OFFICE OF THE CITY MANAGER

CITY OF PALO ALTO

250 Hamilton Avenue, 7th Floor
Palo Alto, CA 94301
650.329.2392

July 7, 2016

Joe Simitian, Chair, Select Committee for South Bay Arrivals
County of Santa Clara
70 West Hedding Street, 10th Floor
San Jose, CA 95110

Dear Chair Simitian and Select Committee Members,

Thank you for volunteering your time to serve on the Select Committee. We ask that you discuss the contents of this letter with the FAA as you see appropriate.

As you have heard from citizens of our City along with others at Select Committee meetings we too have grave concerns about the FAA Feasibility study. Our consultant has reviewed the FAA Feasibility Study and identified numerous flaws and inconsistencies in the analysis. We have a draft evaluation that we will make available to the Select Committee when complete.

In the process of analyzing the study for the Select Committee, our consultants learned that the FAA will also be amending a number of procedures at SFO on July 21, 2016 and September 15, 2016[1]. This will mean a significant increase in noise levels and negative impact for the region. We ask that the FAA address these changes in the upcoming Select Committee meetings in July.

On June 8, 2016 staff and our consultants presented findings of arrival flight path analyses and the impacts of route changes on ground noise levels at a community meeting in Palo Alto. Our consultants confirmed public perception and analyses previously prepared by local noise groups that routes have changed and noise has increased. Please see attached report titled *Historical Noise Assessment* which compared July 10, 2008 to July 9, 2015.

The results indicate an increase in number of flights by 9.5% and an increase in DNL noise exposure of 5 dB to 13 dB in areas above 45 DNL. This increase varies throughout Palo Alto due primarily to changes in aircraft routes and altitude. These noise increases used FAA noise and flight track data, in the FAA standard noise model, to demonstrate that noise has exceeded the impact criteria defined in FAA Order 1050.1F for the two days analyzed. This assessment validates the concerns of Palo Alto citizens that noise has increased.

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Immediate Actions

Based on recommendations from our consultant, we believe there are several actions that can be implemented and evaluated within 45 days. These include inter-agency and inter-department communication, adherence to existing FAA procedures and to specific flight management techniques[2].

New Approaches

On March 2, 2016 in an open letter, which is attached, we provided four specific recommendations to Mr. Glen Martin, FAA Western Regional Administrator. The items below further define and add to those recommendations.

1. Have the FAA create more "points" for aircraft to use while entering SFO[3]. There is currently one point used for flights coming in from the north, west, or south. This point centralizes all arrival aircraft and noise over Palo Alto.

2. Redirect flights arriving from the south to the east; away from the Pacific Ocean coast to the mountains west of Interstate 5 and have aircraft enter the Bay from the east[4].

3. Shift the flights arriving from the north away from the Peninsula to Bay[5].

4. Ensure that the divisions and staff within FAA are working in partnership with each other to minimize noise through efficient organization of aircraft and utilizing arrival descents that limit speed brakes[6].

In addition to these specific noise-reducing suggestions we encourage the Select Committee to invite FAA Managers of NorCal Terminal Radar Approach Control (TRACON) and Oakland Air Route Traffic Control Center (ARTCC) along with local representatives of the National Air Traffic Control Association, outside subject matter experts and technical consultants from SFO's Community Roundtable to future Committee meetings.

We understand the complexities of finding a regional solution. Our search for solutions is guided by the perspective that our community should be affected no more than other communities of the Mid-Peninsula and South Bay. The FAA can and should work to deconcentrate noise in the region.

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We believe that the FAA through its current technology tools such as Terminal Area Route Generation, Evaluation, and Traffic Simulation (TARGETS) and Aviation Environmental Design Tool (AEDT) can show that our suggestions will reduce noise for the region. To be responsive to agency and community concerns, the Select Committee may want to recommend that any changes that are implemented be considered "trial" with a mechanism to verify their effectiveness. This may necessitate recommendations regarding an ongoing structure to receive technical updates from the FAA or regional airports and provide opportunities for community input.

We appreciate your careful consideration of our suggestions. We understand this issue is complex but there is a better way forward than the status quo. To assist your work, we are happy to extend our staff and consultants to assist the Committee. Please let us know if you have any questions.

Sincerely,

James Keene
City Manager

Cc. Congresswoman Anna Eshoo
Palo Alto Mayor and City Council
FAA Western Regional Director Glen Martin
Palo Alto City Attorney Molly Stump

Attachments:

Historical Noise Assessment
Letter to Glen Martin dated March 2, 2016.

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Endnotes:

[1] These changes are related to the Instrument Landing System (ILS) or Localizer (LOC) at runway (RWY) 28 L and the ILS or LOC RWY 28 R. An important result will be that the crossing altitude at MENLO FIX/WAYPOINT will be lowered to a mandatory 4,000 feet. The previous altitude was above 4,000 feet. Further information can be found on the FAA website: https://www.faa.gov/air_traffic/flight_info/aeronav/procedures/ by entering *SFO* into the *Search* bar then selecting the *IFP Coordination* tab. To provide for greater public understanding, we request that all environmental and TARGETS documents produced in support of and or associated with these changes be provided to the Select Committee.

[2] FAA should immediately have informal meetings with users, NorCal Terminal Radar Approach Control (TRACON), Oakland Air Route Traffic Control Center (ARTCC), San Francisco Internal Airport, Oakland International Airport and Mineta San Jose International Airport to enforce compliance with current Standard Operating Procedures, enhance Traffic Management with informal testing, reduce vectoring of Standard Terminal Automation Replacement System (STARS) and Standard Instrument Departures (SID) and have Air Traffic Tower's stage/provide three miles increasing to five miles on departures.

[3] FAA to provide multiple alternative transition routes, in lieu of the MENLO FIX/WAYPOINT, for arrivals into runways (RWYS) 28 L/R at SFO. The City, through our consultants, believes that multiple new transition route alternatives can be created for consideration, from the current SERFR TWO flight path, via waypoint EDDY, into the RWYS 28 L/R instrument finals at SFO. The FAA can provide this information the using TARGETS design tool.

[4] FAA to redirect flights currently designated for SERFR TWO flight path (routed J110 – J186; for FAA), to be sent to DYAMD TWO STAR flight path via CEDES FIX/WAYPOINT or YOSEM THREE flight path via SOOIE FIX/WAYPOINT. These options would help mitigate flights over all affected communities from Monterey County to San Mateo County and place flights over the uninhabited mountains west of Interstate 5 at much higher altitudes.

[5] FAA to shift arrival flights from the north (such as POINT REYES ONE, GOLDEN GATE SIX, and BDEGA TWO), which come down the Peninsula and do a left U-turn over Mid-Peninsula, to go down the middle of the Bay and turn right into the final approach to

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RWYS 28 L/R at SFO. Thus keeping low altitude impacts over water not over noise sensitive residential areas.

[6] FAA to enhance and support the original NextGEN initiatives to reduce vectoring by increasing coordination, Traffic Management initiatives and programs between the TRACON and Towers and Enroute Facilities. This action will reduce noise, reduce carbon emissions over sensitive residential areas, reduce operator fuel costs, and cockpit workload, while providing efficiency in the National Airspace System (NAS) through the increased utilization of Optimal Profile Descent (OPD) designed for Standard Terminal Arrival Routes (STARs).

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Proof of Concept – Task 2

Historical Noise Assessment

Submitted to the City of Palo Alto

John C. Freytag
Randy Waldeck

5 July 2016

JOHN C. FREYTAG, P.E., INCE Bd. Cert.
FREYTAG & ASSOCIATES LLC
925 CRESTA WAY #9, SAN RAFAEL CA 94903 T: 949.500.1853 E: JACK@FREYTAGLLC.COM W: FREYTAGLLC.COM

1. EXECUTIVE SUMMARY

This report describes the process and results of the Historical Noise Assessment of aircraft activity over Palo Alto on two days, seven years apart. It is prepared in compliance with Task 2 of the City of Palo Alto Airplane Noise Assessment & Mitigation, Proof of Concept, Project contract of 22 March 2016 with Freytag & Associates, LLC (C16161182). The report investigates all flight tracks and computes the resultant day-night average noise level (DNL) contours over Palo Alto from San Francisco International Airport (SFO) arrivals for July 10, 2008 and July 9, 2015. The days selected were the second Thursday in July of each year with similar weather conditions and typical air traffic control (ATC) operations. Since this report uses many technical terms and metrics, a glossary of terms is included at the end of the document.

The results of this assessment show 473 arrivals over Palo Alto on the 2008 day and 518 arrivals on the 2015 day, a 9.5 percent increase. Flight tracks differ for the two days and an increase in traffic volume is evident. The DNL noise exposure contours are also larger for the 2015 day. Noise exposure is affected by flight tracks, volume of activity, individual aircraft altitudes, aircraft types, and throttle settings.

An important criterion for this assessment is from the Federal Aviation Administration (FAA) Order 1050.1F, which defines an environmental noise impact as:

- DNL 65 dB+: 1.5 dB increase
- DNL 60 – 65 dB: 3 dB increase
- DNL 45 – 60 dB: 5 dB increase

The City of Palo Alto lies in or below the third category (DNL 45 dB – 60 dB). Therefore, the criterion for significant impact according to the FAA is an increased DNL of at least 5 dB in an area where the later DNL (i.e., 2015) aircraft noise exposure is at least 45 dB. An area of approximately 25 square miles within Palo Alto was found to exceed this criterion for the two days analyzed. Figure 1.1, Palo Alto Noise Impact, shows the impacted areas.

Figure 1.1 is the arithmetic difference between the DNL computations for the two years. We first computed DNL values for every point on a 0.25 NM (nautical mile) grid for YR2008, and then computed all values on the identical grid for YR2015. Figure 1.1 was created by subtracting the 2015 DNL values from the 2008 DNL values (at each grid point). Those points with YR2015 DNL values below 45 dB were eliminated, because the FAA criterion was not met. All areas shown in the map exceed the FAA criteria, and the amount of DNL increase (2015 vs. 2008) is color-coded as indicated in the legend (i.e., darker reds correspond to higher noise increases).

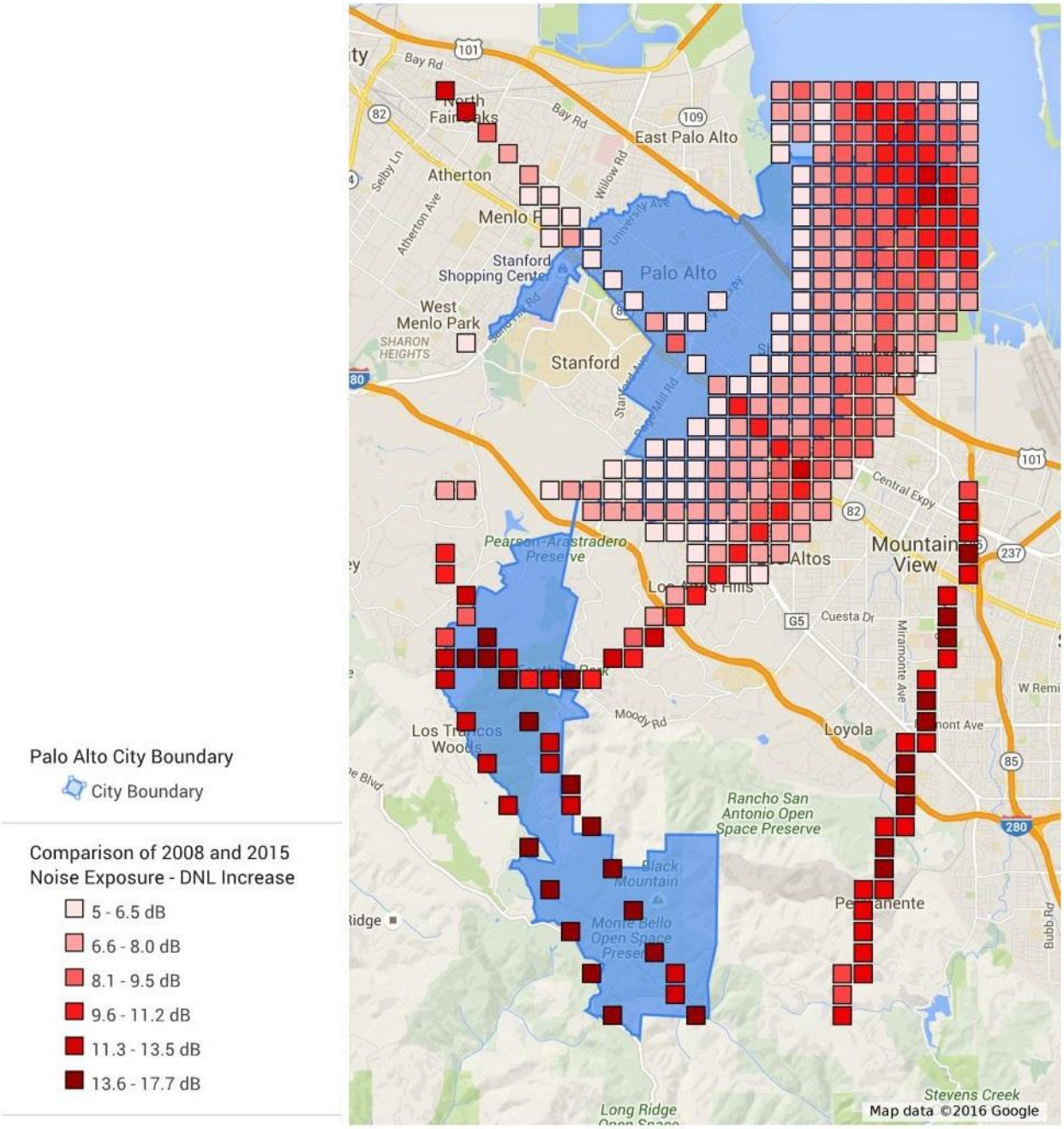


Figure 1.1: Palo Alto Noise Impact – 2015 Increase over 2008 Noise Levels

This noise increase is considerably above the preliminary findings reported in the June 8 Palo Alto community meeting. The change resulted from computer processing errors in the Aviation Environmental Design Tool (AEDT) mandated by the FAA and written for them by ATAC Corporation. Numerous errors and data import issues were reported to and addressed by MITRE/VOLPE, the group now contracted by the FAA to correct and maintain the AEDT. Some changes from the preliminary report also resulted from initially running the program on an undersized area where aircraft entered and exited the analysis boundaries causing omission of some flights or incorrect modeling of these flights by the AEDT.

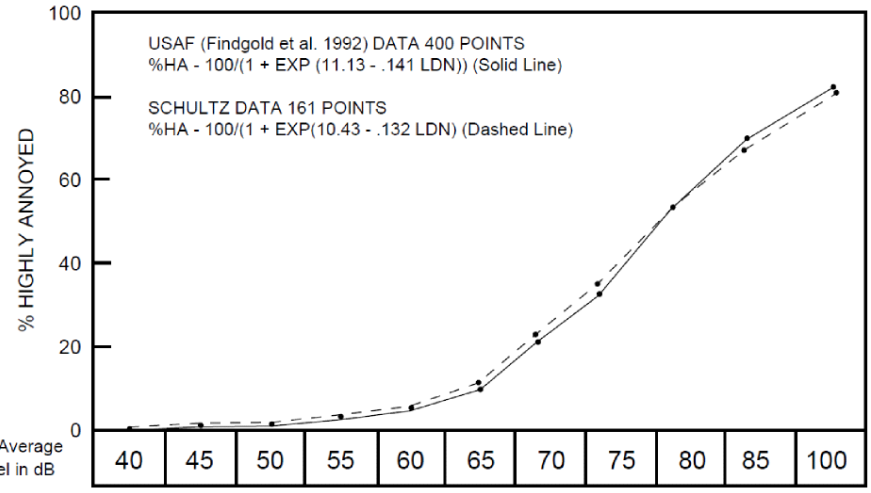
2. DNL NOISE EXPOSURE

The DNL noise exposure metric integrates the level and duration of noise over a day, and penalizes nighttime noise by 10 B to account for increased sensitivity to nighttime noise. DNL is a daily noise dose with the dose divided by the 24-hour period (thus termed an average) to express a constant value whose noise energy is equivalent over that period. A common misnomer is that DNL averages out high-level short durations events such as aircraft flyovers. This is false because the averaging is computed on an energy basis (e.g., the energy average of a period with equal times at 70 dB and 80 dB is 77.4 dB, not 75 dB).

The only noise exposure standard adopted by the EPA and throughout California is the DNL metric; it is also the only standard used by the FAA and all government agencies to quantify community noise annoyance. DNL is used for aircraft noise, highway noise, industrial noise and all other noise sources assessed under the National Environmental Policy Act (NEPA). The DNL is also the only noise metric for which there is a comprehensive assessment of the degree of community noise annoyance. It has been evaluated and reconfirmed as the national standard several times by experts from various government organizations.

In 1979, the Federal Interagency Committee on Urban Noise (FICUN) was formed to develop Federal policy and guidance on noise. The FICUN issued its report, “Guidelines for Considering Noise in Land Use Planning and Control”, June 1980, stating that standard residential construction was compatible for noise exposure up to a DNL of 65 dB. The FAA has adopted the 65 dB standard as the basis for mitigating noise exposure to residents around airports; specifically, some homes may be eligible for sound insulation under the FAR Part 150 program.

In 1991, the FAA and EPA initiated the Federal Interagency Committee on Noise (FICON) to review technical and policy issues related to assessment of noise impacts around airports. With respect to DNL, the FICON found that there are no new descriptors or metrics of sufficient scientific standing to substitute for the present DNL cumulative noise exposure metric. It further recommended continuing the use of the DNL metric as the principal means for describing long-term noise exposure of civil and military aircraft operations. The FICON conducted several studies including a reassessment of the original noise annoyance curve. This curve, with corresponding values of the population that will be highly annoyed (HA), is shown in Figure 2.1.



Day - Night Average Sound Level in dB	40	45	50	55	60	65	70	75	80	85	100
Calculated %HA Points: USAF	0.41	0.831	1.66	3.31	6.48	12.29	22.1	36.47	53.74	70.16	82.64
Calculated %HA Points: SCHULTZ	0.576	1.11	2.12	4.03	7.52	13.59	23.32	37.05	53.25	68.78	81

Figure 2.1: Comparison of logistic fits to original 161 data points of Schultz (1978) and USAF analysis with 400 points (data provided by USAF Armstrong Laboratory).

In 1993, the Federal Interagency Committee on Aviation Noise (FICAN) was formed based on the FICON report's policy recommendation to form a standard interagency committee for facilitating research on methodology development and on the impact of aircraft noise. The FICAN recommended that FAA and other Federal agencies use the yearly day-night average sound level (DNL) metric as the primary measure of noise impacts on people and land uses. This cumulative metric is the Federal standard because it:

- Correlates well with the results of attitudinal surveys of residential noise impact;
- Increases with the duration of noise events, which is important to people's reaction;
- Takes into account the number of noise events of the full 24 hours in a day, which also is important to people's reaction;
- Takes into account the increased sensitivity to noise at night by including a 10-dB nighttime penalty between 10:00 p.m. and 7:00 a.m. to compensate for sleep disturbance and other effects;
- Allows composite measurements of all sources of community noise; and
- Allows quantitative comparison of noise from various sources with a community.

All three committees were comprised of members from various government agencies including the EPA, FAA, HUD, DOD, VA, DOT and NASA. Each of these federal organizations employs the DNL metric exclusively for assessing compatible land use and in assessing community noise annoyance.

3. THE ANALYSIS PROCESS

Task 2, Historical Noise Assessment, followed Task 1, Historical Operations Assessment, completed and described in our report of 1 June to the City. Task 1 collected files for the two days from Federal Aviation Administration (FAA) National Offload Program (NOP), verified data validity, filtered the data, and prepared files for input to the FAA Aviation Environmental Design Tool (the AEDT, the aircraft computer program for modeling noise exposure and other environmental factors).

Task 1 was formidable because it required collecting the NOP files for 24 continuous hours for both days. The NOP file is a series of radar location records for each aircraft noting the time, latitude, longitude, altitude (from transponder transmissions), aircraft identification and other information. The volume of information is considerable in that radar records are recorded every few seconds on each of the more than 1200 flights per day to and from SFO. Results from the Task 1 analyses are a series of coordinates showing the precise latitude, longitude, altitude and aircraft identification for each aircraft.

The Task 1 data was then processed to identify the specific aircraft type from the airline identification information. Next, a computer program was written to translate the sequence of three-dimensional aircraft locations (a vector) into the XML (Extensible Markup Language) format required for input to the AEDT. Using NOP data for input to the AEDT had never been done before, since the AEDT is a new computer program, the NOP data files are large and the XML translation program is complex.

During the translation of NOP data into the AEDT, numerous errors and issues were found with the AEDT software; some of which the software authors have promised to fix in future revisions. Nevertheless, we were successful in translating NOP data into the AEDT to model the noise exposure for the two days. The exact flight tracks (from the NOP data), aircraft type, altitude, and arrival time of each flight was modeled in the AEDT.

Per an FAA Guidance Memo on FAA Order 1050.1E (AEE-400, March 21, 2012), "Guidance on Using AEDT 2a to Conduct Environmental Modeling for FAA Air Traffic Airspace and Procedure Actions," AEDT 2a replaces the Noise Integrated Routing System (NIRS) as the required model for aircraft noise, fuel burn and emissions modeling for FAA air traffic airspace and procedure actions. There is an exemption for projects whose environmental analysis began before March 1, 2012; hence, the NorCal OAPM EA was grandfathered and used the latest version of NIRS.

4. HISTORICAL NOISE ASSESSMENT RESULTS

The flight tracks for the YR2008 day and the YR2015 day are shown in Figures 4.1 and 4.2. While the major flight tracks are somewhat similar, there appears to be considerably more flyover activity in the areas west and south of the City.

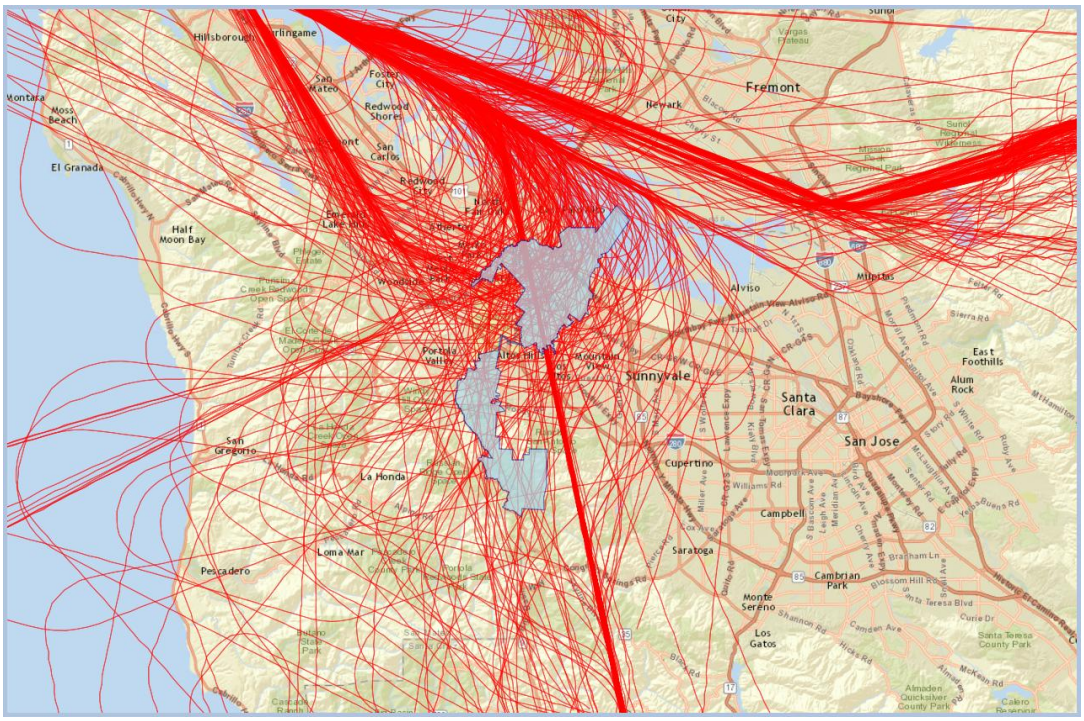


Figure 4.1: July 10, 2008 Flight Tracks

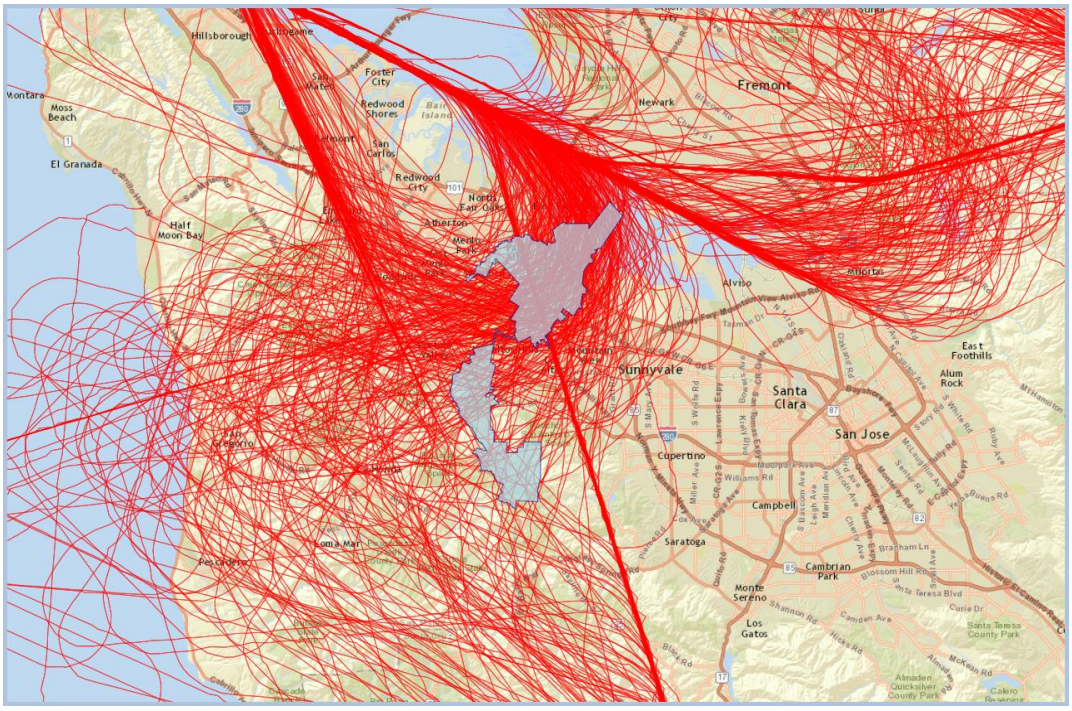


Figure 4.2: July 9, 2015 Flight Tracks

The respective DNL noise contour heat maps are shown adjacently in Figures 4.3 and 4.4. These maps have shaded areas color coded to more clearly show the range of DNL noise exposure rather than contour lines demarking borders.

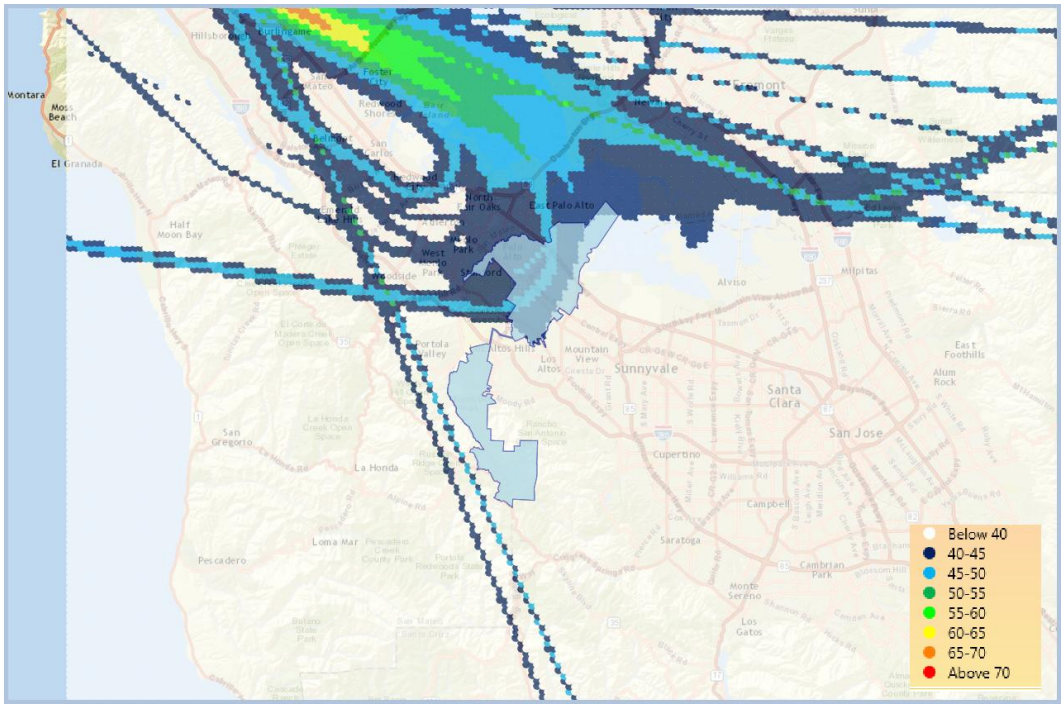


Figure 4.3: July 10, 2008 DNL Heat Map

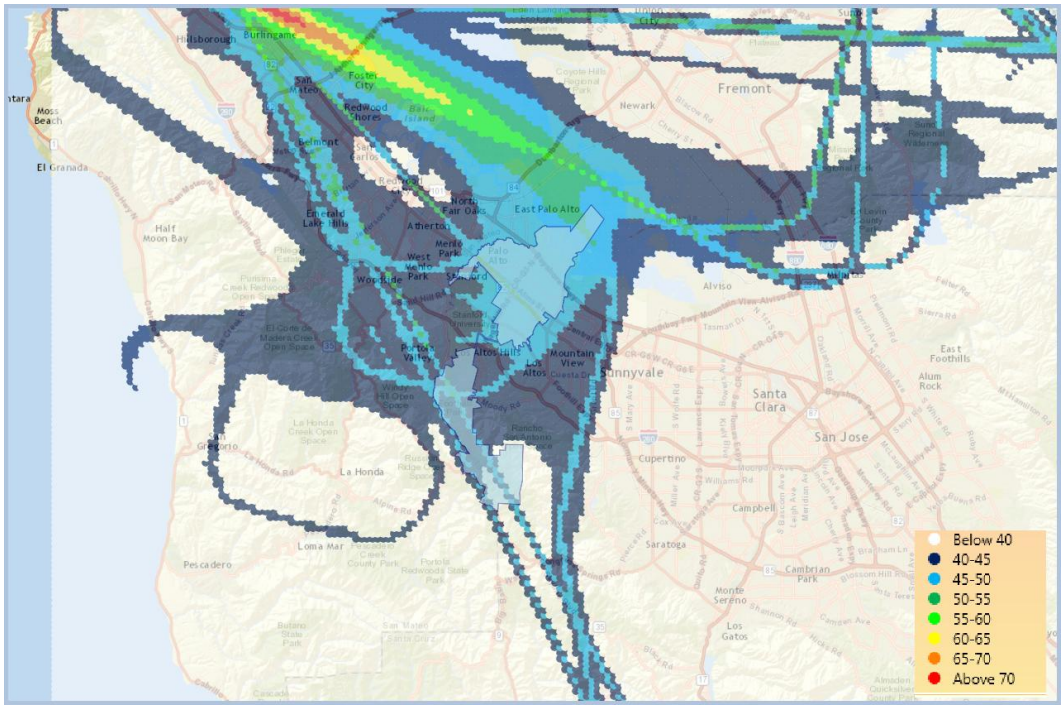
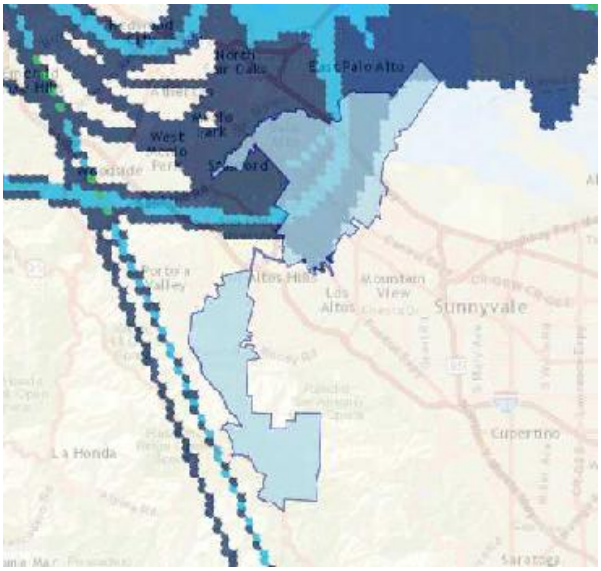
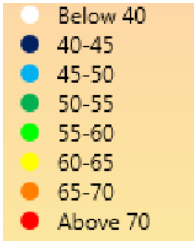


Figure 4.4: July 9, 2015 DNL Heat Map

5. The Palo Alto Community

Figures 5.1 and 5.2 zoom in on the heat maps for the City to more clearly identify those areas most affected in the course of the seven years from 2008 to 2015.





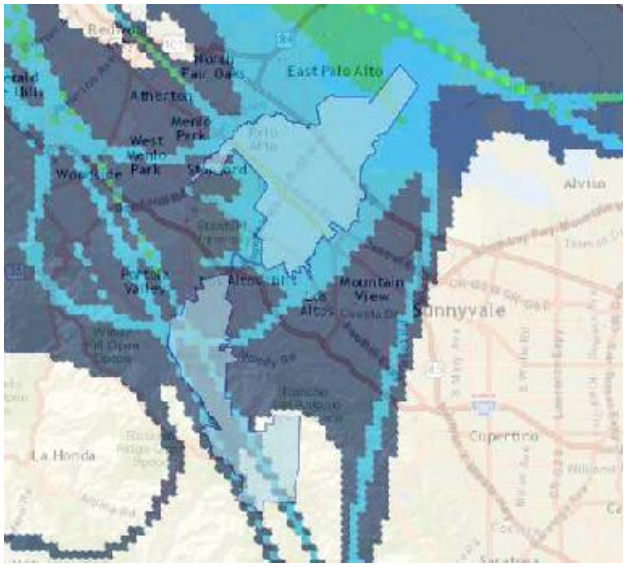


Figure 5.1: July 10, 2008 Palo Alto DNL Map

Figure 5.2: July 9, 2015 Palo Alto DNL Map

6. DISCUSSION

As mentioned before, changes in noise exposure are caused by changes in traffic volume, changes in noise emissions from individual aircraft, flight track locations and altitudes (changing the distance from the aircraft noise source to the receiver). Minor changes arise from meteorological changes. For this comparison, the 9.5 percent increase in traffic would (all other factors unchanged) result in less than a 0.4 dB increase in noise, and the aircraft fleet in 2015 should be slightly less noisy with the retirement of older noisier aircraft; for example, there were no (noisy) MD-80 aircraft found in the 2015 NOP data. Therefore, the noise exposure increase must arise from new flight tracks and/or lower altitudes. In fact, there is general evidence of both. Low altitude delayed vectoring directs air traffic over new areas, often at lower altitudes.

With the increased low altitude vectored traffic from the SERFR and aircraft arriving SFO, particularly at peak traffic hours, there is a need for delayed vectoring to allow safe sequencing of aircraft onto the SFO RWY 28L/R approach. From those being off-loaded from the POINT REYES, BDEGA and Golden Gate arrivals in a west tear drop maneuver over extending west of Woodside into a southeasterly flow over MENLO. This accounts for the increase in flight tracks south and west of the City. While there is only a moderate increase in aircraft arrivals, more aircraft appear to require flying over new areas awaiting the clearance for runway approach. In addition, much of this delayed vectoring may be at lower altitudes in 2015 than in 2008 creating higher noise levels to residents below. For the days modeled, aircraft in 2015 appear to utilize a north-northwest route over the southern areas of the City not used before.

While many areas of the City received increased noise exposure, the most affected areas are the Esther Clark Park, Midtown and Palo Verde neighborhoods.

It is interesting to compare the results of this Historical Noise Assessment with those of Sky Posse, the local Palo Alto group of citizen noise investigators. Sky Posse has gathered sorted and published a number of interesting reports on sample volume and altitude of aircraft activity in recent years over Palo Alto. Likewise, other such groups have also assimilated similar data over other areas such as Los Altos. This information, along with that from this report serves to develop a more complete assessment of the change in airport noise over Palo Alto in the past 10 to 15 years.

The Sky Posse reports elucidate the change in volume and altitude of aircraft activity over the years. However, these data cannot identify the specific aircraft, their noise emissions or air route. This study gathers that information, but only for two sample days and therefore cannot document the extent of the impact over a substantial period. In order to bolster these initial findings (i.e., prove the 5 dB DNL increase in Palo Alto), it would be necessary to model multiple days in 2008 and multiple days in 2015, as the additional days would provide a higher level of statistical validity to any findings.

This Historical Noise Assessment study, a part of the Proof of Concept project, has been successful in developing a means of extracting NOP data and inputting it into the AEDT computer model to document the DNL change over a period.

7. CONCLUSIONS

The results of the 2008 versus 2015 noise exposure impact are encouraging in documenting a substantial noise impact to the City in terms of the new FAA Order 1050.1F criteria, if even only for a single day. This suggests that a noise impact may exist for other periods and in nearby communities as well. While the FAA standard does not specify the periods for which an impact must be documented, it is unlikely that a single day will suffice to initiate FAA action. DNL analyses for Part 150 studies, planning and environmental assessments are computed for average annual conditions. The FAA may expect average annual noise exposure assessments to document an environmental impact prompting their action to mitigate.

It would likely be quite labor-intensive to collect daily NOP data for an entire year, input it to the AEDT and compute average annual DNL values. The work required for this computation, for only the two days reported here, was substantial. However, NOP data may be viable to use for some other representative sample periods. Additionally, it may be practical to compute such AEDT analyses from the ANOMS (Airport Noise Monitoring and Management System) operated at SFO. The information recorded is similar to that from the NOP system, but it may prove more readily input to the AEDT for noise exposure computation. Until recently, ANOMS information from SFO was not available to the public, but that limitation may now have changed.

We recommend that Palo Alto and other communities consider obtaining NOP and/or ANOMS data for several periods, inputting it to the AEDT and computing the annual DNL values and DNL increase over time. This would document the noise environment and change in accordance with the FAA criteria, contrary to the FONSI-ROP results of the NorCal OAPM. This may prompt the FAA to revise their EA decision and undertake noise mitigation.

GLOSSARY OF TERMS

AEDT - Aviation Environmental Design Tool: The FAA mandated software system designed to model aviation related operations in space and time to compute, noise, emissions, and fuel consumption.

ANOMS -- Airport Noise Monitoring and Management System: A private system that monitors and records aircraft identification and flight track information using passive radar (i.e., it records reflections from FAA radar but does not transmit).

ATAC Corporation: The software development company who wrote the AEDT program under contract to the FAA.

ATC – Air Traffic Control: An FAA service provided to aircraft by ground-based controllers.

BDEGA: An airspace approach procedure into SFO.

DNL – day-night average sound level: The U.S. national standard metric for measurement as assessment of community noise exposure.

DOD: Department of Defense.

DOT: Department of Transportation.

EA – Environmental Assessment: An environmental study and conclusions for a proposed project.

EPA: Environmental Protection Agency.

FAA: Federal Aviation Administration.

FICAN – Federal Interagency on Aviation Noise: A committee of government experts formed in 1993 to facilitate research and development regarding aircraft noise.

FICON -- Federal Interagency on Noise: A committee of government experts formed in 1991 to review technical and policy issues about noise around airports.

FICUN -- Federal Interagency on Urban Noise: A committee of government experts formed in 1979 to develop policy and guidance on noise.

FONSI-ROD -- Finding of No Significant Impact and Record of Decision: One conclusion from an Environmental Assessment (EA).

Heat maps: Maps depicting various ranges of DNL noise exposure by color-coding.

HUD – Department of Housing and Urban Development.

MENLO: One 'fix' or location used by aircraft approaching SFO RWY 28L/R by several Standard Arrival Routes.

MD-80 – McDonnell Douglas MD-80: A series of twin-engine aircraft produced between 1979 and 1999.

Mitre Corporation (MITRE): An American not-for-profit organization managing Federally Funded Research and Development Centers (FFRDCs) supporting the DOD, the FAA, IRS and various other government organization.

NM – Nautical Mile: A distance of 1852 meters (~6076 ft. or ~1.51 miles).

NASA: National Aeronautics and Space Administration.

NEPA – National Environmental Policy Act: A United States environmental law that promotes the enhancement of the environment and established the President's Council on Environmental Quality (CEQ)

NIRS – Noise Integrated Routing System: A noise-assessment program designed to provide an analysis of air traffic changes over broad areas

NOP – National Offload Program: Historical radar track and flight plan data around airports collected and managed by the FAA.

NorCal OAPM – Northern California Optimization of Airspace and Procedures in the Metroplex: The Environmental Assessment (EA) prepared by the FAA to issue a Finding of No Significant Impact and Record of Decision (FONSI-ROD) for the change in SFO arrival and departure routes.

POINT REYES: An airspace approach procedure into SFO.

RWY 28L/R – Two parallel runways used primarily for arrivals to SFO. Runways are typically labeled according to their approximate magnetic heading divided by ten (e.g., RWY 28L/R is oriented at about 280°).

SERFR: An airspace approach procedure into SFO.

SFO: San Francisco International Airport

Transponder – flight transponder: A device that emits an identifying signal in response to an interrogating received signal.

VA: Department of Veterans Affairs

VOLPE – John A. Volpe National Transportation System Center Acoustics Facility (Volpe Center): A federal research agency supporting transportation projects.

XML – Extensible Markup Language: A markup language that defines a set of rules for encoding documents in a format that is both human-readable and machine.

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250 Hamilton Avenue, 7th Floor
Palo Alto, CA 94301
650.329.2392

March 2, 2016

Glen A. Martin, Western Regional Administrator
Federal Aviation Administration
Western - Pacific Region Headquarters
15000 Aviation Blvd
Lawndale, CA 90261

Subject: FAA Initiative to Address Noise Concerns of Santa Cruz / Santa Clara / San Mateo / San Francisco Counties

Dear Mr. Martin,

On behalf of the City of Palo Alto and residents of Palo Alto, I would like to thank you and staff at the Federal Aviation Administration (FAA) for your commitment to providing the safest and most efficient aerospace system in the world. As a government agency we understand the pressures placed on your department with regard to the lack of budget predictability, the challenge of responding to diverse stakeholder interests, and ever present labor challenges to retain, recruit and train capable staff. We are also aware of the ongoing discussions about the privatization of the Air Traffic Control division through the upcoming 2016 FAA Reauthorization Act as well as the increased demand on the FAA with the advent of Unmanned Aircraft Systems (UAS) technology. Naturally, we are also cognizant of the increased workload that the NextGEN implementation is creating for your agency. Therefore, we are truly grateful for your willingness to work with Congresswoman Eshoo, Congresswoman Speier, and Congressman Farr to explore solutions to the significant negative impacts from the NextGEN implementation in our region, with attention to our concern about lost legacy routes that affect our city.

Overall we support the implementation of NextGEN, as the goals of reducing fuel consumption and carbon emissions align with our City's strong commitment to sustainability and protecting the environment. Furthermore, from an economic development standpoint, we value advances in technology which modernize our airspace management and the increase predictability of air travel. With that said, the NextGEN Optimization of Airspace & Procedures in the Metroplex (OAPM) redesigns have had significant negative impacts for our community, as flight paths have been changed.

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For these reasons, we have retained the service of Freytag & Associates to assist us in working with you and the region, to generate needed solutions to those impacts. Freytag & Associates will assist us with the three phases of the November 16, 2015 *FAA Initiative to Address Noise Concerns of Santa Cruz / Santa Clara / San Mateo / San Francisco Counties*. Specifically, Freytag & Associates will evaluate potential alternative air traffic routes and other mitigations, conduct operational and noise assessments, as well as sleep interference, classroom disruption and property valuation studies. Our representative for discussions with the FAA and other regional groups will be Dennis Hughes of the Freytag team.

The *Initiative* states that the first phase will conduct an "analysis and a preliminary feasibility study focusing on flight procedures criteria and overall fly-ability of the new Performance Based Navigation (PBN) procedures, potential procedural modifications including speed/altitude adjustments, airspace changes and possibility of moving existing waypoints."

The City's concern is that the FAA developed procedures which were implemented that have resulted in the current conditions. Those conditions have dramatically affected the quality of life for our citizens, due to noise and significant increases in flights and turns over Palo Alto.

In line with the letter issued by Congresswoman Eshoo and Congressman Farr on February 2, 2016, the City supports an FAA Select Committee for the cities and counties in the South Bay and Santa Cruz areas. In addition to the FAA Select Committee, the City recommends a *Task Force* similar to other FAA task forces at the request of the affected cities and counties. A good example of the *Task Force* we seek would have a similar composition to the task force resolving issues with the Palos Verdes Peninsula and the operational impacts of the Los Angeles International Airport.

The City, based on recommendation from our consultants, recommends that the *Task Force* include the FAA's Regional Offices of Flight Standards, Western Operations Support Group (WOSG), and Airports Division to be in attendance as the agenda or issues dictate. They would help provide the needed Subject Matter Expertise (SME) to resolve the task or issues on-site and help save time, expense and reduce misunderstanding. The key staff elements would be offered by the Managers of the NorCal Terminal Radar Approach Control (TRACON), and Oakland Air Route Traffic Control Center (ARTCC). Each facility would dedicate staff (one or two) from their respective Airspace and Procedures Department who are proficient with TARGETS (Terminal Area Route Generation, Evaluation, and Traffic Simulation) software and

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PDARS (Performance Data Analysis and Reporting System) and would be in attendance as the agenda or issues dictated. This composition would allow us to provide validation of flight procedures criteria, assess overall fly-ability, and identify potential procedural conflicts including speed/altitude adjustments, any new airspace boundary changes and the possibility of moving existing waypoints. Any additional coordination could be resolved at this level within their established protocols. The amended procedural packages would then be forwarded to the WOSG for final review and processing by the Flight Procedures Team (FPT) who would in turn post them to the Procedure Track System (PTS) for publication. The WOSG would facilitate at least ten production slots for the calendar year 2016. At least two of these would be facilitated by FAST TRAK processing. This methodology and process would be used to resolve all three phases.

We understand that the FAA will conduct the formal environmental and safety reviews, coordinate and seek feedback from existing and/or new community roundtables, members of affected industry, and the National Air Traffic Controllers Association (NATCA), as a matter of due process, before submitting any amended procedure for publication. The *Task Force* should be a collaborative effort of all vested entities, specifically technical consultants of the San Francisco International Airport (SFO) Community Roundtable, the City's technical consultant and professional technical consultants from impacted cities, counties, community noise groups and other airports. The *Task Force* would then present the findings to the SFO Community Roundtable and FAA Select Committee for review and approval.

The City believes that the Oakland Air Route Traffic Control Center (ARTCC) located in Fremont, CA, in conjunction with representatives from NorCal Terminal Radar Approach Control (TRACON), would be best to serve, initially, as the facility for preliminary fact finding and the central meeting location for the *Task Force*.

The City does understand that the FAA faces time and resource challenges. Therefore, secondarily, we would like to provide some specific proposals for the three SFO arrival routes (SERFR, OCEANIC, POINT REYES) that impact our City.

Proposal for SERFR:
The SERFR route has had a very negative impact on the quality of life in Palo Alto. The City's recommended solution is that one or more new WAYPOINTs be created and used in lieu of MENLO (FIX / WAYPOINT), to take advantage of the full length of the bay at much higher altitudes, as well as the full capability of Air Navigation (RNAV) to assign flights along multiple entry points to the Bay. The ability to have aircraft fly over water during much of the approach provides a unique solution for Silicon Valley communities.

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The City would like to use that ability as much as possible. We understand that a South-of-the-Bay entry is an adjustment which we think could be reviewed as part of the *Task Force*. We would also like to request a re-evaluation of the crossing altitude and position given to Standard Terminal Arrival Route (STAR) termination point.

Proposal for OCEANIC / POINT REYES:
The City endorses the *Initiative's* effort to develop a Required Navigation Performance (RNP) approach to Runways 28L/R from the west which would couple to a new RNAV STAR eliminating the current conventional POINT REYES ONE ARRIVAL. The new STAR would also provide vertical guidance for an Optimize Profile Descent (OPD). This would offer greater operational efficiency to the user and provide for a predictable ground track for the City and enhanced safety for general aviation users. Any development would be inclusive of the *Task Force* input. Oceanic arrivals could also use the RNP approach, thus eliminating low altitude vectoring and unstable descent which produces increased fuel flow engine thrust and increases noise and emissions.

Proposal for Nighttime Arrivals
The City requests that the FAA review proposals regarding nighttime flights within the first set of considerations. The City has received numerous complaints about sleep being disturbed late night and early morning.

In addition to our proposed solutions, the City has participated in many conversations with individuals and local community noise groups about proposed solutions. We are very appreciative of the time, energy and hard work of these individuals and noise groups. Their concern and passion has been critical to advancing this issue. But we are cognizant that our region's efforts require consensus; and also that earnest proposals from individuals and groups may create unintended consequences which professionals in the field of airspace management would not overlook. We encourage our neighboring City and County jurisdictions to retain professional consultants on behalf of their citizens who would bring forth qualified technical knowledge and assist with community education efforts.

In regards to the proposals from Quiet Skies of NorCal (QSNC), their results only address OCEANIC and SERFR flight tracks which are two of three routes that impact Palo Alto and the Mid-Peninsula. For OCEANIC, the City requests the FAA consider our proposed solution. With respect to SERFR, we believe that their solution is, at best, a short term solution. At this point there are conflicting opinions as to whether there will be relief for Palo Alto. We request that the FAA demonstrate the benefits to Palo Alto and the Mid-Peninsula cities before implementing changes to SERFR. Concurrently, we request that a

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comprehensive regional solution be developed by the proposed *Task Force*. We remain concerned that the proposal being presented by QSCN, or by any other group or individual, is not sanctioned or approved by any local government jurisdiction or a represented airport roundtable. Additionally, these proposals may satisfy certain perspectives without considering a comprehensive regional alternative. With that said, we do understand that all solutions being presented are preliminary steps in this *Initiative* process. Finally, we are also aware of additional letters being drafted by Mid-Peninsula residents and noise groups. To date neither the City nor our consultant have reviewed any such letters. Therefore we are not in a position to comment on them.

We look forward to working with the FAA and all stakeholders to find long term solutions for the airspace over Silicon Valley through the *Task Force*. The results of the *Task Force* would be shared with the FAA Select Committee and SFO Community Roundtable. And we again encourage our neighboring local City and County jurisdictions to retain professional consultants on behalf of their residents who could bring forth professional technical knowledge and assist with community education efforts. We appreciate the opportunity to comment on the *Initiative* and look forward to meeting you on March 7, 2016. Thank you very much for taking time to visit Silicon Valley.

Sincerely,

James Keene
City Manager

Cc. Congresswoman Anna Eshoo
Palo Alto Mayor and City Council
Santa Clara County Supervisor Joe Simitian

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February 2, 2016

Mr. Glen Martin, Western Regional Administrator
Federal Aviation Administration
15000 Aviation Boulevard
Lawndale, California 90261

Dear Mr. Martin,

Thank you for working with us to explore standing up a new FAA Select Committee made up of local elected officials from the cities and counties in the South Bay and Santa Cruz County.

As you know, the vast majority of our constituent complaints involve aircraft coming into the San Francisco Airport, not the San Jose Airport. We understand the SFO Airport Roundtable is considering adding an additional city, Palo Alto, to its existing membership of 23 elected officials. This, in our view, will not resolve the issues at hand and we do not support this approach. Santa Clara County has 15 cities within its jurisdiction and adding only one city as a voting member is not an equitable solution. Additionally, Santa Cruz County must have representation as well. Given the focus of the SFO Airport Roundtable on many issues that are not relevant to the South Bay, we believe a new Select Committee representing the entire region (three congressional districts) is necessary.

We greatly appreciate your leadership and support in helping to ensure that our constituents have a direct voice in FAA matters with you and FAA leadership through a new Select Committee with equal regional representation of local elected officials appointed through an appropriate body within each county that we represent. We recommend the new Select Committee hold regular meetings in each county so constituents can have easier access to the meetings.

Most gratefully,

Anna G. Eshoo
Member of Congress

Sam Farr
Member of Congress

cc: The Honorable Jackie Speier (CA-14)
Mr. John Martin, San Francisco International Airport Director
Mr. Cliff Lentz, Chairperson, SFO Airport Roundtable