loma, and 29% from La Jolla.

Fly Quiet Report – Ms. Becker reviewed the purpose and content of the Fly Quiet Program. She noted that in the past year scores have gone up one full point on average for all air carriers, due to Metroplex, early turns reduction, and the introduction of some newer, quieter aircraft (i.e., British Airlines replacing their B747 with a quieter B777). In addition, there have been more curfew cancellations and early turns directed by ATC no longer count against carriers for their Fly Quiet score.

Operators are making notable changes so that they don't break curfew. Two of the airlines have started rerouting aircraft, not bringing red-eye flights from east coast, bringing them from somewhere closer, so late night flights can get out quicker.

She said air carriers try to improve their scores, which shows that the Fly Quiet Program has gained traction over the last year.

Question from ANAC: Jerry Lohla asked when a fine is assessed, what is deadline for payment, and is 100% collected?

Ms. Becker said that 100% is collected, or they go to legal department. She believes they're given 30 days to pay.

Question from ANAC: Mr. Lohla asked if those assessments go into general fund, and if there's any chance they could go into a local Quieter Homes program?

Ms. Becker said they do go into the general fund which is how Airport Noise efforts are funded.

Question from ANAC: Rob Bates asked about Condor Airlines not showing in the data.

Ms. Becker said they are under 0.01 of operations. At the time the report was being put together, they had about 20 operations. They will be included in the next report, but there wasn't enough data for this quarter.

Question from ANAC: Rob Bates asked about contra flow, when airlines are not penalized for curfew, do those airlines still need to be represented and explain at the curfew panel, and is there written policy on which curfews are penalized and which are not?

Ms. Becker said they go through the same process as any curfew violation. The packet is put together the same way and each case is reviewed on a case-by-case basis.

Question from ANAC: Rob Bates asked if those two days were very unusual, or somewhat unusual, compared to all other months?

Ms. Becker said they are only similar to one other day in of December last year, due to contra flow.

Question from ANAC: Chris McCann commented on noise complaints by household, noting from last meeting minutes, there seems to be a change in reporting statistics; instead of reporting numbers of complaints, now households are reported. He said today it looks like a better situation than last year. Does she agree?

Ms. Becker said that looking at a case-by-case basis, households complaining have gone down.

Question from ANAC: Mr. McCann asked about number of complaints received.

Ms. Becker said that it is not being reported anymore.

Question from ANAC: Mr. McCann asked before the last meeting in June, how long were complaint statistics by sheer numbers reported?

Sjohnna Knack stated there was a meeting in April, where the new system was introduced and it was explained why numbers were no longer being reported.

Mr. McCann said he was there, but wonders how long before deciding to make that change, they had been reporting statistics by numbers?

Ms. Knack said it's been done for the four years she's been overseeing noise.

Question from ANAC: Mr. McCann said it's been since January 2008, and is curious why after nine-plus years, when there seems to be a sudden increase in the order of magnitude of complaints, why suddenly a decision was made to change the way numbers are reported. He said the numbers have been changed, and it doesn't seem to be painting a picture compared to every year for the last nine years. He asked why the change?

Ms. Knack said, as was presented in April, the system was changed from a quantity-based complaint system to an individual household case management system, which is typical for a lot of airports. Quite a few are moving to a case management system. Quantity is not as important as the quality of the individual household's concerns.

Question from ANAC: Mr. McCann asked if they called once in the month, that's a complaint that registers a tally. So, if 157 households called on the same day, or if 157 households called every single day for an entire month, the number would be the same?

Ms. Becker said yes, because each case matters. A household matters whether they submit one or 2,000 complaints.

Question from ANAC: Chris Cole said it sounds as if the areas where you can have an impact on the noise are starting to take effect, which is exciting, and suggests that we are looking in the right areas. He heard a plane at 4:00 a.m. this morning, and did not bother to do anything about it. If it was a departure or an arrival, would you know about that anyway?

Ms. Becker said they look for curfew violations every night.

Question from ANAC: David Swarens asked for clarification on the "other" category in noise complaints by neighborhood; He asked if she could give further exposition on what those households were, either specifically, or what part of town.

Ms. Becker said it's any neighborhood that complained three times or less, and that they are located all over the region.

Question from ANAC: Conrad Wear asked if there was a flight that came in that was a quality of life issue, you still reach out to that aircraft? And on early turns, if no one complains, do you still reach out?

Ms. Becker that is correct, they don't wait for complaints to take action. She clarified that medical flights are exempt, but they have to fill out a form which has to be validated.

Question from ANAC: Justin Cook asked what are the two airlines bringing in flights other than East Coast?

Ms. Becker said both Spirit and Frontier have decided to change routing to improve their curfew violations.

La Jolla Monitoring – Ms. Gantwerk introduced Paul Dunholter from Bridgenet, to talk about La Jolla noise monitoring methodology.

Mr. Dunholter introduced himself, President of BridgeNet, a noise consultant that works for the airport, who has been retained to evaluate noise levels in La Jolla, pre and post Metroplex.

The goal of the study is to document the changes in noise, any operational changes that have occurred, how flights are flown, altitude, and any other changes in flight tracks. The study will also determine if there's a measurable difference in noise before and after the Metroplex implementation.

He said the Metroplex was implemented in a three phases, two of which affected San Diego. The first phase was Point Loma related to the ZZOOO ONE departure. The second phase which occurred in early March, is where arrival procedure over La Jolla changed, and departure procedure for airplanes going north (PADRZ ONE). There was an uptick in noise complaints around October 2016.

He reviewed all the sites in the study (UCSD for the pre- and post- Metroplex, and Revelle and Calumet Park, post only) and explained the specific monitoring procedures.

He said they will present the change in how loud the planes are using Lmax, which is how loud the aircraft was.

Mr. Dunholter stated they trying to determine noise from all airports and classify them, giving that information separately (SDIA and Non-SDIA operations). They want to determine not just how many operations, but the character of each operation. Have more night flights started to occur than there were before? They'll have that data to support that. He said the economy is booming on the West Coast, so there may be an uptick of traffic on this route versus other routes. He said that will be presented. They will also provide information regarding the changes in aircraft airlines are using. West Coast tend to have more evening and early night flights.

He stated that the arrival flight path over La Jolla implemented in early March shifted 1,200 feet South. Distribution of planes on that path will be reported in a scatter plot. He said the two-week period has about 1,500 flights, which is the sample size that will be shown. He said they're in the middle of collecting and analyzing the

data. He said the plan is to present this information in October, prior to presenting to the recommendation for the Subcommittee as well.

Question from ANAC: Chris McCann asked if they're purely measuring loudness? Are they doing any kind of spectral analysis on frequencies of the sound?

Mr. Dunholter said at this point in time, they've just collected a weighted data; there may be some spectral data they could show samples of, but it is the human ear weighted that is measured.

Question from ANAC: Mr. McCann asked if they're trying to correlate sound measurements directly to complaints that WebTracker has?

Mr. Dunholter said they are looking at purely noise.

Question from ANAC: Mr. McCann said it would interesting to do at least a sample of correlations of complaints, maybe finding particular planes at particular altitudes are causing a lot of issues.

Question from ANAC: Chris Cole said he attended early FAA meetings, and the summary was that there'd be no measureable sound differential. But that made no sense to him if it's shifting one foot left or right, somebody is going to have less noise, and somebody else will have more. He said it appears this study is picking up practical details, picking up also noise from other airports and other flights that are not San Diego. He asked if there is a way when complaints come in, to let people know they should be directed at a different airport?

Ms. Knack said when a complaint is received for an operation at another airport they are provided information on how to submit a complaint for that airport.

Subcommittee Update – Deborah Watkins reported that the Subcommittee met July 19th, covering the Quieter Home Program, curfew violations, and noise monitoring. The next meeting will be held in September, where members will refine their list of potential changes in noise mitigation or abatement procedures. It is anticipated that this will be a longer meeting, to make sure they encompass all members' recommendations. They will be providing the list to ANAC in the member materials a week before the October meeting.

2. Public Comment

Ms. Gantwerk opened the public comment period. She reminded the public that each speaker would have three (3) minutes to speak and would not be able to go over the allotted time, to ensure all speakers get an opportunity.

Beatrice Pardo said is one of the pros pushing the button. She asked what is case management? She said they want help, something done about the noise. She doesn't want to keep pushing the button and coming to these meetings. She wants the airplanes to be moved offshore. She said she's embarrassed to bring people to stay at her home because it is no longer a sanctuary, and all because airlines are saving money? She says it's poor design in the routes.

Bruce Bailey, a member of the subcommittee, said he's been working on these issues for about two years. What he wants to accomplish today is to let members of this ANAC Committee know where the frustration is coming from. He said the Subcommittee is not being treated the way they should. He said the committee is now arguing about the issue of whether or not the subcommittee is going to continue. He said it's his opinion and those who he talks to all the time, that it's incorrect what they're being told. He spoke against those using profanity or threats, but expressed serious concern that obstacles were being placed in the subcommittee's way. He believes current policy is being misinterpreted and that the subcommittee should continue without interruption, and that was the original intent. .

Sandy Valone said she is from Point Loma Heights and Fleetridge and expressed frustration because she's been attending these meetings for two years now, and gotten absolutely nowhere. She felt the noise contour that identifies eligibility for QHP does not include impacted areas, and that noise has moved eastbound out of Point Loma way over houses that are unprotected, and they're getting blasted day in and day out, particularly between hours of 6:30 a.m. and 8:00 a.m., in particular FedEx, UPS and DHL .She said she's asked for noise monitors in the affected areas, and gotten nowhere, while La Jolla has gotten results very quickly. In addition, she expressed displeasure with the system for recording noise complaints by household.

Alan Harris was concerned about a "case management" approach to noise complaints, and felt the information was not being shared with the FAA and was not benefitting residents. He said many neighbors there notice a change, but don't quite know what it was and don't know how to do the reporting. He said there will be a lot of complaints from the community, but if they're not going to the FAA, how do they know whether one household was reporting one plane, or 100 planes post-Metroplex?

Gale Brian said she is a 20 year resident of La Jolla. She said their home and peaceful enjoyment of it has been disrupted by airplane noise, starting in November of last year. She said they're affected by both departures and arrivals. She said they can see departures now, something they never saw, from their back yard. She said in recent months, she said she and her husband have experienced many frighteningly loud noise incidents from planes, where they feared a plane was falling from the sky, and she cannot escape it anywhere around her home. She hopes for a return to the quiet and peaceful skies they once enjoyed.

Bruce Cromer said he noticed that data is not being collected on the pilots that are turning early. He thinks that's something to consider. He said computer error is meaningless; it's the pilots that are supposed to be flying the planes. He said he's started using an app on his cell phone to report issues in the neighborhood, and it's very effective. He suggested that there may be something like that, that would allow him to file complaints, and would collect data automatically. He also wants to suggest politely the airport must go elsewhere.

Gillian Ackland said she takes issue with the noise monitoring report going on right now, and the fact that it's going to be presented to ANAC before the Subcommittee even sees it. She expressed concerns about the limited data being collected; the short duration, the hours of the day, etc. She said she has lived in her house for 50 years, and this is the first year she's ever heard noise like it is right now. She said a lot of people don't have the time to complain or have gotten too frustrated to continue. She said the procedure has been changed; a lot of people are not familiar with it and counting households instead of complaints was not enough.

Gary Wonacott said he's president of Mission Beach Town Council, and he wants to address the nighttime noise abatement procedure. He said when there is not compliance with that procedure, or when there are changes to it, that impacts Mission Beach. He believes the data indicates there has been a change, that the flights that are going to northern destinations are flying on PADRZ ONE after 10:00 p.m. He asks If there have been changes, how were changes made? And who authorized the change? He said these are things that are very important to Mission Beach.

Karen Lunt is from Bird Rock, and has lived in her home almost 20 years. She was concerned that she had never heard anything about Metroplex until it was complete. The noise is affecting her sleep, and her work as she works from home. She said she can't afford to put in central air. She said she got on the button, Air Noise IO, and she counted 400 complaints just from the time that she'd been on it in the last week and a half. She said it's impacting her life, especially as a distance runner. She's hitting the button every time; can't even enjoy a run. She wonders if her complaints are even being counted.

Greg Anderson has lived in Pacific Beach for 15 years and has watched the inbound plane traffic move further and further south. What used to be out there, like North County, now there's times where there are planes literally flying over his house. There were no planes flying over 15 years ago. He said he's lived in Point Loma, but didn't want to deal with the plane noise. He said they're getting squeezed because Point Loma is complaining. He said he used to think small planes flying over his house was cool, but is not happy with larger carriers.

Lila Schmidt said flights were not sticking to flight paths and agreements in Point Loma. She said many people do not complain because they don't have time. She expressed concern about pollution from air traffic over homes and the potential for serious health and environmental risks, which were being disregarded for profit. She did a study in 2014, the lowest CEO of the airlines, five major ones in San Diego was $5 million; highest was $26 million. She's hearing profit versus people.

3. Approval of Minutes

Ms. Gantwerk apologized on behalf of the Airport Authority that minutes were not distributed. Minutes are complete and everyone will get them with the next member package. If there are any comments, please report them. Ms. Knack said she will also make sure the website is updated as well.

4. New Business

There was no new business.

5. Next Meeting/Adjourn

The next meeting is scheduled for October 18th at 4:00 p.m. location to be at Portuguese Hall.

HMMH
1508 Eureka Road, Suite 190
Roseville, CA 95661
916.368.0707
www.hmmh.com

October 4, 2017

Ms. Sjohnna Knack
Program Manager, Airport Noise Mitigation
Planning & Environmental Affairs
San Diego County Regional Airport Authority

Subject:	La Jolla Aircraft Noise and Flight Track Analysis Report – HMMH Peer Review Letter
Reference:	HMMH Project Number 308970

Dear Ms. Sjohnna Knack:

As requested, HMMH conducted a peer review of Report #2017-005 and titled, "La Jolla Aircraft Noise and Flight Track Analysis Report." The Report was prepared by BridgeNet International and dated September 28, 2017.

According to the Report, the purpose of the project was to evaluate noise levels in the La Jolla community through noise monitoring and evaluation of aircraft flight track data prior to and after the implementation of the Federal Aviation Administration (FAA) Southern California Metroplex project[1].

Per your direction, HMMH thoroughly reviewed the information contained within the Report to determine the accuracy of the results and came to the following conclusions:

- The five (5) noise monitoring locations appear to have been properly placed and set up for the purpose of the analysis completed
- The noise monitoring durations at the five (5) noise monitoring locations provided adequate information for meeting the purpose of the project
- The noise monitoring data was acquired with highly accurate and appropriately calibrated equipment – assuming the equipment have up to date manufacturer's calibrations
- The noise monitoring data, flight track radar data analysis, and gate/aircraft altitude analysis provided information to determine the differences experienced in the areas in close proximity to the five (5) measurement locations due to the implementation of the Metroplex

Overall, the data, analysis and report prepared by BridgeNet International appear to be accurate.

Sincerely yours,

Harris Miller Miller & Hanson Inc.

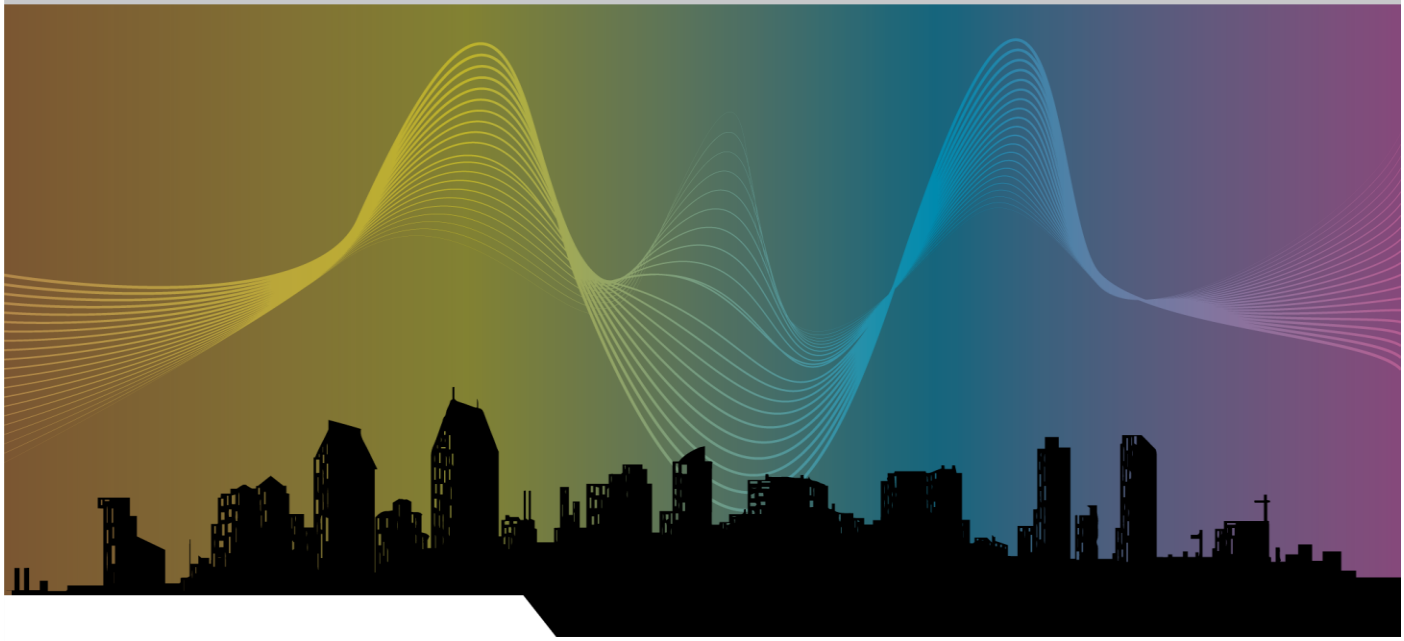
Justin W. Cook - INCE, LEED GA
Principal Consultant

cc: Gene M. Reindel, Vice President

[1] http://www.metroplexenvironmental.com/socal_metroplex/socal_introduction.html

Report #2017-005

October 11, 2017



La Jolla Aircraft Noise and Flight Track Analysis

Prepared for:
San Diego County Regional Airport Authority
P.O. Box 82776
San Diego, CA 92138

BridgeNet International

20201 SW Birch Street, Suite 250
Newport Beach, CA 92660
T: 949-250-1222 | F: 949-250-1225
Airports@AirportNetwork.com

Background

BridgeNet International was contracted by the San Diego County Regional Airport Authority, who operates San Diego International Airport's (SDIA) Noise Mitigation Office, to evaluate noise levels in the La Jolla community. The study includes both portable noise monitoring and a detailed evaluation of flight track radar and operational data. The study's purpose was to better understand potential factors contributing to increased community noise complaints. The methodology of this analysis was presented at the Airport Noise Advisory Committee (ANAC) meeting on August 16, 2017. Based on discussions at the August ANAC meeting, the following data was added to the report:

- **Measurement sites.** Two additional noise measurement sites in La Jolla were added to cover additional areas of the La Jolla community. These sites were also measured for a longer time period (25 days) in order to measure the noise in a variety of conditions.
- **Departure analysis.** In addition to reviewing the arrival flight path over La Jolla, the SDIA departure paths were reviewed, as some areas of La Jolla are more impacted by departures than by arrivals.
- **Noise metrics.** The community preferred the Maximum Noise Level (Lmax) metric over the FAA's Community Noise Equivalent Level (CNEL) metric. They also asked for information about the duration of the noise levels.
- **Additional historical operations analysis.** A larger sample of radar and operational data for both SDIA and other airports was analyzed to show operational trends.
- **Analysis of noise complaint information.** Noise complaints received during the noise monitoring period were collected and analyzed.

Noise Monitoring Locations

Five locations in La Jolla – UCSD (Site A), Ravelle Drive (Site B), Calumet Park/Bird Rock (Site C), Upper Bird Rock (Site D), and Muirlands (Site E) – were monitored for aircraft noise over time periods ranging from 2 days to 25 days. Site A was tested before and after the FAA SoCal Metroplex project (Metroplex) was implemented, since it was in the area where aircraft arrival flight paths into San Diego International Airport (SDIA) were altered by the FAA in March of 2017. Noise monitoring at the other four La Jolla locations was conducted post- Metroplex implementation. These sites are described below, with the locations presented in **Figure 1**.

- **Site A** was a longer-term (14-day) monitoring location placed atop buildings at the University of California San Diego (UCSD), at the intersection of Downwind Way and Shellback Way, during two separate testing periods (one in 2016 and one in 2017). The purpose of the longer-term monitoring was to measure noise pre- and post-implementation

of the FAA SoCal Metroplex project[1] (Metroplex) at this location. The analysis determined both the single event levels and the cumulative overall noise level. The measurement and analysis cover arrivals from SDIA as well as aircraft operating from other airports in the region.

- **Sites B and C** were shorter-term two-day monitoring sites. Site B was at the end of a cul-de-sac on Revelle Drive, and Site C was just north of Calumet Park at the end of Midway Road, east of Calumet Avenue. Site B was under the approach path to SDIA. Site C is along the shoreline and had a view of the departure operations from SDIA. The purpose of the noise monitoring at these two shorter-term portable locations was to measure current peak single event aircraft noise levels (Lmax) from various aircraft operations in the community. This included arrivals and departures from SDIA as well as aircraft operating from other airports in the region. These measurements reflect 2017 post-Metroplex conditions.
- **Sites D and E** were longer-term monitoring locations that were measured for 25 days, selected with assistance from citizens concerned with aircraft noise in the La Jolla community. Site D was in upper Bird Rock and was exposed to noise from the departure operations from SDIA. Site E was in the Muirlands neighborhood and experienced noise from both departure and arrival flight paths. Per the request of the community, these sites were measured for a longer duration to measure noise under a variety of meteorological conditions. The analysis determined the single event level, the maximum level, and the duration of the events. The measurement and analysis included arrivals and departures from SDIA as well as aircraft operating from other airports in the region. These measurements reflect 2017 post-Metroplex conditions.

Radar data from 2014 through September 2017 was evaluated to identify changes that have occurred over that time. This includes changes in the number of operations, the aircraft mix, time of day, location of the flight track, altitude, dispersion, and descent rate. During the various measurement periods, the radar data was also reviewed and correlated with noise event data to further identify changes that have occurred.

Summary of Findings and Observations

Summary of Aircraft Noise Monitoring

La Jolla is located in close proximity to a number of airports and is adjacent to the Pacific Ocean. The shoreline is a scenic flight path for many smaller aircraft. From the center of La Jolla, nearby airports include SDIA (located nine miles to the south), Montgomery Field (seven miles to the east), and Miramar (six miles to the east).

[1] http://www.Metroplexenvironmental.com/socal_Metroplex/socal_introduction.html

- The aircraft noise from SDIA operations varied depending upon the location in La Jolla. In the Bird Rock area, the primary SDIA noise source was westerly departures over the ocean that turn northward, flying up the coast. For the UCSD area, the primary SDIA noise source was the arrival flight path in which aircraft coming from the north pass over the shoreline, flying easterly to land at SDIA. For communities in the middle of La Jolla, such as the Muirlands, noise events occurred from both SDIA arrivals and departures. The noise levels from SDIA operations can be characterized as repeating noise events coming from higher altitude aircraft; these events have a lower maximum noise level but are often of long duration. These operations start early in the morning and last into the late evening when ambient background noise is lower; at peak operational hours, there is less respite between noise events. The day-to-day noise levels from the offshore departures have more variability under certain meteorological conditions, such as higher humidity and inversions.
- Aircraft noise from non-SDIA operations in the region occurs more often than that from SDIA operations; this noise is characterized by lower altitudes and higher single event maximum noise levels. These operations are more random in nature and consist of many types of aircraft operations, including small general aviation (GA) traffic from Montgomery Field, military aircraft from Miramar/North Island, and transient and local aircraft flying up and down the coast just offshore. Military helicopters typically generated the highest noise levels. Non-SDIA operations are most active during the daytime and less so in the early morning and late evening hours.
- The maximum noise levels from SDIA operations in La Jolla were typically in the low 50s dBA, while the typical single event noise level from non-SDIA operations was in the high 50s to low 60s dBA. (In comparison to other areas around the airport, locations under the flight path in Point Loma experience maximum noise levels in the 80s dBA.). Noise events from SDIA departures can often have durations of 30 to 60 seconds. Most GA operations that generated the highest events were in the 30 second duration range, however slow-moving helicopters could generate events of 60 seconds or greater.

Summary of Radar Data Analysis

Radar data from 2014 through September 2017 was evaluated to determine the potential changes and resultant exposure associated with general changes and trends and with the Metroplex implementation. The findings are summarized below.

- The point at which the arrival flight path over La Jolla passes over the shoreline shifted approximately 1,200 feet south of its previous location. The concentration of aircraft (meaning how closely aircraft follow the defined flight path) flying this path was approximately the same before and after Metroplex implementation.
- The average altitude of aircraft flying this arrival path was slightly higher in 2017 than it was before Metroplex implementation, going from on average 8,455 to 8,610 feet at the shoreline.

- These changes were not in themselves sufficient to result in measurable changes in noise. The propagation of noise for aircraft above 8,000 feet for a ground shift of 1,200 feet would result in a change of less than 1 dBA. The pre- and post-Metroplex noise measurements did not show a measurable change in the maximum noise levels of aircraft flying the new arrival procedure.
- The north bound SDIA departure flight paths are largely unchanged from pre-Metroplex patterns. There is an increase in concentration and changes in usage (presented in the next paragraphs), but no significant change to the ground path of these procedures.

Summary of Other Changes during the Study Timeframe

A number of other changes have been observed over the evaluation period that are unrelated specifically to the Metroplex project itself, but have taken place over the same general time period that new procedures have been implemented. These other factors can also affect the perception of the overall noise environment. These are described below:

- **Fleet mix changes.** The fleet mix of smaller commuter turboprop and regional jet aircraft is evolving here, as it is nationwide. Turboprop aircraft and smaller regional jets are being replaced with larger regional jets that are approaching the size of the narrow-body jets that commonly fly into SDIA. The noise measurements show that these larger regional jet aircraft generate similar maximum noise levels to the common narrow-body aircraft (A320, B737) family. These new larger regional aircraft generate higher noise levels than the aircraft they replaced.
- **Overall growth in jet activity.** The number of jet aircraft flying the north corridor of arrival and departure paths has grown about 14% since 2014. A similar percentage increase in operations has occurred in the evening/early nighttime hours for both departing and arriving aircraft.
- **General concentration.** Flight path concentration is occurring independent of any changes to flight procedures. With the modern aircraft flight deck, the flight computer will fly a very precise flight path, no matter what the specific procedure.
- **Combined effects.** The combined effect of overall growth in jet activity, the fleet mix changes to larger regional aircraft, the concentration of the flight pattern and operations from non-SDIA aircraft can result in some locations experiencing a higher increase in number of overflights and noise events. In addition, slight changes in how a procedure is flown can result in perceived changes in the character of the noise, which can be perceived as a change even though the magnitude may not change.
- **Nighttime noise procedure.** The south departure around Point Loma is used for flights with an easterly destination. These departures primarily fly on a heading of 275 degrees (close to due west) before turning south and back to the east. After 10 PM, the long-standing nighttime noise abatement procedure directs aircraft on this departure path to depart on a 290-degree heading (west-northwest) before turning back to the south and east. This path has less residential and more commercial land use in areas close to the airport.

    - The 290-degree heading noise procedure for after 10 p.m. has been in use for many years. With the noted growth in operations it is used for initial departure more frequently than it was in the past. This path results in similar maximum noise levels in La Jolla as those from an aircraft flying the north departure route.
    - Occasionally, aircraft will continue north and then turn back toward the east over La Jolla. The number of times this occurs now is less than in the past. However, it is a noted concern to the La Jolla community when it does occur.

- **Meteorological changes.** The departure flight path for flights heading north does not pass directly over La Jolla but passes to the west over water. At these distances and with overwater propagation, meteorology plays a large role in noise levels. Two major factors that increase noise propagation are higher humidity and inversions. After many years of drought, this past winter saw more frequent occurrences of higher humidity, which resulted in greater noise propagation.
- **Higher awareness.** The Metroplex implementation occurred during a time of heightened public awareness of potential changes in flight patterns. Such increased awareness can lead to increased scrutiny of and concern about aircraft noise.
- **Next-generation aircraft.** The next-generation aircraft just entering service are approximately 2 to 4 dBA quieter than current narrow-body aircraft of the same size. These aircraft will become much more widely used over the next few years.

Noise Complaint Analysis

The noise complaint data submitted during the time that noise measurements were taken was analyzed. Residents of La Jolla that filed noise complaints typically identified aircraft as coming from SDIA and less from non-SDIA operations. Both SDIA departures and arrivals generated noise complaints. The operations were typically not associated with out-of-normal operations, but rather with regularly occurring flights. It should be noted that the majority of the noise complaints were received via an application not created by the Airport Authority.

Definition of Terms

Characteristics of Sound

Sound can be described technically in terms of amplitude (loudness), frequency (pitch), or duration (time). Frequency (or pitch) is measured in hertz (Hz). The standard unit of measurement for the loudness of sound is the decibel (dB). Decibels are based on a logarithmic scale. The logarithmic scale compresses the wide range in sound pressure levels to a more usable range of numbers (in a manner similar to the Richter scale used to measure earthquakes).

Human hearing is not equally sensitive to sound at all frequencies. Sound waves below 16 Hz are not heard at all and are “felt” more as a vibration. Similarly, while people with extremely sensitive hearing can hear sounds as high as 20,000 Hz, most people cannot hear above 15,000 Hz. In all

cases, hearing acuity falls off rapidly above about 10,000 Hz and below about 200 Hz. Since the human ear is not equally sensitive to sound at all frequencies, a special frequency-dependent rating scale has been devised to measure loudness in a way that reflects how the human ear actually perceives sound. Community noise levels are measured in terms of this A-weighted decibel scale (or dBA), which is widely used in industrial and environmental noise-management contexts.

Propagation of Noise

Outdoor sound levels decrease as a result of several factors, including increased distance from the sound source, atmospheric absorption (characteristics in the atmosphere that absorb sound), and ground attenuation (characteristics on the ground that absorb sound). If sound radiates from a source in a homogeneous and undisturbed manner, the sound travels in spherical waves. As the sound wave travels away from the source, the sound energy is spread over a greater area dispersing the power of the sound wave.

Atmospheric temperature and humidity also influence the sound levels received by the observer. How much sound is absorbed by the atmosphere depends on the frequency of the sound as well as the humidity and air temperature. For example, when the air is cold and humid, and therefore denser, atmospheric absorption is lowest and sound travels farther. Higher frequencies are more readily absorbed than the lower frequencies. The fluctuations in sound levels created by atmospheric conditions increase with distance and become particularly important at distances greater than 1,000 feet. Over large distances, lower frequency sounds become dominant as the higher frequencies are attenuated. Noise propagation is one of the reasons that aircraft noise will be higher one day than other days even when the same aircraft are flying the same path and altitude.

Noise Metrics

The description, analysis, and reporting of noise levels around communities is made difficult by the complexity of human response to noise and the variety of metrics that have been developed for describing noise impacts. Each of these metrics attempts to quantify noise levels with respect to community impact.

Noise metrics can be divided into two categories: single event and cumulative. Single event metrics describe the noise levels from an individual event such as an aircraft flyover. Cumulative metrics average the total noise over a specific time period, typically from one to 24 hours. This study presents single event measurement results.

- **Maximum Noise Level,** or Lmax, is the maximum or peak sound level during an aircraft noise event. The metric accounts only for the peak intensity of the sound and not for the duration of the event. As an aircraft passes by an observer, the sound level increases to a maximum level and then decreases. Typical single event noise levels range from over 90 dBA close to the airport to the low 50s dBA at more distant locations.
- **Community Noise Equivalent Level (CNEL)** is a measure of not just one event like Lmax but of average noise over twenty-four hours; it applies a weighting factor that penalizes

noise events occurring during the evening and night hours (when humans are typically more sensitive to noise and sleep disturbance is a concern). More specifically, noises occurring during the evening (from 7 PM to 10 PM) are penalized by 5 dB, while noises occurring during the night (10 PM to 7 AM) are penalized by 10 dB. CNEL noise levels near airports range from 70 CNEL directly next to an airport to less than 45 CNEL at more distant locations.

Methodology

Noise Monitoring Durations

- **Site A**, located at UCSD, was an unattended location that collected noise data for two weeks; the monitor was set up around 4 PM on October 17, 2016, and removed at about 11 AM on November 1, 2016. This timeframe provided noise data prior to the Metroplex implementation (2016 pre-Metroplex).

  Site A was measured again for a second two-week period, from 1 PM on April 27, 2017, to 1 PM on May 12, 2017. This timeframe provided noise data after the Metroplex implementation (2017 post-Metroplex).

- **Site B** on Revelle Drive and **Site C** on Calumet Park were attended locations set up to measure from 4 PM to 11 PM on May 3 and May 4, 2017. Technicians were on-site for the duration of this monitoring and logged the sources of the noise data collected. These measurements reflect 2017 post-Metroplex conditions.
- **Site D** in upper Bird Rock and **Site E** in Muirlands were unattended sites set up to measure from approximately 4 PM on September 1, 2017 until 1 PM on September 25, 2017. These measurements reflect 2017 post-Metroplex conditions.

Noise Monitoring Equipment

During the entire duration of the noise measurements, the sound level meters were mounted on tripods five feet above the ground/roof and equipped with windscreens at all locations. State-of-the-art sound level meters were used to continuously measure the noise and record a measured noise value once every second (continuous one-second noise levels).

The Site A 2016 pre-Metroplex noise testing used a Brüel & Kjær 2250 sound level meter. Equipment used for the short-term testing at Sites B and C was one 01dB DUO and one 01dB FUSION. The equipment used meets the International Standard IEC 61672 specification for Class 1 precision sound level meters. The microphones were calibrated before the tests with a Brüel & Kjær Type 4231 sound level calibrator that meets International Standard IEC 60942. Calibration is traceable to the National Institute of Standards and Technology (NIST).

For the unattended locations (Sites A, D, and E), the aircraft noise events were correlated to radar data obtained from the SDIA noise monitoring system. For the attended locations (Sites B and C),

the noise source observation logs kept by the on-site field technicians and SDIA radar data were used to correlate the noise events to aircraft operations.

Findings: Changes in Operations in La Jolla

Analysis of historical operations (2014 through 2017) were reviewed to identify possible changes in aircraft operations and flight paths. This also included an assessment of the flight path changes associated with the FAA's Metroplex program in Southern California. The metroplex review included longer-term noise monitoring at Site A for pre- and post- metroplex conditions to document changes in aircraft noise or operations (flight paths). There has been heightened awareness and concern in the community that noise levels have increased since Metroplex was implemented, with the first phase and November 2016 (south departures) and the second phase in March 2017 (north departures and south arrivals). La Jolla noise complaints showed an increase starting in October 2016.

The metroplex analysis presents the results of a comparative analysis of two two-week periods: the first from October 18 to October 31, 2016, prior to the airspace change; the second from April 28 to May 11, 2017, after the airspace change. The study evaluated flight track information from the airport's noise monitoring system and noise measurement data from a monitoring site located at UCSD during these two time periods.

At the request of the community, additional noise monitoring was completed at two locations from September 1 through September 26, 2017. This data represents current conditions only, as there are no historical measurements at these locations. Again, at the request of the community the historical radar data from 2014 to the present day was reviewed in order to identify potential changes that have occurred at the airport.

How Have Historical Aircraft Operations Changed?

Overall operations at SDIA have increased since 2014, with the fleet mix also evolving with the regional aircraft shifting from smaller regional turboprop and jet aircraft to larger regional jet aircraft.

The SDIA noise monitoring system radar data was reviewed from 2014 through September 26, 2017. The data was reviewed relative to number of operations, fleet mix, time of day and flight path usage. This data is summarized in the following tables and paragraphs. All data presented for 2017 reflects data gathered from January 1 through September 26, 2017. These results are the average for the first 9 months of the year, and do not include the 4th Quarter of 2017.

Findings: Changes in Operations in La Jolla (Cont.)

Table 1 presents the operations counts by aircraft category from 2014 to the present, including operations by jet and propeller aircraft. The data shows that the number of jet operations has increased (16%) while the number of propeller aircraft operations has decreased (58%). Jet

operations include all categories of jets, including commercial jets, regional jets, business jets, and military jets. Note that early morning and evening/nighttime jet operations have also increased.

Table 1
Average Operations by Aircraft Category

Year	Average Daily Operations				Percentage Increase from 2014
	Jet	Propeller	Other/Unknown	Total	
2014	470	45	10	524	--
2015	490	33	8	532	2%
2016	516	21	2	539	3%
2017*	546	19	1	566	8%

**2017 data is through September 26th, 2017*

The types of jets by category are presented in **Table 2**. This data shows the different types of jets that operate at SDIA and the change in the number over time. The data shows that the primary jet aircraft is a narrow-body jet (A320 and B737 family), and that the greatest percentage growth is taking place in the category of regional jets (CRJ7, E175). Wide-body aircraft (B747, B767) have remained steady.

Table 2
Average Operations by Jet Category

Year	Average Daily Operations by Jet Category				
	Wide-body	Narrow-body	Regional	Business	Military
2014	17	379	40	33	<1
2015	18	387	51	34	<1
2016	17	407	54	37	<1
2017*	18	424	66	38	<1

**2017 data is through September 26th, 2017*

Nationwide, the type of aircraft used in regional service has shifted away from turboprop aircraft and small regional jets and toward larger regional jets that approach the size of a traditional narrow-body jet. **Table 3** shows the change in the fleet mix of regional jets and commuter turboprop aircraft that serve SDIA. The data shows a reduction in the number of turboprop and small regional jets and an increase in the number of large regional jets. These large regional jets

are approaching the size of a narrow body jet aircraft. Measurements show that they generate higher noise then the small regionals similar to the noise level of a narrow body jet.

Table 3
Average Operations by Regional Aircraft Categories

Year	Average Daily Operations by Regional Aircraft				
	Turboprop DH8D/E120	Small RJ CRJ2	Medium RJ CRJ7/9	Large RJ E175/95	Total Jets
2014	27	18	16	6	40
2015	10	17	11	24	52
2016	5	4	13	37	54
2017*	5	1	14	51	66

**2017 data is through September 26th, 2017*

The radar data was also reviewed to determine the number of jet aircraft that fly the arrival and departure procedures that take aircraft near or over La Jolla. **Table 4** presents the average daily number of jet arrivals from the north and jet departures flying to the north. The data shows a general increase in the number of jet operations that reflects the increased airport traffic as a whole.

Table 4
Average Operations by Jet Aircraft Departing to or Arriving from the North

Year	Average Daily Jet Flights		Percent Increase from 2014	
	Arrivals	Departures	Arrivals	Departures
2014	88	103	--	--
2015	95	110	8%	7%
2016	102	119	16%	16%
2017*	108	127	23%	23%

**2017 data is through September 26th, 2017*

In order to visually show the flight tracks for the different periods of time that include a year of operations, it was necessary to create a representative data set. It is difficult to visually show trends using a full year of data where there are over 200,000 flight tracks. And selecting only a few days of data may miss what is occurring over the course of an entire year. To present data for a year's worth of operations, a process was created that selected a random sample of 8,000 flight tracks that was representative of the full yearly activity. This represents approximately 10 days of flight tracks. All the selected tracks were for SDIA jet aircraft only operating on Runway

Findings: Changes in Operations in La Jolla (Cont.)

27 in order to show trends in jet operations during standard operations (reverse and contra flow conditions are also not included). The results for the years 2014 through 2017 are presented in **Figures 2** through **5**. The data for 2017 represents operations occurring after March 3, 2017, to show post-Metroplex tracks only while the 2016 data is up until November 10th when Phase 1 was implemented. Note that each individual flight path is printed at 30% transparency so that the more dominant paths are readily visible.

Did the Number of Operations Change during the Noise Measurement Period?

Between the 2016 and the 2017 measurement period, there was a 9% increase in the number of jet aircraft on approach to SDIA over La Jolla.

During the two-week period in October 2016 (pre-Metroplex), the radar data shows that there were 104 average daily jet operations on approach to SDIA over La Jolla. During the two-week period in April and May 2017 (post-Metroplex), there were 113 average daily jet operations on approach to SDIA over La Jolla.

The radar data does not show that there are any additional flight origins that would account for the increase in operations on this path. Instead, the increase is a result of general growth, seasonal changes, and growth in service from the regions of the country that utilize this path.

There can be over 2,000 aircraft operations per day in the San Diego region associated with SDIA and the other airports in the region. Not all fly close enough to La Jolla to generate noise events. In order to identify potential noise events, circles of two, three, and five statute miles were drawn around Site A. Within each of those circles, the average daily number of SDIA jet arrivals and the number of average daily other airport operations was tallied for the 2016 and 2017 study periods. The results are presented in **Table 5**. As a very rough estimate, an aircraft within two statute miles could potentially generate a noise event.

Table 5
Average Operations per Day within Two, Three, and Five Miles of Site A

Statue	2016		2017	
Miles	**SDIA**	**OTHER**	**SDIA**	**OTHER**
2	96	142	107	127
3	99	165	109	152
5	102	196	111	176

The over flight counts in Table 5 also shows that the majority of the SDIA operations over La Jolla followed a relatively constant predictable path. The operations from other airports followed less predictable and more dispersed paths. The majority of the non-SDIA operations came from

Findings: Changes in Operations in La Jolla (Cont.)

Montgomery-Gibbs Executive Airport (MYF), located 7 miles to the east, transient aircraft flying up and down the coast, and a lesser number of operations from Miramar Marine Corps Air Station (NKX), located 6 miles away, and Gillespie Field, located 16 miles away. **Table 6** presents a count of the number of operations from other airports that flew within two, three, and five statute miles of Site A during the measurement survey, as well as the airport that these operations were associated with.

Table 6
Average Operations from Other Airports per Day within Two, Three, and Five Miles of Site A

Other Airports	Code	Pre 2016			Post 2017		
		2 mile	3 mile	5 mile	2 mile	3 mile	5 mile
Scripps Memorial Hospital Heliport	CA24	1	1	1	1	2	2
McClellan-Palomar Airport	CRQ	4	5	6	3	3	4
Montgomery-Gibbs Executive	MYF	102	111	123	93	101	112
Miramar Marine Corps Air Station	NKX	1	6	11	1	10	15
North Island Naval Air Station	NZY	3	6	9	2	4	5
Brown Field Municipal Airport	SDM	6	7	8	7	7	8
Gillespie Field Airport	SEE	12	12	14	9	10	12
Unknown or Other		13	18	25	11	15	19
TOTAL		**142**	**165**	**196**	**127**	**152**	**176**

Did the Flight Track Path Change?

The arrival path over La Jolla shifted approximately 1,200 feet to the south where the aircraft pass over the shoreline.

Radar data of aircraft arriving into SDIA over La Jolla and the FAA's published flight procedure show that the centerline location of the flight path shifted to the south after the implementation of the Metroplex program. The revised path is now approximately 1,200 feet further to the south where it crosses the shoreline and converges with the pre-Metroplex path at a location north of Balboa/Garnet Avenue.

Figure 6 presents the flight tracks for SDIA jet arrivals during the 2016 measurements period; these arrivals were flying the pre-Metroplex arrival procedure over La Jolla. **Figure 7** presents the flight track data for SDIA jet arrivals during the 2017 measurements period; these arrivals

were flying the post-Metroplex arrival procedure over La Jolla. Each flight track is printed at 50% transparency, so that the figure highlights where the concentration of the paths occurred. The results show that the flight tracks in 2017 were further south when they crossed the shoreline than they were in 2016, and that the 2016 and 2017 paths overlapped when the aircraft turned toward the west in the area of Balboa/Garnet Avenue. **Figures 8** and **9** present radar data from other airport operations for the two time periods.

The SDIA radar data is combined into one graphic presented in **Figure 10**. This data shows both the 2016 and 2017 SDIA radar data, with each track printed at 35% transparency. At the lower transparency, the concentrated tracks are more highlighted while the dispersed tracks are less visible. This graphic illustrates where the shift to the south has occurred.

Have Aircraft Altitudes Changed?

The average arrival altitude over La Jolla increased slightly by 155 feet to an altitude of 8,610 where the aircraft pass over the shoreline.

SDIA jet arrival aircraft radar data was evaluated by the creation of a "gate" perpendicular to the flight path at the point where aircraft cross over the shoreline on approach to land. The top of **Figure 11** presents the location of the gate, with its southern edge at point AA (La Jolla Point) and its northern edge at point BB (approximately the 805 Freeway and Lusk Boulevard). This gate is approximately five statute miles wide, ranging from 0 to 16,000 feet above MSL (Mean Sea Level). The graphics in the bottom of the same figure show the position of aircraft as they pass through this gate, as seen from the perspective of an observer watching the aircraft come towards them. The middle graphic presents the gate results for 2016 radar data; the bottom graphic shows the 2017 radar data. The graphics show both the concentrated areas and the dispersed areas both vertically and horizontally.

The results show that the average altitude of jet aircraft that passed through the gate in 2016 was 8,455 feet above MSL. For the 2017 the average altitude increased to 8,610 feet above MSL. In a comparison of flight paths before and after the implementation of Metroplex, aircraft are now flying, on average, 155 feet higher than before on this flight procedure into SDIA. The data also shows a more concentrated altitude with less range.

This difference in altitude and location of the flight path is shown in a schematic graphic in **Figure 12**. This figure shows the difference between the 2016 and 2017 flight paths both vertically and laterally when drawn to scale. At an altitude of 8,455 feet, a 1,200-foot lateral shift and a 155-foot increase in altitude results in less than one decibel change in noise, which is typically not a noticeable change.

The altitude data for other aircraft operations was also determined. For all aircraft (SDIA and other aircraft operations) that flew within two statue miles of Site A, the altitude of the aircraft when it was at a point closest to the site was determined. These results for 2016 and 2017 are

presented in **Figure 13.** The results show that the SDIA operations (in blue) are normally in the 6,000- to 10,000-foot range with the majority between 8,000 and 9,000 feet. For other aircraft operations (in orange) the primary range is 500 to 5,000 feet with the altitudes scattered throughout that range. The other airport operations are lower for two reasons: they are typically propeller or helicopter operations that fly lower, and the two airports (Montgomery Field and Miramar) are located closer to La Jolla than SDIA is.

Has the Dispersion of the Flight Path Changed?

The level of flight path concentration between the 2016 and 2017 measurement periods is roughly the same.

SDIA jet arrival radar data was also analyzed with respect to the lateral dispersion of the aircraft on the flight path. Both the pre- and post-Metroplex procedures use area navigation (RNAV), and these have a similar degree of concentration of the path. This can be seen both from the flight track maps (Figures 2 through 5) and the gate penetration graphics (Figure 11). In both pre- and post-conditions, aircraft did deviate from the path at the direction of air traffic control (ATC). Controllers commonly give such instructions for safety and efficiency reasons, to maintain separation and spacing as the aircraft approach the airport to land.

The sample time periods were assessed to determine the percentage of flights that deviate more than 2,000 feet from the flight path at some point of the flight. Analysis of the data shows that 28% of the 2016 flights had some deviation to the north and that 27% of the 2017 flights had some deviation to the north. Therefore, the dispersion of aircraft relative to the centerline of the ATC-assigned flight procedure was roughly the same. The concentrated portion of the path shifted slightly south in conjunction with the movement of the flight procedure to the south.

Are Aircraft Descending or Flying Level When Passing over La Jolla?

Both the 2016 and 2017 procedures operated with a descent rate near 3 degrees (depending upon the aircraft type), which is considered optimal for aircraft approaching an airport.

The radar data between the shoreline and Balboa/Garnet Avenue was analyzed to determine the descent rate of the aircraft. This distance is approximately 4.5 statute miles. In theory, aircraft descending are operating at lower thrust levels, generating less noise and producing less CO_2 emissions than an aircraft in level flight maintaining a constant altitude.

The 2016 radar data showed the average aircraft in a descent profile passing an altitude of 8,455 feet above MSL when crossing the shoreline and continuing the descent to 7,210 feet above MSL at Balboa Boulevard: a decrease in altitude of 1,245 feet and a glide path of just under 3 degrees. The 2017 radar data showed an average altitude of 8,610 feet above MSL when crossing the shoreline and descending to 7,380 feet above MSL at Balboa Avenue: a descent of 1,230 feet and an average glide path of 2.9 degrees. Both the 2016 and 2017 procedures operated with a descent

rate near 3 degrees (depending upon the aircraft type), which is considered optimal for aircraft approaching an airport.

Findings: Noise Levels in La Jolla

Have Single Event Noise Levels Changed at Site A?

There was not a measurable change in the single event maximum aircraft noise at Site A when comparing noise data before and after Metroplex implementation.

The noise measurements from the two monitoring sessions at Site A (UCSD) were compared to determine the Lmax noise levels associated with aircraft operations during the 2016 and 2017 study periods. Typical Lmax levels range from the low 50s dBA at distant locations to over 90 dBA near an airport. Generally, the levels measured in La Jolla ranged from the low 50s dBA to high 70s dBA, with the majority in the 50s dBA.

Many overflights did not generate a measurable noise event, for example because the aircraft noise was lower than the ambient noise, because there were other sources of noise at the time of the event that masked the noise, or because there were other louder aircraft operating at the same time. The ambient noise was often in the low 50s dBA, which was at times similar to the noise generated by a typical arrival of a SDIA jet. (More detail about ambient noise readings appears in the next Findings section.)

Examples of noise events for a SDIA jet and Non SDIA aircraft are presented in **Figure 14**. The top portion of the graphic shows a typical SDIA jet approach over Site A in 2016, and the bottom portion shows typical operations of other propeller aircraft at the same location and testing period. The light blue lines represent a continuous noise level for a 5-minute time period. The light green lines are plots of an aircraft's closest approach for the same time period, with the green line getting lower as the aircraft passes closest to the site and higher as it flies past. In the examples, the SDIA noise event generated an Lmax of 54 dBA with the aircraft passing within 8,400 feet of the site. The other airport noise event generated an Lmax of 67 dBA with the aircraft passing within 2,100 feet of the site. Generally, the noise of SDIA jet operations was close to the ambient noise at Site A. If the ambient noise is low, then more events will be measurable and more distinctly audible. If the ambient is high, then fewer events are measurable and they will be less distinctly audible.

The results are presented in **Table 7** and **Table 8**, for 2016 and 2017 respectively, with the results described below.

- **2016:** There were 164 average daily measured aircraft events during the sample period used in this study, with an average peak noise of 59 dBA. The highest maximum noise measured was 83 dBA and was the result of an aircraft operation associated with another airport. Of the 164 aircraft events, 71 were associated with arrivals into SDIA, with an average peak noise of 56 dBA. There were 93 events from aircraft from other airports,

Findings: Noise Levels in La Jolla (Cont.)

with an average peak noise of 63 dBA. For events above 60 dBA, there was an average of 4 events per day from SDIA and 35 events per day from other airports.

- **2017:** There were 157 average daily measured aircraft events during the sample period used in this study, with an average peak noise of 58 dBA. The highest maximum noise measured was 85 dBA and was the result of an aircraft operation associated with another airport. Of the 157 aircraft events, 68 were associated with arrivals into SDIA, with an average peak noise of 56 dBA. There were 89 events from aircraft from other airports, with an average peak noise of 62 dBA. For events above 60 dBA, there was an average of 3 events per day from SDIA and 39 events per day from other airports.

Table 7
Site A: 2016 Noise Measurement Results

Airport Source	Avg. Daily Measured Events	Average Lmax	Peak Lmax	Avg. Daily Events Greater than >60 dBA	Avg. Daily Events Less than <60 dBA
SDIA Airport	71	56	65	4	67
Non SDIA	93	63	83	35	58
Total	**164**	**59**	**83**	**39**	**125**

Table 8
Site A: 2017 Noise Measurement Results

Airport Source	Avg. Daily Measured Events	Average Lmax	Peak Lmax	Avg. Daily Events Greater than >60 dBA	Avg. Daily Events Less than <60 dBA
SDIA Airport	68	56	71	3	65
Non SDIA	89	62	85	39	50
Total	**157**	**58**	**85**	**42**	**115**

The results show that the single event noise levels were similar between the 2016 and 2017 measurements. The SDIA arrival tracks were slightly higher in 2017, and they shifted to the south, away from the measurement site and flying a similar descent profile. At an altitude of over 8,000 feet these slight shifts in distances do not result in a significant change in the single event noise levels. Based upon the shift in distance of the flight path, areas to the south may experience

a 0.1 to 0.4 dBA increase in Lmax noise levels while locations to the north may experience a 0.1 to 0.4 dBA decrease.

Aircraft from other airports generally result in somewhat higher single event noise levels, since these are often propeller or helicopter aircraft that fly lower to the ground, thus generating higher single event noise in the 60s dBA to low 70s dBA range. Aircraft from other airports also have a more varied flight pattern and day to day fluctuations in the number of operations. Thus, the difference in the number of operations between the two measurement periods is likely a reflection of the type, number and location of the flights in the two periods rather than changes due to the implementation of Metroplex.

Have Overall CNEL Noise Levels Changed at Site A?

There was not a measurable change in the SDIA DNL noise level at Site A when comparing noise data before and after Metroplex implementation.

CNEL is a measure of cumulative noise throughout the day. CNEL noise levels typically range from 70 CNEL very close to an airport to less than 55 CNEL at communities a number of miles away. Note that measuring CNEL at levels below 55 CNEL becomes less precise because the noise from aircraft events can be close to existing ambient noise, and it is not always technically possible to separate the two. (Note that CNEL differs from the Lmax values presented previously. Lmax values are numerically higher than CNEL values because the CNEL represents an average that includes both peak sounds [like the Lmax] and lower values when aircraft noise is not present.)

Aircraft noise events and the time when aircraft noise was present were calculated for identified aircraft events above the ambient threshold and correlated with an aircraft that caused that event. This was completed for both measurement periods at Site A. The CNEL metric can be calculated by summing the noise energy from the aircraft events and applying the evening and night weighting penalty. The results are presented in **Table 9**.

The results show that the measured aircraft CNEL levels were below 50 CNEL for both the 2016 pre-Metroplex and the 2017 post-Metroplex measurement periods. CNEL levels from aircraft operating at airports other than SDIA were higher than from SDIA aircraft. The noise from aircraft operating at the other airports also had more variability than SDIA in that the number of operations and the pattern of the flights varied much more widely than the more precise SDIA arrival procedures. The CNEL noise levels associated with SDIA operations measured essentially the same in 2016 and 2017.

Findings: Noise Levels in La Jolla (Cont.)

Table 9
Site A: CNEL Measurement Results

CNEL	Pre 2016	Post 2017
SDIA Aircraft	40	40
Other Aircraft	46	44
Total Aircraft	47	46

Findings: Ambient Noise Monitoring Results

The ambient background noise during the time of the measurements was also determined. Ambient background noise represents the typical residual noise that exists in the area independent of the aircraft noise. These results show that the ambient noise ranged from 41 dBA at the Muirlands site (Site E) to 54 dBA at the UCSD site (Site A). The Muirlands location is a quiet setting with no other traffic, whereas UCSD is a more developed environment with more vehicle traffic and urban noise.

These results are presented in **Table 10** below. The results are presented in terms of the L50 or mean noise level, which is defined as the point at which half the time the noise is above that value and half below that value. (The ambient levels between 1 AM and 5 AM were not included in calculating L50 because there are few aircraft operations during that time.) Ambient noise varies throughout the day; typically, ambient noise is reduced at night. When ambient noise is low, the sound of an aircraft may be distinct, while when ambient noise is higher the same aircraft emitting the same noise may be not be audible at all.

Table 10
Ambient Background Noise Measurement Results (Mean-L50 dBA)

Site	Name	Mean (L50)
A (2017)	UCSD	54
A (2016)	UCSD	47
B	Revelle	43
C	Calumet	52
D	Upper Bird Rock	41
E	Muirlands	41

Findings: Short-term Lmax Portable Noise Monitoring Results

The purpose of the noise monitoring at Sites B and C, short-term sites was to determine the single event Lmax noise level from SDIA aircraft as well as from other aircraft operations. Site B is primarily under the SDIA arrival flight path and Site C overlooks the coast under the northbound and westbound departure flight paths. Both sites experience overflights from other airports. The measurements were attended.

The radar data obtained from the two-day measurement period is combined and presented in **Figure 15**. This data presents arrival and departure flight tracks from SDIA as well as aircraft operations associated with other local airports. From the continuous one-second noise data, noise events were calculated to identify Lmax noise levels at the time of the events. Some noise events generated noise levels at or near the ambient level (See **Table 10**) that existed at the time of the event.

A threshold of 60 dBA was used to identify higher noise level events from those that were close to the ambient levels. Events above 60 dBA are typically close to the minimum threshold used by permanent noise monitoring systems; events with Lmax levels below 60 dBA are at or near the ambient background noise.

The daily average results of the correlated noise measurement for the May 3 and May 4 sample period are presented in **Table 11** for Site B and **Table 12** for Site C and summarized below. Note that these measurements are not a full day of noise monitoring but just from around 4 p.m. to 11 p.m. only.

- **Site B (Revelle):** There were 89 measured aircraft events per day during the two-day sample period used in this study, with an average peak noise of each event of 55 dBA. Of those events, 48 per day were associated with arrivals into SDIA, with an average peak noise of 53 dBA. There were 41 events per measurement day from aircraft from other airports with an average peak noise of 58 dBA. Of the events over 60 dBA, 2 per measurement day were associated with SDIA aircraft and 13 per measurement day were associated with other airports. The highest maximum noise measured was 80 dBA and was associated with a piston aircraft from an airport other than SDIA.
- **Site C (Calumet):** There were 104 measured aircraft events during the two-day sample period used in this study, with an average peak noise of each event of 59 dBA. Of those events, 64 were associated with operations (primarily departures) from SDIA with an average peak noise of 56 dBA. There were 40 events from aircraft from other airports per measurement day with an average peak noise of 62 dBA. Of the events over 60 dBA, 14 per measurement day were associated with SDIA while 23 per measurement day were associated with other airports. The highest maximum noise measured was 78 dBA, from a piston aircraft operating out of an airport other than SDIA.

Findings: Short-term Lmax Portable Noise Monitoring Results (Cont.)

Table 11
Site B (Revelle): 2017 Measurement Results

Airport Source	Avg. Daily Measured Events	Average Lmax	Peak Lmax	Avg. Daily Events Greater than >60 dBA	Avg. Daily Events Less than <60 dBA
SDIA Airport	48	53	68	2	46
Non SDIA	41	58	80	13	28
Total	**89**	**55**	**80**	**15**	**74**

Table 12
Site C (Calumet): 2017 Measurement Results

Airport Source	Avg. Daily Measured Events	Average Lmax	Peak Lmax	Avg. Daily Events Greater than >60 dBA	Avg. Daily Events Less than <60 dBA
SDIA Airport	64	56	72	12	53
Non SDIA	40	62	78	23	17
Total	**104**	**59**	**78**	**35**	**70**

Findings: Longer-term La Jolla Noise Monitoring Results (Cont.)

The purpose of the noise monitoring at the two longer-term sites was to determine the single event Lmax noise level and duration from SDIA aircraft as well as noise levels from non-SDIA operations. For SDIA operations, Site D is primarily exposed to departure noise while Site E experiences both departures and arrivals. Both sites experience overflights from non-SDIA operations. The measurements were unattended.

The radar data obtained from the 25-day measurement period is presented in **Figures 16A, 16B, 16C and 16D.** This data presents arrival and departure flight tracks from SDIA as well as aircraft operations associated with other local airports and overflights. From the continuous one-second noise data measured at each site, noise events were calculated to identify Lmax noise levels and

durations at the time of the events, and then correlated to the aircraft causing the event using the radar data information.

These locations had lower background noise then the other measurement sites (See **Table 10**). Thus, noise events are measurable from more distant operations then when the ambient his higher. This results in some noise events generated noise levels at or near the ambient level that existed at the time of the event.

As with the other measurement sites, a threshold of 60 dBA was used to identify higher noise level events from those that were close to the ambient. Events above 60 dBA are typically close to the minimum threshold used by permanent systems in that events. These sites had a lower number of higher noise events, in that the aircraft do not typically directly overfly the locations but are offset from the center of the flight paths.

An example of different noise events at Site D are presented **Figure 17**. The top portion of the figures shows a higher noise level event measured at this site. This is a departure of a B763 after 10 pm flying the 290 degrees departure heading and then turning to the south around Point Loma. This aircraft generated a maximum noise event of 61 dBA and a duration of 90 seconds. The ambient at that time was 37 dBA. The bottom portion shows a series of three jet departure events two minutes apart that occurred after 11 pm. These aircraft generated maximum noise level events in the low 50s in an ambient environment of 40 dBA. The measurements survey commonly measured similar levels of noise for multiple jet departures during that hour of the night that were roughly 2 minutes apart with durations lasting roughly a minute.

The daily average results of the correlated noise measurement for the September sample period is presented in **Table 13** for Site D and **Table 14** for Site E and summarized below.

- **Site D (Upper Bird Rock):** This site is located in a more elevated area of Bird Rock, with elevated direct views of the Ocean and the departure flight paths. The arrival flight path is not visible from this location. The location does have some local street traffic and some boat activity in Mission Bay. When these sources of activity are not present the ambient levels are a quiet background. The primary aircraft noise source from SDIA at this location was departures on the north bound path, which is used for aircraft with northerly destinations, and the south departures (used for destinations to the east). The nighttime 290 heading departures that then turn back to the south also generated measurable events. These operations do not directly overfly the measurement site but generate measurable events. The peak noise levels are not as pronounced, but the durations can be longer when the ambient conditions are low. These operations generated a typical average Lmax level of 51 dBA. During the evening/night hours when the ambient noise levels were lower, the durations of these events were typically 30 to 60 seconds. On average, there were 81 events per day from SDIA operations. On an average day, one event is greater than the 60 dBA threshold. For other airport operations, there

Findings: Longer-term La Jolla Noise Monitoring Results (Cont.)

were 134 events per day with an average Lmax noise level of 54 dBA. The duration of these events varied significantly, ranging from 15 to 90 seconds. Slow-moving helicopter operations generated the longest duration and the loudest noise. With the low background noise, more lower noise level events are measurable than at sites with higher background noise.

- **Site E (Muirlands):** This site is located near the top of Muirlands with elevated direct views of the Ocean and the departure flight paths. The arrival flight path is also visible from this location. The location does not have exposure to other non-aviation sources of noise, so the ambient levels are low. This location is exposed to both departures and arrival operations from SDIA as well as non-SDIA operations. The departures typically generated higher peak noise than the arrivals. These operations generated a typical Lmax level of 50 dBA. During the evening hours when the ambient noise levels were lower, the durations of these events were 30 to 60 seconds. On average, there were 98 events per day from SDIA operations with both SDIA departure and arrival events. Less than one per day was above the 60 dBA threshold. For the non-SDIA operations, there were 140 events per day with an average Lmax noise level of 53 dBA. The duration of these events varied significantly, ranging from 15 to 90 seconds. Slow-moving helicopter operations generated the longest duration and the loudest noise.

Both locations had more day to day variability in the measured noise levels. When the background noise is low, more events are measurable. The meteorology also plays a role in the measured noise. Noise from the departing aircraft propagates more under conditions of inversions and higher humidity. These conditions are more common in the nighttime and early morning hours.

Findings: Longer-term La Jolla Noise Monitoring Results (Cont.)

Table 13
Site D (2017): Upper Bird Rock

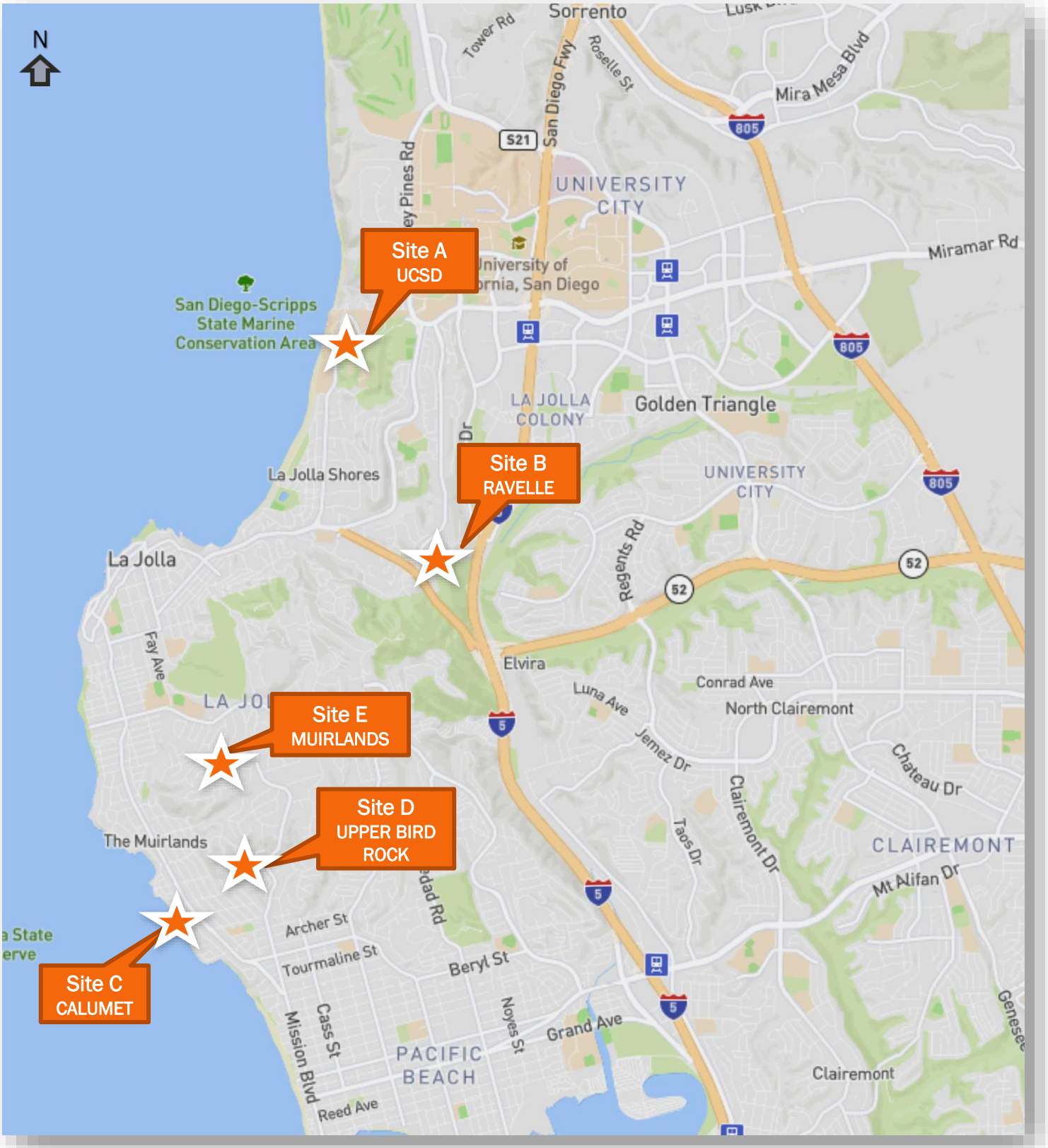
Airport Source	Avg. Daily Measured Events	Average Lmax	Peak Lmax	Avg. Daily Events Greater than >60 dBA	Avg. Daily Events Less than <60 dBA
SDIA Airport	81	51	64	1	80
Non SDIA	134	54	79	21	113

Table 14
Site E (2017): Muirlands

Airport Source	Avg. Daily Measured Events	Average Lmax	Peak Lmax	Avg. Daily Events Greater than >60 dBA	Avg. Daily Events Less than <60 dBA
SDIA Airport	98	50	60	1	97
Non SDIA	140	53	78	22	118

Figure 1
Noise Measurement Sites

LA JOLLA NOISE MONITORING STUDY (2017)

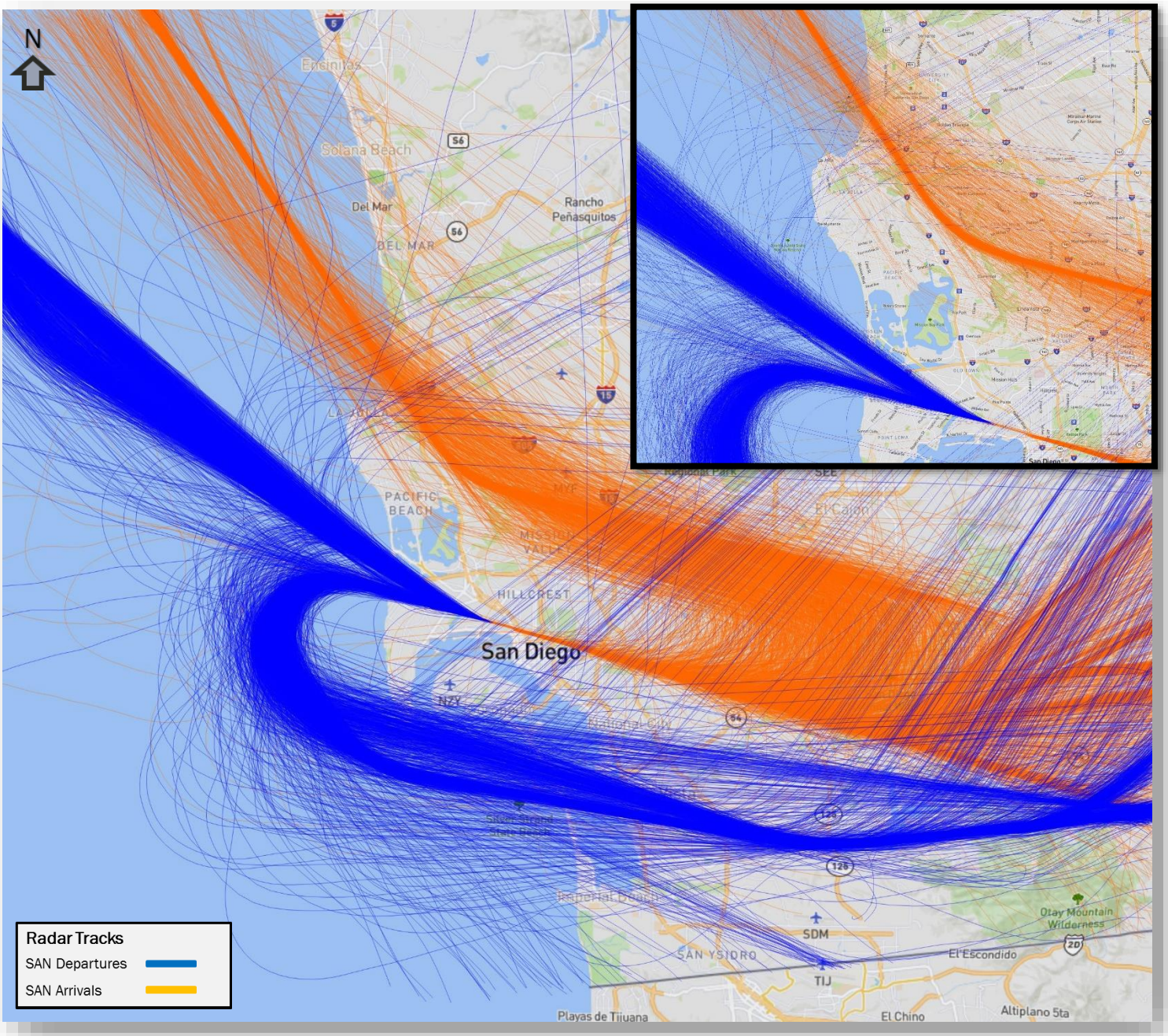


Source: BridgeNet International 2017

Figure 2

2014 SAN Jet Departure and Arrival Radar Tracks

(Random Sample of 8,000 SAN Jet Radar Tracks on Rwy 27 from Jan. 1st – Dec. 31st 2014)



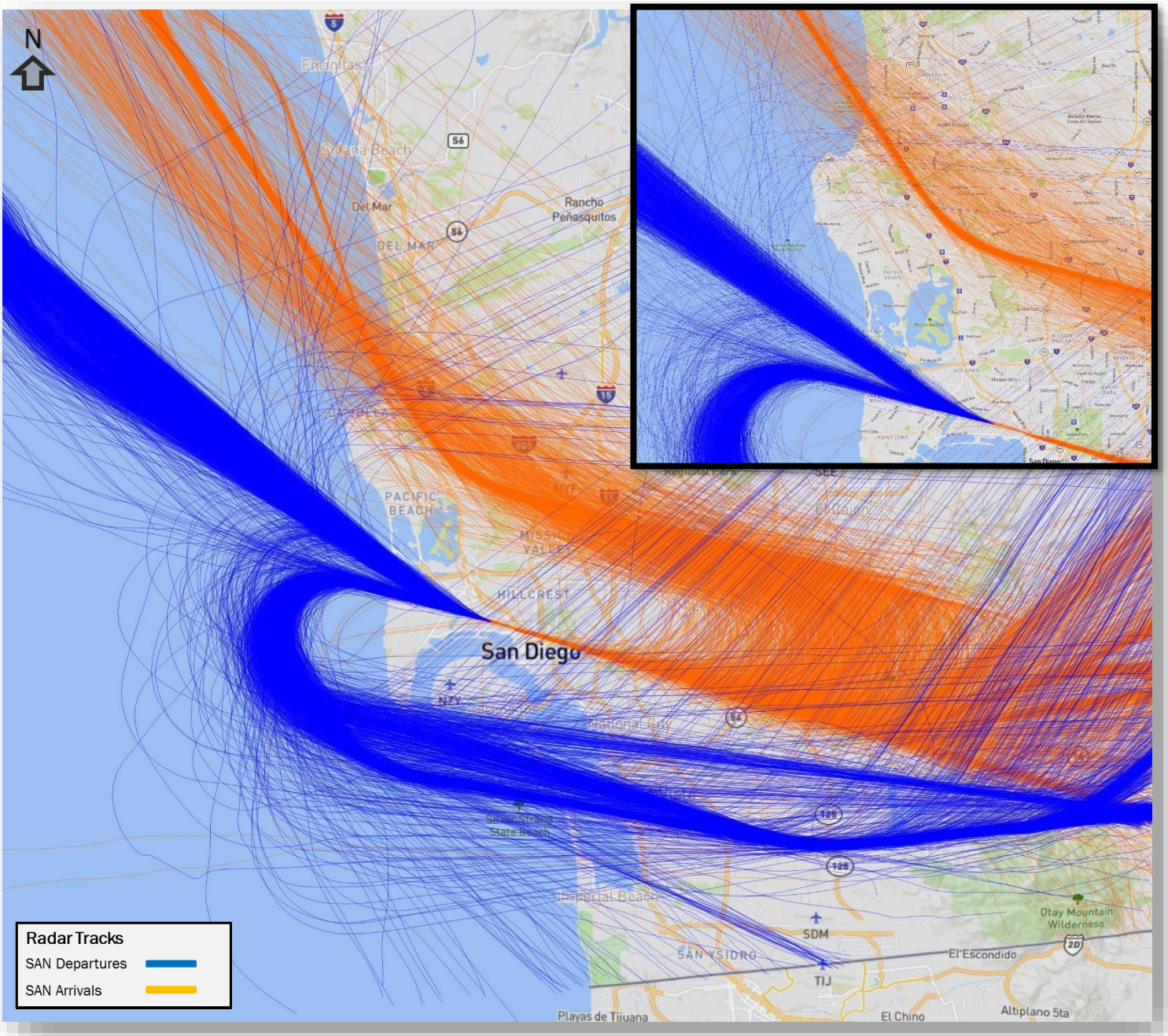
Random Sample of 8,000 Jet Radar Tracks.
Standard Flow Runway 27 operations only.
Flight Track Transparency 30%

Source: BridgeNet International 2017

Figure 3

2015 SAN Jet Departure and Arrival Radar Tracks

(Random Sample of 8,000 SAN Jet Radar Tracks on Rwy 27 from Jan. 1st – Dec. 31st 2015)



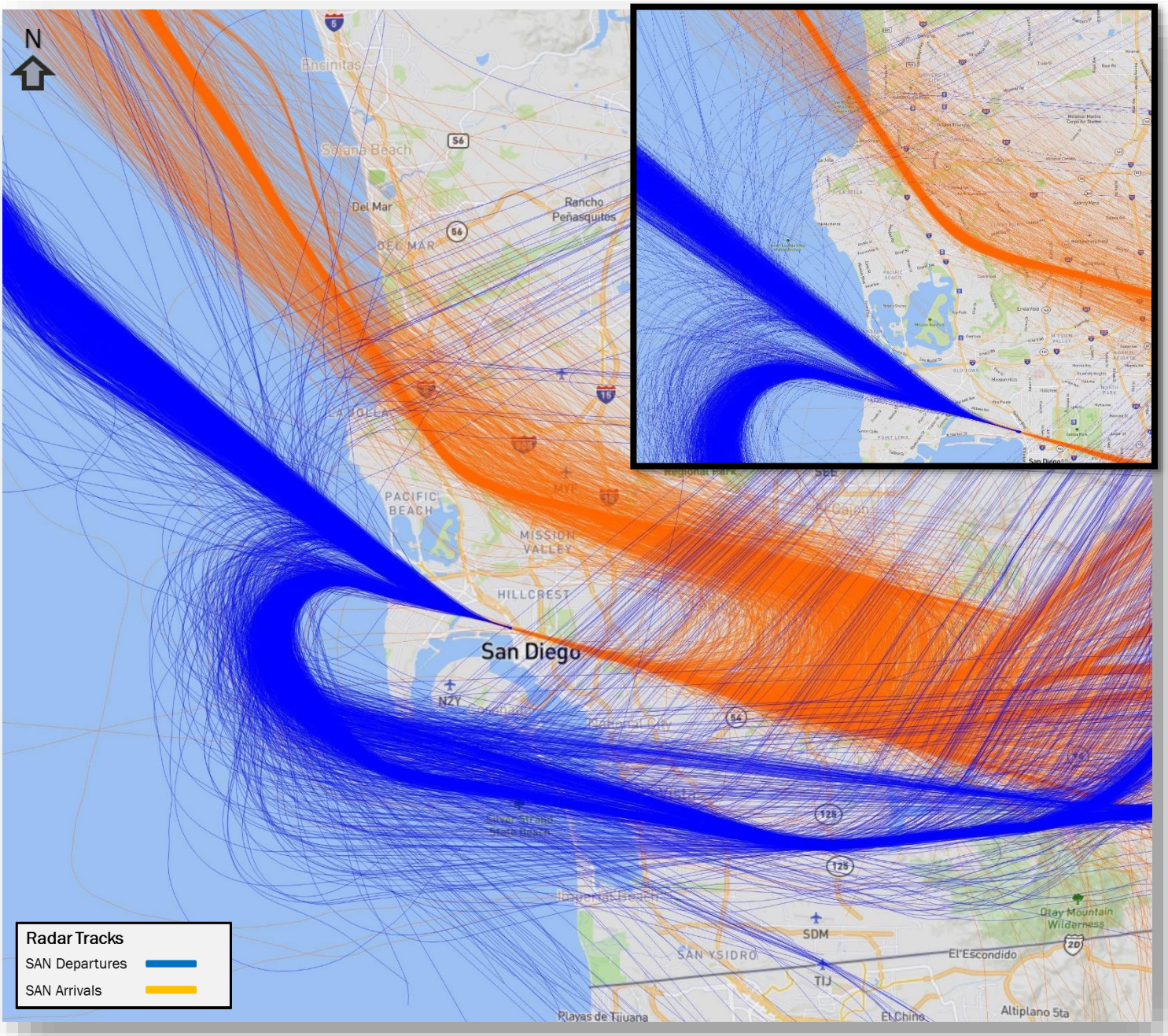
Random Sample of 8,000 Jet Radar Tracks.
Standard Flow Runway 27 operations only.
Flight Track Transparency 30%

Source: BridgeNet International 2017

Figure 4

2016 SAN Jet Departure and Arrival Radar Tracks

(Random Sample of 8,000 SAN Jet Radar Tracks on Rwy 27 from Jan. 1st – Nov. 10th 2016)

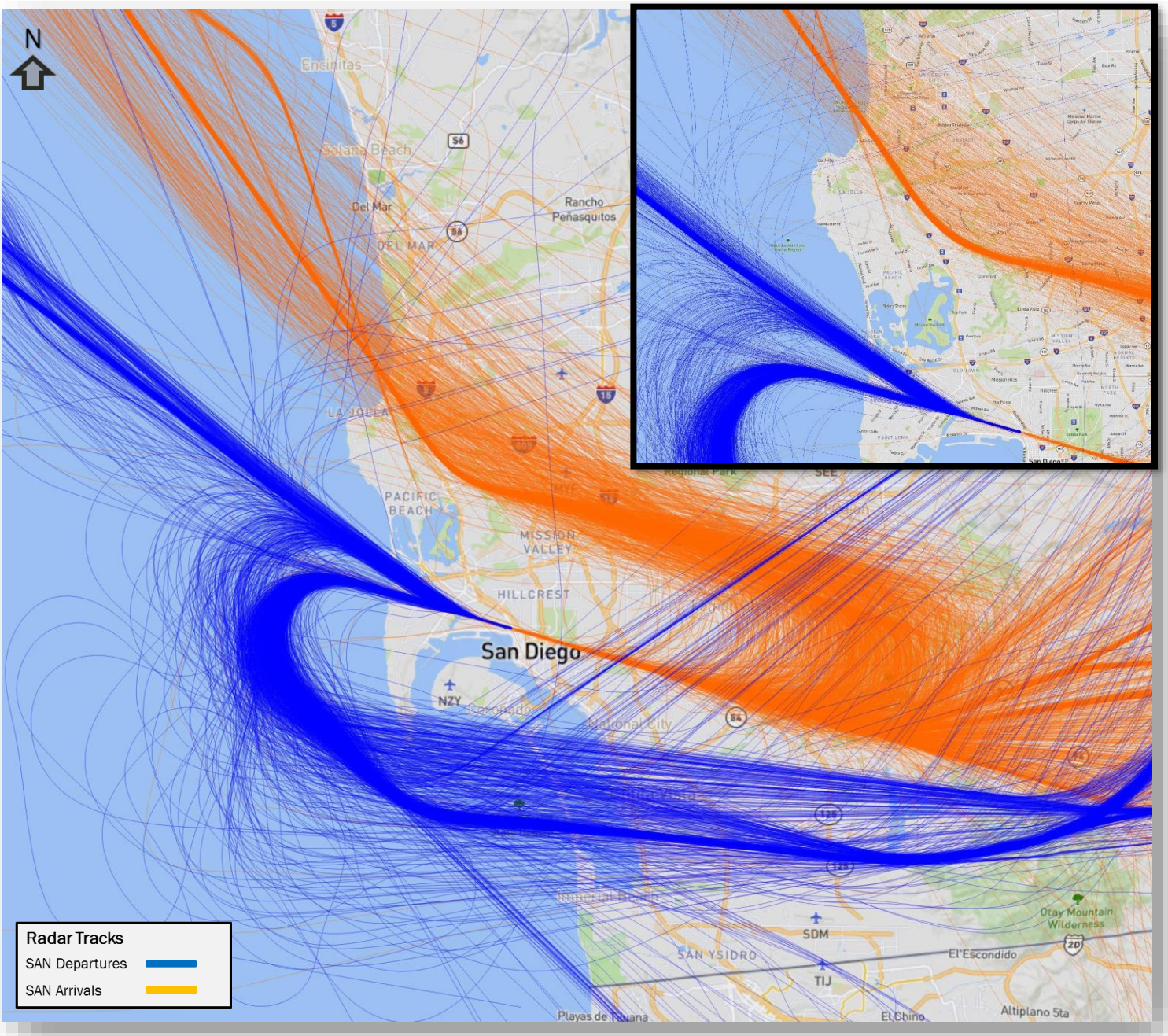


Random Sample of 8,000 Jet Radar Tracks.
Standard Flow Runway 27 operations only.
Flight Track Transparency 30%

Figure 5

2017 SAN Jet Departure and Arrival Radar Tracks

(Random Sample of 8,000 SAN Jet Radar Tracks on Rwy 27 from Mar. 3rd – Sep. 26th 2017)



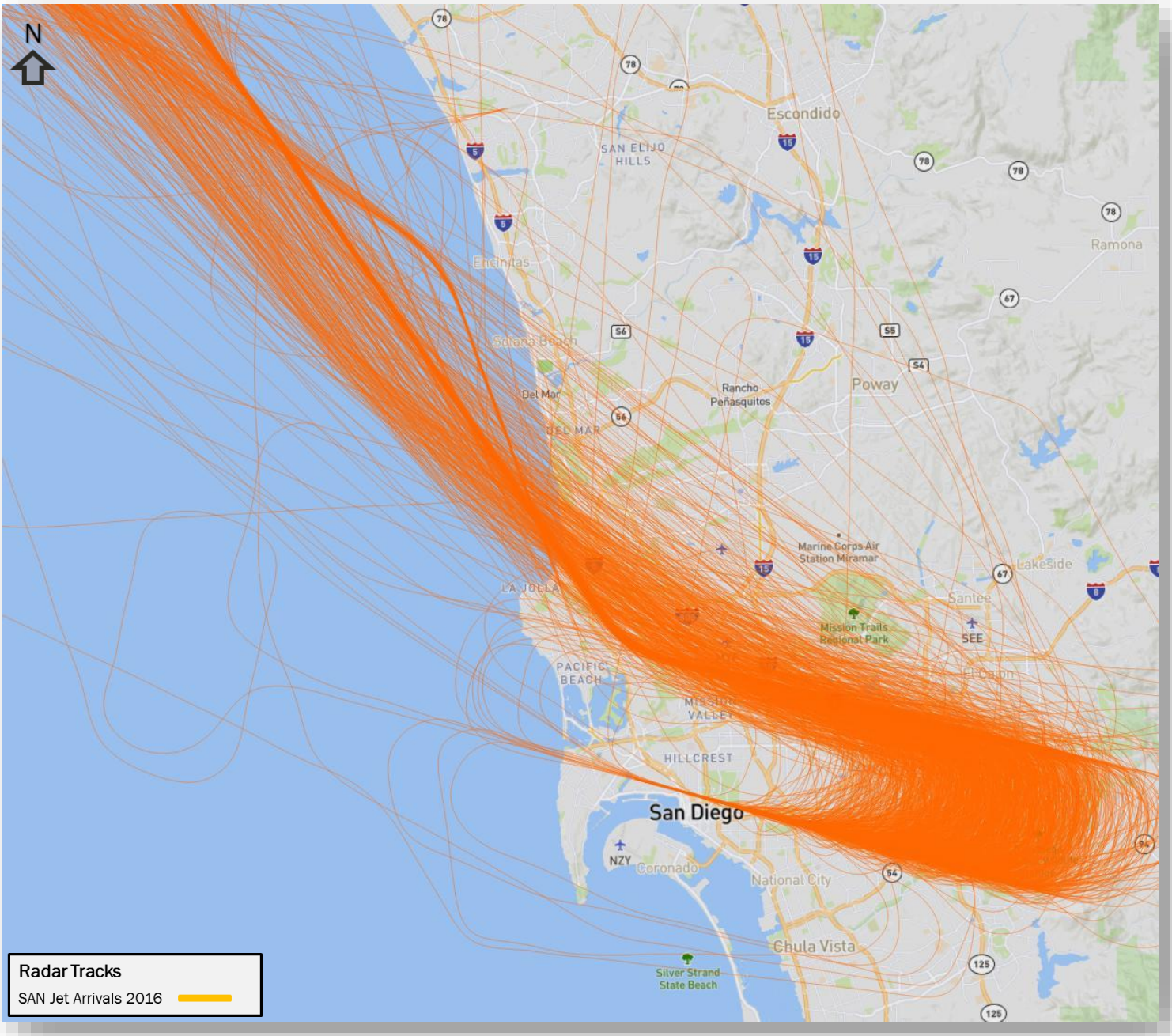
Random Sample of 8,000 Jet Radar Tracks.
Standard Flow Runway 27 operations only.
Flight Track Transparency 30%

Source: BridgeNet International 2017

Figure 6

2016 Measurement Period SAN Jet Arrival Radar Tracks

(SAN Jet Arrivals from Oct.18th through Oct. 31st 2016)



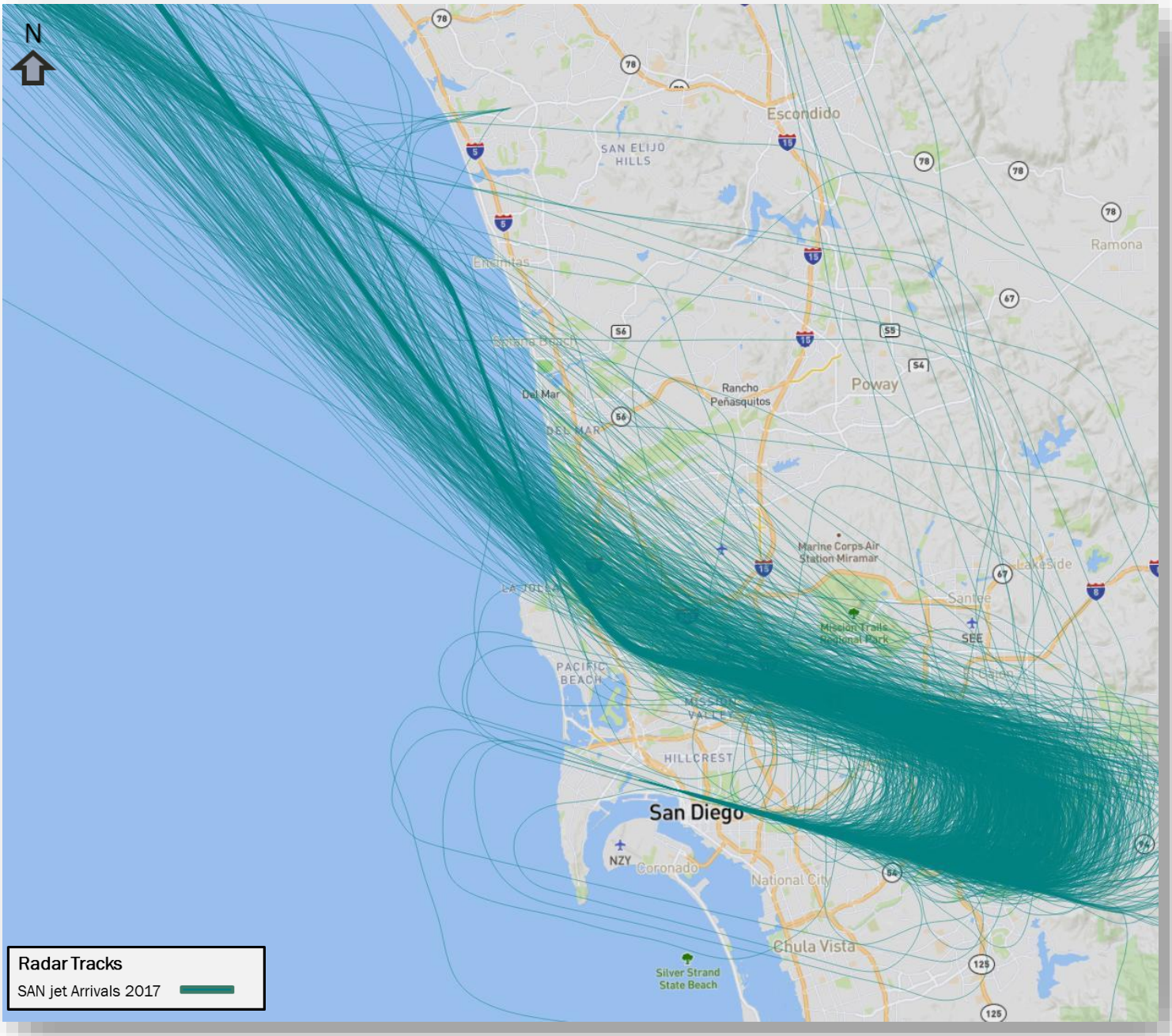
Flight Track Transparency 50%

Source: BridgeNet International 2017

Figure 7

2017 Measurement Period Jet Arrival Radar Tracks

(SAN Jet Arrivals from Apr.28th through May 11th 2017)



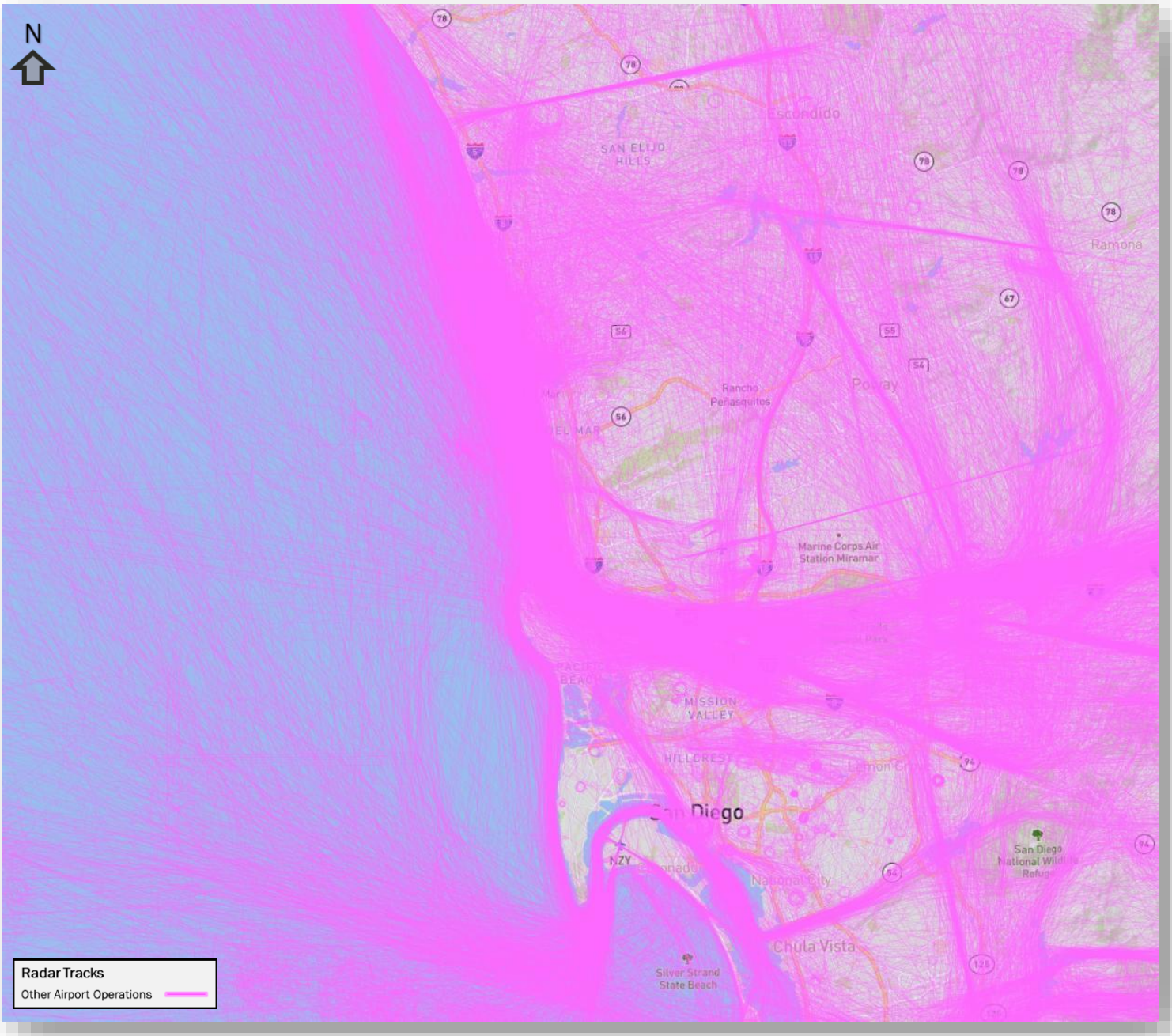
Flight Track Transparency 50%

Source: BridgeNet International 2017

Figure 8

2016 Measurement Period Other Airport Radar Tracks

(Other Airports than SAN from Oct.18th through Oct. 31st 2016)



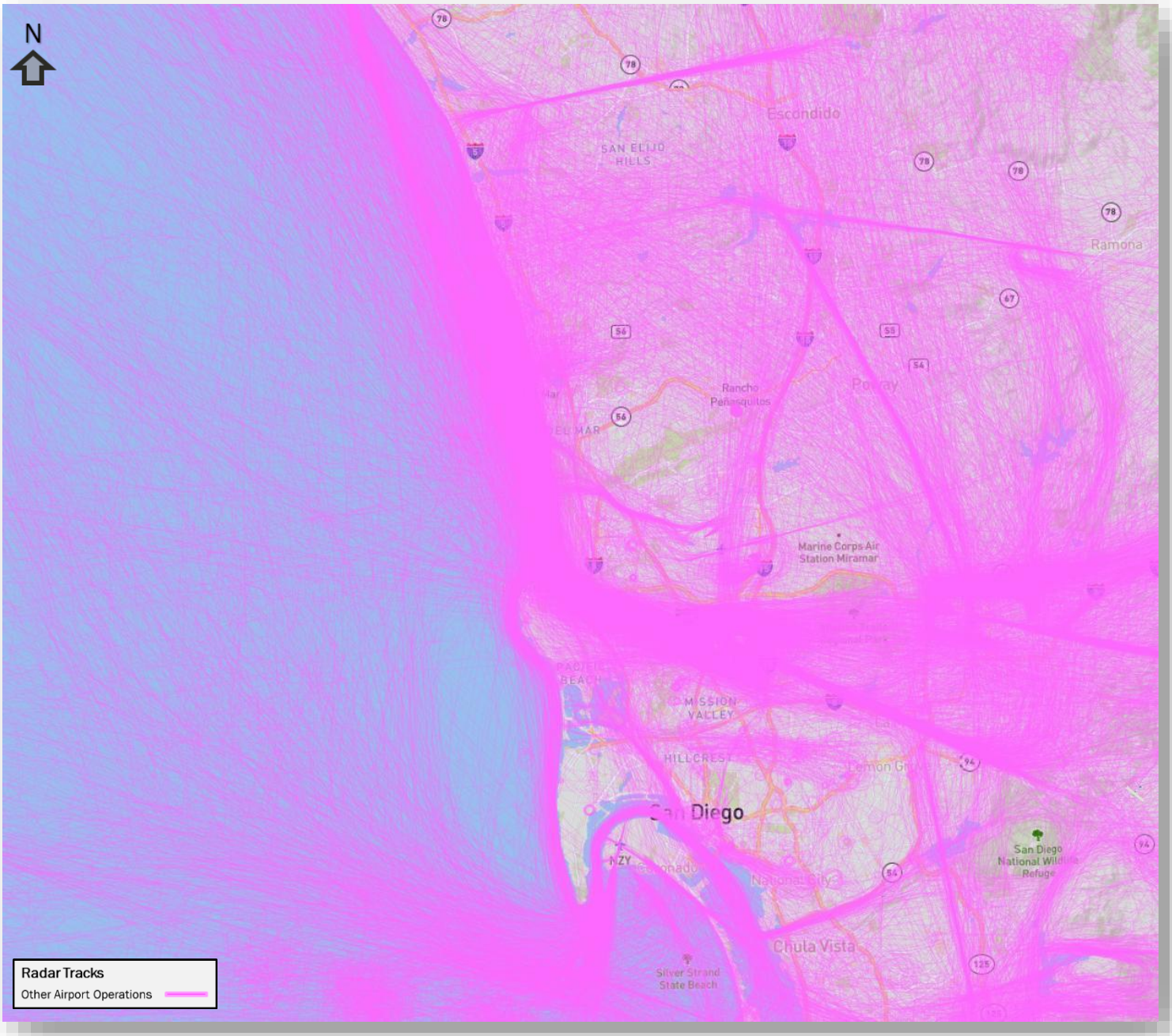
Flight Track Transparency 20%

Source: BridgeNet International 2017

Figure 9

2017 Measurement Period Other Airport Radar Tracks

(Other Airport Operations than SAN from Apr.28th through May 11th 2017)



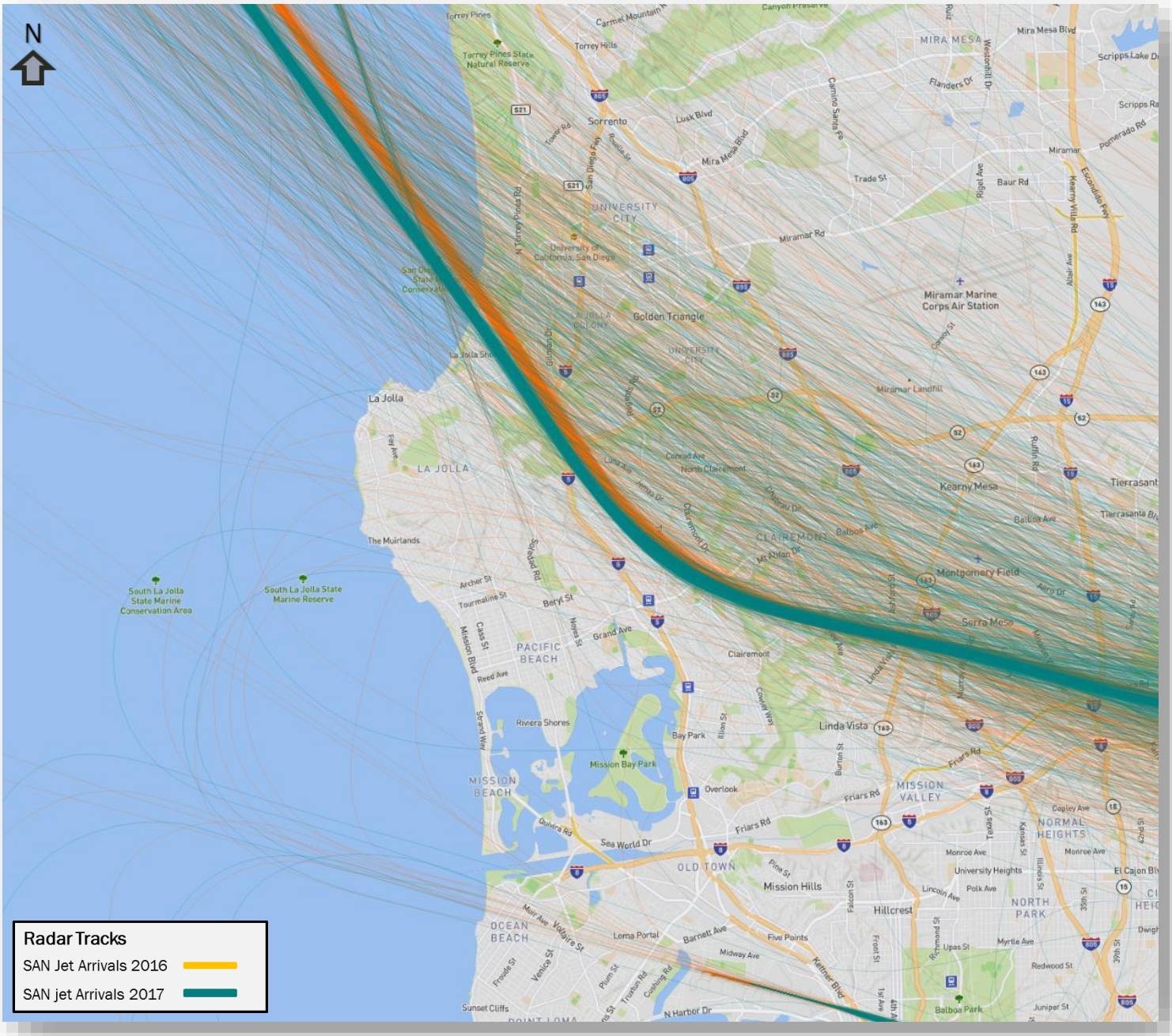
Flight Track Transparency 20%

Source: BridgeNet International 2017

Figure 10

Combined 2016 and 2017 SAN Jet Arrival Radar Flight Tracks

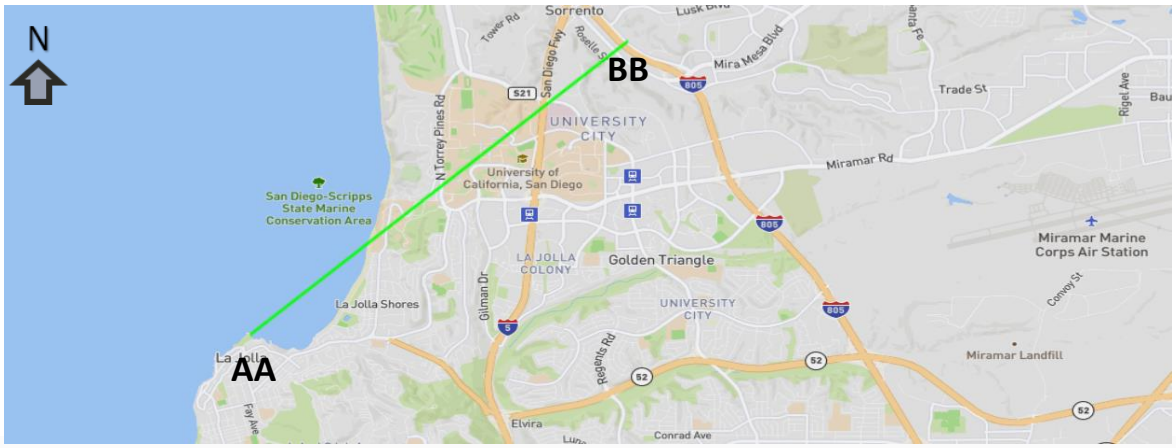
(SAN Jet Arrivals from Oct.18th through Oct. 31st 2016 /Apr.28th through May 11th 2017)

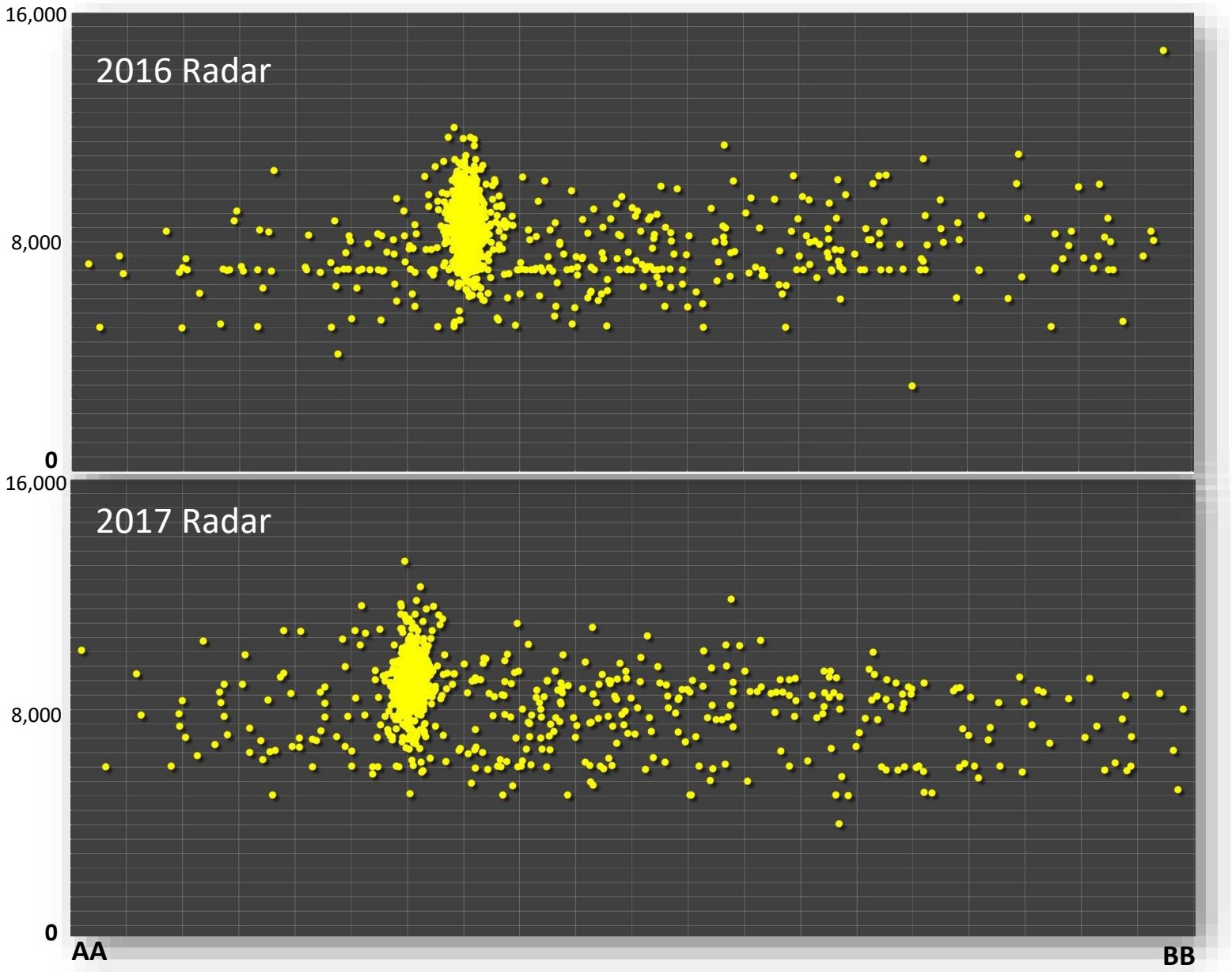


Flight Track Transparency 35%

Source: BridgeNet International 2017

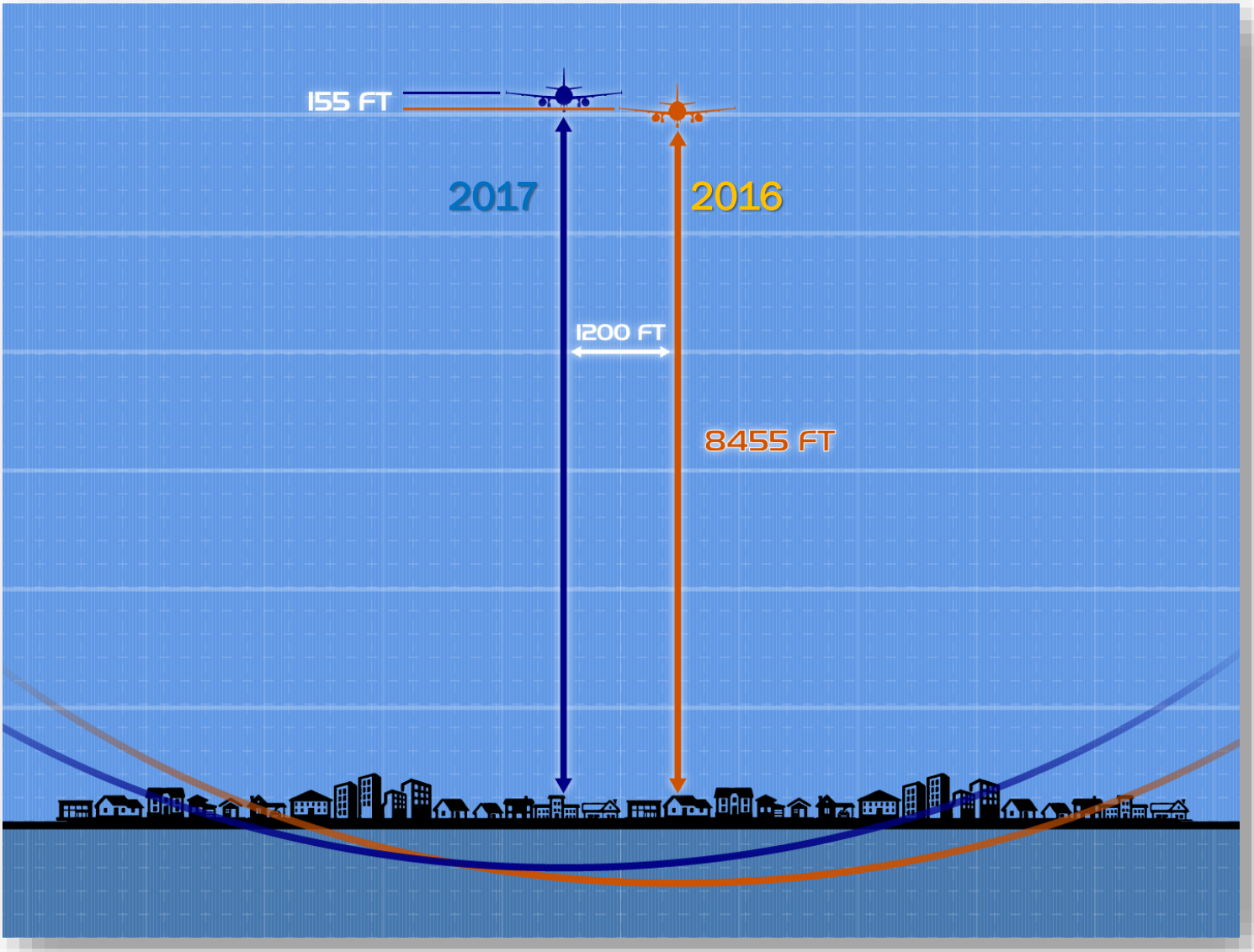
Figure 11
Gate Altitudes for 2016 and 2017 Radar Flight Tracks
(SAN Jet Arrivals from Oct.18th through Oct. 31st 2016 /Apr.28th through May 11th 2017)





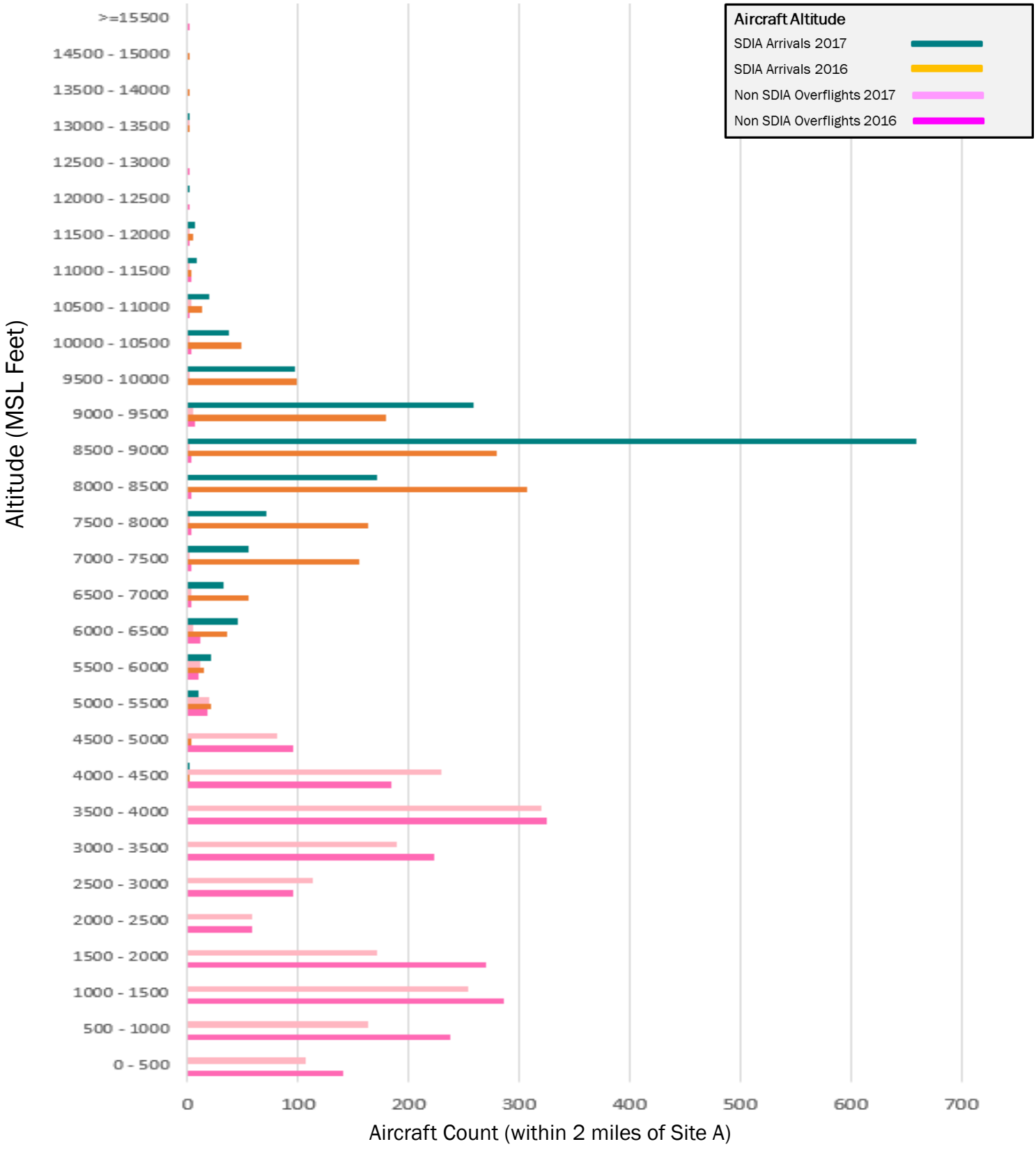
Source: BridgeNet International 2017

Figure 12
Aircraft Altitude and Flight Path Location Comparison (Site A)



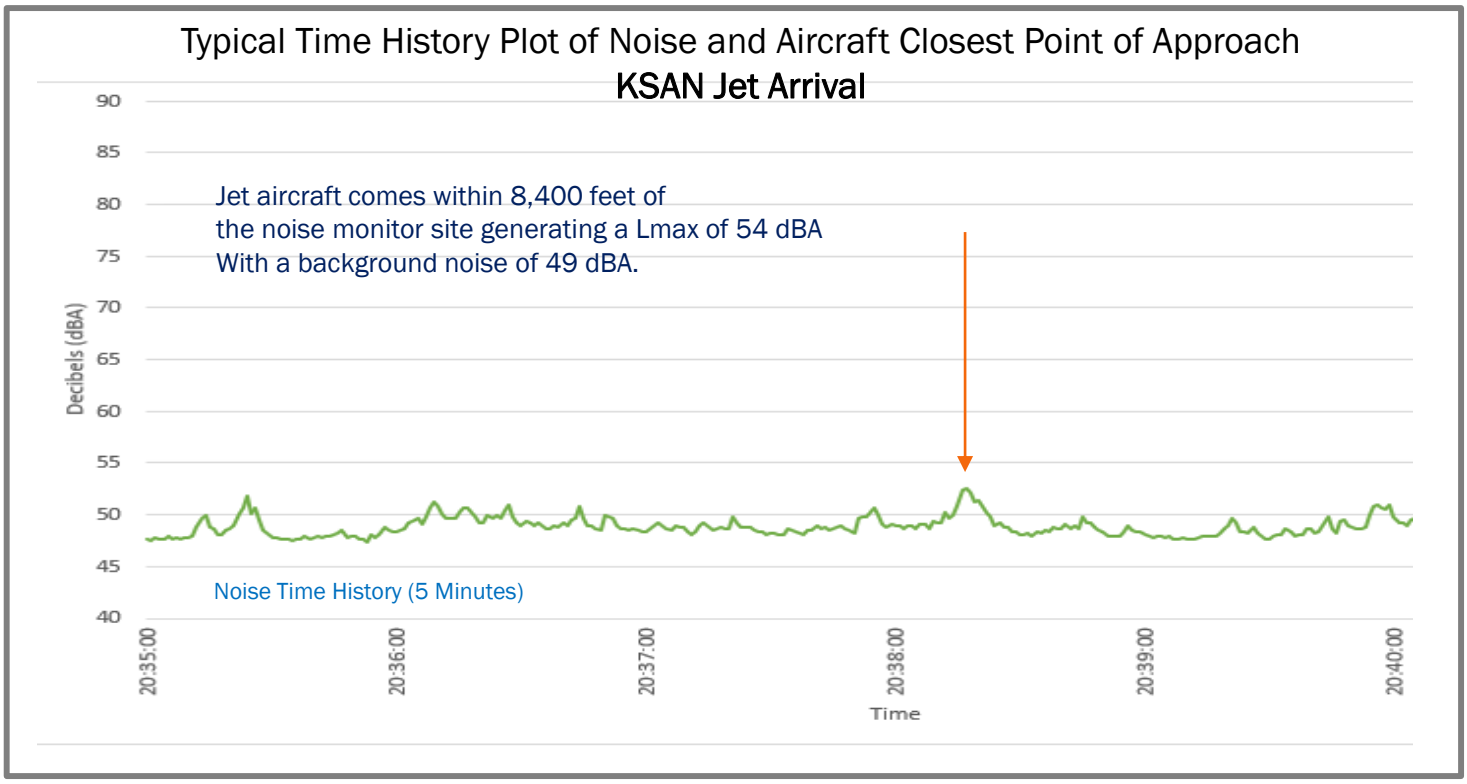
Source: BridgeNet International 2017

Figure 13
Aircraft Altitude Comparison (Site A)
(All Operations from Oct.18th through Oct. 31st 2016 /Apr.28th through May 11th 2017)

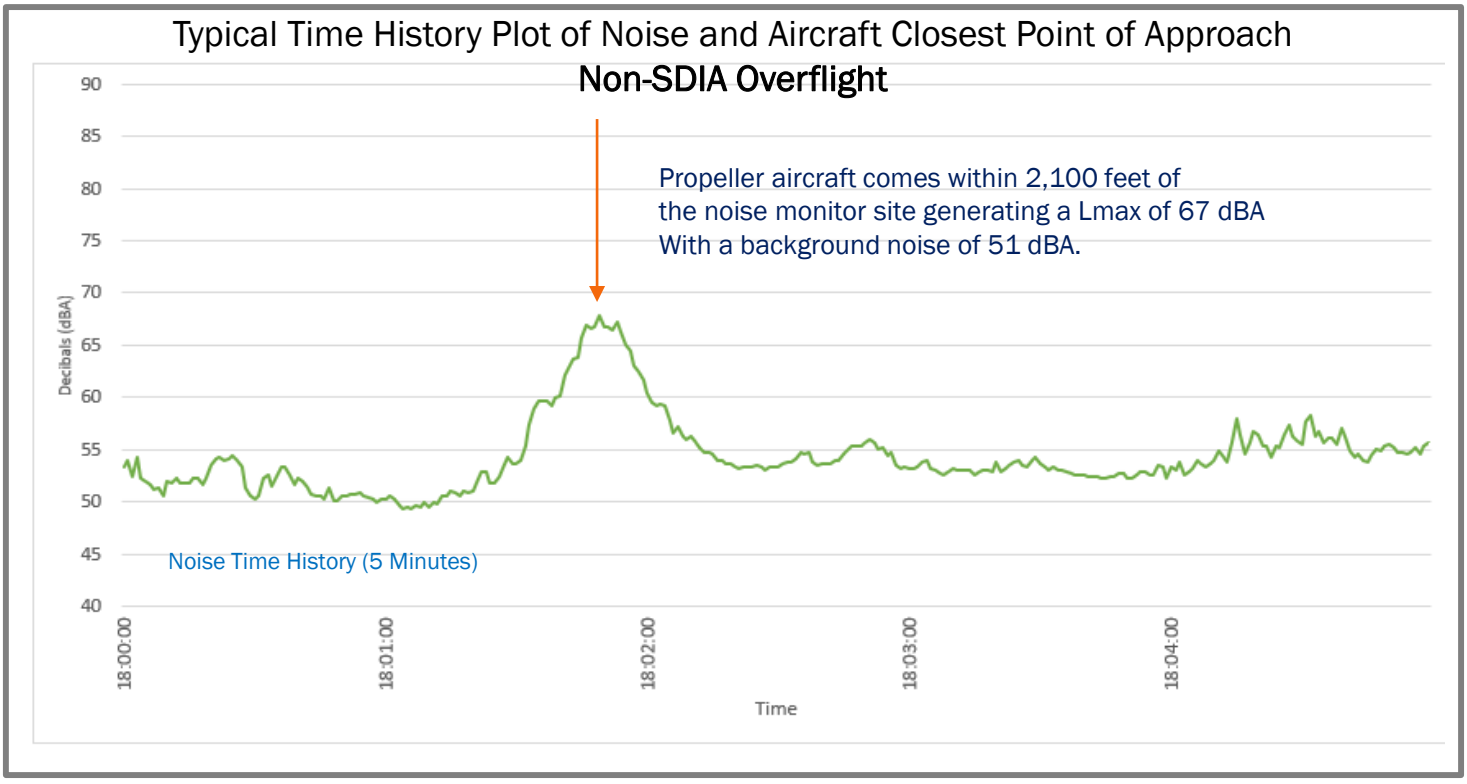


Source: BridgeNet International 2017

Figure 14
Noise Time History Plot (Site A)



Site A – October 19, 2016

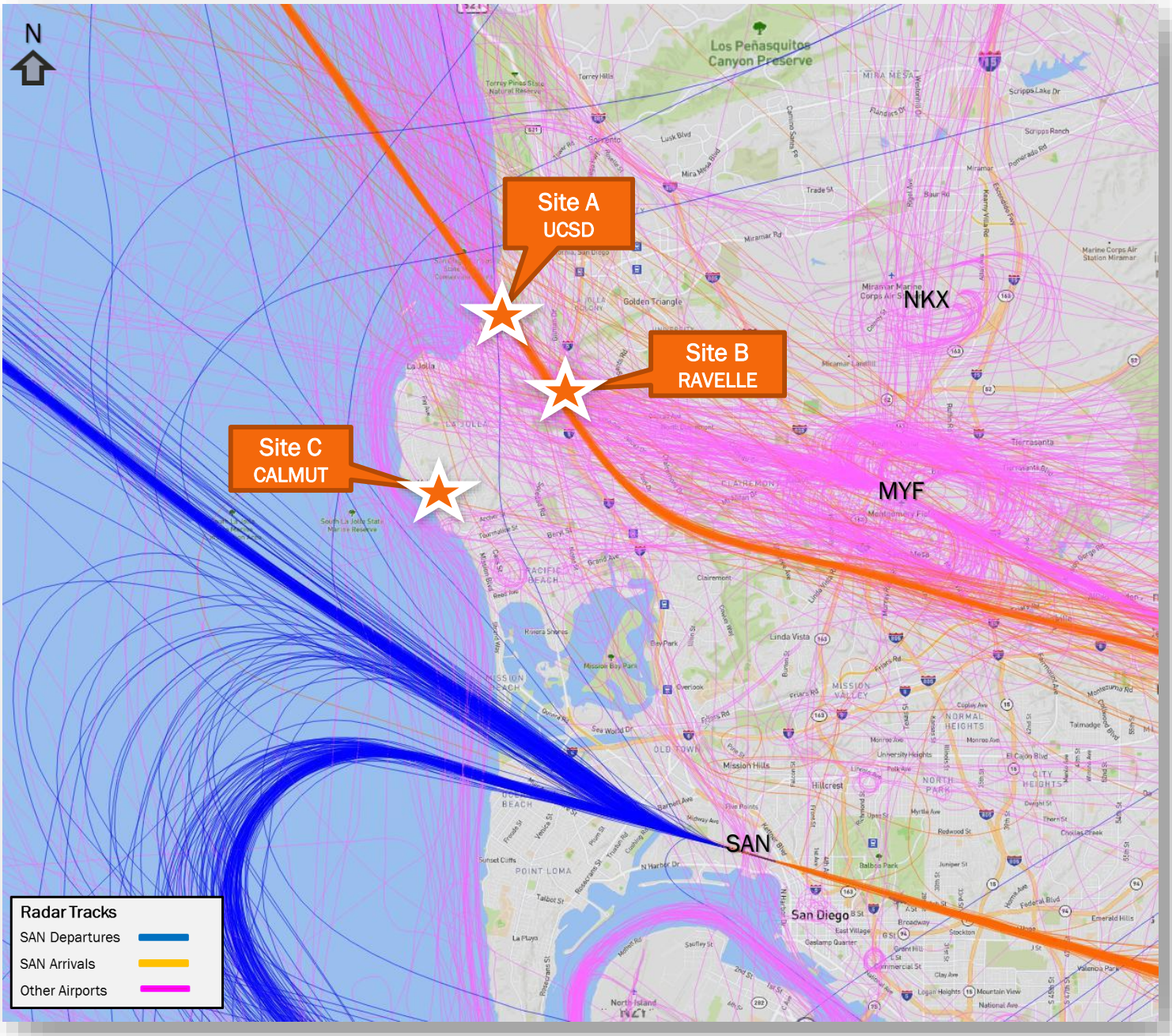


Site A – October 19, 2016

Source: BridgeNet International 2017

Figure 15

Radar Tracks for the May 3 and May 4 2017 Measurement Period

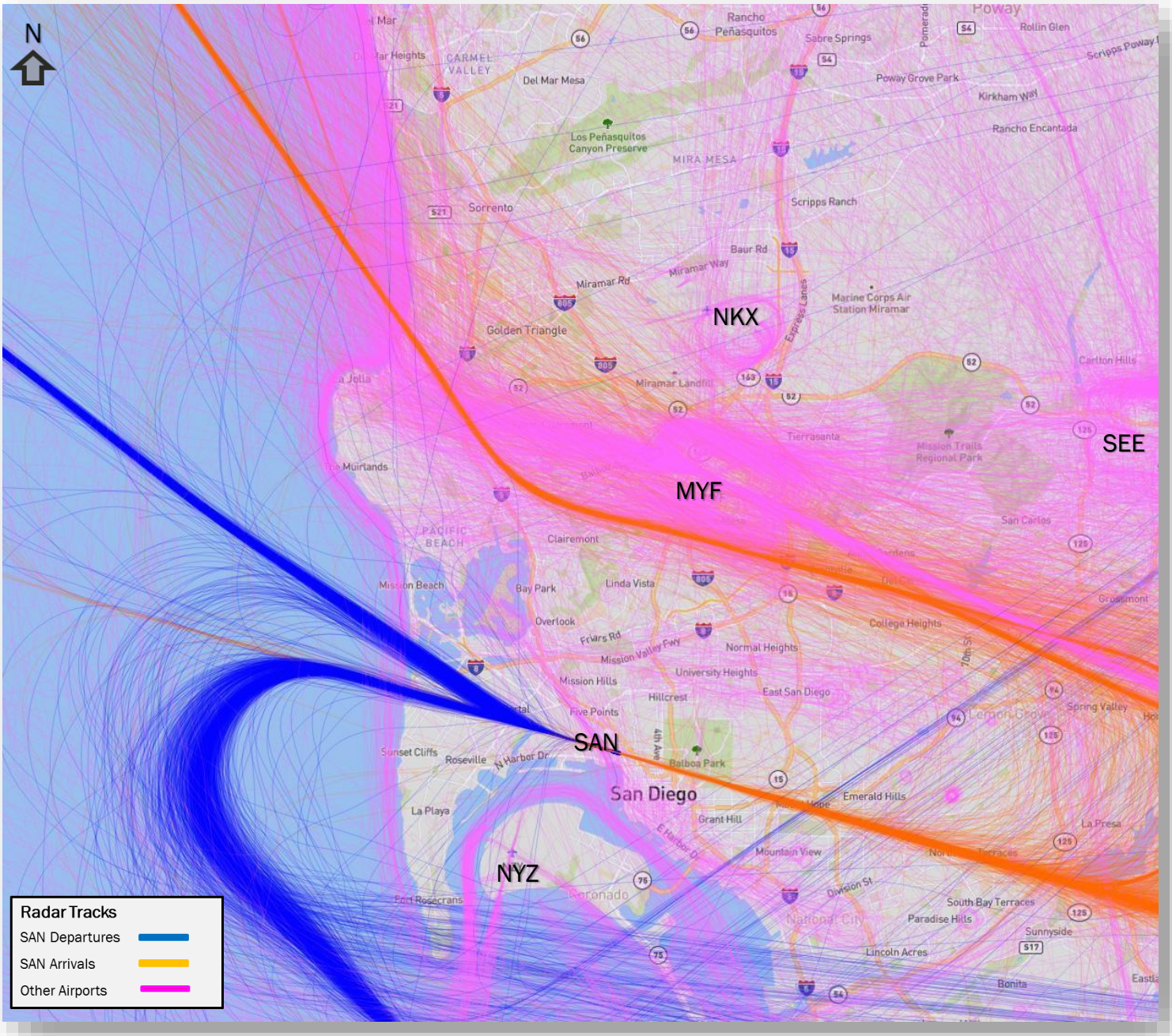


Source: BridgeNet International 2017

Figure 16A

Radar Tracks for September 2017 Measurement Period

(September 1st – September 7th 2017)



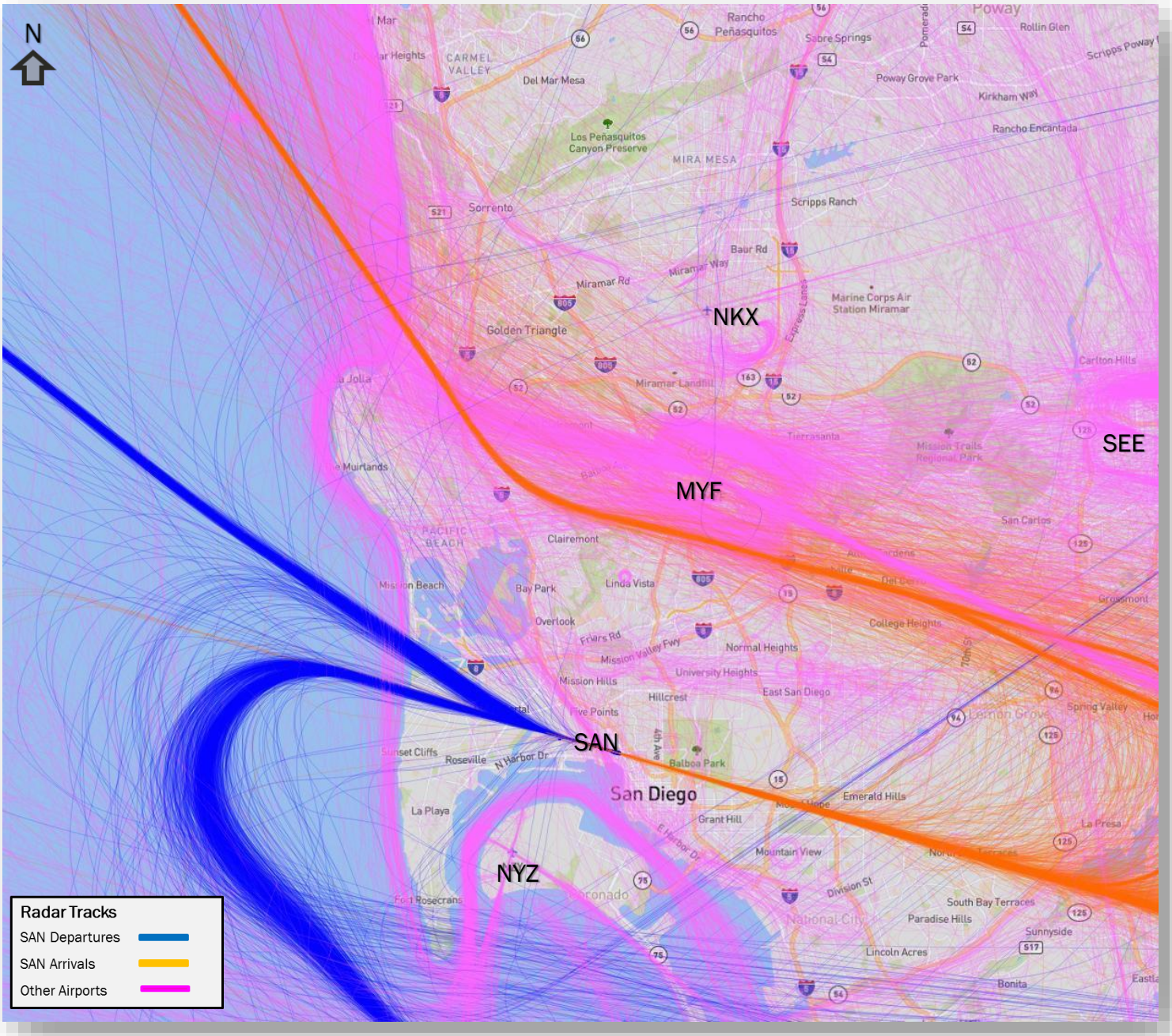
Flight Track Transparency 20%

Source: BridgeNet International 2017

Figure 16B

Radar Tracks for September 2017 Measurement Period

(September 8th – September 14th 2017)



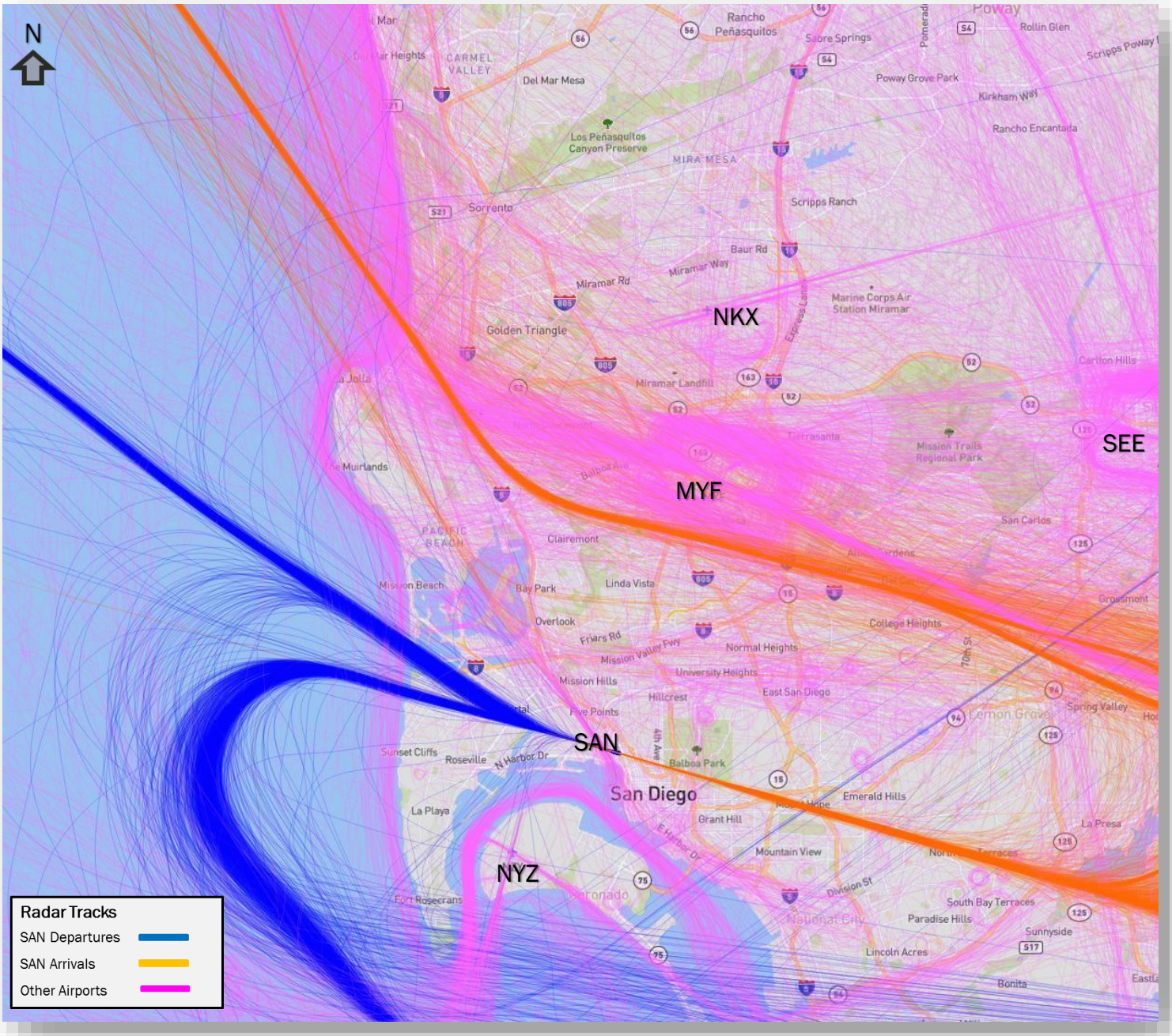
Flight Track Transparency 20%

Source: BridgeNet International 2017

Figure 16C

Radar Tracks for September 2017 Measurement Period

(September 15th – September 21St 2017)



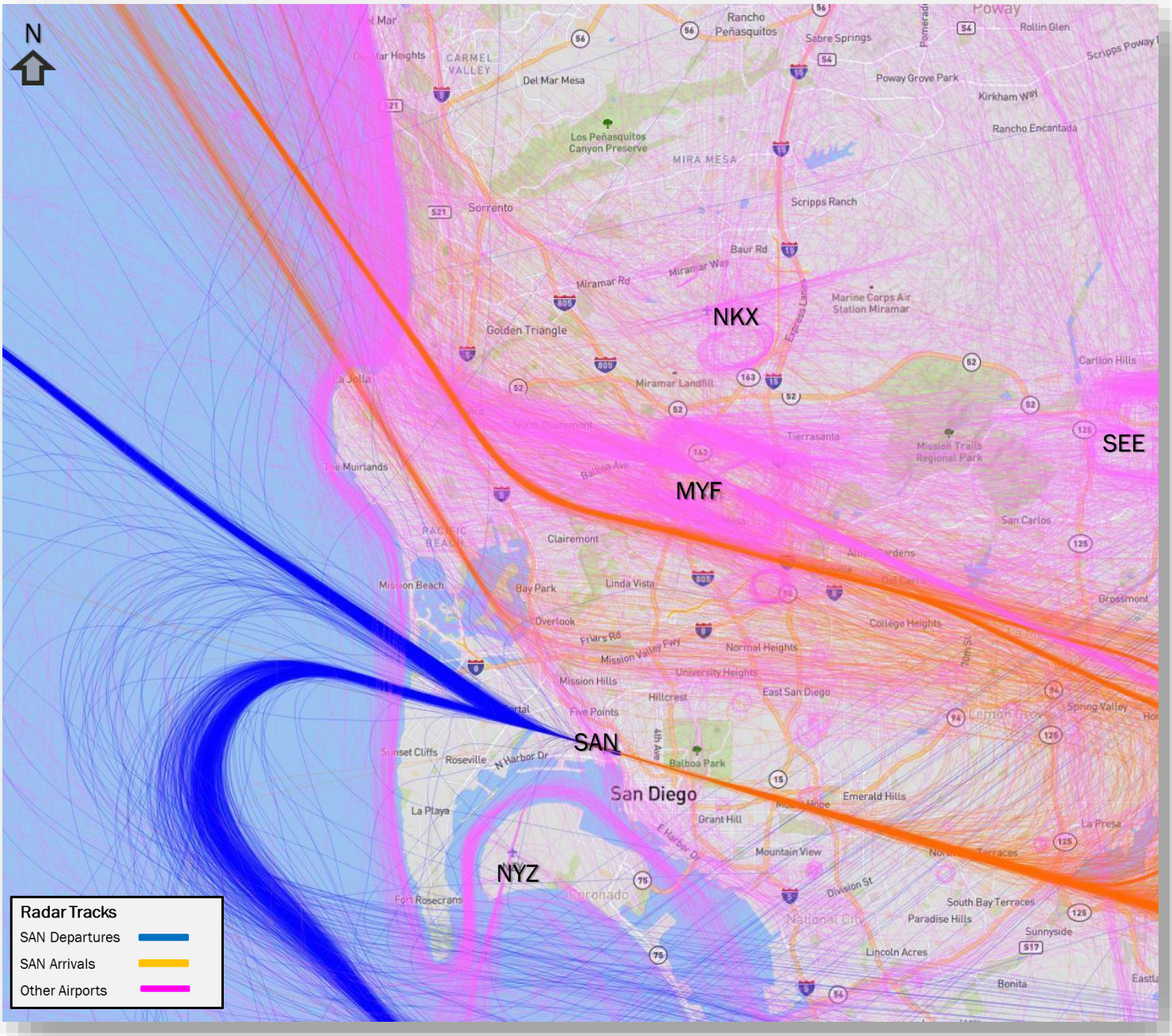
Flight Track Transparency 20%

Source: BridgeNet International 2017

Figure 16D

Radar Tracks for September 2017 Measurement Period

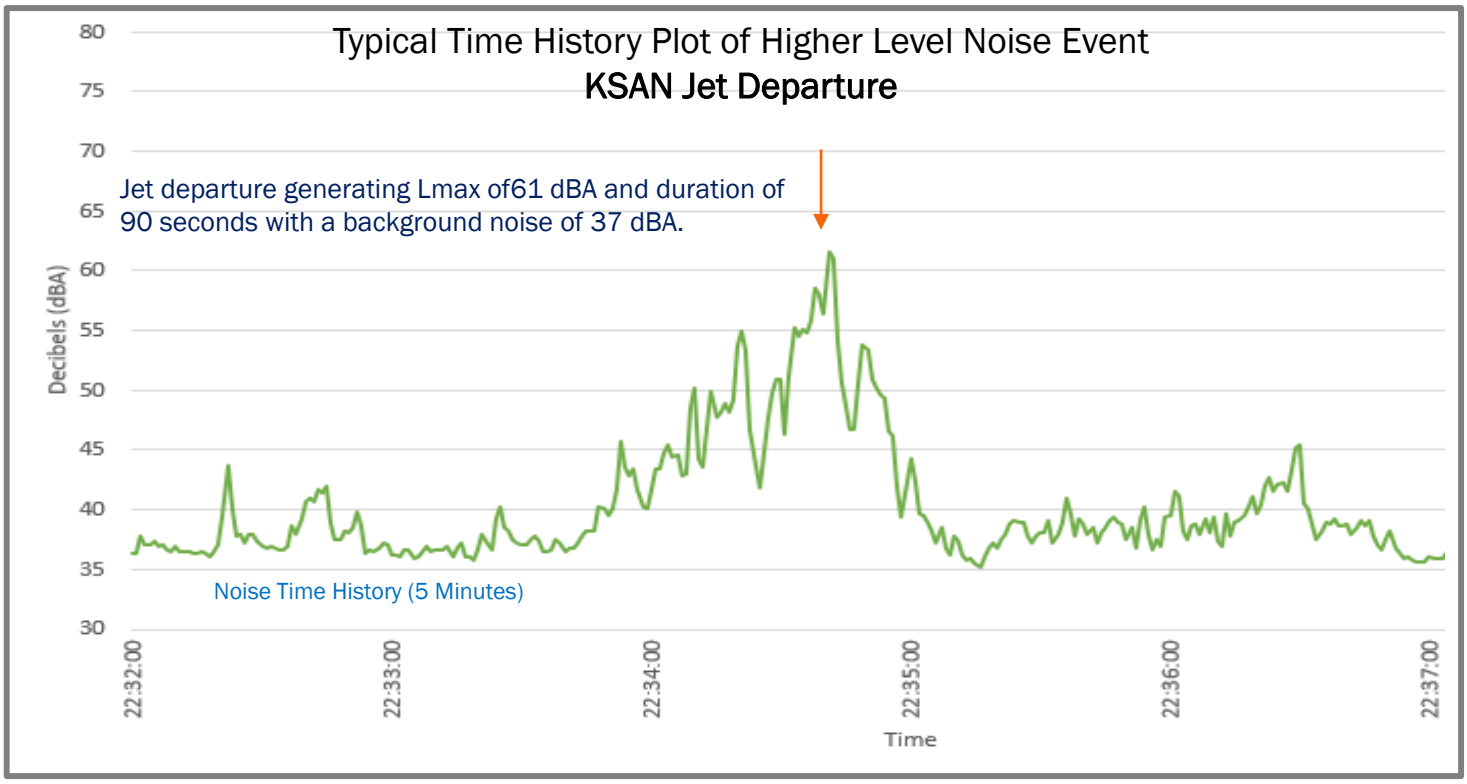
(September 22Nd – September 26Th 2017)



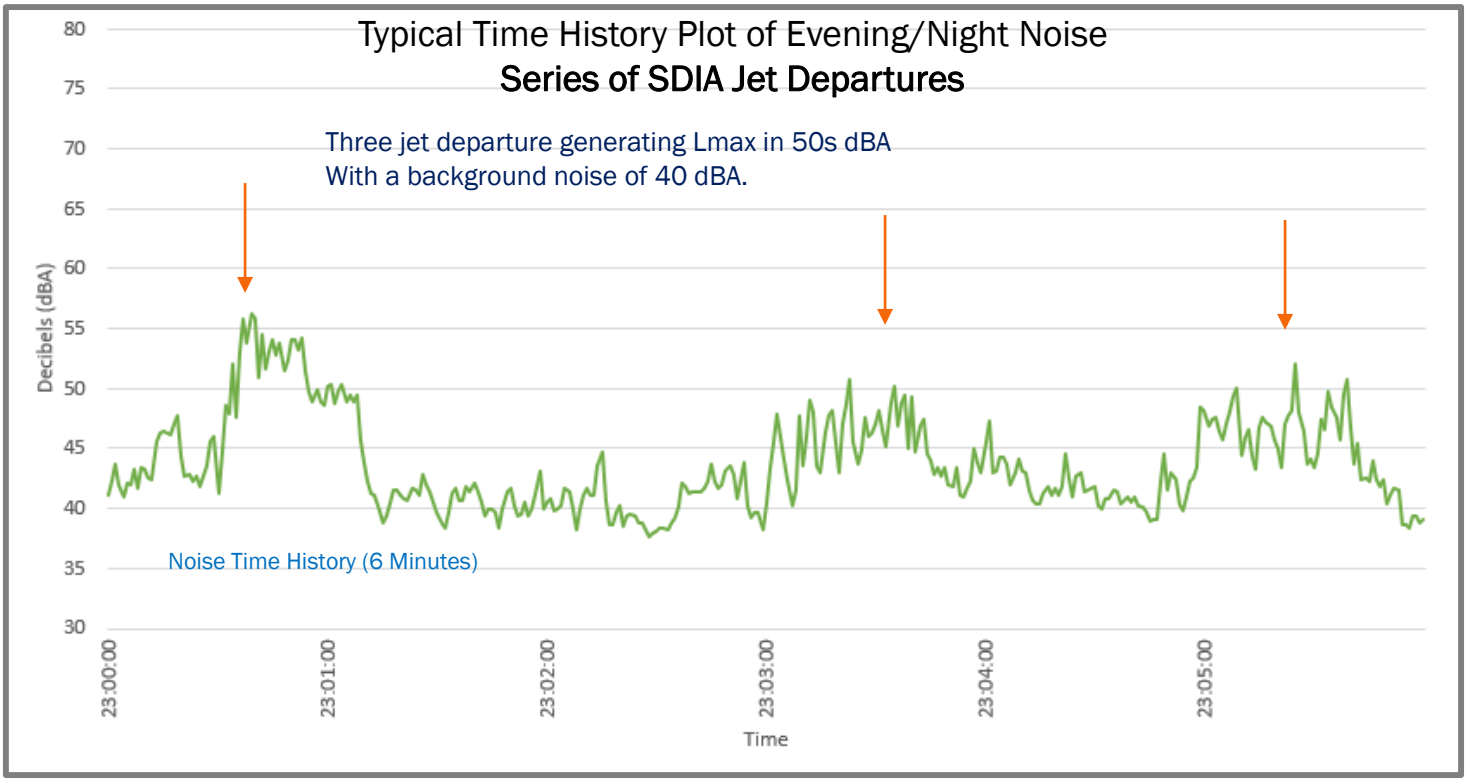
Flight Track Transparency 20%

Note Miramar Air Show on weekend of September 23rd altered normal flight patterns. Data for those days not used for this study.

Figure 17
Noise Time History Plot (Site D)



Site D – September 08, 2017



Site D – September 08, 2017

Source: BridgeNet International 2017

ANAC Subcommittee Recommendations (Member Recommendations – for Discussion at ANAC 10/18/17)

CURFEW PENALTIES

Recommendation	Background/Rationale
1. Increase the amount of fines assessed on the airlines for curfew violations commensurate with the increase in cost of living. Continue to maintain the multiplier.	Curfew violation fines, when multiplied, seem to have been effective in reducing Airlines' willingness to depart after curfew, however these fines have not increased in some time. Increasing the amount will create more of an incentive for Airlines to avoid departures after curfew.
2. Use 100% of curfew violations fines for noise mitigation efforts, including but not limited to, additional noise monitoring, home upgrades not covered by QHP, engineering studies, community awareness, etc. In addition, the San Diego County Regional Airport Authority (SDCRAA) should make community members aware of these fines and how they are being used to reduce noise impacts.	The curfew is in place to protect residents from noise impacts late and night and early in the morning. Currently, SDCRAA is profiting from curfew violations, and the money goes directly to the airport general fund. However, because these funds are generated at the expense of residents in affected areas, we believe all of the monies collected from curfew violations should be set aside in a fund used exclusively to monitor and mitigate noise impacts.

SUBCOMMITTEE CONTINUATION

Recommendation	Background/Rationale
3. Continue the subcommittee to ensure continued community input from affected neighborhoods. Post applications on the website for 2017/18 seats.	There are significant unaddressed issues to address after the initial 9/2017 Subcommittee recommendations are forwarded to ANAC, as well as significant interest among current members and community members to continue the Subcommittee on an ongoing basis. It is our understanding, based on dialogue from SDCRAA Board members, that the intent of the originating parties (Supervisor Cox and the SDCRAA Board of Directors via their approval of the motion) creation of this Subcommittee was that this was to be an ongoing committee, and that no further recommendation by the Subcommittee, ANAC or the SDCRAA Board was necessary.

FAA AIR TRAFFIC CONTROL RADIO FREQUENCIES

Recommendation	Background/Rationale
4. FAA to provide full public access to TRACON So Cal Arrivals and Departures live radio broadcast frequencies including live FAA feeds (as is provided at LAX) via	

LiveATC.net or similar.	
5. SDCRAA to archive and make publically available on its website ATC of Clearance Delivery, Ground Control, Tower and Approach/Departure, SoCal Arrival and Departure Control radio communications for prior 6 month period.	

ANAC COMMITTEE

Recommendation	Background/Rationale
6. SDCRAA to make all raw noise related data available to the public.	Without access to the raw data on noise-related issues being analyzed by SDCRAA Staff, we cannot validate the conclusions are being reported accurately. We would like to see all of the raw data made publicly available so that we can conduct our own analysis. Providing this information would increase transparency with SDCRAA.
7. Modify ANAC Committee Policy to add one representative each from Pacific Beach, Bird Rock, La Jolla and other directly impacted communities.	Impacted communities including Pacific Beach, La Jolla and Bird Rock and Point Loma Heights are not directly represented on ANAC and deserve a voice.

QUIETER HOME PROGRAM

Recommendation	Background/Rationale
8. Review alternative funding sources to expand the homes treated by the Quieter Home Program (QHP) to noise-impacted homes outside the current noise contour.	The FAA established a noise contour, and millions of dollars are spent to retrofit homes within the contour. If noise impacts continue occurring outside of the contour, then the QHP should be expanded to protect the homes that are being impacted.
9. SDCRAA to track and report to ANAC at each meeting the count and specific circumstances where applicants are denied Air Conditioning (AC) installations in their QHP applications so that ANAC may consider recommendations to pursue the FAA reconsider the terms of the AC prohibitions.	Under new FAA guidelines, some applicants to the QHP may be denied the inclusion of AC units into their improvement plans, due to compatibility issues and new restrictions on HVAC installation. By reviewing reports this information, ANAC will have a better understanding of this issue and be able to take informed action, if warranted.

ANAC Subcommittee Recommendations (Member Recommendations – for Discussion at ANAC 10/18/17)

NOISE MONITORING AND MITIGATION

RECOMMENDATION	Background/Rationale
10. Conduct portable noise monitoring in areas that express concerns about aircraft noise that do not have a permanent noise monitoring site close by. Initially these locations should include: Mission Beach parallel to Noise Dot #1, Fleetridge, South Fleetridge, Point Loma Heights, Dana Middle School or the Wooded Area on the bayside of the Point.	We have experienced a shift and an increase in noise impacts in some neighborhoods in Point Loma and Mission Beach, that currently sit outside the 65 dB noise contour. We believe that additional noise monitoring in these areas is critical to develop a baseline understanding of the true noise impacts on these communities.
11. Install noise barriers/airport noise mitigation on the water side of the airport and runways across from the Car Rental agency.	Since the construction of the car rental facility, noise impacts have increased, perhaps due to some sort of reflection off the building. These steps are recommended to reduce the impact of the new facility.

ADDITIONAL SDCRAA ANALYSIS

Recommendation	Background/Rationale
12. SDCRAA to conduct additional analysis and publish this data as part of ANAC data package, this information should include: a. Missed approaches as it relates to the noise dots (compliant versus non-compliant both left and right), by time of day. b. Missed approaches to the left of the JETTI waypoint, in between JETTI and the original noise dot #1 (which is now Noise dot 2) and to the right of the original Noise Dot #1 (which is now Noise Dot #2.) c. Include in the definition and calculation of early turns departures to the left of the JETTI waypoint and to the right of the original Noise Dot #1 (which is now Noise Dot #2.). d. ZZOOO departures that are outside/south of ZZOOO waypoint, noise dot compliant but not outside the ZZOOO waypoint, early turns to the	Data provided to ANAC can be revised to improve its usefulness, accuracy and clarity to better the public's understanding and tracking of performance to existing procedures and agreements.

left and aircraft that are cleared direct to the MTBAL waypoint.	
e. Include airline information associated with missed approaches, curfew violations, and early turns.	The measure known as N(x) counts (N) the number of planes overheard that are at least "x" decibels loud (typically 65 dB, which is then expressed as N65). We believe this is a more informative and representative measure than CNEL, which is a 24-hour average measure that includes hours restricted by curfew. Additional reporting (such as Nx or N65) can be useful for ANAC to take action with industry stakeholders to reduce noise impacts.
f. Report on noise events using the number above (Nx or N65) to indicate how many loud aircraft noise events are occurring.	
g. Report all noise complaints by time, date, flight number, and neighborhood (reinstate historical noise complaint reporting).	We believe that the historical manner of reporting noise complaints provided a more accurate understanding of the public's experience, and allows ANAC to better understand historical trends.
h. SDCRAA to publish 55 dB CNEL contour on their website.	
i. Conduct an independent audit of the accuracy of web-based Flight Tracking system.	Audits of system will increase transparency with the public.
j. Implement a range of ways to educate the community on how to use Flight Tracker.	
k. Track conformance to the "the 290 degree" departure heading (from end of runway 27) to the Nighttime Noise Abatement Procedure.	We believe that violations of the Nighttime Noise Abatement procedure (10pm to 6:30 am) are occurring due to lack of enforcement and lack of data collection to support the observations. Data regularly provided to ANAC by SDCRAA staff does not include information as to TRACON performance in honoring the Nighttime Noise Abatement Procedure. This agreement is similar to the Red Dot Noise Agreement and therefore justifies tracking it in a similar fashion.

FLIGHT PROCEDURE CHANGES – OVERALL

RECOMMENDATION	Background/Rationale
13. SDCRAA will engage an independent third party consultant, with public involvement, to provide a full and honest analysis and evaluation of the overall alignment of current SID's, STAR's and Procedures and Agreements.	As a result of Metroplex's implementation, initial SAN departures have become louder, lower and fanned out to broader angles. As evidenced by ANAC data, SAN departures are also causing increasing negative impacts to surrounding communities inside and outside of the 65 CNEL contour, as well as impacting DOT Act Section 4(f) protected properties (Fort Rosecrans, Cabrillo National Monument) at a rate greatly in excess of operational increases; with contemplated SAN operational growth, these material and negative impacts will dramatically increase if current rates of increase are allowed to continue.

ANAC Subcommittee Recommendations (Member Recommendations – for Discussion at ANAC 10/18/17)

FLIGHT PROCEDURE CHANGES – PADRZ SID

RECOMMENDATION	Background/Rationale
14. Revise PADRZ or create a new procedure to reduce increased noise in La Jolla, Mission Beach and Pacific Beach.	The communities of La Jolla, Mission Beach and Pacific Beach have noted concerning increases in noise impacts in recent years, and especially after the implementation of Metroplex. Repositioning of PADRZ or the development of a new procedure could help to significantly mitigate these increases.

PROCEDURE SUGGESTIONS-PADRZ SID: Several members of the subcommittee worked to develop potential revised procedures designed to reduce noise impacts. The suggestions below are included as, and meant to be, examples to clarify the desired outcome and to bring up potential alternatives to the current procedure.
• Move the **WNFLD and LANDN** waypoints due south so as to align with the relocated Noise Dot #1 at 290 (15 degree separation from JETTI at 275 degrees) and designate as "Flyover" waypoints in their respective SID's, consistent with JETTI
• Establish within the PADRZ SID procedure a horizontal distance from end of runway (1.0 miles) along a fixed heading which must be satisfied along with altitude before a right turn can be initiated to preclude flights that quickly attain the current minimum 520' altitude and turn right of and prior to Noise Dot #1 before correcting to WYNFLD which results in aircraft flying farther north over Mission Beach
• PADRZ ONE SID As currently designed the PADRZ ONE departure leaves aircraft very close to and almost paralleling the coast along La Jolla, increasing noise impacts significantly. We recommend moving the WNFLD and KERNL waypoints 1.5NM south of their current positions. This will ensure aircraft proceed more directly off the coast without paralleling the shore and adds less than a mile of track distance to PADRZ.
• Create a new procedure: BROCK-2 (alternative 1) Request FAA to revise PADRZ SID and establish new waypoint BROCK1. Adds min increased flight time and takes aircraft further offshore before turning to northern destinations. This will help all coastal neighborhoods with noise issues.
• Create a new procedure: BROCK-1 (alternative 2 - preferred) Relocate Waypoints WNFLD and LANDN 0.75 miles directly south or adopt BROCK recommendation. Maintain 274 Departure until Altitude 520 or greater. Maintain 274 departure heading until 520 foot altitude or greater and the aircraft have reached (new) flyover waypoint 0.25 to 0.5 miles from the end of the runway before turning towards WNFLD, LANDN or new BROCK Waypoint.
• Do not move the PADRZ SID further south to avoid negative noise impacts on the south side communities of the Point Loma Peninsula.

ANAC Subcommittee Recommendations (Member Recommendations – for Discussion at ANAC 10/18/17)

FLIGHT PROFLIGHT PROCEDURE CHANGES – ZZOOO SID

RECOMMENDATION	Background/Rationale
15. Revise ZZOOO to significantly reduce or eliminate flights over the Point Loma Peninsula, including Cabrillo National Park and reduce or eliminate eastbound turns over La Jolla.	We have experienced an increase in flights over the Point Loma Peninsula in areas that were not previously impacted as greatly, as a result of flights not adhering to the ZZOOO procedure (and the Noise Dot agreement). In addition, flights seem to be lower over the Peninsula than they have been in previous years. Eastbound turns at lower altitudes, avoiding the ZZOOO departure path (which seems to be more common in the late evening) are impacting La Jolla and increasing noise there as well. A revision and reinforcement of the ZZOOO procedure could be implemented to reduce the noise impacts over the Peninsula and La Jolla.

PROCEDURE SUGGESTIONS-ZZOOO SID: Several members of the subcommittee worked to develop potential revised procedures designed to reduce noise and enforce compliance with Noise Dots and the ZZOOO procedure over Point Loma. Those suggestions are included as, and meant to be, examples to clarify the desired outcome and to bring up potential alternatives to the current procedure
• East bound flights should reach a minimum of 8K feet before crossing over ZOOO to minimize thrusters and reduce duration of noise impacts over Point Loma.
• FAA\TRACON to discourage the practice of redirecting flights off of their filed ZZOOO flight plan departure, to turn north then east over La Jolla. FAA to increase minimum SID flyover\flyby altitudes to encourage increased climb rates.
• FAA\TRACON to direct that ALL SAN departure separation be limited to between JETTI (275 degrees) and the historical Red Noise Dot #1 (290 degree vectors from the end of runway 27) for LNSAY, BORDER, PEBLE and ZZOOO, etc. (plus all new Metroplex SID's); Prohibit 250 to 275 departure vector range, except for specific safety events ("Runway 27 STAR Missed Approach Wave Off").
• Follow ZZOOO procedure, comply with the JETTI flyover waypoint and consider the establishment of a minimum vectoring altitude for Eastbound turns
• The ZZOOO ONE departure as currently designed puts departing aircraft to close to the Point Loma peninsula and the southern end of coastal La Jolla, subjecting residents to increased and at times incessant noise from departing aircraft. Aircraft need to be further offshore before beginning the turn south to the ZZOOO waypoint. We recommend replacing the JETTI waypoint with a waypoint along the same track from the departure end of runway 27 that is 2 NM further west, located at approximately 32.75360N -117.25755W.

ANAC Subcommittee Recommendations (Member Recommendations – for Discussion at ANAC 10/18/17)

FLIGHT PROCEDURE CHANGES – COMIX STAR

RECOMMENDATION	Background/Rationale
16. Reassess and revise the entire arrival corridor in a manner that more appropriately "shares the noise" instead of concentrating arrivals from the North in a very narrow corridor.	Arrivals from the North are now concentrated and have moved westerly, meaning a small, heavily populated area is more impacted than prior to Metroplex, when the arrivals were more spread out. Implementation of NextGen resulted in flights at lower altitudes and flight path shifting south resulting in concentrated new noise issues over La Jolla Cove, Mount Soledad, and North Pacific Beach.

PROCEDURE SUGGESTIONS-COMIX STAR SID: Several members of the subcommittee worked to develop potential revised procedures to COMIX STAR designed to reduce the increased noise that has resulted from the implementation of Metroplex and NextGen. Those suggestions are included as, and meant to be, examples to clarify the desired outcome and to bring up potential alternatives to the current procedure.
• Revise COMIX STAR procedure in order to shift flights that Metroplex has moved and concentrated farther South (the downwind leg) over less populated areas and restore prior altitude.
• Shift the way point XMANS on the COMIX STAR north to a location that is over the interstate freeway 805 and 52 with the constraint to remain clear of MCAS Miramar's airspace. It would come ashore over Torrey Pines State Park before connecting with KLOMN.
• Increase Min. Altitude at LNTRN (LCOVE) at or above 10,000. This change would result in aircraft flying over less populated areas, including industrial businesses, thus reducing the noise impact and saving time/fuel. This proposed path is closer to the historical flights pre-NextGen.
• COMIX ONE STAR The RNAV-only COMIX ONE arrival is very similar to the existing non-RNAV BAYVU arrival in terms of ground track with a key difference being that the COMIX arrival has an "at or above 8,000 feet" altitude restriction on its last offshore waypoint (LANTRN). The BAYVU arrival has an "at or above 9,000 feet" restriction at its nearly identically-located LCOVE waypoint. This has resulted in aircraft being lower and noisier over La Jolla. We recommend changing the LANTRN waypoint's altitude restriction to "at or above 9,000 feet".

NIGHTTIME NOISE ABATEMENT PROCEDURE

Recommendation	Background/Rationale
17. Conduct an analysis and make recommendations for possible adjustments to the nighttime noise abatement procedure to improve noise impacts for affected communities and ensure that ATC is only turning aircraft off this procedure for safety reasons only.	

ANAC Subcommittee Recommendations (Member Recommendations – for Discussion at ANAC 10/18/17)

FAA NOISE DOTS

Recommendation	Background/Rationale
18. Review if the current definition of an early turn, define what an early turn means and conduct comparative analysis to actual flight paths	In discussions about how to reduce the number of early turns, it became clear that a more specific definition would be useful in working with the FAA to address (and reduce) the egregious examples of early turns, and improve compliance with procedures, which the group believes are not being followed in many cases.
19. Work with FAA/ATC to modify flight procedures to increase compliance and reduce early turns, with consideration of aircraft performance.	Erratic compliance with departure procedures is failing to meet the established guidelines for community quality of life, the mission of Airport Authority. Regular meetings with ATC/FAA personnel are recommended to educate and encourage all ATCs to direct air traffic to minimize community impact.
20. FAA\TRACON to incorporate Red Dot waypoint locations into current and future SID's as part of the formal SID and STAR Procedures, so that Red Dots become waypoints on departure procedures and data is collected on waypoints.	With some small adjustments, the subcommittee believes that the noise dots are a useful tool, however unless they are proceduralized as waypoints, compliance can be challenging, as pilots do not see noise dots, and ATC controllers are focused on waypoints and formal procedures. If the noise dots were incorporated into procedures as waypoints, it would improve compliance and reduce noise impacts.
a. Reposition FAA Noise **Dot #1** from its current position at 295 degrees (implemented by FAA\AA without public notice) to its "original" pre 2005 position at 290 degrees from end of SAN Runway 27 and 1.5 miles off of the coast b. Reposition FAA Noise Dot #3 from its current position at 265 degrees (implemented by FAA\AA without public notice) to its "original"pre 2005 position of 275 degrees (JETTI) and 1.5 miles off of the coast c. Reposition FAA Noise **Dot #4** from its current location (west of Fort Rosecrans) to coincide with the ZZOOO waypoint to deter regular Early left turns inside of ZZOOO which continue to occur at the direction of ATC in direct conflict with the SID routing. ZZOOO was specifically designed by FAA to provide an efficient and cost effective departure for	

eastbound traffic and to mitigate impacts to affected DOT Section 4(f) recourses (including Fort Rosecrans, Cabrillo National Monument) and the peninsula community	

NOISE ABATEMENT DEPARTURE PROCEDURE (NADP)

Recommendation	Background/Rationale
21. Have SDCRAA conduct an engineering analysis of modification to the Noise Abatement Departure Procedure to assess the potential improvement to noise contours around the airport.	Noise Abatement Departure Procedures (NADPs) refer to the geometry of a jet's initial climb out from the runway. The SIDs implemented as a result of the recent Metroplex changes, when complied with, have largely improved the Early Turns metrics, and decreased noise for neighborhoods north and south of the defined departure tracks to the West. However, for neighborhoods within the defined departure tracks over Point Loma and Ocean Beach, some additional noise relief may be possible if SAN jet operators utilized a different NADP. The FAA allows jet operators to utilize two distinct NADPs. Again, these procedures have the pilots fly one of two specific initial climb profiles. • NADP-1 has the jet climb at an initial climb speed to approximately 3000' before retracting flaps and accelerating toward 250 knots. NADP-2 has the jet climb at an initial climb speed to approximately 1000' before retracting flaps and accelerating toward 250 knots. You may be able to imagine the difference between these two profiles: NADP-1 provides a steeper climb, but at a slower airspeed. • NADP-2, on the other hand, provides a shallower climb, but airspeed is allowed to increase earlier. It's a tradeoff between altitude and airspeed, due to thrust limits. Most airports and airlines prefer NADP-2. NADP-2 is currently used at SAN. It is slightly more efficient in terms of fuel consumption, emissions, and time to depart the airport area. But because the jet stays lower while accelerating toward 250 knots, it tends to be slightly noisier for those neighborhoods under the final segment of the initial climb, which in our case are those neighborhoods roughly between Chatsworth Blvd.

	and the ocean. Because NADP-1 sometimes improves noise contours within airport surroundings, there are at least a dozen airports, mostly in Europe and Asia, that utilize this slightly less efficient procedure. At least one airline uses NADP-1 at SFO, which is particularly noise sensitive. Because airlines have varied fleets, missions, pilot training requirements, and priorities, implementation of a change from NADP-2 to NADP-1 at SAN would be an extensive effort. But other airports have done it. The data may show that the improvement in noise contours is negligible, or it may be significant. It has not been analyzed yet.