Federal Aviation Administration

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

UPDATE ON PHASE TWO

Compiled at the Requests
of Representatives Farr (Panetta),
Eshoo and Speier

November 2017

EXECUTIVE SUMMARY

In November 2015, the FAA released the "FAA Initiative to Address Noise Concerns in Santa Cruz/Santa Clara/San Mateo/San Francisco Counties" report, which was compiled at the requests of U.S. Representatives Eshoo, Speier and Farr. The purpose of the three-phased initiative was to summarize and establish a framework for responding to dozens of specific recommendations submitted by the three members' constituencies. The recommendations pertained to longstanding aircraft noise concerns, as well as to concerns related to the FAA's implementation of new optimized routes beginning in November 2014 and concluding in April 2015.

During the first phase of the Initiative, the FAA conducted its detailed analysis and preliminary feasibility study of all the recommendations summarized and included in the November 2015 Initiative. The FAA released its Phase One Report in May 2016.

During the spring of 2016 and to facilitate community involvement within their respective districts, the Congressional delegation designated a total of 12 representatives—locally-elected officials from Santa Cruz, Santa Clara, San Mateo and San Francisco Counties – to serve on the Select Committee. The Select Committee's role was to review the FAA's Phase One Report, gather public input within their represented areas about measures to address noise concerns, and make recommendations that reflect public input. The Select Committee diligently worked to identify which of the initially feasible recommendations, including amendments and/or new procedures, could be included within the second phase of the Initiative. The San Francisco Airport Community Roundtable provided guidance and assistance to the Select Committee's efforts as well.

The Select Committee held a total of 10 public meetings, and the SFO Roundtable concurrently discussed the Initiative during its own regularly scheduled meetings. In November 2016, the Congressional delegation provided the FAA with 104 recommendations from these two bodies.

In July 2017 the FAA issued an interim report on its efforts to evaluate 104 recommendations from these two bodies. At that time, the agency was still considering how to address more than 50 percent of them. The agency has now determined how it will proceed on the full set of recommendations. This November 2017 update details a total of 203 items, which consists of the original 104 recommendations and each of their sub-recommendations. Of these, 101 have already been addressed, 25 will be addressed in the future, and 77 were not endorsed. Each of these is explained in this report and its appendices.

This report does not represent the end of our work. The FAA continues to commit to work collaboratively with communities and local members of Congress to address a wide range of noise concerns.

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BACKGROUND

Status of the Initiative

In November 2015, the "FAA Initiative to Address Noise Concerns in Santa Cruz/Santa Clara/San Mateo/San Francisco Counties" was released. The Initiative includes multiple recommendations to the published procedures serving the Northern California (NorCal) Airspace, as well as detailing the phases in which these recommendations will be considered by the FAA. These recommendations came from multiples meetings and correspondence with congressional offices and local community representatives of Santa Cruz, Santa Clara, San Mateo and San Francisco Counties.

The "FAA Initiative to Address Noise Concerns in Santa Cruz/Santa Clara/San Mateo/San Francisco Counties" outlined a three phase approach to review and respond to the community proposals. These three phases are collectively known as the NorCal Initiative:

- Phase One: The FAA will conduct a detailed analysis and a preliminary feasibility study focusing on flight procedures criteria and overall fly-ability of the new Performance Based Navigation (PBN) procedures and potential procedural modifications. This phase includes coordination with the local stakeholders.
- Phase Two: The FAA will consider any amendments and/or new procedures that are determined to be initially feasible, flyable, and operationally acceptable from a safety point of view. As part of this effort, 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) before moving forward with the formal amendment process.
- Phase Three: The FAA will implement procedures; conduct any required airspace changes and additional negotiated actions, as needed

In April 2016, in advance of the release of the Phase One detailed analysis and a preliminary feasibility study report, U.S. Representatives Anna G. Eshoo (CA-18), Sam Farr (CA-20) and Jackie Speier (CA-14) formed a Select Committee on South Bay Arrivals ("Select Committee"). The Select Committee was comprised of 12 local elected officials representing Santa Cruz, Santa Clara, San Mateo and San Francisco Counties. Together with the San Francisco (SFO) Airport/Community Roundtable ("SFO Roundtable"), the role of the Select Committee and SFO Roundtable was to lead the public coordination aspect of Phase One. Specifically, the Select Committee was tasked with accepting public input and reviewing FAA proposals with a focus on arrival issues that primarily impact the South Bay Region while the SFO Roundtable was tasked with accepting public input and reviewing FAA proposals with a focus on SFO departures as well as arrivals that primarily impact the SFO Roundtable geographical area.

In May 2016, the FAA released the NorCal Initiative Phase One report. Following the release of this report, the Select Committee started a series of public meetings; the first three had the sole purpose of collecting public comment. The remaining seven meetings, spanning May – November 2016, provided a venue in which the Select Committee could ask specific questions of

the FAA in order to facilitate the formation of their recommendations. Throughout this same time period, the SFO Roundtable had their regular meetings, which included discussion on the NorCal Initiative.

In November 2016, the SFO Roundtable and the Select Committee respectively released reports, detailing their recommendations on the NorCal initiative. These recommendations included items in the NorCal Initiative Phase One report, as well as items not included in the report.

This NorCal Initiative Phase Two report provides information on the feasibility and status on each of the recommendations put forward by the SFO Roundtable and Select Committee. The intent of this document is to categorize each recommendation as "Addressed Concerns", "Feasible And Could Be Implemented In The Short Term", "Feasible And Could Be Implemented In The Long Term" or "Not Endorsed". This report is a living document, such that it will be updated as recommendations which start out in a particular category are moved into a different category, as appropriate. The Appendices released with this updated Phase Two Report have been organized consistent with the recommendations of the Select Committee (Attachment A) and of the SFO Roundtable (Attachments B, C and D)

National Environmental Policy Act

In addition to its mandate to ensure the safe and efficient use of the NAS, the FAA complies with the requirements of the National Environmental Policy Act ("NEPA"). Although not specifically detailed within the NorCal Initiative, the FAA's processes and standards for evaluating noise impacts associated with potential amendments to currently published procedures—consistent with FAA Order 1050.1F (effective July 16, 2015)—will be followed before implementing any airspace or procedural changes. Finally, this document does not constitute either a final decision of the FAA or a re-opening of the FAA's August 6, 2014 final decision for the NorCal Optimization of Airspace and Procedures in the Metroplex (OAPM).

INTRODUCTION

Timelines

This report includes implementation timelines for the recommendations presented in the SFO Roundtable and the Select Committee Reports. These timelines incorporate a number of established Federal processes and sub-processes. To best understand why the FAA determined the presented implementation timelines, some background to these processes is necessary. This section provides that background.

1. Rule Making:

Federal Agencies may issue regulations within their authority through the rule-making process. This process is generally made up of the Agency taking some preliminary steps before issuing a proposed rule. This proposed rule must be published in the Federal Register to notify the public and give them an opportunity to submit comments. The Agency may also hold public hearings where people can make statements and submit comments. The Agency takes all comments into consideration prior to issuing the final rule.

a) Class B Modifications: All Class B boundaries, including SFO Class B, are provided in FAA Order 7400.11A. FAA Order 7400.11A is included by reference in 14 Code of Federal Regulations (CFR) §71.41, and as such making amendments to Class B airspace is a rule making action.

   The steps in the Class B rulemaking process are as follows:

   - An Air Traffic facility study ("Staff Study") provides the details of Class B modification proposal as well as the justification of the need for the Class B amendments.
   - The Staff Study is sent to FAA headquarters (HQ) for review and authorization for the formation of a committee ("Ad-Hoc committee") for review and to provide recommendations. This Ad-Hoc committee represents a cross section of airspace users and aviation organization that would be affected by the proposed airspace change. The FAA participation on the committee is limited to the role of technical advisor or subject matter expert only. The FAA is not a voting member of the group.
   - The Ad-Hoc committee reviews the proposal and provides comments.
     Timeline: 180 days
   - The FAA reviews the comments provided by the Ad-Hoc committee and makes adjustments, as necessary.
     Timeline: 60 days.

- The FAA conducts informal airspace meetings to present the proposed modifications and to facilitate public comment.
  Timeline: 245 days.
- The FAA reviews comments and makes adjustments to the proposed Class B modifications, as necessary.
  Timeline: 120 days.
- The Draft Class B modification is prepared as a Notice of Proposed Rulemaking (NPRM) for publication in the Federal Register
  Timeline: 30 days
- The NPRM is published in the Federal Register for public comment
  Timeline: 60 days
- The FAA reviews comments and makes adjustments to the proposed Class B modifications, as necessary.
  Timeline: 120 days.
- The final rule is published in the Federal Register with an effective data based on the VFR sectional Charting Cycle.
  Timeline: 302 days.

Total time, not including the development of the Staff Study: ~3 years.

2. Non-Rule Making:

Non-rule making processes do not result in the amendment to any CFR or amend any other document which is included by reference in a CFR.

a. Air Traffic Facility Actions: These actions provide specific directions for the local air traffic control facility. These actions could be a change to a facility's Standard Operating Procedures (SOP), to Letter of Agreements (LOA) between facilities are part of regular Air Traffic Controllers training to increase awareness of certain issues

The steps are as follows:

- Initial proposal: The Air Traffic Facility proposes an amendment to their SOP, to an LOA with another Air Traffic Facility or training requirements. This initial proposal is vetted within the Air Traffic Facility.
  Timelines: few weeks for training proposal
  1 – 8 months for an SOP change
  1 – 18 months for an LOA change.
- The LOA is sent for review and approval
  Timelines: few weeks

Total time: a few weeks – more than 1 year.

b. Creation/Amendment of an instrument flight rules procedure: Amending or creating a new instrument flight rule procedure is an example of a non-rule making process. Given the variables involved with each of the following steps, the timelines provided are only intended on capturing the average time taken for each step. Since release of the November 2015 NorCal Initiative, the FAA has undertaken enhanced community outreach efforts. Although not specifically referenced within the following section and even if there is no legal requirement to do so, the FAA remains willing to address community noise concerns. As a result, the FAA undertakes its community outreach efforts and considers potential adjustments to address community noise concerns while remaining mindful that all arrival and departure procedures within the Northern California airspace are interconnected, interdependent and designed to improve safety and efficiency within the National Airspace System (NAS). To the extent the FAA determines a new requested procedure is initially feasible, flyable, and operationally acceptable from a safety point of view, then the FAA will conduct its formal environmental and safety reviews for this new federal action.

The steps in the instrument flight rules procedure processes are as follows:

- Initial Feasibility/Analysis of the procedure. The proponent of the procedure does initial research into the details and justifications for the new/amended procedure. This stage is completed once the proponent places the request and the associated justification into the IFP Information Gateway.
  Timeline: 45 days

- FAA Order 7100.41A: Performance Based Navigation (PBN) processing: This is the required process for all new and amended PBN procedures and/or routes, Area Navigation (RNAV)/Required Navigation Performance (RNP) Standard Instrument Departures (SIDs), RNAV Standard Terminal Arrivals (STARs) and RNAV routes. The FAA Order 7100.41A breaks down the design and implementation process into 5 stages:
  - Preliminary Activities: This includes the conduction of baseline analysis to identify expected benefits and develop conceptual procedures and/or routes for the proposed project.
  - Design Activities: This includes the creation of a working group in order to design a procedure/route that meets the project goals and objectives. An environmental review is included in this stage.
  - Development and Operational Preparation: The intent of this stage is to complete all pre-operational items necessary to implement the procedures and/or routes. This phase includes training, issuing notifications, automation, updating radar video maps, and processing documents. This phase ends when procedures and/or routes are submitted for publication.
  - Implementation: The purpose of the implementation phase is to implement the procedures and/or routes as designed. This phase starts with confirmation by the Full Working Group ("FWG") that all required pre-implementation

activities have been completed and ends when the procedures and/or routes are published and implemented.
    - Post-Implementation Monitoring and Evaluation: The purpose of the post-implementation monitoring and evaluation phase is to ensure that the new or amended procedures and/or routes perform as expected and meet the mission statement finalized during the design activities phase. Post implementation activities include collecting and analyzing data to ensure that safe and beneficial procedures and/or routes have been developed.

  Timeline: > 1 year.

- Regional Airspace and Procedure Team (RAPT) review: If approved, the RAPT assigns a priority for the project and a proposed chart date. Due to existing charting requirements, as well as the demand for NextGen procedures, there are currently projected charting dates scheduled through 2024.
  Timeline: 30 days.

- Development of proposed chart: This is the actual preparation of the proposed chart/s.
  Timeline: 45 days

- Quality Control Review:
  Timeline: Variable

- Project is coded for Flight Management Systems:
  Timeline: 10 days

- Flight Inspection:
  Timeline: 50 days

- Flight Standards Review: this is only required for some procedural development projects.
  Timeline: 21 days.

- Proposed Procedure/s are sent for publication and distribution:
  Timeline: 38 to 60 days.

Total time: >1.5 years.

Organization of the Response

The response tables provide the current status and associated timeline for implementation, if applicable, to all of the recommendations presented in the Select Committee and SFO Roundtable reports, as well as references to where the recommendations may be found. Details on the implementation processes are found within the Introduction section of this document.

The Select Committee and SFO Roundtable reports provided recommendations identified in the NorCal Initiative Phase One report, recommendations identified during the ensuing communications between the FAA and the Select Committee/SFO Roundtable, and recommendations that were not discussed. The Response Tables follow the order of the Select Committee and SFO Roundtable reports, with a total of 203 individual recommendations. However, many of these recommendations contain multiple sub-recommendations themselves. This report responds to each sub-recommendation individually for traceability.

In addition to the categories mentioned above, two more categories exist in the Phase Two report to capture all of the recommendations. They are:

i. Not endorsed by the Select Committee: At this point in time, the only non-feasible recommendations were those which were not endorsed by the Select Committee. These were placed in their own category.
ii. Not under the FAA's jurisdiction: This category was added to capture those recommendations which are outside of the FAA's jurisdiction and whose feasibility cannot be determined.

To make this document more navigable, instead of grouping individual recommendations by category, individual recommendations are listed in the same order that they are listed in the Select Committee and SFO Roundtable reports.

RESPONSE TABLES

1. Select Committee Recommendations

Recommendation		1. Amend the SFO Class B airspace to fully contain the SERFR procedure, or any supplement or replacement.
Process / Status		Feasible And Could Be Implemented In The Short Term. See Appendix B.
Recommendation Report Reference	Select Committee	1.1

Recommendation		2. Arrivals into SFO from the south use the BSR ground track for a new NextGen procedure.
Process / Status		Feasible And Could Be Implemented In The Long Term. See Appendix C.
Recommendation Report Reference	Select Committee	1.2 R1

Recommendation		3. The new NextGen procedure for arrivals into SFO from the south be implemented as soon as feasible and include the listed criteria.
Process / Status		Feasible And Could Be Implemented In The Long Term. See Appendix C.
Recommendation Report Reference	Select Committee	1.2 R2

Recommendation		4. Within three months of completing the new procedure, the FAA will meet with the Ad-Hoc Subcommittee to review whether the new procedure has resulted in an equivalent or less DNL noise exposure along its entire route when compared to 2014 noise modeling of the BSR procedure.
Process / Status		Feasible And Could Be Implemented In The Long Term. See Appendix C.
Recommendation Report Reference	Select Committee	1.2 R3

Recommendation		5. The FAA search for and develop a new flight procedure for arrivals into SFO from the south that includes the listed criteria.
Process / Status		Feasible And Could Be Implemented In The Long Term. See Appendix C.
Recommendation Report Reference	Select Committee	1.2 R4

Recommendation		6. NIGHTTIME: Increase the percentage of eastbound NIITE flights that remain on the path until reaching the waypoint, thereby reducing early turns which cross land at lower, noisier altitudes.
Process / Status		Addressed Concern. See Appendix A.
Recommendation Report Reference	Select Committee	1.3

Recommendation		7. NIGHTTIME: Nighttime SSTIK departures use the NIITE procedure up to the NIITE waypoint, which is in the Bay north of the Bay Bridge, then the aircraft would head west out over the Golden Gate Bridge.
Process / Status		Feasible And Could Be Implemented In The Long Term. See Appendix C.
Recommendation Report Reference	Select Committee	1.4

Recommendation		8. Increase the percentage of CNDEL departures that stay on the procedure longer and do not turn prior to the CNDEL waypoint.
Process / Status		Addressed Concern. See Appendix A.
Recommendation Report Reference	Select Committee	1.5

Recommendation		9. Use new, more effective, time-based flow management tools currently in development to allow for better sequencing (i.e., spacing) of aircraft to reduce the percentage of aircraft that are vectored or held prior to the final approach path to SFO.
Process / Status		Feasible And Could Be Implemented In The Long Term. See Appendix C.
Recommendation Report Reference	Select Committee	1.6

Recommendation		10. Airbus family aircraft arriving or departing SFO undergo the retrofit at the earliest possible opportunity.
Process / Status		Not FAA's Action.
Recommendation Report Reference	Select Committee	2.1

Recommendation		11. Aircraft flying on the BDEGA procedure utilize the so-called East leg (over the San Francisco Bay) as much as possible. The FAA assess the potential of formalizing this procedure so that it is more likely to be used.
Process / Status		Addressed Concern. See Appendix A.
Recommendation Report Reference	Select Committee	2.2 R1

Recommendation		12. All aircraft flying on the BDEGA procedure during nighttime hours, when air traffic flows are reduced, use the East leg, unless safety considerations prohibit such a flight path.
Process / Status		Addressed Concern. See Appendix A.
Recommendation Report Reference	Select Committee	2.2 R2

Recommendation		13. Per the current noise abatement procedure, aircraft comply with the obligation to cross the Woodside VOR at 8,000 feet mean sea level, traffic permitting. The Committee further recommends that this altitude restriction, to the greatest extent possible and traffic permitting, also be applicable to all vectored flights that are in the vicinity of the Woodside VOR.
Process / Status		Addressed Concern. See Appendix A.
Recommendation Report Reference	Select Committee	2.3 R1

Recommendation		14. Revise the Woodside VOR Ocean Tailored Arrival to honor the existing noise abatement procedure to cross the Woodside VOR at 8,000 feet.
Process / Status		Feasible And Could Be Implemented In The Long Term. See Appendix C.
Recommendation Report Reference	Select Committee	2.3 R2

Recommendation		15. Recommend further restrictions to prohibit any overnight crossings at the Woodside VOR below 8,000 feet.
Process / Status		Not Endorsed By The FAA. See Appendix D.
Recommendation Report Reference	Select Committee	2.3 R3

Recommendation		16. NIGHTTIME: All efforts be made to reduce in-flight aircraft noise over populated areas during "nighttime" hours when residents need a reprieve from aircraft noise so that they can sleep.
Process / Status		Addressed Concern. See Appendix A.
Recommendation Report Reference	Select Committee	2.4 R1

Recommendation		17. NIGHTTIME: Air traffic control make every effort to direct arrivals into a single stream to Runway 28R to reduce the noise exposure on the bayside communities of Redwood City and Foster City.
Process / Status		Addressed Concern. See Appendix A.
Recommendation Report Reference	Select Committee	2.4 R2

Recommendation		18. The FAA, SFO, and industry users continue their efforts to establish new additional overnight noise abatement procedures within the next six months. This work should be done in consultation with other relevant stakeholders.
Process / Status		Addressed Concern. See Appendix A.
Recommendation Report Reference	Select Committee	2.4 R3

Recommendation		19. Altitude of flights over the MENLO waypoint be 5,000 feet or higher.
Process / Status		Not Endorsed By The FAA. See Appendix D.
Recommendation Report Reference	Select Committee	2.5 R1

Recommendation		20. The FAA design a new procedure for arrivals into SFO from the south using the MENLO waypoint. The recommended procedure would cross the EDDYY waypoint (or equivalent) above 6,000 feet, continue at idle power to cross the MENLO waypoint at or above 5,000 feet, and maintain idle power until the HEMAN waypoint (or other ILS 28L interception point). Such a procedure should also be designed to avoid the use of drag devices such as speed brakes.
Process / Status		Feasible And Could Be Implemented In The Short Term. See Appendix B.
Recommendation Report Reference	Select Committee	2.5 R2

Recommendation		21. All air traffic in the vicinity of the MENLO waypoint (including vectored traffic from other procedures) be kept at altitudes of 5,000 feet or higher, even if not crossing directly over the MENLO waypoint.
Process / Status		Not Endorsed By The FAA. See Appendix D.
Recommendation Report Reference	Select Committee	2.5 R3

Recommendation		22. The FAA should review whether the angle of the 28L glide slope can be increased in order to increase the altitude at the HEMAN waypoint, or equivalent.
Process / Status		Not Endorsed By The FAA. See Appendix D.
Recommendation Report Reference	Select Committee	2.5 R4

Recommendation		23. Assess the feasibility of establishing different points of entry, over compatible land use and at high altitudes, to the final approach into SFO on the SERFR arrival (or any replacement), such as a different waypoint east or north of MENLO, or using FAITH, ROKME or DUMBA. May involve modifying SJC Class C airspace.
Process / Status		Not Endorsed By The FAA. See Appendix D.
Recommendation Report Reference	Select Committee	2.5 R5

Recommendation		24. The FAA decrease the size of the altitude windows on the SERFR procedure or path so that aircraft crossing EPICK do so at a higher altitude.
Process / Status		Not Endorsed By The FAA. See Appendix D.
Recommendation Report Reference	Select Committee	2.6 R1

Recommendation		25. The arrival procedure for SERFR, or any subsequent route in this sub-region, be designed, if possible, to allow aircraft to reduce speed early, while over the Monterey Bay.
Process / Status		Not Endorsed By The FAA. See Appendix D.
Recommendation Report Reference	Select Committee	2.6 R2

Recommendation		26. The FAA determine the feasibility of increasing the glide slopes of SFO Runways 28R and 28L to the maximum extent consistent with safety and the Committee's goal of noise mitigation.
Process / Status		Not Endorsed By The FAA. See Appendix D.
Recommendation Report Reference	Select Committee	2.7

Recommendation		27. To the greatest extent possible, while still ensuring the safety of the aircraft, that the altitude be increased for all flight procedures/paths into and out of SFO.
Process / Status		Not Endorsed By The FAA. See Appendix D.
Recommendation Report Reference	Select Committee	2.8

Recommendation		28. The FAA identify locations that have the most compatible land uses for vectoring, such as over the Pacific Ocean or San Francisco Bay, and vector the SFO arriving air traffic in those locations to reduce noise exposure experienced on the ground.
Process / Status		Addressed Concern. See Appendix A.
Recommendation Report Reference	Select Committee	2.9 R1

Recommendation		29. The FAA raise vectoring altitudes to maximum feasible altitudes over the Mid-Peninsula, with a focus on higher altitudes in the vicinity of the MENLO waypoint.
Process / Status		Not Endorsed By The FAA. See Appendix D.
Recommendation Report Reference	Select Committee	2.9 R2

Recommendation		30. All feasible measures be taken to reduce the noise exposure to bayside communities, including Foster City and Redwood City, by directing air traffic to Runway 28R whenever possible.
Process / Status		Addressed Concern. See Appendix A.
Recommendation Report Reference	Select Committee	2.10

Recommendation		31. Following implementation of changes to the current arrival route for aircraft from southern destinations, the FAA shall consider a new BRIXX procedure that maintains the highest possible altitude at the point where it (BRIXX) intersects the new arrival route from the south. The FAA shall review any proposed new BRIXX procedure with any successor committee.
Process / Status		Feasible And Could Be Implemented In The Long Term. See Appendix C.
Recommendation Report Reference	Select Committee	2.11

Recommendation		32. The NRRLI waypoint be moved to where the SERFR procedure/path intersects the coastline near the City of Seaside along the Monterey Bay.
Process / Status		Not Endorsed by Select Committee.
Recommendation Report Reference	Select Committee	2.12

Recommendation		33. The SJC "Reverse Flow" approach could instead arrive from the east of SJC, using a "Normal Flow" departure procedure that is not used during "Reverse Flow" conditions.
Process / Status		Not Endorsed by Select Committee.
Recommendation Report Reference	Select Committee	2.13

Recommendation		34. Aircraft from the southwest be removed from the SERFR arrival procedure, and instead use an eastern approach into SFO, using either the DYAMD arrival or a new procedure crossing the FAITH waypoint.
Process / Status		Not Endorsed by Select Committee.
Recommendation Report Reference	Select Committee	2.14

Recommendation		35. Arriving OCEANIC aircraft could be "fanned-in" into the area of the Woodside VOR, using that point and other new waypoints to achieve dispersion of the arriving aircraft.
Process / Status		Not Endorsed by Select Committee.
Recommendation Report Reference	Select Committee	2.15

Recommendation		36. The herringbone approach could be applied to the SERFR arrival procedure, which approaches SFO from the south over the Santa Cruz Mountains.
Process / Status		Not Endorsed by Select Committee.
Recommendation Report Reference	Select Committee	2.16

Recommendation		37. Simply return conditions, including aircraft procedures, altitudes, and concentration, to "how they were before NextGen."
Process / Status		Not Endorsed by Select Committee.
Recommendation Report Reference	Select Committee	2.17

Recommendation		38. Need for an Ad-Hoc Subcommittee to continue work on the issues identified.
Process / Status		Not FAA's Action.
Recommendation Report Reference	Select Committee	3.1 R1

Recommendation		39. A permanent entity be established to address issues of aircraft noise in the three county area on an ongoing basis, and to provide a forum for community input.
Process / Status		Not FAA's Action.
Recommendation Report Reference	Select Committee	3.1 R2

Recommendation		40. The FAA review the SUA in our area with an eye towards better balancing special use restrictions and civilian aviation needs, particularly in the congested San Francisco Bay Area airspace.
Process / Status		Addressed Concern. See Appendix A.
Recommendation Report Reference	Select Committee	3.2

Recommendation		41. The U.S. Congress require the FAA to adopt supplemental metrics for aircraft noise that characterize the true impact experienced by people on the ground.
Process / Status		Not FAA's Action.
Recommendation Report Reference	Select Committee	3.3

Recommendation		42. Any successor committee consider capacity issues as identified.
Process / Status		Not FAA's Action.
Recommendation Report Reference	Select Committee	3.4

Recommendation		43. Any successor committee consider aircraft speed and its impact on noise as identified.
Process / Status		Not FAA's Action.
Recommendation Report Reference	Select Committee	3.5

Recommendation		44. The FAA be charged with the responsibility for identifying and proposing solutions to mitigate noise concerns, and that community groups and elected officials be consulted for review and comment, and to offer additional suggestions.
Process / Status		Addressed Concern. See Appendix A.
Recommendation Report Reference	Select Committee	4.1

Recommendation		45. The FAA and/or SFO monitor and document noise exposure of any feasible solutions before and after FAA implementation to ensure impacts are verified, and to determine whether results are of a discernible benefit.
Process / Status		Not FAA's Action.
Recommendation Report Reference	Select Committee	4.2 R1

Recommendation		46. The implementation of a set of regional noise monitoring stations that will adequately monitor aircraft noise levels at carefully selected points in the San Francisco Bay Area and the three Congressional Districts represented on the Select Committee.
Process / Status		Not FAA's Action.
Recommendation Report Reference	Select Committee	4.2 R2

Recommendation		47. Recommends careful documentation and ongoing compliance monitoring for any set of solutions accepted and implemented by the FAA. The Committee recommends that the Members of Congress ensure that the FAA takes the appropriate steps to measure and guarantee ongoing compliance.
Process / Status		Not FAA's Action.
Recommendation Report Reference	Select Committee	4.3

2. SFO Roundtable Recommendations – Attachment B

Recommendation		1. Return to historical use of the BDEGA East downwind prior to May 2010.
Process / Status		Addressed Concern. See Appendix A.
Recommendation Report Reference	Roundtable	B 1

Recommendation		2. Explain the limitations of using the BDEGA East downwind. Create an RNP arrival procedure down the bay, creating a curved arrival path over the bay.
Process / Status		Not Endorsed By The FAA. See Appendix D.
Recommendation Report Reference	Roundtable	B 2

Recommendation		3. Reinstate the FNISH transition in order to facilitate use of the BDEGA East downwind, and create a "connection" between FNISH waypoint and a turn on to 28R for the FMS Bridge Visual, Quiet Bridge Visual or similar approach to 28R.
Process / Status		Not Endorsed By The FAA. See Appendix D.
Recommendation Report Reference	Roundtable	B 3

Recommendation		4. The FAA provide data on Golden Gate/BDEGA lateral track locations pre-NextGen and post-NextGen and if new procedures can use headings, not tracks, in procedure design.
Process / Status		Addressed Concern. See Appendix A.
Recommendation Report Reference	Roundtable	B 4

Recommendation		5. Determine if the BDEGA West downwind can be flown at a higher altitude or over compatible land uses.
Process / Status		Not Endorsed By The FAA. See Appendix D.
Recommendation Report Reference	Roundtable	B 5

Recommendation		6. The FAA study whether an increase in in-trail spacing on the BDEGA arrival will result in the decrease in vectoring over the Peninsula.
Process / Status		Feasible And Could Be Implemented In The Short Term. See Appendix B.
Recommendation Report Reference	Roundtable	B 6

Recommendation		7. NIGHTTIME: Every effort should be made for all arrivals from the north to be assigned the historical BDEGA East Downwind.
Process / Status		Addressed Concern. See Appendix A.
Recommendation Report Reference	Roundtable	B 7

Recommendation		8. The FAA increase the in-trail spacing of aircraft on the SERFR arrival, flying the procedure as charted, which will decrease the need for vectoring. Increase the altitude of the arrivals on the assigned routes as well as the vector traffic.
Process / Status		Not Endorsed By The FAA. See Appendix D.
Recommendation Report Reference	Roundtable	B 8

Recommendation		9. NIGHTTIME: Determine if arrivals from the south (such as on the SERFR/BSR) could instead file a route which would terminate to the east of the Bay for an approach to Runway 28R.
Process / Status		Not Endorsed By The FAA. See Appendix D.
Recommendation Report Reference	Roundtable	B 9

Recommendation		10. NIGHTTIME: Whenever aircraft fly over residential areas, the RT requests that every effort be made to keep aircraft at a higher altitude than typical daytime altitudes. Consider using extra flight distance over the Bay to 28R to dissipate extra altitude (BDEGA and Oceanic to East Downwind). BDEGA arrivals assigned East downwind. Oceanic arrivals to East downwind. SERFR/BSR arrivals to east of the Bay.
Process / Status		Not Endorsed By The FAA. See Appendix D.
Recommendation Report Reference	Roundtable	B 10

Recommendation		11. The FAA increase the in-trail spacing of aircraft on the DYAMD arrival to allow additional opportunities for aircraft to use the BDEGA East arrival, Down the Bay.
Process / Status		Not Endorsed By The FAA. See Appendix D.
Recommendation Report Reference	Roundtable	B 11

Recommendation		12. Whenever there is a single stream operation to only one runway, aircraft should approach and land only on Runway 28R.
Process / Status		Addressed Concern. See Appendix A.
Recommendation Report Reference	Roundtable	B 12

Recommendation		13. When landing single stream to 28R or landing both 28L/28R in VMC, aircraft landing 28R should be assigned noise "friendlier" approaches such as FMS Bridge Visual 28R, Quiet Bridge Visual, or RNAV (RNP) Y 28R.
Process / Status		Addressed Concern. See Appendix A.
Recommendation Report Reference	Roundtable	B 13

Recommendation		14. NIGHTTIME: ATC should make every effort to coordinate traffic arrivals to **create a single stream of traffic** to land only on Runway 28R.
Process / Status		Addressed Concern. See Appendix A.
Recommendation Report Reference	Roundtable	B 14

Recommendation		15. Determine the feasibility of creating dual offset (VMC or IMC) RNAV, RNAV (RNP) or other type of approach to Runway 28L **and** to Runway 28R.
Process / Status		Not Endorsed By The FAA. See Appendix D.
Recommendation Report Reference	Roundtable	B 15

Recommendation		16. In VMC, aircraft should cross the vicinity around the MENLO waypoint and at or above 5,000 feet MSL. Aircraft within the **vicinity** of MENLO should use the 5,000' altitude when able.
Process / Status		Not Endorsed By The FAA. See Appendix D.
Recommendation Report Reference	Roundtable	B 16

Recommendation		17. Create a Visual Approach for Runway 28L with a MENLO crossing altitude at or above 5,000' MSL.
Process / Status		Feasible And Could Be Implemented In The Long Term. See Appendix C.
Recommendation Report Reference	Roundtable	B 17

Recommendation		18. The NIITE procedure should be flown **as charted** including flying over the NIITE flyover waypoint as specified in the departure procedure.
Process / Status		Addressed Concern. See Appendix A.
Recommendation Report Reference	Roundtable	B 18

Recommendation		19. NIGHTTIME: Create a south transition (GOBBS and south) for the NIITE/HUSSH that keeps traffic over the Bay and ocean until a high altitude is attained.
Process / Status		Feasible And Could Be Implemented In The Long Term. See Appendix C.
Recommendation Report Reference	Roundtable	B 19

Recommendation		20. NIGHTTIME: While awaiting the development of a NIITE/HUSSH SOUTH transitions, NCT is requested to use the NIITE DP track to GOBBS and then vectors from GOBBS southbound (keeping offshore) at least until PORTE or further south.
Process / Status		Feasible And Could Be Implemented In The Long Term. See Appendix C.
Recommendation Report Reference	Roundtable	B 20

Recommendation		21. NIGHTTIME: Determine if Runway 10 take-offs can be authorized to use the NIITE. If not, create a departure to allow Runway 10 take-offs to make a left turn up the Bay to NIITE waypoint.
Process / Status		Not Endorsed By The FAA. See Appendix D.
Recommendation Report Reference	Roundtable	B 21

Recommendation		22. NIGHTTIME: Determine if aircraft can file for SFO QUIET Departure or the OAK SILENT Departure and then be vectored in accordance with NCT SOPs out to GOBBS and then southbound.
Process / Status		Not Endorsed By The FAA. See Appendix D.
Recommendation Report Reference	Roundtable	B 22

Recommendation		23. NIGHTTIME: While awaiting authorization for Runway 10 departures to use the NIITE DP, the RT requests that aircraft be vectored to mirror the NIITE DP.
Process / Status		Not Endorsed By The FAA. See Appendix D.
Recommendation Report Reference	Roundtable	B 23

Recommendation		24. NIGHTTIME: Without increasing Runway 01 departures, the RT supports the use the 050° heading from SFO Runways 01; and A comparable OAK Rwy 30 heading down the Bay at night.
Process / Status		Addressed Concern. See Appendix A.
Recommendation Report Reference	Roundtable	B 24

Recommendation		25. NIGHTTIME: Is there any ability to eliminate or raise the 3,000’ altitude limit on straight-out departures?
Process / Status		Not Endorsed By The FAA. See Appendix D.
Recommendation Report Reference	Roundtable	B 25

Recommendation		26. NIGHTTIME: Use of SFO's long-standing preferential runways for departure: Runways 10 then Runways 28 (TRUKN or NIITE) and then Runways 01. The TRUKN is similar to the legacy Shoreline departure up the Bay. When aircraft use the SAHEY departure, aircraft should fly the procedure as charted and not vector over populated areas.
Process / Status		Addressed Concern. See Appendix A.
Recommendation Report Reference	Roundtable	B 26

Recommendation		27. NIGHTTIME: Using the decommissioned DUMBARTON EIGHT procedure, create either an RNAV overlay of this procedure or create a new procedure with the same fixes used as waypoints for Runway 10L/R.
Process / Status		Not Endorsed By The FAA. See Appendix D.
Recommendation Report Reference	Roundtable	B 27

Recommendation		28. Determine if the existence of a VFR flyway or other conflicting airspace use off the coastline in the vicinity of the extended Runways 28 centerline, leads to Runway 28 straight-out departures being required to level off at 3000'.
Process / Status		Addressed Concern. See Appendix A.
Recommendation Report Reference	Roundtable	B 28

Recommendation		29. Use Bay and Pacific Ocean for overflights as much as possible. From CNDEL, direct aircraft to GOBBS and south.
Process / Status		Feasible And Could Be Implemented In The Long Term. See Appendix C.
Recommendation Report Reference	Roundtable	B 29

Recommendation		30. The CNDEL procedure should be flown **as charted** including flying over the CNDEL flyover waypoint and flying to the PORTE fly-by waypoint as specified in the departure procedure. If vectoring over the Bay and Ocean, use NIITE and GOBBS for aircraft routing.
Process / Status		Addressed Concern. See Appendix A.
Recommendation Report Reference	Roundtable	B 30

Recommendation		31. Determine if a revised southbound transition (with additional waypoints) for the CNDEL procedure could "contain" the flight paths further west (GOBBS and south) to allow expanded clear space for possible modification of the SSTIK departure.
Process / Status		Not Endorsed By The FAA. See Appendix D.
Recommendation Report Reference	Roundtable	B 31

Recommendation		32. Determine if a southbound transition for CNDEL could effectively use flight over bodies of water to gain altitude before flying over populated areas.
Process / Status		Not Endorsed By The FAA. See Appendix D.
Recommendation Report Reference	Roundtable	B 32

Recommendation		33. NIGHTTIME: For OAK southbound aircraft, until the NIITE southbound transition has been finalized, use of the NIITE/HUSSH DP or vectors to replicate the NIITE/HUSSH DP with a vector from GOBBS to the south to remain offshore. For OAK southbound aircraft, a left turn down the Bay is supported.
Process / Status		Feasible And Could Be Implemented In The Long Term. See Appendix C.
Recommendation Report Reference	Roundtable	B 33

Recommendation		34. Use Bay and Pacific Ocean for overflights as much as possible. From SSTIK, direct aircraft to GOBBS and south.
Process / Status		Not Endorsed By The FAA. See Appendix D.
Recommendation Report Reference	Roundtable	B 34

Recommendation		35. Create an RNAV overlay of the OFFSHORE ONE procedure to guide aircraft higher over the Bay before turning to a waypoint located in the ocean.
Process / Status		Not Endorsed By The FAA. See Appendix D.
Recommendation Report Reference	Roundtable	B 35

Recommendation		36. Use the OFFSHORE ONE procedure for aircraft departures. Higher altitude over water is preferred.
Process / Status		Not Endorsed By The FAA. See Appendix D.
Recommendation Report Reference	Roundtable	B 36

Recommendation		37. SSTIK: Avoid non-safety vectoring prior to SEPDY waypoint. Avoid vectors down the Peninsula to waypoints beyond PORTE.
Process / Status		Addressed Concern. See Appendix A.
Recommendation Report Reference	Roundtable	B 37

Recommendation		38. Move SSTIK N + E as much as feasible to allow maximum altitude gain before turning to fly over land using the historic SEPDY waypoint as a guide. Create an additional waypoint over the ocean to guide aircraft over water to PORTE such as the legacy WAMMY waypoint associated with the OFFSHORE procedure. Determine if the minimum altitude required at SSTIK can be raised before a left turn (vicinity of SSTIK). Determine if a reduced airspeed (~220kts) can be required until after established in the left turn from SSTIK so aircraft climb at a higher angle of climb approaching land.
Process / Status		Not Endorsed By The FAA. See Appendix D.
Recommendation Report Reference	Roundtable	B 38

Recommendation		39. The RT requests that the FAA determine if any aircraft were assigned or re-assigned-- via preferential runway or otherwise– from one departure or arrival to a different departure or arrival.
Process / Status		Not Endorsed By The FAA. See Appendix D.
Recommendation Report Reference	Roundtable	B 39

Recommendation		40. SFO allocate funds or work with the FAA to obtain grant money to commission an updated Technical Study of the backblast noise from takeoffs at SFO.
Process / Status		Not FAA's Action.
Recommendation Report Reference	Roundtable	B 40

Recommendation		41. The FAA determine if upgraded radar display equipment or notations on the map using symbols would be helpful to TRACON controllers to increase the use of less impactful areas if vectoring is required for safety for departing and arriving flights.
Process / Status		Not Endorsed By The FAA. See Appendix D.
Recommendation Report Reference	Roundtable	B 41

Recommendation		42. The SFO Airport and the SFO RT will support the FAA in their efforts. The RT will provide data regarding land use and terrain height for areas throughout the RT region to assist NCT in using less sensitive noise areas for vectoring. SFO and RT will work with airline representatives to encourage use of "noise-friendlier" options for flight planning and operations. The RT will provide community input to the FAA and will make recommendations to the FAA based on community consensus for changes.
Process / Status		Addressed Concern. See Appendix A.
Recommendation Report Reference	Roundtable	B 41

3. SFO Roundtable Recommendations – Attachment C

Recommendation		1. For daytime BDEGA and other arrivals from the north, use all available opportunities to assign arrivals from the north to an east downwind "down the Bay."
Process / Status		Addressed Concern. See Appendix A.
Recommendation Report Reference	Roundtable	C Woodside ST 1

Recommendation		2. Increase the in-trail spacing of aircraft on the SERFR arrival, flying the procedure as charted, which will decrease the need for vectoring. Increase the altitude of the arrivals on the assigned routes as well as the vector traffic.
Process / Status		Not Endorsed By The FAA. See Appendix D.
Recommendation Report Reference	Roundtable	C Woodside ST 2

Recommendation		3. NIGHTTIME: Every effort should be made to use the Bay for 100% of the arrivals from the north and west, use the east downwind or the "down the Bay" procedure.
Process / Status		Addressed Concern. See Appendix A.
Recommendation Report Reference	Roundtable	C Woodside ST 3

Recommendation		4. Reinstatement of BDEGA FINSH transition in order to facilitate increased use of the east downwind ("down the Bay") to Runway 28R.
Process / Status		Not Endorsed By The FAA. See Appendix D.
Recommendation Report Reference	Roundtable	C Woodside LT 1

Recommendation		5. Increase in-trail spacing on the SERFR Arrival, on the DYAMD Arrival (to allow an increase in the BDEGA East Downwind). Determine if an increase in the BDEGA in-trail spacing would decrease vectoring.
Process / Status		Not Endorsed By The FAA. See Appendix D.
Recommendation Report Reference	Roundtable	C Woodside LT 2

Recommendation		6. Avoid flight over noise-sensitive land uses as much as feasible, even if it means a few additional track miles.
Process / Status		Addressed Concern. See Appendix A.
Recommendation Report Reference	Roundtable	C Woodside COL 1

Recommendation		7. Airlines file oceanic flight plans that follow the path of BDEGA arrival for an FAA assigned east downwind for Runway 28R (down the Bay procedure) instead of flying over the peninsula.
Process / Status		Addressed Concern. See Appendix D.
Recommendation Report Reference	Roundtable	C Woodside COL 2

Recommendation		8. Airlines file routes from the south to a point east of the Bay in order to use a noise-friendlier approach to Runway 28R.
Process / Status		Not Endorsed By The FAA. See Appendix D.
Recommendation Report Reference	Roundtable	C Woodside COL 3

Recommendation		9. NCT update its SOP to reflect using a “down the Bay” procedure is preferred during nighttime hours.
Process / Status		Feasible And Could Be Implemented In The Short Term. See Appendix B.
Recommendation Report Reference	Roundtable	C Woodside COL 4

Recommendation		10. Determine if the BDEGA transition to FINSH can be reinstated. If so, determine a timeline for this revised procedure to be included for publication.
Process / Status		Not Endorsed By The FAA. See Appendix D.
Recommendation Report Reference	Roundtable	C Woodside RSCH 1

Recommendation		11. Compare the previous Golden Gate arrival with the current BDEGA arrival to determine what changes have been made in actual flight tracks with regard to location of lateral paths, narrowing of path and concentration of aircraft.
Process / Status		Addressed Concern. See Appendix A.
Recommendation Report Reference	Roundtable	C Woodside RSCH 2

Recommendation		12. Research reasons for the continued increased use of the BDEGA west leg from May 2010 – present.
Process / Status		Addressed Concern. See Appendix A.
Recommendation Report Reference	Roundtable	C Woodside RSCH 3

Recommendation		13. Whenever there are arrivals to both Runway 28L and 28R, and VMC conditions allow, aircraft for Runway 28R should be assigned to fly the FMS Bridge Visual Runway 28R or RNAV (RNP) Runway 28R (as capable), Quiet Bridge Visual or other noise friendlier approach to land on Runway 28R.
Process / Status		Addressed Concern. See Appendix A.
Recommendation Report Reference	Roundtable	C Visual ST 1

Recommendation		14. Regardless of the time of day, and when conditions and traffic allow, whenever there is a single stream operation to only one runway, aircraft should arrive only on Runway 28R and should be assigned to fly the FMS Bridge Visual 28R or RNAV (RNP) Rwy 28R (as capable), Quiet Bridge Visual or other "noise friendlier" approach to land on Runway 28R.
Process / Status		Addressed Concern. See Appendix A.
Recommendation Report Reference	Roundtable	C Visual ST 2

Recommendation		15. NIGHTTIME: Make every effort to coordinate traffic arrivals to create a single stream of traffic to land only on Runway 28R.
Process / Status		Addressed Concern. See Appendix A.
Recommendation Report Reference	Roundtable	C Visual ST 3

Recommendation		16. Research the feasibility of creating dual offset RNAV, RNAV (RNP) or other type of approach to Runway 28L and to Runway 28R which would create two offset paths closer to the middle of the Bay with both Runway 28L path and 28R path remaining well clear of Foster City and other bayside communities until past the San Mateo Bridge when aircraft would then line up with each runway for landing.
Process / Status		Not Endorsed By The FAA. See Appendix D.
Recommendation Report Reference	Roundtable	C Visual LT 1

Recommendation		17. The SFO Roundtable will work with NCT management to illustrate the importance of the use of Runway 28R instead of Runway 28L during periods of single stream operations and the critical nature of nighttime operations which might require managing arrival traffic to create a single stream of traffic to 28R.
Process / Status		Addressed Concern. See Appendix A.
Recommendation Report Reference	Roundtable	C Visual COL 1

Recommendation		18. The SFO Roundtable will provide information and community input to the FAA regarding the process of creating, if feasible, of dual satellite-based Runway 28L and 28R offset approaches closer to the middle of the Bay.
Process / Status		Addressed Concern. See Appendix A.
Recommendation Report Reference	Roundtable	C Visual COL 2

Recommendation		19. NIGHTTIME: While undergoing the formal process of amending the NIITE departure to add a transition for southbound aircraft past GOBBS and adopting GOBBS for use, the Roundtable requests that NCT work with the SFO RT to determine if an interim informal procedure based on TRACON vectors might be feasible to approximate the NIITE departure which would be heading up the Bay to NIITE, then west to GOBBS, then south-south-east to the PORTE or WAMMY waypoint, remaining clear of the shore.
Process / Status		Feasible And Could Be Implemented In The Long Term. See Appendix C.
Recommendation Report Reference	Roundtable	C NIITE ST 1

Recommendation		20. Keep aircraft on the NIITE procedure as much as possible to reduce vectoring.
Process / Status		Addressed Concern. See Appendix A.
Recommendation Report Reference	Roundtable	C NIITE ST 2

Recommendation		21. NCT use its longstanding noise abatement procedure to vector Runway 10 L/R departing aircraft up the Bay (approximate heading of 330°), then vector as needed for routes of flight such as from NIITE to GOBBS (if the destination is to the west or south), in accordance with its SOP.
Process / Status		Not Endorsed By The FAA. See Appendix D.
Recommendation Report Reference	Roundtable	C NIITE ST 3

Recommendation		22. While not increasing the actual number of aircraft using Runway 01 L/R, for those aircraft using Runways 1L/1R, continue to use the 050° heading option for southbound flights at night instead of the SSTIK procedure for south-bound departures.
Process / Status		Addressed Concern. See Appendix A.
Recommendation Report Reference	Roundtable	C NIITE ST 4

Recommendation		23. The SFO RT formally requests that the FAA add a transition to the NIITE departure for southbound aircraft. Once implemented, the 050° down the Bay option is still preferred.
Process / Status		Feasible And Could Be Implemented In The Long Term. See Appendix C.
Recommendation Report Reference	Roundtable	C NIITE LT 1

Recommendation		24. The NIITE departure and all transitions be amended to include authorization for its safe use by aircraft taking off from Runway 10 L/R.
Process / Status		Not Endorsed By The FAA. See Appendix D.
Recommendation Report Reference	Roundtable	C NIITE LT 2

Recommendation		25. The SFO Roundtable will provide input regarding the new southbound transition and will elicit community input and response to the design of the new NIITE southbound transition and Runway 10 L/R NIITE authorization.
Process / Status		Addressed Concern. See Appendix A.
Recommendation Report Reference	Roundtable	C NIITE COL 1

Recommendation		26. NIGHTTIME: Use the 050° heading at night to the maximum extent feasible for aircraft departures to southern destinations instead of the SSTIK departure procedure.
Process / Status		Addressed Concern. See Appendix A.
Recommendation Report Reference	Roundtable	C 050° ST 1

Recommendation		27. The use of a comparable heading down the Bay for southbound flights taking off from OAK.
Process / Status		Feasible And Could Be Implemented In The Long Term. See Appendix C.
Recommendation Report Reference	Roundtable	C 050° ST 2

Recommendation		28. NIGHTTIME: Continue flying the 050 heading when able during nighttime hours.
Process / Status		Addressed Concern. See Appendix A.
Recommendation Report Reference	Roundtable	C 050° LT 1

Recommendation		29. NCT use a longstanding TRACON procedure for aircraft taking off on Runway 10 L/R by vectoring them north up the Bay (using an approximate 330°heading) and then, if westbound, vectoring them to the Pacific Ocean.
Process / Status		Not Endorsed By The FAA. See Appendix D.
Recommendation Report Reference	Roundtable	C ODO ST 1

Recommendation		30. Maintain the existing SFO ANAO nighttime preferential runway use in place, including Runway 10 L/R as the preferred nighttime runway for takeoffs; aircraft using the SAHEY departure should not be vectored and stay over the bay.
Process / Status		Addressed Concern. See Appendix A.
Recommendation Report Reference	Roundtable	C ODO ST 2

Recommendation		31. SFO Airport Director work with the Roundtable to coordinate outreach efforts to educate dispatchers and pilots on the importance of considering the use of a Runway 10 L/R ODO departure to the impacted communities.
Process / Status		Not FAA's Action.
Recommendation Report Reference	Roundtable	C ODO ST 3

Recommendation		32. When Runway 28 L/R must be used for nighttime departures, the SFO Roundtable requests use of the GAP SEVEN departure that does not have a top altitude restriction.
Process / Status		Addressed Concern. See Appendix A.
Recommendation Report Reference	Roundtable	C ODO ST 4

Recommendation		33. Determined if any VFR flyway results in Runway 28 straight-out departures being assigned a 3,000' altitude restriction.
Process / Status		Addressed Concern. See Appendix A.
Recommendation Report Reference	Roundtable	C ODO LT 1

Recommendation		34. Create a procedure that includes the ability of aircraft to depart Runway 10 L/R on a heading that isn't in the direct path of aircraft arriving on Runway 28, such as making an immediate left turn after takeoff or flying to the east of the Runway 28 arrival path to provide lateral separation; for vertical separation, use altitude restrictions for the departing aircraft.
Process / Status		Not Endorsed By The FAA. See Appendix D.
Recommendation Report Reference	Roundtable	C ODO LT 2

Recommendation		35. Create a Runway 10L/R RNAV departure that mirrors the decommissioned DUMBARTON EIGHT procedure, keeping aircraft over the bay to gain altitude before turning.
Process / Status		Not Endorsed By The FAA. See Appendix D.
Recommendation Report Reference	Roundtable	C ODO LT 3

Recommendation		36. The SFO Roundtable will provide information to the FAA to assist in a review of options for aircraft to use Runway 10 L/R that does not use the same flight path as a Runway 28 L/R arrival.
Process / Status		Addressed Concern. See Appendix A.
Recommendation Report Reference	Roundtable	C ODO COL 1

Recommendation		37. Consistently use the effective noise abatement procedures such as the long-standing TRACON nighttime noise abatement procedure for aircraft taking off from Runway 10, to fly an approximate 330° heading up the Bay and thence out the Golden Gate.
Process / Status		Not Endorsed By The FAA. See Appendix D.
Recommendation Report Reference	Roundtable	C ODO COL 2

Recommendation		38. The Roundtable will work with the FAA to re-design the SAHEY departure to mirror historic flight tracks that keep aircraft over the bay.
Process / Status		Addressed Concern. See Appendix A.
Recommendation Report Reference	Roundtable	C ODO COL 3

Recommendation		39. NIGHTTIME: While awaiting the publication of this NIITE/HUSSH southbound transition, it is requested that aircraft be vectored in according with long-standing NCT procedures (SFO 330° heading up the Bay) and (SFO and OAK) out to the ocean and southbound over the Pacific Ocean. Also use the 050° heading for southbound departures.
Process / Status		Feasible And Could Be Implemented In The Long Term. See Appendix C.
Recommendation Report Reference	Roundtable	C Nighttime ST 1

Recommendation		40. NIGHTTIME: While awaiting authorization to use NIITE departure from Runways 10, (or in the failure to obtain such authorization), the RT requests that aircraft be vectored to mirror the NIITE DP.
Process / Status		Not Endorsed By The FAA. See Appendix D.
Recommendation Report Reference	Roundtable	C Nighttime ST 2

Recommendation		41. NIGHTTIME: While awaiting the publication of this NIITE/HUSSH southbound transition, determine if aircraft can file for SFO QUIET SEVEN departure or the OAK SILENT departure and then be vectored in accordance with NCT SOPs out to GOBBS waypoint and then southbound.
Process / Status		Not Endorsed By The FAA. See Appendix D.
Recommendation Report Reference	Roundtable	C Nighttime ST 3

Recommendation		42. NIGHTTIME: The RT supports the use the 050° heading from SFO, and A comparable OAK Rwy 30 heading down the Bay. Runway 01 departures should not be increased; rather, use a 050 heading in lieu of flying a procedure over the peninsula for aircraft with southern departures.
Process / Status		Addressed Concern. See Appendix A.
Recommendation Report Reference	Roundtable	C Nighttime ST 4

Recommendation		43. NIGHTTIME: Determine if there is any ability to eliminate the 3,000’ MSL altitude restriction on straight-out departures.
Process / Status		Not Endorsed By The FAA. See Appendix D.
Recommendation Report Reference	Roundtable	C Nighttime ST 5

Recommendation		44. NIGHTTIME: All nighttime approaches be managed into a "single stream" of airplanes, that (wind/weather permitting) this single stream of planes only uses noise abatement approaches such as the Runway 28R FMS Bridge Visual, the Runway 28R Quiet Bridge, or the RNAV (RNP) 28R and that this single stream of planes landing only on Runway 28R. If conditions require an ILS approach, it is requested that only Runway 28R be used.
Process / Status		Addressed Concern. See Appendix A.
Recommendation Report Reference	Roundtable	C Nighttime ST 6

Recommendation		45. NIGHTTIME: BDEGA and other arrivals from the north be assigned only to the BDEGA East downwind (or similar) for a "noise-friendlier" approach to only 28R.
Process / Status		Addressed Concern. See Appendix A.
Recommendation Report Reference	Roundtable	C Nighttime ST 7

Recommendation		46. NIGHTTIME: when feasible, during nighttime hours and VMC conditions -- *if any flights fly over sensitive areas* -- every effort be made which would allow aircraft to **remain higher than typical** and are vectored so as to approach single stream using noise-friendlier approaches to land on Runway 28R. If an arrival ***must*** be made over Woodside (Oceanic) or the Peninsula (BDEGA) or from the south (SERFR), every effort should be made to keep aircraft higher than typical.
Process / Status		Not Endorsed By The FAA. See Appendix D.
Recommendation Report Reference	Roundtable	C Nighttime ST 8

Recommendation		47. The SFO Roundtable supports an immediate start to designing the southbound transition for SFO and OAK flights on the NIITE departure. This NIITE departure/southbound transition procedure will replace the SSTIK and CNDEL departures during the nighttime hours.
Process / Status		Feasible And Could Be Implemented In The Long Term. See Appendix C.
Recommendation Report Reference	Roundtable	C Nighttime LT 1

Recommendation		48. Determine if Runway 10 take-offs can be authorized to use the NIITE. If not, create a departure to allow Runway 10 take-offs to make a left turn up the Bay to NIITE waypoint.
Process / Status		Not Endorsed By The FAA. See Appendix D.
Recommendation Report Reference	Roundtable	C Nighttime LT 2

Recommendation		49. Reinstate the FINSH transition to the BDEGA arrival in order to facilitate increased use of the BDEGA East downwind ("down the Bay") to Runway 28R or the establishment of a similar east downwind transition if there are technical concerns with the original design.
Process / Status		Not Endorsed By The FAA. See Appendix D.
Recommendation Report Reference	Roundtable	C Nighttime LT 3

Recommendation		50. The SFO RT will work with airline representatives and the FAA to request that all oceanic nighttime arrivals from the north file for and fly an approach which utilizes the Bay (such as the BDEGA East downwind) and substantially avoids flight over non-compatible land uses.
Process / Status		Addressed Concern. See Appendix A.
Recommendation Report Reference	Roundtable	C Nighttime LT 4

Recommendation		51. The SFO RT will work with airline representatives and the FAA to request that all nighttime arrivals from the south (SERFR) file for a routing and Arrival that would terminate east of the Bay for connection to an approach to SFO Runway 28R.
Process / Status		Not Endorsed By The FAA. See Appendix D.
Recommendation Report Reference	Roundtable	C Nighttime LT 5

Recommendation		52. NIGHTIME: The SFO Roundtable will work with airline representatives to encourage them to file for SFO arrivals that avoid flight over sensitive areas. If inbound aircraft choose to file for BDEGA, it is requested that only the BDEGA East downwind be assigned to them.
Process / Status		Addressed Concern. See Appendix A.
Recommendation Report Reference	Roundtable	C Nighttime LT 6

Recommendation		53. The SFO Roundtable will provide any required community data as well as community input to the FAA to support all efforts to improve noise impacts during the important night time hours.
Process / Status		Addressed Concern. See Appendix A.
Recommendation Report Reference	Roundtable	C Nighttime COL 1

Recommendation		54. In the existing procedure, fly the planes on the charted CNDEL departure as published so that they fly over the CNDEL flyover waypoint THEN over the PORTE waypoint as charted.
Process / Status		Addressed Concern. See Appendix A.
Recommendation Report Reference	Roundtable	C CNDEL ST 1

Recommendation		55. Use the Bay and Pacific Ocean for overflight as much as possible. From the CNDEL waypoint, direct aircraft to a waypoint in the Pacific Ocean – potentially to the GOBBS waypoint in the ocean then to the WAMMY waypoint.
Process / Status		Not Endorsed By The FAA. See Appendix D.
Recommendation Report Reference	Roundtable	C CNDEL ST 2

Recommendation		56. NIGHTTIME: Use the GOBBS waypoint during nighttime hours to reduce overflights of the Peninsula - (HUSSH departure).
Process / Status		Feasible And Could Be Implemented In The Long Term. See Appendix C.
Recommendation Report Reference	Roundtable	C CNDEL ST 3

Recommendation		57. In the existing procedure, avoid vectoring aircraft for non-safety reasons prior to the CNDEL waypoint.
Process / Status		Addressed Concern. See Appendix A.
Recommendation Report Reference	Roundtable	C CNDEL ST 4

Recommendation		58. Assignment of southbound vectors be delayed until the aircraft has reached the ocean and PORTE waypoint to reduce aircraft flying over San Francisco and down the Peninsula.
Process / Status		Addressed Concern. See Appendix A.
Recommendation Report Reference	Roundtable	C CNDEL ST 5

Recommendation		59. Determine if the actual flight tracks of aircraft after CNDEL waypoint could be "contained" to a more limited area such as west of the eastern shore of the Bay (perhaps by an additional waypoint) that would decrease potential conflicts with the SSTIK departure airspace to enable the SSTIK departure to be flown as published.
Process / Status		Not Endorsed By The FAA. See Appendix D.
Recommendation Report Reference	Roundtable	C CNDEL LT 1

Recommendation		60. Determine if a southbound transition for the CNDEL procedure could effectively use flight over bodies of water to enable aircraft to gain altitude before flying over noise-sensitive land uses without interfering with a possible expanded SSTIK departure path or shifting noise to other communities.
Process / Status		Not Endorsed By The FAA. See Appendix D.
Recommendation Report Reference	Roundtable	C CNDEL LT 2

Recommendation		61. Utilizing the OAK HUSSH departure procedure during daytime hours should help avoid conflicts with SFO SSTIK, reduce the need for vectoring, increase the separation between these flight paths, and increase safety. From CNDEL, direct aircraft to GOBBS and south.
Process / Status		Not Endorsed By The FAA. See Appendix D.
Recommendation Report Reference	Roundtable	C CNDEL LT 3

Recommendation		62. The Roundtable is available to provide community input to the FAA with the use of modeling or other tools to determine the effects of other noise friendlier departure paths for flights using the OAK CNDEL departure, especially for CNDEL southbound flights. Such options might include (but are not limited to) flight over the waters of the Bay to the Pacific Ocean or flight over the Bay to SFO and then over the Peninsula (primarily Millbrae and Burlingame) to PORTE or flight down the Bay as far south as feasible, or other options that may become known.
Process / Status		Addressed Concern. See Appendix A.
Recommendation Report Reference	Roundtable	C CNDEL COL 1

Recommendation		63. Avoid issuing any non-safety vectors to aircraft for as long as feasible and no earlier than when an aircraft is actually over the SEPDY flyover waypoint. After reaching the designated waypoint or intersection, continued flight up the Bay (to attain higher altitude) is desirable. When a left turn is to be made, a relatively wide dispersal of flight paths to the ocean is preferred.
Process / Status		Addressed Concern. See Appendix A.
Recommendation Report Reference	Roundtable	C SSTIK ST 1

Recommendation		64. Flights should be directed to fly as high as possible over the SEPDY waypoint (over the bay), allowing them to be higher in altitude before turning over land, with a steady altitude increasing as they make their way to the ocean.
Process / Status		Addressed Concern. See Appendix A.
Recommendation Report Reference	Roundtable	C SSTIK ST 2

Recommendation		65. Avoid vectoring aircraft down the Peninsula direct to waypoints beyond PORTE. Aircraft should fly over the PORTE waypoint on the published procedure.
Process / Status		Addressed Concern. See Appendix A.
Recommendation Report Reference	Roundtable	C SSTIK ST 3

Recommendation		66. In the existing SSTIK procedure, use the Bay and ocean for overflight as much as possible.
Process / Status		Addressed Concern. See Appendix A.
Recommendation Report Reference	Roundtable	C SSTIK ST 4

Recommendation		67. In the existing SSTIK procedure, utilize existing areas of compatible land use for overflight.
Process / Status		Addressed Concern. See Appendix A.
Recommendation Report Reference	Roundtable	C SSTIK ST 5

Recommendation		68. For aircraft with destinations in Southern California use the OFFSHORE ONE departure.
Process / Status		Not Endorsed By The FAA. See Appendix D.
Recommendation Report Reference	Roundtable	C SSTIK ST 6

Recommendation		69. For aircraft with southeast destinations use the TRUKN departure with a transition at TIPRE or SYRAH.
Process / Status		Not Endorsed By The FAA. See Appendix D.
Recommendation Report Reference	Roundtable	C SSTIK ST 7

Recommendation		70. Determine the feasibility of depicting the SEPDY waypoint on the scopes in an effort for aircraft to stay over the Bay as long as possible. This would allow aircraft additional time to climb over the Bay before turning.
Process / Status		Not Endorsed By The FAA. See Appendix D.
Recommendation Report Reference	Roundtable	C SSTIK ST 8

Recommendation		71. Determine if a reduced climb airspeed can be assigned until reaching 3,000' MSL or other higher altitude; a slower airspeed will allow the aircraft to climb to a higher altitude in a shorter distance before overflying noise-sensitive land uses. Determine if the minimum required altitude for ATC to initiate a left turn can be raised.
Process / Status		Not Endorsed By The FAA. See Appendix D.
Recommendation Report Reference	Roundtable	C SSTIK LT 1

Recommendation		72. Move the SSTIK waypoint north and east as much as feasible to allow maximum altitude gain before turning west to fly over land, using the legacy SEPDY waypoint as a guide. Remain over the Pacific Ocean until attaining a high altitude.
Process / Status		Not Endorsed By The FAA. See Appendix D.
Recommendation Report Reference	Roundtable	C SSTIK LT 2

Recommendation		73. Create an OFFSHORE RNAV overlay.
Process / Status		Not Endorsed By The FAA. See Appendix D.
Recommendation Report Reference	Roundtable	C SSTIK LT 3

Recommendation		74. Create a SSTIK transition to GOBBS. Similar to the NIITE procedure, aircraft would depart on the SSTIK procedure flying up the Bay instead of over the peninsula to approximately the GOBBS intersection, then onto a waypoint in the ocean such as WAMMY. This could be used for aircraft with southerly destinations in California.
Process / Status		Not Endorsed By The FAA. See Appendix D.
Recommendation Report Reference	Roundtable	C SSTIK LT 4

Recommendation		75. The SFO Roundtable will provide community input to the FAA to find an appropriate location for moving the SSTIK waypoint east and north of its current location, again using SEPDY as a guide, so planes can fly over the Bay for a longer period of time, and thus increase altitude before heading west and flying over residential areas.
Process / Status		Addressed Concern. See Appendix A.
Recommendation Report Reference	Roundtable	C SSTIK COL 1

Recommendation		76. The FAA provide modeling, noise monitoring, and/or other tools to determine the effects of different waypoint options.
Process / Status		Not FAA's Action.
Recommendation Report Reference	Roundtable	C SSTIK COL 2

Recommendation		77. Allow planes to fly the charted procedures and to reduce vectoring and when safety is not an issue as well as to use higher altitudes when flying over noise-sensitive land uses and the use of non-residential areas where feasible.
Process / Status		Addressed Concern. See Appendix A.
Recommendation Report Reference	Roundtable	C SSTIK COL 3

Recommendation		78. The SFO Roundtable will work with the SFO noise office and TRACON to research use of the legacy LINDEN VORTAC transition to determine why it has not been used within the last few years and determine which city pairs can utilize this corridor via TIPRE or SYRAH.
Process / Status		Not Endorsed By The FAA. See Appendix D.
Recommendation Report Reference	Roundtable	C SSTIK COL 4

Recommendation		79. Determine any conflicting airspace issues which would not be available for the location of a new SSTIK waypoint.
Process / Status		Not Endorsed By The FAA. See Appendix D.
Recommendation Report Reference	Roundtable	C SSTIK RSCH 1

4. SFO Roundtable Recommendations – Attachment D

Recommendation		1. The SFO Aircraft Noise Abatement (ANAO) Office and Northern California TRACON have an agreement that states when able, aircraft will cross the MENLO intersection during visual conditions at 5,000' AGL and 4,000' AGL during instrument conditions. The Roundtable requests this agreement stays in place and aircraft cross MENLO at or close to 5,000' AGL during visual conditions. The Roundtable also recommends the creation of an RNAV visual approach to mirror the TIPP TOE Visual approach for 28L which would specify crossing MENLO at 5,000-feet.
Process / Status		Addressed Concern. See Appendix A.
Recommendation Report Reference	Roundtable	D 1.a.i.(a)

Recommendation		2. SSTIK to be flown to the SEPDY waypoint and vectored for safety purposes only, prior to the waypoint. While awaiting the development of an OFFSHORE ONE RNAV overlay, NCT is requested to use the OFFSHORE departure procedure for flights to Southern California. Planes should be directed to fly as high as possible over the SEPDY waypoint (over the Bay), allowing them to be higher in altitude before turning over land, with a steady altitude increase and relatively wide dispersal of flight paths as they make their way to the ocean. The Roundtable requests the FAA to research other possible flight alternatives utilizing the Bay and Pacific Ocean.
Process / Status		Addressed Concern. See Appendix A.
Recommendation Report Reference	Roundtable	D 1.a.ii. Resp 1

Recommendation		3. The WESLA procedure should be flown as charted and allow aircraft to climb unrestricted when there are no other air traffic conflicts.
Process / Status		Addressed Concern. See Appendix A.
Recommendation Report Reference	Roundtable	D 1.a.ii. Resp 2

Recommendation		4. CNDLE to be flown as charted and vectored for safety purposes only, not for efficiency. The Roundtable would request the FAA to research other possible lateral path options for the CNDEL southbound departures.
Process / Status		Addressed Concern. See Appendix A.
Recommendation Report Reference	Roundtable	D 1.a.ii. Resp 3

Recommendation		5. Fly over the Bay until the SSTIK waypoint, by moving SSTIK N + E as much as feasible to allow maximum altitude gain before turning to fly over land using the historic SEPDY waypoint as a guide. Preferably, the SSTIK should be flown to GOBBS, then to WAMMY, before flying to PORTE, so that planes are flying over water, rather than people's homes.
Process / Status		Not Endorsed By The FAA. See Appendix D.
Recommendation Report Reference	Roundtable	D 1.b.i. Bullet 1

Recommendation		6. Fly the SSTIK procedure as charted to PORTE waypoint instead of clearing aircraft to subsequent waypoints downstream from SSTIK, bypassing PORTE. Create an additional waypoint over the ocean to guide aircraft over the water to PORTE, such as the legacy WAMMY waypoint associated with the OFFSHORE procedure.
Process / Status		Addressed Concern. See Appendix A.
Recommendation Report Reference	Roundtable	D 1.b.i. Bullet 2

Recommendation		7. Fly the CNDEL to the CNDEL waypoint as charted, so as to create less interference with SSTIK. The CNDEL should be flown to GOBBS, then to WAMMY, before flying to PORTE.
Process / Status		Addressed Concern. See Appendix A.
Recommendation Report Reference	Roundtable	D 1.b.i. Bullet 3

Recommendation		8. SSTIK: That southerly vectors not be issued to an aircraft until an aircraft is actually *over* SEPDY (avoid anticipatory turns approaching SPEDY). Once past SEPDY, a relatively wide dispersal of flight paths to the ocean is preferred.
Process / Status		Addressed Concern. See Appendix A.
Recommendation Report Reference	Roundtable	D 1.b.ii. Resp 2.a.

Recommendation		9. SSTIK: That the Bay, and waypoints such as GOBBS and WAMMY in the ocean be used for overflight as much as possible.
Process / Status		Not Endorsed By The FAA. See Appendix D.
Recommendation Report Reference	Roundtable	D 1.b.ii. Resp 2.b.

Recommendation		10. SSTIK: That existing areas of non-residential land be used for overflight.
Process / Status		Addressed Concern. See Appendix A.
Recommendation Report Reference	Roundtable	D 1.b.ii. Resp 2.c.

Recommendation		11. SSTIK: That assigning a southbound heading toward PORTE should be delayed as long as feasible **including flying to the ocean before turning south.**
Process / Status		Addressed Concern. See Appendix A.
Recommendation Report Reference	Roundtable	D 1.b.ii. Resp 2.d.

Recommendation		12. SSTIK: That vectoring aircraft down the Peninsula direct to **PORTE and to** waypoints beyond PORTE should be avoided.
Process / Status		Addressed Concern. See Appendix A.
Recommendation Report Reference	Roundtable	D 1.b.ii. Resp 2.e.

Recommendation		13. Move SSTIK north and east as much as feasible to allow maximum altitude gain before turning to fly over land using the historic SEPDY waypoint as a guide. The Roundtable would ultimately prefer a SSTIK procedure that utilizes the entire Bay out to GOBBS, then to WAMMY and then to PORTE.
Process / Status		Not Endorsed By The FAA. See Appendix D.
Recommendation Report Reference	Roundtable	D 1.b.ii. Resp 2.

Recommendation		14. CNDEL procedure should be flown as charted and reduce the amount of aircraft vectored. CNDEL departures be allowed to fly the procedure to PORTE intersection unless safety (not efficiency) requires vectoring earlier.
Process / Status		Addressed Concern. See Appendix A.
Recommendation Report Reference	Roundtable	D 1.b.ii. Resp 3.

Recommendation		15. The FAA to use this as a baseline to compare conditions in the future when reporting back to this body regarding decreasing vector traffic. The FAA research various options as alternate lateral paths for CNDEL southbound departures.
Process / Status		Addressed Concern. See Appendix A.
Recommendation Report Reference	Roundtable	D 1.b.ii. Resp 4.

Recommendation		16. Utilizing the HUSSH departure procedure during daytime hours should help avoid conflicts with SSTIK, reduce the need for vectoring, increase separation between these flight paths, and increase safety. The Roundtable would ultimately prefer a CNDEL procedure that utilizes the entire bay out to GOBBS, then to WAMMY and then to PORTE.
Process / Status		Not Endorsed By The FAA. See Appendix D.
Recommendation Report Reference	Roundtable	D 1.b.ii.

Recommendation		17. Work with SFO Noise Abatement Office on a pilot outreach program to encourage aircraft to stay over water while on approach after receiving their cleared to land instructions.
Process / Status		Addressed Concern. See Appendix A.
Recommendation Report Reference	Roundtable	D 1.b.iii. Resp a.

Recommendation		18. Increase controller awareness on keeping aircraft over water as much as possible, especially during late night hours and when aircraft are operating in single-stream and using RWY 28R. Assurances from the FAA, to the maximum extent possible, not turn aircraft over affected communities prior to nine miles from the SFO VOR (9 DME) final from the airport, consistent with the NCT informal noise abatement agreement.
Process / Status		Addressed Concern. See Appendix A.
Recommendation Report Reference	Roundtable	D 1.b.iii. Resp b.

Recommendation		19. Determine the feasibility of creating an RNAV (RNP) dual offset approach to Runway 28R and 28L.
Process / Status		Not Endorsed By The FAA. See Appendix D.
Recommendation Report Reference	Roundtable	D 1.b.iii. Resp c.

Recommendation		20. Work with SFO Noise Abatement Office on a pilot outreach program to encourage aircraft to stay over water while on approach after receiving their cleared to land instructions.
Process / Status		Addressed Concern. See Appendix A.
Recommendation Report Reference	Roundtable	D 1.b.iv. Resp a.

Recommendation		21. Increase controller awareness on keeping aircraft over water as much as possible, especially during late night hours and when aircraft are operating in single-stream and using RWY 28R.
Process / Status		Addressed Concern. See Appendix A.
Recommendation Report Reference	Roundtable	D 1.b.iv. Resp b.

Recommendation		22. Work with SFO Noise Abatement Office on a pilot outreach program to encourage aircraft to stay over water while on approach after receiving "cleared to land" instructions.
Process / Status		Addressed Concern. See Appendix A.
Recommendation Report Reference	Roundtable	D 1.b.v. Resp a.

Recommendation		23. Educate controllers on keeping aircraft over water as much as possible, especially during late night hours and when aircraft are operating in single-stream.
Process / Status		Addressed Concern. See Appendix A.
Recommendation Report Reference	Roundtable	D 1.b.v. Resp b.

Recommendation		24. The Roundtable requests to work with the FAA to determine where aircraft can be vectored with the least noise impact and identify locations that have the most compatible land uses for vectoring purposes.
Process / Status		Addressed Concern. See Appendix A.
Recommendation Report Reference	Roundtable	D 1.f.ii.

Recommendation		25. Request a timeline from the FAA for implementation of this procedure (NIITE, GOBBS, WAMMY, PORTE), factoring in requirements to run the procedure through the FAA Order JO 7100.41A process.
Process / Status		Feasible And Could Be Implemented In The Long Term. See Appendix C.
Recommendation Report Reference	Roundtable	D 1.f.iii.

Recommendation		26. Oakland Center and NCT to encourage use of the RNAV (RNP) Y procedure to Runway 28R or the FMS Visual 28R to keep aircraft over the water for as long as possible.
Process / Status		Addressed Concern. See Appendix A.
Recommendation Report Reference	Roundtable	D 1.f.iv.

Recommendation		27. Educate controllers on keeping aircraft over water as long as possible on approach, especially during single-stream operations.
Process / Status		Addressed Concern. See Appendix A.
Recommendation Report Reference	Roundtable	D 1.f.iv. a Resp.

Recommendation		28. Work with the SFO ANAO to educate pilots on the ability to request the RNP to Runway 28R or the FMS Visual 28R, given the properly equipped aircraft and flight crew.
Process / Status		Addressed Concern. See Appendix A.
Recommendation Report Reference	Roundtable	D 1.f.iv. Resp b.

Recommendation		29. Determine the ability of more aircraft to utilize the Bay for arrivals from points north instead of the peninsula. This is especially important during nighttime hours, where 100% of arrivals using the Bay is desired.
Process / Status		Addressed Concern. See Appendix A.
Recommendation Report Reference	Roundtable	D 2.a.i. Resp a.

Recommendation		30. The BDEGA TWO procedure include the waypoints for a down the Bay procedure, as done in BDEGA ONE.
Process / Status		Not Endorsed By The FAA. See Appendix D.
Recommendation Report Reference	Roundtable	D 2.a.i. Resp b.

Recommendation		31. Determine altitudes to turn aircraft for vector purposes that minimizes noise.
Process / Status		Not Endorsed By The FAA. See Appendix D.
Recommendation Report Reference	Roundtable	D 2.a.i. Resp c.

Recommendation		32. We are encouraged by the use of the NIITE procedure with a goal of 100% use from midnight to 6am and infrequent use during other nighttime hours.
Process / Status		Addressed Concern. See Appendix A.
Recommendation Report Reference	Roundtable	D 2.a.ii.(a) Resp 1.

Recommendation		33. We continue to encourage the use of HUSSH and reduce vectors off of the HUSSH departure for the same reasons as the NIITE.
Process / Status		Addressed Concern. See Appendix A.
Recommendation Report Reference	Roundtable	D 2.a.ii.(a) Resp 2.

Recommendation		34. When weather conditions dictate the use of these runways (10L/R & 19L/R), we encourage the use of FOGGG as published and not vector off the procedure.
Process / Status		Not Endorsed By The FAA. See Appendix D.
Recommendation Report Reference	Roundtable	D 2.a.ii.(a) Resp 3.

Recommendation		35. Remove GNNRR TWO in references to flying aircraft over less noise-sensitive areas and the associated inclusion in procedures used over less noise-sensitive areas that total 88%.
Process / Status		Addressed Concern. See Appendix A.
Recommendation Report Reference	Roundtable	D 2.a.ii.(a) Resp 4.a.

Recommendation		36. When available, use the GAP SEVEN departure to avoid any top altitude restrictions for aircraft departing Runway 28L/R out the gap.
Process / Status		Addressed Concern. See Appendix A.
Recommendation Report Reference	Roundtable	D 2.a.ii.(a) Resp 4.b.

Recommendation		37. Aircraft use compatible land uses (such as the Bay, Pacific Ocean, and non-residential areas) for as long as possible before turning. For the SSTIK procedure, this would be using the Bay to gain altitude before turning over populated areas.
Process / Status		Addressed Concern. See Appendix A.
Recommendation Report Reference	Roundtable	D 2.a.ii.(b) Req a.

Recommendation		38. Define the airspace limitations to the north and east for placement of a waypoint to replace SSTIK. Present these limitations to the Roundtable in graphic and memo formats.
Process / Status		Not Endorsed By The FAA. See Appendix D.
Recommendation Report Reference	Roundtable	D 2.a.ii.(b) Req b.

Recommendation		39. Define the airspace limitations over the Golden Gate and the ocean to the west of the peninsula for placement of a waypoint to replace or augment PORTE. Present these limitations to the Roundtable in graphic and memo formats.
Process / Status		Feasible And Could Be Implemented In The Long Term. See Appendix C.
Recommendation Report Reference	Roundtable	D 2.a.ii.(b) Req c.

Recommendation		40. Aircraft remain on the WESLA procedure, as charted.
Process / Status		Addressed Concern. See Appendix A.
Recommendation Report Reference	Roundtable	D 2.a.ii.(b) Req 2.

Recommendation		41. The FAA to use *FAA Initiative Phase 1, Appendix B* as a baseline to compare improvements in decreasing vector traffic.
Process / Status		Addressed Concern. See Appendix A.
Recommendation Report Reference	Roundtable	D 2.a.ii.(b) Req 3.

Recommendation		42. When aircraft use the SAHEY THREE departure from Runway 10L/R, that aircraft are not vectored and fly the procedure as charted.
Process / Status		Addressed Concern. See Appendix A.
Recommendation Report Reference	Roundtable	D 2.e.i. Req a.

Recommendation		43. Create an RNAV overlay, or create a new procedure, based on the decommissioned DUMBARTON EIGHT procedure for aircraft departures from Runway 10L/R to keep aircraft over the Bay.
Process / Status		Not Endorsed By The FAA. See Appendix D.
Recommendation Report Reference	Roundtable	D 2.e.i. Req b.

Recommendation		44. For departures using RWY 01L/R for departures during nighttime hours, the Roundtable requests aircraft with southern destinations use the 050 departure heading as much as possible to avoid overflights of the peninsula. The RT is not advocating for Runway 01L/R to be used more during nighttime hours.
Process / Status		Addressed Concern. See Appendix A.
Recommendation Report Reference	Roundtable	D 2.e.ii.

Recommendation		45. Maximum use of SFO's preferred nighttime preferential runway procedures, including using the TRUKN (up the Bay) and NIITE as replacements for the SHORELINE and QUIET departures.
Process / Status		Addressed Concern. See Appendix A.
Recommendation Report Reference	Roundtable	D 2.e.iii. Req 1.

Recommendation		46. Create a RWY 10R procedure for aircraft to depart RWY 10R, then turn up the Bay to join the NIITE.
Process / Status		Not Endorsed By The FAA. See Appendix D.
Recommendation Report Reference	Roundtable	D 2.e.iii. Req 2.

Recommendation		47. When conditions permit and aircraft use the TRUKN departure off RWY 28L/R, the Roundtable requests the FAA conduct controller outreach to educate them about aircraft staying east of Highway 101.
Process / Status		Addressed Concern. See Appendix A.
Recommendation Report Reference	Roundtable	D 2.e.iv.

Recommendation		48. Aircraft climb unrestricted on the GNNRR procedure. Aircraft depart without a top altitude restriction when flying "out the gap" on Runway 28L/R and consider the use of the GAP 7 departure that has no top altitude restriction instead of the GNNRR.
Process / Status		Not Endorsed By The FAA. See Appendix D.
Recommendation Report Reference	Roundtable	D 2.f.iv.

Recommendation		49. The SSTIK procedure should be flown as charted, especially flying to the PORTE waypoint instead of down the peninsula to points south of PORTE.
Process / Status		Addressed Concern. See Appendix A.
Recommendation Report Reference	Roundtable	D 2.f.vi.

Recommendation		50. NIGHTTIME: The nighttime preferential runway program remains unchanged, and primarily use Runways 10 L/R for takeoff because they offer routing over the Bay. Don't vector aircraft on the SAHEY THREE departure.
Process / Status		Addressed Concern. See Appendix A.
Recommendation Report Reference	Roundtable	D 3.a.i. 1.

Recommendation		51. NIGHTTIME: The nighttime preferential runway program remains unchanged, and the second preference is depart Runways 28 L/R and the SHORELINE, QUIET or TRUKN procedures.
Process / Status		Addressed Concern. See Appendix A.
Recommendation Report Reference	Roundtable	D 3.a.i. 2.

Recommendation		52. NIGHTTIME: The nighttime preferential runway program remains unchanged, and the third preference is depart Runways 01 L/R.
Process / Status		Addressed Concern. See Appendix A.
Recommendation Report Reference	Roundtable	D 3.a.i. 3.

Recommendation		53. Work with SFO Roundtable on future changes.
Process / Status		Addressed Concern. See Appendix A.
Recommendation Report Reference	Roundtable	D 3.b.ii.

APPENDICES

APPENDIX A: Addressed Concerns

1.6 NIGHTTIME: Increase the percentage of eastbound NIITE flights that remain on the path until reaching the waypoint, thereby reducing early turns which cross land at lower, noisier altitudes.

The requirement for aircraft to remain on the NIITE / HUSSH departure procedures as much as operationally feasible was added to NCT's SOP in February 2017. An analysis of May 2017 traffic data revealed that 99% of NIITE aircraft and 70% of HUSSH aircraft passed within 1 NM of NIITE Waypoint. July 2015 showed 71% NIITE and 68% HUSSH compliance. NCT will continue to reinforce the use of this procedure to personnel through training and briefings.

It is important to note how the spike in compliance with the NIITE / HUSSH procedures was achieved, and the associated effects. Prior to the update to NCT's SOP in February 2017, aircraft were allowed to depart both the SFO and OAK airports with little restriction, allowing for a high departure rate and minimal delays. What this created, however, was aircraft from two airports being fed into a single departure corridor. As explained in Appendix A, 2.30, it is safer and more efficient to vector aircraft to maintain the minimum required separation than it is to 'step-up' aircraft, which led to aircraft being vectored off the NIITE / HUSSH procedures prior to the NIITE waypoint.

After the update to the NCT SOP in February 2017, there has been a tradeoff. The capacity limitations of the departure corridor (which contains both the NIITE and HUSSH departure procedures) remains unchanged. Therefore, in order for aircraft on the NIITE/HUSSH procedures to remain on their respective procedure until the NIITE waypoint *while also* maintaining the required minimum separation between aircraft, ATC must delay aircraft on the ground prior to departure. Analysis of ground delays, during noise abatement hours, for SFO and OAK for June 2017 showed 103 reportable delays, while ground delays for SFO and OAK in June 2016 showed 1 reportable delay. Note: reportable delays are delays of 15 minutes or more.

1.8 Increase the percentage of CNDEL departures that stay on the procedure longer and do not turn prior to the CNDEL waypoint.

The FAA concurs with the recommendation that aircraft fly the CNDEL procedure as published to the extent operationally feasible. Vectoring aircraft is a necessary component to maintaining separation requirements for safety considerations. For a detailed explanation of using vectors

1.11 Aircraft flying on the BDEGA procedure utilize the so-called East leg (over the San Francisco Bay) as much as possible.

The FAA concurs with the recommendation to utilize the BDEGA "East Leg" to the extent operationally feasible; however, a return to "pre-May 2010 levels" is unlikely without a decrease in operations. The BDEGA East Leg shares a final for SFO's Runway 28R with the DYAMD arrival, which contains the greatest share of SFO's arrivals. DYAMD arrival aircraft are constrained by SJC airspace to the South and OAK airspace to the North, which inhibits ATC's ability to vector these aircraft. Additionally, the density of aircraft on the DYAMD arrival is such that vectoring of aircraft creates a ripple effect, jeopardizing safety and resulting in delays.

Because of this, aircraft flying the BDEGA arrival will only be assigned the East Leg when enough space exists between arrivals on the DYAMD to allow for it. As SFO and DYAMD traffic counts increase, opportunities to utilize the BDEGA East Leg will be affected. It is important to understand that increases in volume and the times of day that they fly is a result of Air Carrier scheduling. The FAA's role is to safely manage these aircraft from the time they push back from their departure airport jet way to the time that they reach their arrival airport jet way.

This recommendation conflicts with the Recommendation that Runway 01 nighttime departures be issued the 050° and down the Bay as much as possible (Appendix A, 2.24). The conflict results from departure aircraft climbing out while flying down the Bay, while BDEGA East Downwind aircraft would be descending in the same corridor. As a result, when aircraft are departing on the 050° and down the Bay, BDEGA aircraft will be routed to the West Downwind.

Additionally, this recommendation conflicts with the Recommendation that southerly arrivals be routed to an 'east of the Bay' approach, such as via the DYAMD arrival or FAITH waypoint (Appendix D, 1.23).

The FAA assess the potential of formalizing this procedure so that it is more likely to be used.

Please refer to Appendix C, 3.9, as these share similar recommendations.

1.12 All aircraft flying on the BDEGA procedure during nighttime hours, when air traffic flows are reduced, use the East leg, unless safety considerations prohibit such a flight path.

Please refer to Appendix A, 1.11, as these share similar recommendations.

1.13 Per the current noise abatement procedure, aircraft comply with the obligation to cross the Woodside VOR at 8,000 feet mean sea level, traffic permitting.

The FAA, to the extent feasible and for applicable aircraft, complies with directives that require that aircraft cross the Woodside VOR (OSI) at or above 8,000 feet MSL. This requirement does not apply to aircraft on the Ocean Tailored Arrival (OTA), nor does it apply to aircraft that are being vectored in the vicinity of OSI (BDEGA and SERFR Arrivals). As noted in the Select Committee's recommendation, aircraft authorized to fly the OTA may cross OSI at or above 6,000 feet MSL.

This altitude restriction, to the greatest extent possible and traffic permitting, also be applicable to all vectored flights that are in the vicinity of the Woodside VOR.

Aircraft vectoring is a tactical decision used by ATC to establish and maintain the sequence of aircraft to the airport. Due to safety considerations, the FAA cannot support a restriction on when ATC may or may not use a vital component of its sequencing tools.

1.16 NIGHTTIME: All efforts be made to reduce in-flight aircraft noise over populated areas during "nighttime" hours when residents need a reprieve from aircraft noise so that they can sleep.

The FAA has made a request to the SFO Airport to update the Fly Quiet program.

1.17 NIGHTTIME: Air traffic control make every effort to direct arrivals into a single stream to Runway 28R to reduce the noise exposure on the bayside communities of Redwood City and Foster City.

The FAA concurs with this recommendation to the extent operationally feasible. SFO's Runway 28R is listed within NCT's SOP as the preferred arrival runway. NCT will continue to reinforce the use of this procedure to personnel through training and briefings.

1.18 The FAA, SFO, and industry users continue their efforts to establish new additional overnight noise abatement procedures within the next six months. This work should be done in consultation with other relevant stakeholders.

The FAA has made a request to the SFO Airport to update the Fly Quiet program.

1.28 The FAA identify locations that have the most compatible land uses for vectoring, such as over the Pacific Ocean or San Francisco Bay, and vector the SFO arriving air traffic in those locations to reduce noise exposure experienced on the ground.

While safety remains the FAA's highest priority, the agency attempts to address noise impacts by designing procedures over water and industrial areas when safety and efficiency permit. To the extent your vectoring request seeks to solve a noise issue in one area, doing so may simply shift the noise concern from one location to another. The FAA's Northern California Optimization of Airspace & Procedures in the Metroplex August 7, 2014 Final Environmental Assessment, Finding of No Significant Impact and Record of Decision (NorCal OAPM Final EA/FONSI/ROD) was the result of the FAA's thorough noise analysis of the Northern California Metroplex' General Study Area which included 11 entire counties and portions of 12 counties. The Northern California Metroplex' noise analysis included an assessment of aircraft noise associated with Northern California Metroplex procedures, vectoring and compatible land use. Although the FAA continues to seek to reduce vectoring by improved Traffic Management Tools and work towards accomplishing vectors at a higher altitude, aircraft continue to require vectoring consistent with the FAA's August 7, 2014 noise analysis and completion of the Northern California Metroplex.

1.30 All feasible measures be taken to reduce the noise exposure to bayside communities, including Foster City and Redwood City, by directing air traffic to Runway 28R whenever possible.

Please refer to Appendix A, 1.17, as these share similar recommendations.

1.40 The FAA review the SUA in our area with an eye towards better balancing special use restrictions and civilian aviation needs, particularly in the congested San Francisco Bay Area airspace.

The FAA, along with the United States military, have defined Restricted / Special Use airspace to ensure that the military can meet its mission requirements, while at the same time limiting the impact on civilian air travel. The Select Committee may submit airspace modifications, which will be evaluated by the FAA and the United States military.

1.44 The FAA be charged with the responsibility for identifying and proposing solutions to mitigate noise concerns, and that community groups and elected officials be consulted for review and comment, and to offer additional suggestions.

The Northern California Metroplex project included a noise analysis and an overall assessment of aircraft noise associated with NCTs procedures, as well as vectoring and compatible land use. During the project, the FAA engaged the public and solicited comments during the environmental review.

The FAA has the technical expertise to design safe flight paths that are within criteria, as applicable, and does not expect the public to provide expertise in this manner. If a community requests that an FAA procedure be changed/moved, it is incumbent upon that party to present a suitable alternative for consideration through the FAA Instrument Flight Procedures Gateway online at https://www.faa.gov/air_traffic/flight_info/aeronav/procedures/.

2.1 Return to historical use of the BDEGA East downwind prior to May 2010.

Please refer to Appendix A, 1.11 for more information regarding opportunities for BDEGA aircraft to be assigned the East downwind.

2.4 The FAA provide data on Golden Gate/BDEGA lateral track locations pre-NextGen and post-NextGen and if new procedures can use headings, not tracks, in procedure design.

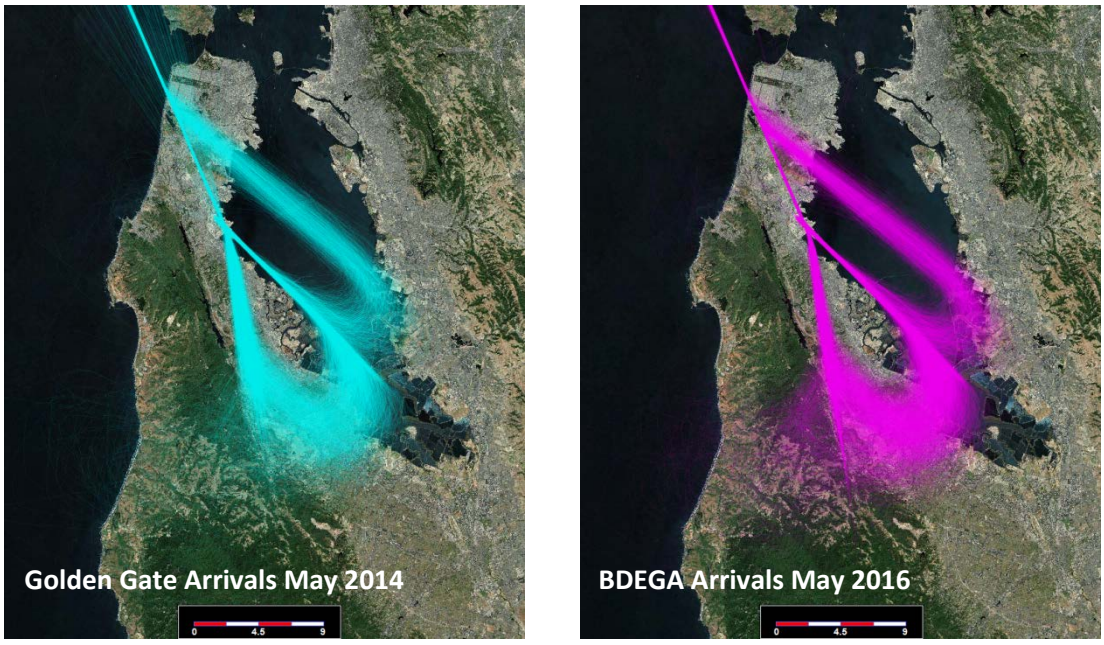

Figure A1: Comparison of Golden Gate arrivals (May 2014) and BDEGA arrivals (May 2016)

The FAA reviewed the identified arrivals: the Golden Gate and BDEGA arrivals. The Golden Gate arrival states, "…via SFO R-303 to SFO VOR/DME. Expect RADAR vectors to final approach course." Aircraft that flew this arrival navigated to the SFO VOR/DME via the SFO 303° radial, which is a conventional, or non-precision, method of navigation. Upon reaching the SFO VOR/DME, aircraft on the Golden Gate arrival were typically instructed to fly a 140° heading. Note, the Golden Gate arrival does not stipulate a 140° heading.

The BDEGA arrival states, "... track 126° to BRIXX, then on track 140°. Expect RADAR vectors to final approach course." For clarification, BRIXX is a waypoint near the SFO VOR/DME. Aircraft are instructed to "track 140°" after BRIXX. This is also a heading.

The difference between flying a heading (fly or track 140°) as opposed to proceeding to a point or navigational aid (track 126° to BRIXX) is that the latter must account for wind to arrive at the assigned point. Flying or tracking a heading are synonymous, and does not account for wind.

Therefore, aircraft that historically flew the Golden Gate arrival and that currently fly the BDEGA arrival essentially perform the same maneuver after crossing SFO/DME / BRIXX. Figure A1 (above), a review of one month of Golden Gate arrival aircraft (Teal) and one month of BDEGA arrival aircraft (Pink), supports this conclusion.

Note - Aircraft navigating via the conventional Golden Gate arrival are following a non-precision procedure, which accounts for the slightly more dispersed tracks after the SFO VOR/DME.

2.7 NIGHTTIME: Every effort should be made for all arrivals from the north to be assigned the historical BDEGA East Downwind.

Please refer to Appendix A, 1.11 for more information regarding opportunities for BDEGA aircraft to be assigned the East downwind.

2.12 Whenever there is a single stream operation to only one runway, aircraft should approach and land only on Runway 28R.

Please refer to Appendix A, 1.17 as these share similar recommendations.

2.13 When landing single stream to 28R or landing both 28L/28R in VMC, aircraft landing 28R should be assigned noise "friendlier" approaches such as FMS Bridge Visual 28R, Quiet Bridge Visual, or RNAV (RNP) Y 28R.

Please refer to Appendix A, 1.17, as these share similar recommendations. When weather conditions and equipment/crew capabilities allow, the recommended approaches are used to the extent feasible.

2.14 NIGHTTIME: ATC should make every effort to coordinate traffic arrivals to create a single stream of traffic to land only on Runway 28R.

Please refer to Appendix A, 1.17 as these share similar recommendations.

2.18 The NIITE procedure should be flown as charted including flying over the NIITE flyover waypoint as specified in the departure procedure.

Please refer to Appendix A, 1.6, as these share similar recommendations.

2.24 NIGHTTIME: Without increasing Runway 01 departures, the RT supports the use the 050° heading from SFO Runways 01.

The FAA concurs with this recommendation to the extent operationally feasible. The use of 050° for Runway 01 departures is contained within NCT's SOP, and NCT will continue to reinforce the use of this procedure to personnel through training and briefings. Use of this procedure is highly dependent on operational activity in the airspace at the time.

This recommendation conflicts with the recommendation to increase the use of BDEGA East downwind arrivals. Please refer to Appendix A, 1.11 for more information.

A comparable OAK Rwy 30 heading down the Bay at night.

Please refer to Appendix C, 3.27 for more information regarding OAK departures down the Bay, as these share similar recommendations.

2.26 NIGHTTIME: Use of SFO's long-standing preferential runways for departure: Runways 10 then Runways 28 (TRUKN or NIITE) and then Runways 01. The TRUKN is similar to the legacy Shoreline departure up the Bay.

The FAA researched and addressed a similar question in its NorCal Initiative Phase One Report, 2.e.i. and Appendix A. While RWY 10 remains the preferred departure runway, Opposite Direction Operations (ODO) makes the use of RWY 10 for departures and RWY 28 for arrivals highly restrictive, particularly at night. Runway 28 L/R remains the second preferred departure runway, followed by Runway 01 L/R. Filed routings are dependent upon aircraft destination, as well as airport configuration. The FAA will continue to be an active participant in Round Table meetings, providing subject matter expertise in seeking solutions. In addition, the FAA has made a request to the SFO Airport to update the Fly Quiet program. Please refer to Appendix D, 2.27 for more information regarding ODO.

When aircraft use the SAHEY departure, aircraft should fly the procedure as charted and not vector over populated areas.

Please refer to Appendix A, 4.42 for information regarding the SAHEY procedure, as these share similar recommendations.

2.28 Determine if the existence of a VFR flyway or other conflicting airspace use off the coastline in the vicinity of the extended Runways 28 centerline, leads to Runway 28 straight-out departures being required to level off at 3000'.

There are VFR flyways in the vicinity of SFO, however the altitudes are below 2,100 feet and therefore would not cause Runway 28 straight out departures to level at 3,000 feet. Aircraft on the GNNRR and WESLA departures may be required to level off at 3,000 feet for safety due to aircraft that depart Runway 01 climbing above these aircraft.

Please refer to Appendix D, 2.25, as these share similar recommendations.

2.30 The CNDEL procedure should be flown as charted including flying over the CNDEL flyover waypoint and flying to the PORTE fly-by waypoint as specified in the departure procedure.

The SSTIK and CNDEL RNAV SIDs are a unique set of departures in that they serve two busy airports in close proximity: SFO and OAK respectively. Aircraft routes have separation criteria, per FAA regulations, that require aircraft to either be separated laterally or vertically. Lateral separation is the preferred method, as both aircraft can simply be instructed to climb to an assigned altitude. Vertical separation is much more complicated from a safety perspective as it requires more controller instructions. Higher aircraft can be instructed to climb to an assigned altitude, lower aircraft must be 'stepped-up' (leveled at an altitude) to ensure that the lower aircraft does not out-climb and violate the vertical separation requirements with the preceding aircraft. Being stepped-up complicates the matter even further for each subsequent aircraft, requiring them to be stepped-up as well, and so on. Additionally, the fluctuations in an aircraft's power and equipment settings while being stepped-up has the potential for a greater noise impact than that of an aircraft in an unrestricted climb.

Another factor to consider is frequency congestion. Frequency congestion is a term used in ATC to describe the limitations of voice communications on an assigned frequency. A single controller must issue individual control instructions to multiple aircraft in a limited amount of time, while allowing time for that aircraft to respond that they received the instruction (termed a 'readback'). If an aircraft would like to put in a request with ATC, they must wait for a gap in broadcasts. More than one broadcast at the same time (controller/pilot or pilot/pilot) is referred to as 'stepping' on each other, the result typically being incomprehensibly jumbled words. The instruction and/or 'readback' must then be re-broadcast. A high number of instructions that must be issued in a short amount of time and their associated 'readbacks', impeded by pilot requests and/or aircraft stepping on each other results in frequency congestion. 'Stepping-up' multiple aircraft on a procedure, such as the SSTIK and CNDEL SIDs, presents greater opportunities for frequency congestion.

If lateral separation is removed as an option, the only method to alleviate vertical separation is to restrict the rate of departures from the airport(s). This course of action creates delays at the airport(s) that has an overall negative effect on the airport's operations; including gate scheduling, holding aircraft on the ground, etc. These effects are tangible, as discussed in Appendix A, 1.6, and those delays are occurring during the time period when SFO and OAK have their *lowest* volume of traffic.

When departures from SFO and OAK allow for aircraft to fly the SSTIK and/or CNDEL procedures as published, to the extent feasible those are aircraft are instructed to do so. However, when lateral or vertical separation cannot be maintained, oftentimes the safest (with regards to frequency congestion) and most efficient (with regards to airport delays) way to control these aircraft is to use lateral separation - achieved by vectoring the aircraft to maintain lateral separation.

If vectoring over the Bay and Ocean, use NIITE and GOBBS for aircraft routing.

Please refer to Appendix C, 3.23 for more information regarding the recommendation to route aircraft via SSTIK / CNDEL to the Pacific Ocean and the GOBBS waypoint.

2.37 SSTIK: Avoid non-safety vectoring prior to SEPDY waypoint.

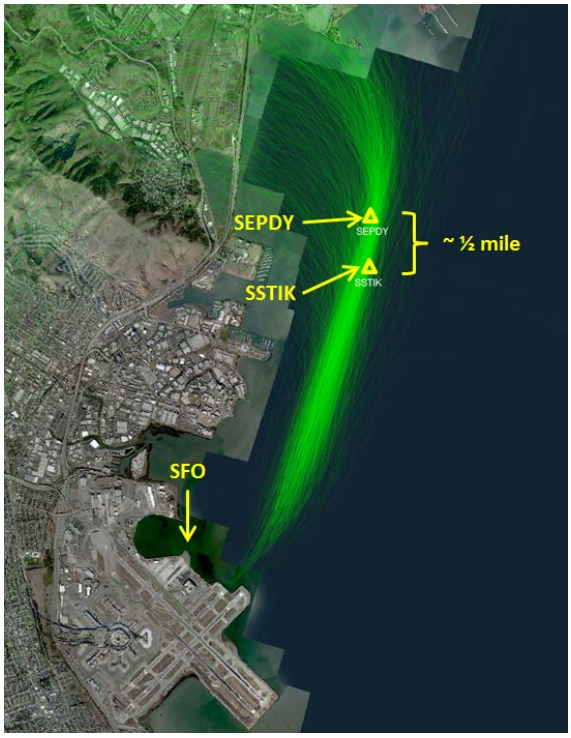

Figure A2: SEPDY Reporting Point relative to SSTIK waypoint.

SEPDY is a reporting point from the conventional PORTE and OFFSHORE departure procedures. The SSTIK RNAV departure, which serves as PORTE and OFFSHORE's replacement for nearly all southbound aircraft, does not include the SEPDY reporting point. While not a part of the SSTIK departure procedure, the point in space that is SEPDY already sees the majority of SSTIK departures passing through it, as illustrated above in Figure A2.

Aircraft are allowed to climb unrestricted when the procedure allows for it and there is no conflicting traffic. Aircraft that fly this procedure, as with other procedures, use the aircraft's FMS to follow the procedure's requirements, while also safely accounting for the individual aircraft characteristics, e.g. heavier aircraft typically are slower to climb and take longer to turn than lighter aircraft – the FMS accounts for this.

Avoid vectors down the Peninsula to waypoints beyond PORTE.

Please refer to Appendix A, 2.30 for more information regarding why aircraft are vectored prior to PORTE, as these share similar recommendations.

2.42 The SFO Airport and the SFO RT will support the FAA in their efforts. The RT will provide data regarding land use and terrain height for areas throughout the RT region to assist NCT in using less sensitive noise areas for vectoring. SFO and RT will work with airline representatives to encourage use of "noise-friendlier" options for flight planning and operations. The RT will provide community input to the FAA and will make recommendations to the FAA based on community consensus for changes.

NCT will continue to be an active participant in Roundtable meetings, providing subject matter expertise in seeking solutions.

3.1 For daytime BDEGA and other arrivals from the north, use all available opportunities to assign arrivals from the north to an east downwind "down the Bay."

Please refer to Appendix A, 1.11 for more information regarding opportunities for BDEGA aircraft to be assigned the East downwind.

3.3 NIGHTTIME: Every effort should be made to use the Bay for 100% of the arrivals from the north and west, use the east downwind or the "down the Bay" procedure.

Please refer to Appendix A, 1.11 for more information regarding opportunities for BDEGA aircraft to be assigned the East downwind.

Please refer to Appendix D, 2.10 for information regarding arrivals from the West (Oceanic), as these share similar recommendations.

3.6 Avoid flight over noise-sensitive land uses as much as feasible, even if it means a few additional track miles.

Please refer to Appendix A, 1.28, as these share similar recommendations.

3.11 Compare the previous Golden Gate arrival with the current BDEGA arrival to determine what changes have been made in actual flight tracks with regard to location of lateral paths, narrowing of path and concentration of aircraft.

Please refer to Appendix A, 2.4, as these share similar recommendations.

3.12 Research reasons for the continued increased use of the BDEGA west leg from May 2010 – present.

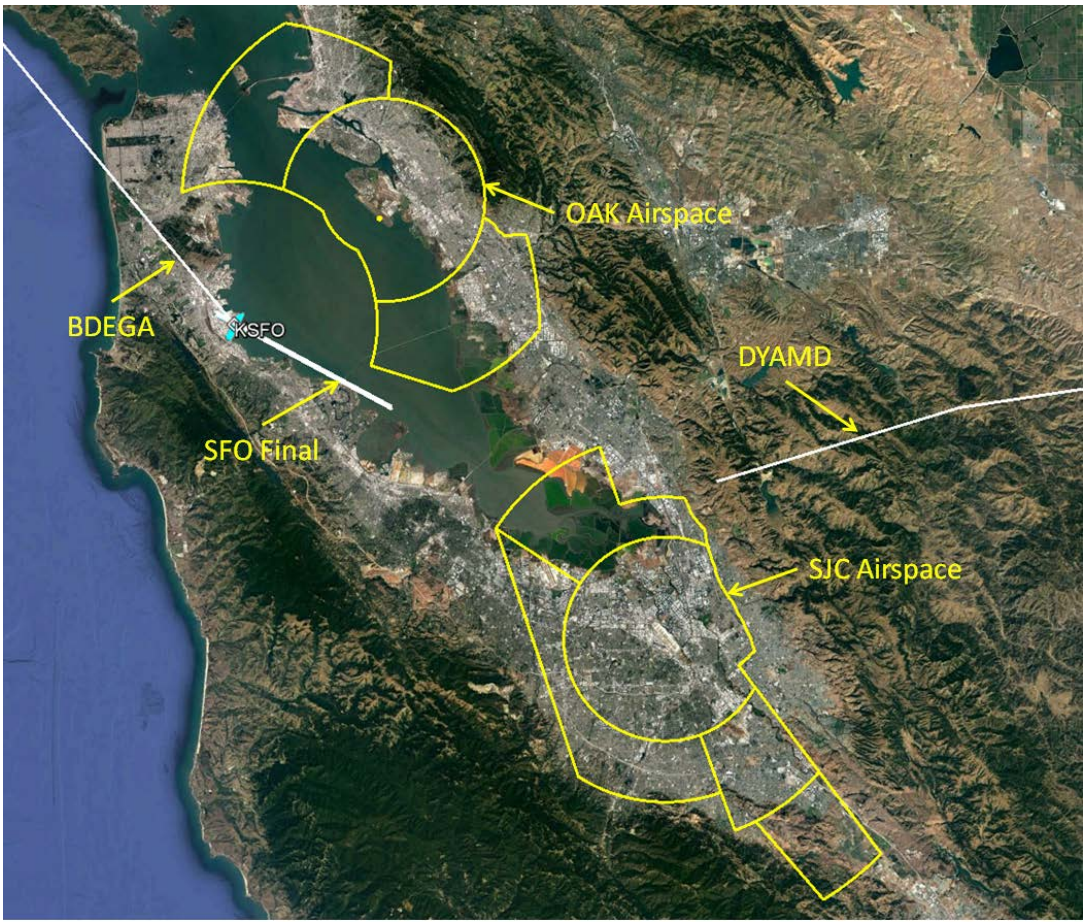

Figure A3: BDEGA / DYAMD / Bay Area Airspace

SFO operations have increased 4% from 2014 to 2016, with an 18% and 4% increase in the BDEGA and DYAMD arrivals, respectively. It is important to understand that this increase in volume and the times of day that they fly is a result of Air Carrier scheduling. The FAA's role is to safely manage these aircraft from the time they push back from their departure airport jet way to the time that they reach their arrival airport jet way.

As noted in Figure A3 and in previous meetings with the Select Committee and SFO Roundtable, the ability to route a BDEGA arrival to the East downwind is dependent on the density of aircraft on the DYAMD arrival and the volume of traffic landing at OAK. Straight-in aircraft, as aircraft on the DYAMD arrival are to SFO, largely have priority over aircraft on the downwind. The reason for this is DYAMD aircraft are constrained by surrounding airspace to the North and South (OAK and SJC, respectively), and vectoring aircraft on the straight-in affects every trailing aircraft in the line – increasing the controller's workload significantly. The same is true, to a smaller degree, of aircraft on the East downwind. This leg also has the constraint of OAK airspace to the North and the SFO Final to the south, leaving very little room to maneuver aircraft for a sequence. Because of these two limiting factors, aircraft on the BDEGA can only be routed

to the East downwind when a suitable space is present on the DYAMD arrival that will allow for minimal maneuvering of the BDEGA aircraft. If there is no gap present, the BDEGA aircraft must be routed to the West downwind. When traffic levels allow, a single stream to SFO Runway 28R is implemented, to include vectoring BDEGA arrivals to the East Downwind.

3.13 Whenever there are arrivals to both Runway 28L and 28R, and VMC conditions allow, aircraft for Runway 28R should be assigned to fly the FMS Bridge Visual Runway 28R or RNAV (RNP) Runway 28R (as capable), Quiet Bridge Visual or other noise friendlier approach to land on Runway 28R.

Please refer to Appendix A, 2.13, as these share similar recommendations.

3.14 Regardless of the time of day, and when conditions and traffic allow, whenever there is a single stream operation to only one runway, aircraft should arrive only on Runway 28R and should be assigned to fly the FMS Bridge Visual 28R or RNAV (RNP) Rwy 28R (as capable), Quiet Bridge Visual or other "noise friendlier" approach to land on Runway 28R.

Please refer to Appendix A, 1.17 and 2.13, as these share similar recommendations.

3.15 NIGHTTIME: Make every effort to coordinate traffic arrivals to create a single stream of traffic to land only on Runway 28R.

Please refer to Appendix A, 1.17, as these share similar recommendations.

3.17 The SFO Roundtable will work with NCT management to illustrate the importance of the use of Runway 28R instead of Runway 28L during periods of single stream operations and the critical nature of nighttime operations which might require managing arrival traffic to create a single stream of traffic to 28R.

NCT will continue to be an active participant in Roundtable meetings, providing subject matter expertise in seeking solutions.

Please refer to Appendix A, 1.17 for more information regarding single stream operations to Runway 28R.

3.18 The SFO Roundtable will provide information and community input to the FAA regarding the process of creating, if feasible, of dual satellite-based Runway 28L and 28R offset approaches closer to the middle of the Bay.

NCT will continue to be an active participant in Roundtable meetings, providing subject matter expertise in seeking solutions.

The FAA has no plans for creating a dual satellite-based Runway 28L and 28R offset approach. Please refer to Appendix D, 2.15 for more information.

3.20 Keep aircraft on the NIITE procedure as much as possible to reduce vectoring.

Please refer to Appendix A, 1.6, as these share similar recommendations.

3.22 While not increasing the actual number of aircraft using Runway 01 L/R, for those aircraft using Runways 1L/1R, continue to use the 050° heading option for southbound flights at night instead of the SSTIK procedure for south-bound departures.

Please refer to Appendix A, 2.24, as these share similar recommendations.

3.25 The SFO Roundtable will provide input regarding the new southbound transition and will elicit community input and response to the design of the new NIITE southbound transition and Runway 10 L/R NIITE authorization.

NCT will continue to be an active participant in Roundtable meetings, providing subject matter expertise in seeking solutions.

Please refer to Appendix C, 3.23 for more information regarding a NIITE southbound transition.

The FAA has no plans for a Runway 10 L/R NIITE authorization. Please refer to Appendix D, 2.21 for more information.

3.26 NIGHTTIME: Use the 050° heading at night to the maximum extent feasible for aircraft departures to southern destinations instead of the SSTIK departure procedure.

Please refer to Appendix A, 2.24, as these share similar recommendations.

3.28 NIGHTTIME: Continue flying the 050 heading when able during nighttime hours.

Please refer to Appendix A, 2.24, as these share similar recommendations.

3.30 Maintain the existing SFO ANAO nighttime preferential runway use in place, including Runway 10 L/R as the preferred nighttime runway for takeoffs.

Please refer to Attachment A, 2.26, as these share similar recommendations.

Aircraft using the SAHEY departure should not be vectored and stay over the bay.

Please refer to Appendix A, 4.42, as these share similar recommendations.

3.32 When Runway 28 L/R must be used for nighttime departures, the SFO Roundtable requests use of the GAP SEVEN departure that does not have a top altitude restriction.

The GAP SEVEN departure, which does not have a published 3,000 foot altitude restriction, is a non-RNAV departure procedure and is used as much as possible. However, when traffic dictates, these aircraft must be stopped at 3,000 feet as well.

Please refer to Appendix D, 2.25, as these share similar recommendations.

3.33 Determined if any VFR flyway results in Runway 28 straight-out departures being assigned a 3,000' altitude restriction.

Please refer to Appendix A, 2.28, as these share similar recommendations.

3.36 The SFO Roundtable will provide information to the FAA to assist in a review of options for aircraft to use Runway 10 L/R that does not use the same flight path as a Runway 28 L/R arrival.

NCT will continue to be an active participant in Roundtable meetings, providing subject matter expertise in seeking solutions. However, Opposite Direction Operations (ODO) criteria are highly restrictive due to its inherent safety risks.

The FAA has no plans, and is restricted from creating, procedures that involve Opposite Direction Operations. Please refer to Appendix D, 2.27 for more information.

3.38 The Roundtable will work with the FAA to re-design the SAHEY departure to mirror historic flight tracks that keep aircraft over the bay.

NCT will continue to be an active participant in Roundtable meetings, providing subject matter expertise in seeking solutions. However, Opposite Direction Operations (ODO) criteria are highly restrictive due to its inherent safety risks.

The FAA has no plans, and is restricted from creating, procedures that involve Opposite Direction Operations. Please refer to Appendix D, 2.27 for more information.

3.42 NIGHTTIME: The RT supports the use the 050° heading from SFO.

Please refer to Appendix A, 2.24, as these share similar recommendations.

Comparable OAK Rwy 30 heading down the Bay.

Please refer to Appendix C, 3.27 for more information regarding OAK departures down the Bay, as these share similar recommendations.

Runway 01 departures should not be increased; rather, use a 050 heading in lieu of flying a procedure over the peninsula for aircraft with southern departures.

Please refer to Appendix A, 2.24, as these share similar recommendations.

3.44 NIGHTTIME: All nighttime approaches be managed into a "single stream" of airplanes, that (wind/weather permitting) this single stream of planes only uses noise abatement approaches such as the Runway 28R FMS Bridge Visual, the Runway 28R Quiet Bridge, or the RNAV (RNP) 28R and that this single stream of planes landing only on Runway 28R. If conditions require an ILS approach, it is requested that only Runway 28R be used.

Please refer to Appendix A, 1.17 and 2.13, as these share similar recommendations.

3.45 NIGHTTIME: BDEGA and other arrivals from the north be assigned only to the BDEGA East downwind (or similar) for a "noise-friendlier" approach to only 28R.

Please refer to Appendix A, 1.11, as these share similar recommendations.

3.50 The SFO RT will work with airline representatives and the FAA to request that all oceanic nighttime arrivals from the north file for and fly an approach which utilizes the Bay (such as the BDEGA East downwind) and substantially avoids flight over non-compatible land uses.

The FAA understands this recommendation to mean Oceanic arrivals from the North would essentially be BDEGA arrivals. Please refer to Appendix A, 1.11, as these share similar recommendations.

3.52 NIGHTIME: The SFO Roundtable will work with airline representatives to encourage them to file for SFO arrivals that avoid flight over sensitive areas. If inbound aircraft choose to file for BDEGA, it is requested that only the BDEGA East downwind be assigned to them.

Please refer to Appendix A, 1.11, as these share similar recommendations.

3.53 The SFO Roundtable will provide any required community data as well as community input to the FAA to support all efforts to improve noise impacts during the important night time hours.

NCT will continue to be an active participant in Roundtable meetings, providing subject matter expertise in seeking solutions.

3.54 In the existing procedure, fly the planes on the charted CNDEL departure as published so that they fly over the CNDEL flyover waypoint THEN over the PORTE waypoint as charted.

Please refer to Appendix A, 1.8, as these share similar recommendations.

Please refer to Appendix A, 2.30 for a detailed explanation of using vectors for climbing aircraft.

3.57 In the existing procedure, avoid vectoring aircraft for non-safety reasons prior to the CNDEL waypoint.

Please refer to Appendix A, 1.8, as these share similar recommendations.

Please refer to Appendix A, 2.30 for a detailed explanation of using vectors for climbing aircraft.

3.58 Assignment of southbound vectors be delayed until the aircraft has reached the ocean and PORTE waypoint to reduce aircraft flying over San Francisco and down the Peninsula.

Please refer to Appendix A, 1.8, as these share similar recommendations.

Please refer to Appendix A, 2.30 for a detailed explanation of using vectors for climbing aircraft.

3.62 The Roundtable is available to provide community input to the FAA with the use of modeling or other tools to determine the effects of other noise friendlier departure paths for flights using the OAK CNDEL departure, especially for CNDEL southbound flights. Such options might include (but are not limited to) flight over the waters of the Bay to the Pacific Ocean or flight over the Bay to SFO and then over the Peninsula (primarily Millbrae and Burlingame) to PORTE or flight down the Bay as far south as feasible, or other options that may become known.

NCT will continue to be an active participant in Roundtable meetings, providing subject matter expertise in seeking solutions.

The FAA does not support **CNDEL flights being routed up the Bay to the Pacific Ocean** (GOBBS and south). Please refer to Appendix D, 2.31 for more information.

Flight over the Bay to SFO and then over the Peninsula to PORTE is essentially how CNDEL is flown today.

For more information on **flight down the bay as far south as feasible**, please refer to Appendix C, 3.27.

3.63 Avoid issuing any non-safety vectors to aircraft for as long as feasible and no earlier than when an aircraft is actually over the SEPDY flyover waypoint. After reaching the designated waypoint or intersection, continued flight up the Bay (to attain higher altitude) is desirable. When a left turn is to be made, a relatively wide dispersal of flight paths to the ocean is preferred.

In accordance with the NorCal Phase One Report, 2.a.ii, 99% of aircraft flying the STTIK departures in October 2016 are within 1NM of the SSTIK waypoint, as per the procedure. Aircraft that fly this procedure, as with other procedures, use the aircraft's FMS to follow the procedure's requirements, while also safely accounting for the individual aircraft characteristics, e.g. heavier aircraft typically are slower to climb and take longer to turn than lighter aircraft – the FMS accounts for this. NCT will continue to reinforce not intervening with aircraft until after the SSTIK waypoint to personnel through training and briefings.

Please refer to Appendix A, 2.37, as these share similar recommendations.

Please refer to Appendix A, 2.30 for a detailed explanation of using vectors for climbing aircraft.

It should be noted that, for criteria, an IFP Gateway entry has been made to move the SSTIK waypoint 0.44 NM East-Southeast from its present position. For a more detailed explanation, please refer to Appendix D, 2.38.

3.64 Flights should be directed to fly as high as possible over the SEPDY waypoint (over the bay), allowing them to be higher in altitude before turning over land, with a steady altitude increasing as they make their way to the ocean.

Please refer to Appendix A, 2.37 and 3.63, as these share similar recommendations.

Please refer to Appendix A, 2.30 for a detailed explanation of using vectors for climbing aircraft.

It should be noted that, for criteria, an IFP Gateway entry has been made to move the SSTIK waypoint 0.44 NM East-Southeast from its present position. For a more detailed explanation, please refer to Appendix D, 2.38.

3.65 Avoid vectoring aircraft down the Peninsula direct to waypoints beyond PORTE. Aircraft should fly over the PORTE waypoint on the published procedure.

Please refer to Appendix A, 1.8, as CNDEL to PORTE and SSTIK to PORTE are similar recommendations.

Please refer to Appendix A, 2.30 for a detailed explanation of using vectors for climbing aircraft.

3.66 In the existing SSTIK procedure, use the Bay and ocean for overflight as much as possible.

Under the existing SSTIK procedure, aircraft that fly the procedure as published do overfly water as much as possible.

Please refer to Appendix A, 3.63, as these share similar recommendations.

Please refer to Appendix A, 1.28 for information regarding compatible land use.

3.67 In the existing SSTIK procedure, utilize existing areas of compatible land use for overflight.

Under the existing SSTIK procedure, aircraft that fly the procedure as published do overfly compatible land use as much as possible.

Please refer to Appendix A, 3.63, as these share similar recommendations.

Please refer to Appendix A, 1.28 for information regarding compatible land use.

3.75 The SFO Roundtable will provide community input to the FAA to find an appropriate location for moving the SSTIK waypoint east and north of its current location, again using SEPDY as a guide, so planes can fly over the Bay for a longer period of time, and thus increase altitude before heading west and flying over residential areas.

NCT will continue to be an active participant in Roundtable meetings, providing subject matter expertise in seeking solutions.

Please refer to Appendix D, 2.38, as these share similar recommendations.

3.77 Allow planes to fly the charted procedures and to reduce vectoring and when safety is not an issue as well as to use higher altitudes when flying over noise-sensitive land uses and the use of non-residential areas where feasible.

Please refer to Appendix A, 2.37 and 3.63, as these share similar recommendations.

Please refer to Appendix A, 1.8, as CNDEL to PORTE and SSTIK to PORTE are similar recommendations.

Please refer to Appendix A, 2.30 for a detailed explanation of using vectors for climbing aircraft.

Please refer to Appendix A, 1.28 for information regarding compatible land use.

4.1 The SFO Aircraft Noise Abatement (ANAO) Office and Northern California TRACON have an agreement that states when able, aircraft will cross the MENLO intersection during visual conditions at 5,000' AGL and 4,000' AGL during instrument conditions. The Roundtable requests this agreement stays in place and aircraft cross MENLO at or close to 5,000' AGL during visual conditions.

The FAA agrees with this recommendation to the extent feasible. However, it should be noted that there is no such agreement as stated that references altitudes as Above Ground Level (AGL). The FAA, for clarity and consistency, typically references altitudes in Mean Sea Level (MSL) in orders, agreements and procedures. The FAA is in ongoing discussions with the SFO Airport to update the Fly Quiet program.

For more information, please refer to Appendix E.

The Roundtable also recommends the creation of an RNAV visual approach to mirror the TIPP TOE Visual approach for 28L which would specify crossing MENLO at 5,000-feet.

Please refer to Appendix C, 2.17, as these share similar recommendations.

4.2 SSTIK to be flown to the SEPDY waypoint and vectored for safety purposes only, prior to the waypoint.

Please refer to Appendix A, 2.37 and 3.63, as these share similar recommendations.

It should be noted that, for criteria, an IFP Gateway entry has been made to move the SSTIK waypoint 0.44 NM East-Southeast from its present position. For a more detailed explanation, please refer to Appendix D, 2.38.

While awaiting the development of an OFFSHORE ONE RNAV overlay, NCT is requested to use the OFFSHORE departure procedure for flights to Southern California.

Please refer to Appendix D, 2.35 and 2.36, as these share similar recommendations.

Planes should be directed to fly as high as possible over the SEPDY waypoint (over the Bay), allowing them to be higher in altitude before turning over land, with a steady altitude increase and relatively wide dispersal of flight paths as they make their way to the ocean.

Please refer to Appendix A, 2.37 and 3.63, as these share similar recommendations.

Please refer to Appendix A, 2.30 for a detailed explanation of using vectors for climbing aircraft.

It should be noted that, for criteria, an IFP Gateway entry has been made to move the SSTIK waypoint 0.44 NM East-Southeast from its present position. For a more detailed explanation, please refer to Appendix D, 2.38.

The Roundtable requests the FAA to research other possible flight alternatives utilizing the Bay and Pacific Ocean.

As noted in Appendix D, 2.35, the YYUNG transition on the SSTIK departure has recently been modified so it no longer conflicts with military airspace over the Pacific Ocean. When this change is published, NCT will evaluate increasing the use of the transition.

4.3 The WESLA procedure should be flown as charted and allow aircraft to climb unrestricted when there are no other air traffic conflicts.

The FAA concurs with the recommendation that aircraft fly the WESLA procedure as charted to the extent operationally feasible. However, this recommendation incorrectly suggests that the WESLA departure allows aircraft to climb unrestricted as published, when in actuality the WESLA departure requires aircraft to maintain 3,000. Please refer to Appendix D, 2.25 for more information regarding eliminating or raising the 3,000' altitude limit.

4.4 CNDEL to be flown as charted and vectored for safety purposes only, not for efficiency.

Please refer to Appendix A, 1.8, as these share similar recommendations.

Please refer to Appendix A, 2.30 for a detailed explanation of using vectors for climbing aircraft.

Research other possible lateral path options for CNDEL southbound departures.

The Select Committee and the SFO Roundtable have made two recommendations for use of the available water. The first is for OAK departures to turn left and proceed down the Bay. Please refer to Appendix C, 3.27 for more information. The second recommendation regards OAK departures turn right and proceed up the Bay, over the Golden Gate Bridge to GOBBS, then proceed south over the ocean. Please refer to Appendix D, 2.31 for more information. As these recommendations make full use of the available bodies of water, the FAA has no further recommendations.

4.6 Fly the SSTIK procedure as charted to PORTE waypoint instead of clearing aircraft to subsequent waypoints downstream from SSTIK, bypassing PORTE.

Please refer to Appendix A, 2.37 and 3.63, as these share similar recommendations.

Please refer to Appendix A, 1.8, as CNDEL to PORTE and SSTIK to PORTE are similar recommendations.

Please refer to Appendix A, 2.30 for a detailed explanation of using vectors for climbing aircraft.

Create an additional waypoint over the ocean to guide aircraft over the water to PORTE, such as the legacy WAMMY waypoint associated with the OFFSHORE procedure.

Please refer to Appendix D, 2.34, as these share similar recommendations.

4.7 Fly the CNDEL to the CNDEL waypoint as charted, so as to create less interference with SSTIK.

Please refer to Appendix A, 1.8, as these share similar recommendations.

Please refer to Appendix A, 2.30 for a detailed explanation of using vectors for climbing aircraft.

The CNDEL should be flown to GOBBS, then to WAMMY, before flying to PORTE.

Please refer to Appendix D, 2.31, as these share similar recommendations.

4.8 SSTIK: That southerly vectors not be issued to an aircraft until an aircraft is actually *over* SEPDY (avoid anticipatory turns approaching SPEDY). Once past SEPDY, a relatively wide dispersal of flight paths to the ocean is preferred.

Please refer to Appendix A, 2.37 and 3.63, as these share similar recommendations.

Please refer to Appendix A, 2.30 for a detailed explanation of using vectors for climbing aircraft.

4.10 SSTIK: That existing areas of non-residential land be used for overflight.

Please refer to Appendix A, 1.28 for more information regarding compatible land use.

4.11 SSTIK: That assigning a southbound heading toward PORTE should be delayed as long as feasible including flying to the ocean before turning south.

The FAA will continue to instruct aircraft to fly the SSTIK procedure as charted to the extent operationally feasible.

Please refer to Appendix A, 2.30 for a detailed explanation of using vectors for climbing aircraft.

Please refer to Appendix D, 2.34 for more information regarding aircraft flying to the ocean.

4.12 SSTIK: That vectoring aircraft down the Peninsula direct to PORTE and to waypoints beyond PORTE should be avoided.

Please refer to Appendix A, 2.37 and 3.63, as these share similar recommendations.

Please refer to Appendix A, 1.8, as CNDEL to PORTE and SSTIK to PORTE are similar recommendations.

Please refer to Appendix A, 2.30 for a detailed explanation of using vectors for climbing aircraft.

4.14 CNDEL procedure should be flown as charted and reduce the amount of aircraft vectored.

Please refer to Appendix A, 1.8, as these share similar recommendations.

Please refer to Appendix A, 2.30 for a detailed explanation of using vectors for climbing aircraft.

CNDEL departures be allowed to fly the procedure to PORTE intersection unless safety (not efficiency) requires vectoring earlier.

Please refer to Appendix A, 1.8, as these share similar recommendations.

Please refer to Appendix A, 2.30 for a detailed explanation of using vectors for climbing aircraft.

4.15 The FAA to use this as a baseline to compare conditions in the future when reporting back to this body regarding decreasing vector traffic.

The FAA concurs with this recommendation.

The FAA research various options as alternate lateral paths for CNDEL southbound departures.

The Select Committee and the SFO Roundtable have made two recommendations for use of the available water. The first is for OAK departures to turn left and proceed down the Bay. Please refer to Appendix C, 3.27 for more information. The second recommendation regards OAK departures turn right and proceed up the Bay, over the Golden Gate Bridge to GOBBS, then proceed south over the ocean. Please refer to Appendix D, 2.31 for more information. As these recommendations make full use of the available bodies of water, the FAA has no further recommendations.

4.17 Work with SFO Noise Abatement Office on a pilot outreach program to encourage aircraft to stay over water while on approach after receiving their cleared to land instructions.

Please refer to Appendix A, 2.13, as this recommendation is similar to recommendations for use of noise-friendly approaches.

4.18 Increase controller awareness on keeping aircraft over water as much as possible, especially during late night hours and when aircraft are operating in single-stream and using RWY 28R.

Please refer to Appendix A, 2.13, as this recommendation is similar to recommendations for use of noise-friendly approaches.

Assurances from the FAA, to the maximum extent possible, not turn aircraft over affected communities prior to nine miles from the SFO VOR (9 DME) final from the airport, consistent with the NCT informal noise abatement agreement.

NCT's SOP prohibits jet aircraft executing visual approaches to be turned to join the final closer than nine miles from the runway. NCT will continue to reinforce the use of this procedure to personnel through training and briefings.

4.20 Work with SFO Noise Abatement Office on a pilot outreach program to encourage aircraft to stay over water while on approach after receiving their cleared to land instructions.

Please refer to Appendix A, 2.13, as this recommendation is similar to recommendations for use of noise-friendly approaches.

4.21 Increase controller awareness on keeping aircraft over water as much as possible, especially during late night hours and when aircraft are operating in single-stream and using RWY 28R.

Please refer to Appendix A, 2.13, as this recommendation is similar to recommendations for use of noise-friendly approaches.

4.22 Work with SFO Noise Abatement Office on a pilot outreach program to encourage aircraft to stay over water while on approach after receiving "cleared to land" instructions.

Please refer to Appendix A, 2.13, as this recommendation is similar to recommendations for use of noise-friendly approaches.

4.23 Educate controllers on keeping aircraft over water as much as possible, especially during late night hours and when aircraft are operating in single-stream.

Please refer to Appendix A, 2.13, as this recommendation is similar to recommendations for use of noise-friendly approaches.

4.24 The Roundtable requests to work with the FAA to determine where aircraft can be vectored with the least noise impact and identify locations that have the most compatible land uses for vectoring purposes.

NCT will continue to be an active participant in Roundtable meetings, providing subject matter expertise in seeking solutions.

Due to safety considerations, the FAA does not support a restriction on when ATC may or may not vector aircraft. Please refer to Appendix D, 4.31 for more information.

4.26 Oakland Center and NCT to encourage use of the RNAV (RNP) Y procedure to Runway 28R or the FMS Visual 28R to keep aircraft over the water for as long as possible.

Please refer to Appendix A, 1.17 and 2.13, as these share similar recommendations.

4.27 Educate controllers on keeping aircraft over water as long as possible on approach, especially during single-stream operations.

Please refer to Appendix A, 2.13, as this recommendation is similar to recommendations for use of noise-friendly approaches.

4.28 Work with the SFO ANAO to educate pilots on the ability to request the RNP to Runway 28R or the FMS Visual 28R, given the properly equipped aircraft and flight crew.

Please refer to Appendix A, 1.17 and 2.13, as these share similar recommendations.

4.29 Determine the ability of more aircraft to utilize the Bay for arrivals from points north instead of the peninsula. This is especially important during nighttime hours, where 100% of arrivals using the Bay is desired.

Please refer to Appendix A, 1.11 for more information regarding opportunities for BDEGA aircraft to be assigned the East downwind.

4.32 We are encouraged by the use of the NIITE procedure with a goal of 100% use from midnight to 6am and infrequent use during other nighttime hours.

Please refer to Appendix A, 1.6, as these share similar recommendations.

4.33 We continue to encourage the use of HUSSH and reduce vectors off of the HUSSH departure for the same reasons as the NIITE.

Please refer to Appendix A, 1.6, as these share similar recommendations.

4.35 Remove GNNRR TWO in references to flying aircraft over less noise-sensitive areas and the associated inclusion in procedures used over less noise-sensitive areas that total 88%.

The GNNRR departure is not listed as a noise abatement procedure in any of the FAA's orders or agreements. The NorCal Phase One Report, a.ii.(a) does list the GNNRR procedure as being used during nighttime hours. During these times, the GNNRR departure is primarily used by heavy aircraft that require the use of the long runways (Runway 28 L/R) and this procedure for safety considerations.

4.36 When available, use the GAP SEVEN departure to avoid any top altitude restrictions for aircraft departing Runway 28L/R out the gap.

Please refer to Appendix A, 3.32, as these share similar recommendations.

4.37 Aircraft use compatible land uses (such as the Bay, Pacific Ocean, and non-residential areas) for as long as possible before turning. For the SSTIK procedure, this would be using the Bay to gain altitude before turning over populated areas.

Please refer to Appendix A, 2.37 and 3.63, as these share similar recommendations.

Please refer to Appendix A, 1.8, as CNDEL to PORTE and SSTIK to PORTE are similar recommendations.

Please refer to Appendix A, 1.28 for information regarding compatible land use.

4.40 Aircraft remain on the WESLA procedure, as charted.

The FAA agrees with this recommendation to the extent feasible. Note: The GNNRR and WESLA contain a 3,000-foot altitude restriction for Runway 28 departures that is required for safety. This altitude restriction provides the required minimum vertical separation with Runway 01 departures that turn over the top of the Runway 28 departures. This restriction can be waived by ATC if there are no traffic conflicts.

4.41 The FAA to use *FAA Initiative Phase 1, Appendix B* as a baseline to compare improvements in decreasing vector traffic.

The FAA concurs with this recommendation.

4.42 When aircraft use the SAHEY THREE departure from Runway 10L/R, that aircraft are not vectored and fly the procedure as charted.

The FAA analyzed historic tracks for aircraft that filed the SAHEY procedure and found that 93% of those aircraft pass within 1 NM of the SAHEY waypoint. The FAA concurs with the recommendation that aircraft fly the SAHEY procedure as published to the extent operationally feasible. NCT will continue to reinforce the use of this procedure to personnel through training and briefings.

4.44 For departures using RWY 01L/R for departures during nighttime hours, the Roundtable requests aircraft with southern destinations use the 050 departure heading as much as possible to avoid overflights of the peninsula. The RT is not advocating for Runway 01L/R to be used more during nighttime hours.

Please refer to Appendix A, 2.24, as these share similar recommendations.

4.45 Maximum use of SFO's preferred nighttime preferential runway procedures, including using the TRUKN (up the Bay) and NIITE as replacements for the SHORELINE and QUIET departures.

The FAA concurs with this recommendation to the extent operationally feasible. Noise Abatement Procedure beginning and ending times are coordinated 'real-time' between NCT and ZOA every night, based upon airport arrival and departure demand.

4.47 When conditions permit and aircraft use the TRUKN departure off RWY 28L/R, the Roundtable requests the FAA conduct controller outreach to educate them about aircraft staying east of Highway 101.

The TRUKN departure was designed so that most aircraft that depart SFO's Runway 28 would be able to make the right turn while remaining East of highway 101. Aircraft that fly this procedure, as with other procedures, use the aircraft's FMS to follow the procedure's requirements, while also safely accounting for the individual aircraft characteristics, e.g. heavier aircraft typically are slower to climb and take longer to turn than lighter aircraft – the FMS accounts for this. This phase of flight is typically done with no communication with ATC. NCT will continue to reinforce the use of this procedure to personnel through training and briefings. A similar recommendation can be found in the FAA's NorCal Initiative Phase One Report, 2.e.iv.

4.49 The SSTIK procedure should be flown as charted, especially flying to the PORTE waypoint instead of down the peninsula to points south of PORTE.

Please refer to Appendix A, 2.37 and 3.63, as these share similar recommendations.

Please refer to Appendix A, 1.8, as CNDEL to PORTE and SSTIK to PORTE are similar recommendations.

Please refer to Appendix A, 2.30 for a detailed explanation of using vectors for climbing aircraft.

4.50 NIGHTTIME: The nighttime preferential runway program remains unchanged, and primarily use Runways 10 L/R for takeoff because they offer routing over the Bay.

Please refer to Attachment A, 2.26, as these share similar recommendations.

Don't vector aircraft on the SAHEY THREE departure.

Please refer to Appendix A, 4.42 for information regarding the SAHEY procedure, as these share similar recommendations.

4.51 NIGHTTIME: The nighttime preferential runway program remains unchanged, and the second preference is depart Runways 28 L/R and the SHORELINE, QUIET or TRUKN procedures.

Please refer to Attachment A, 2.26, as these share similar recommendations.

4.52 NIGHTTIME: The nighttime preferential runway program remains unchanged, and the third preference is depart Runways 01 L/R.

Please refer to Attachment A, 2.26, as these share similar recommendations.

4.53 Work with SFO Roundtable on future changes.

NCT will continue to be an active participant in Roundtable meetings, providing subject matter expertise in seeking solutions.

APPENDIX B: Feasible And Could Be Implemented In The Short Term **(Less Than 2 Years)**

Appendix B

1.1 Amend the SFO Class B airspace to fully contain the SERFR procedure, or any supplement or replacement.

Modification of the San Francisco Class B was initiated in January 2015. The Northern California TRACON studied the current airspace for safety and efficiency concerns. The Western Service Center and FAA HQ Airspace Policy Group evaluated the proposal and approved a review by Aviation Industry experts. The Ad-Hoc committee met, and their recommendations were incorporated into the proposal. The proposal was presented at three informal airspace meetings held in February 2017. The comments received from the public were either incorporated into the proposed design or an explanation was provided to FAA HQ as to why incorporation was not possible. FAA Legal Counsel and the FAA Office of Economic Policy are currently reviewing the proposal for legal and economic feasibility. Once the analysis is completed the proposal will be published in the Federal Register for public consideration and comment. The modified Class B airspace is scheduled to be published in August 2018.

1.20 The FAA design a new procedure for arrivals into SFO from the south using the MENLO waypoint. The recommended procedure would cross the EDDYY waypoint (or equivalent) above 6,000 feet, continue at idle power to cross the MENLO waypoint at or above 5,000 feet, and maintain idle power until the HEMAN waypoint (or other ILS 28L interception point). Such a procedure should also be designed to avoid the use of drag devices such as speed brakes.

Due to a safety issue, the SERFR procedure is in the process of being amended. MENLO, and its crossing restriction of 4,000 feet, is being removed. It's being replaced by the Initial Approach Fix (IAF) SIDBY, which will in the same vicinity of MENLO, however it will have a crossing restriction of at or above 4,000 feet. SERFR will now terminate at EDDYY, with a crossing restriction at EDDYY of 6,000 feet. Once published, aircraft that fly the SERFR procedure will proceed to EDDYY (crossing at 6,000 feet), then to SIDBY (at or above 4,000'), followed by the IF fix (HEMAN, for example). For more information, please refer to Appendix E.

2.6 The FAA study whether an increase in in-trail spacing on the BDEGA arrival will result in the decrease in vectoring over the Peninsula.

The FAA is continuously working to improve aircraft setup and sequencing between facilities. The BDEGA Arrival has the lightest traffic load (24% of SFO arrivals), as compared to the SERFR Arrival (29% of SFO arrivals) and DYAMD Arrival (39% of SFO arrivals), and as such is a candidate for this type of action.

Please refer to Appendix A, 1.11 for more information regarding opportunities for BDEGA aircraft to be assigned the East downwind.

3.9 NCT update its SOP to reflect using a "down the Bay" procedure is preferred during nighttime hours.

NCT is working to update SOP to accommodate this request as much as operationally feasible from the beginning of Noise Abatement Procedure hours until 6 am. NCT currently routes BDEGA arrivals to the East downwind to the extent operationally feasible, and SFO's Runway 28R is listed within NCT's SOP as the preferred arrival runway. NCT will continue to reinforce the use of this procedure to personnel through training and briefings.

APPENDIX C: Feasible And Could Be Implemented In The Long Term
(More Than 2 Years)

1.2 Arrivals into SFO from the south use the BSR ground track for a new NextGen procedure.

The FAA is currently following its non-rule making process outlined in the Updated NorCal Phase Two Report (See "b. Creation/Amendment of an instrument flight rule procedure")

1.3 The new NextGen procedure for arrivals into SFO from the south be implemented as soon as feasible and include the listed criteria.

In the NorCal Phase One Report, 1. f., the recommendation to revert back to the BSR ground track was deemed feasible by the FAA. The Select Committee voted 8 to 4 in favor of the recommendation to create an RNAV procedure overlaying the BSR ground track. In addition, the Select Committee provided nine sub-recommendations for the design of the new procedure. Although these sub-recommendations will be considered during the FAA's procedure design process, all Select Committee sub-recommendations are subject to the FAA's design criteria and safety/operational requirements.

Please refer to Appendix C, 1.2, as these share similar recommendations.

1.4 Within three months of completing the new procedure, the FAA will meet with the Ad-Hoc Subcommittee to review whether the new procedure has resulted in an equivalent or less DNL noise exposure along its entire route when compared to 2014 noise modeling of the BSR procedure.

This recommendation is dependent upon the outcome of the BSR RNAV Overlay. Please refer to Appendix C, 1.2, as these share similar recommendations. The FAA will continue to be an active participant in Round Table and/or Ad-Hoc Subcommittee meetings, providing subject matter expertise in seeking solutions.

1.5 The FAA search for and develop a new flight procedure for arrivals into SFO from the south that includes the listed criteria.

Please refer to Appendix C, 1.2, as these share similar recommendations.

1.7 NIGHTTIME: Nighttime SSTIK departures use the NIITE procedure up to the NIITE waypoint, which is in the Bay north of the Bay Bridge, then the aircraft would head west out over the Golden Gate Bridge.

Please refer Appendix C, 3.23, as these share similar recommendations.

1.9 Use new, more effective, time-based flow management tools currently in development to allow for better sequencing (i.e., spacing) of aircraft to reduce the percentage of aircraft that are vectored or held prior to the final approach path to SFO.

The FAA is continuously finding better and more efficient ways to manage the NAS. Through technology and innovation, programs are being developed to adjust capacity/demand imbalances at select airports, departure fixes, arrival fixes and en route points across the NAS. As newer technology and more effective programs become available, the FAA is committed to incorporate needed improvements into the NAS to reduce impacts to local communities.

1.14 Revise the Woodside VOR Ocean Tailored Arrival to honor the existing noise abatement procedure to cross the Woodside VOR at 8,000 feet.

The FAA is in the process of creating an overlay of the OTA. The new procedure will be an OPD called the PIRATE STAR which will replace the OTA. To track the development of this new procedure, visit the FAA Instrument Flight Procedures Gateway online at https://www.faa.gov/air_traffic/flight_info/aeronav/procedures/.

1.31 Following implementation of changes to the current arrival route for aircraft from southern destinations, the FAA shall consider a new BRIXX procedure that maintains the highest possible altitude at the point where it (BRIXX) intersects the new arrival route from the south. The FAA shall review any proposed new BRIXX procedure with any successor committee.

This recommendation is dependent upon the outcome of the BSR RNAV Overlay. Please refer to Appendix C, 1.2, as these share similar recommendations.

2.17 Create a Visual Approach for Runway 28L with a MENLO crossing altitude at or above 5,000' MSL.

NCT supports the development of an RNAV visual approach to SFO's Runway 28L. Due to safety considerations and current criteria, development of this type of procedure is on hold. The FAA is currently evaluating methods for overcoming these concerns.

For more information, please refer to Appendix E.

2.19 NIGHTTIME: Create a south transition (GOBBS and south) for the NIITE/HUSSH that keeps traffic over the Bay and ocean until a high altitude is attained.

Please refer Appendix C, 3.23, as these share similar recommendations.

2.20 NIGHTTIME: While awaiting the development of a NIITE/HUSSH SOUTH transitions, NCT is requested to use the NIITE DP track to GOBBS and then vectors from GOBBS southbound (keeping offshore) at least until PORTE or further south.

Please refer Appendix C, 3.23, as these share similar recommendations.

2.29 Use Bay and Pacific Ocean for overflights as much as possible. From CNDEL, direct aircraft to GOBBS and south.

Please refer Appendix C, 3.23, as these share similar recommendations.

2.33 NIGHTTIME: For OAK southbound aircraft, until the NIITE southbound transition has been finalized, use of the NIITE/HUSSH DP or vectors to replicate the NIITE/HUSSH DP with a vector from GOBBS to the south to remain offshore.

Please refer Appendix C, 3.23, as these share similar recommendations.

For OAK southbound aircraft, a left turn down the Bay is supported.

Please refer to Appendix C, 3.27 for more information regarding OAK departures down the Bay, as these share similar recommendations.

3.19 NIGHTTIME: While undergoing the formal process of amending the NIITE departure to add a transition for southbound aircraft past GOBBS and adopting GOBBS for use, the Roundtable requests that NCT work with the SFO RT to determine if an interim informal procedure based on TRACON vectors might be feasible to approximate the NIITE departure which would be heading up the Bay to NIITE, then west to GOBBS, then south-south-east to the PORTE or WAMMY waypoint, remaining clear of the shore.

Please refer to Appendix C, 3.23, as these share similar recommendations.

3.23 The SFO RT formally requests that the FAA add a transition to the NIITE departure for southbound aircraft.

As noted in this recommendation, the NorCal Phase One Report, 2.f.i determined that a south transition for the NIITE departure procedure for southbound destinations was feasible. However, as explained on numerous occasions, the following issues remain: **Congestion, Noise Shifting** and **Flying Distance.**

> **Congestion.** This recommendation is asking for nighttime southbound aircraft that normally get routed via SSTIK / CNDEL to instead be routed via the NIITE procedure to NIITE, GOBBS, then PORTE and south (or some similar version thereof). As the system stands now, SFO can clear SSTIK and NIITE aircraft for takeoff *simultaneously* because, simply put, their courses immediately diverge after takeoff (SSTIK departures turn left and south, NIITE departures continue north). Routing SSTIK departures north via NIITE/GOBBS will eliminate the ability to depart two aircraft simultaneously because there would be no divergence after takeoff (both aircraft would continue north). Instead of launching two aircraft at the same time, only one aircraft would be allowed to depart. Additionally, because these aircraft would all be departing on the same procedure, the Tower would be required to delay subsequent departures until the required 5 mile in-trail separation was established.
>
> This would have a significant impact to delays at both SFO and OAK airports. It would be similar to merging three lanes of highway traffic to one (SSTIK/NIITE/CNDEL to

NIITE). Greatly increasing the volume of aircraft from these three available departures to the only departure corridor (NIITE), without the ability to vector aircraft off the corridor early (except for safety), will have the effect of backing up traffic on the ground awaiting departure at both SFO and OAK airports. This will likely affect the times that the Noise Abatement Procedures would be effective as well.

Noise Shifting. While routing SSTIK departures north to NIITE/GOBBS and south will likely reduce noise for some communities on the peninsula, it will likely shift that noise to communities near the Bay and Golden Gate Bridge. Please refer to the FAA's comment in response to 1.28

Flying Distance. Routing SSTIK and CNDEL aircraft north to NITTE/GOBBS and south will add approximately 32 flying miles compared to the SSTIK departure, and approximately 20 flying miles compared to the CNDEL departure.

As noted previously by the FAA, while this recommendation is feasible, the FAA will not move forward on this recommendation until issues of **Congestion, Noise Shifting** and **Flying Distance** have been addressed with the airline stakeholders and the affected communities by the Select Committee and/or SFO Roundtable.

Once implemented, the 050° down the Bay option is still preferred.

Please refer to Appendix A, 2.24, as these share similar recommendations.

3.27 The use of a comparable heading down the Bay for southbound flights taking off from OAK.

OAK Southbound / Eastbound departures are currently vectored down the bay, traffic permitting, during noise sensitive hours. An IFP Gateway entry had been made to create a charted departure procedure.

This recommendation conflicts with the multiple recommendations for SFO runway 10 L/R departures to fly up the Bay (see Appendix D, 2.21). These recommendations would put aircraft flying in opposite directions while being the similar stages of climb-out.

3.39 NIGHTTIME: While awaiting the publication of this NIITE/HUSSH southbound transition, it is requested that aircraft be vectored in according with long-standing NCT procedures (SFO 330° heading up the Bay) and (SFO and OAK) out to the ocean and southbound over the Pacific Ocean.

Please refer to Appendix C, 3.23, as these share similar recommendations.

Use the 050° heading for southbound departures.

Please refer to Appendix A, 2.24, as these share similar recommendations.

3.47 The SFO Roundtable supports an immediate start to designing the southbound transition for SFO and OAK flights on the NIITE departure. This NIITE departure/southbound transition procedure will replace the SSTIK and CNDEL departures during the nighttime hours.

Please refer Appendix C, 3.23, as these share similar recommendations.

3.56 NIGHTTIME: Use the GOBBS waypoint during nighttime hours to reduce overflights of the Peninsula - (HUSSH departure).

Please refer Appendix C, 3.23, as these share similar recommendations.

4.25 Request a timeline from the FAA for implementation of this procedure (NIITE, GOBBS, WAMMY, PORTE), factoring in requirements to run the procedure through the FAA Order JO 7100.41A process.

Please refer Appendix C, 3.23, as these share similar recommendations.

4.39 Define the airspace limitations over the Golden Gate and the ocean to the west of the peninsula for placement of a waypoint to replace or augment PORTE. Present these limitations to the Roundtable in graphic and memo formats.

The Northern California Metroplex project included a noise analysis and an overall assessment of aircraft noise associated with NCTs procedures, as well as vectoring and compatible land use. During the project, the FAA engaged the public and solicited comments during the environmental review.

The FAA has the technical expertise to design safe flight paths that are within criteria, as applicable, and does not expect the public to provide expertise in this manner. If a community requests that an FAA procedure be changed/moved, it is incumbent upon that party to present a suitable alternative for consideration through the FAA Instrument Flight Procedures Gateway online at https://www.faa.gov/air_traffic/flight_info/aeronav/procedures/.

NCT will continue to be an active participant in Roundtable meetings, providing subject matter expertise in seeking solutions.

Please refer to Appendix C, 3.23 for more information regarding creating a transition that extends south from GOBBS.

APPENDIX D: Recommendations Not Endorsed by the FAA

1.15 Recommend further restrictions to prohibit any overnight crossings at the Woodside VOR below 8,000 feet.

Aircraft vectoring is a tactical decision used by ATC to establish and maintain the sequence of aircraft to the airport. Due to safety considerations, the FAA cannot support a restriction on when ATC may or may not use a vital component of its sequencing tools.

Please refer to Appendix C, 1.14 for more information about the OTA overlay, PIRATE STAR procedure.

1.19 Altitude of flights over the MENLO waypoint be 5,000 feet or higher.

During the design phase of the SERFR arrival, the major airline carriers were present in order to ensure that the SERFR would be safe for their aircraft. During those discussions it was determined that in order to accommodate the majority of aircraft into SFO, the descent gradient into RWY 28 would need to be between 2.72 º – 2.85 º. With the altitude restriction of MENLO at 4,000 feet, the descent gradient to RWY 28L is 2.85 º. The published altitude at MENLO cannot be any higher without jeopardizing the safe operation of each aircraft. This optimum descent gradient does not change in VMC or in IMC. The higher an aircraft flies while in the vicinity of MENLO, the farther away from the SFO airport the aircraft must travel in order to descend to the appropriate altitude for approach. The FAA researched and addressed a similar question in its NorCal Phase One Report, 1.a.i. and Appendix D.

For more information, please refer to Appendix E.

1.21 All air traffic in the vicinity of the MENLO waypoint (including vectored traffic from other procedures) be kept at altitudes of 5,000 feet or higher, even if not crossing directly over the MENLO waypoint.

The average altitude of vectored traffic in the vicinity of MENLO waypoint is approximately 4,600 feet MSL. Aircraft that fly in the vicinity of MENLO with the intention of landing on Runways 28L or 28R at SFO are subject to the same descent requirements of those that cross MENLO on an arrival. Those requirements are detailed in the FAA's NorCal Phase One Report, 1.a.i. and Appendix D. For safety considerations, and to fly a stabilized approach, aircraft must be descended in order to intercept (join) the Final Approach Course (FAC) at or below the glideslope (See Figure D1).

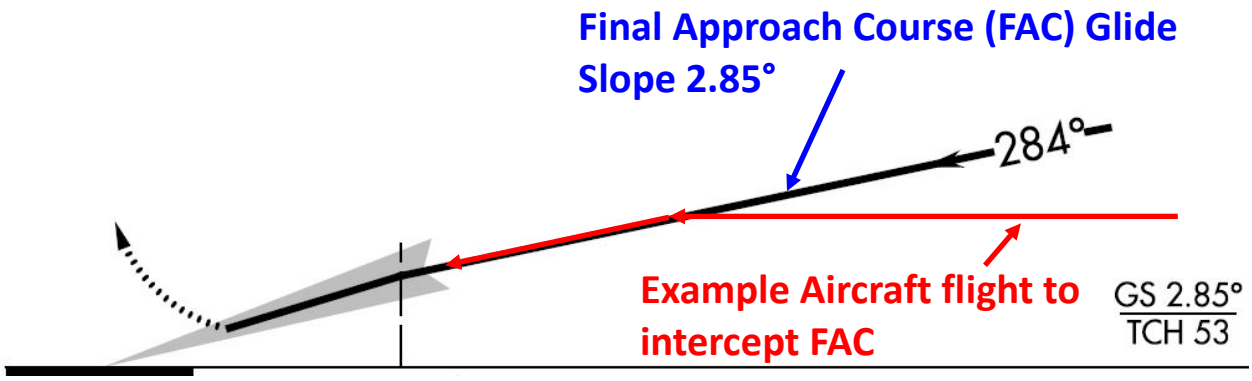

Figure D1: Intercept FAC below the glideslope

The higher an aircraft flies while in the vicinity of MENLO, the farther away from the SFO airport the aircraft must travel in order to descend to the appropriate altitude for approach. The available airspace does not allow for this, however, as the airspace to the East and Southeast of MENLO is primarily responsible for aircraft landing and departing the San Jose airport (SJC). These airspace restrictions are illustrated in Figure D2.

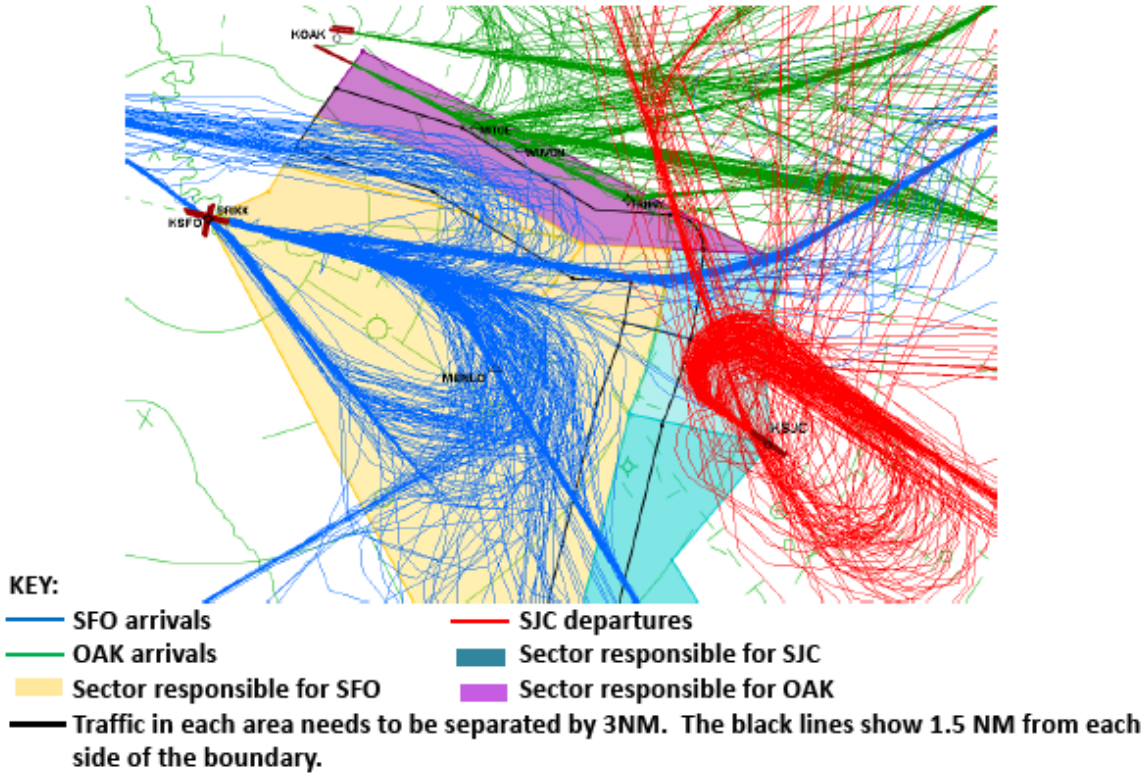

Figure D2: Airspace and tracks in the San Francisco Bay Area

For more information, please refer to Appendix E.

1.22 The FAA should review whether the angle of the 28L glide slope can be increased in order to increase the altitude at the HEMAN waypoint, or equivalent.

Please refer to Appendix D, 1.19, as these share similar recommendations.

1.23 Assess the feasibility of establishing different points of entry, over compatible land use and at high altitudes, to the final approach into SFO on the SERFR arrival (or any replacement), such as a different waypoint east or north of MENLO, or using FAITH, ROKME or DUMBA.

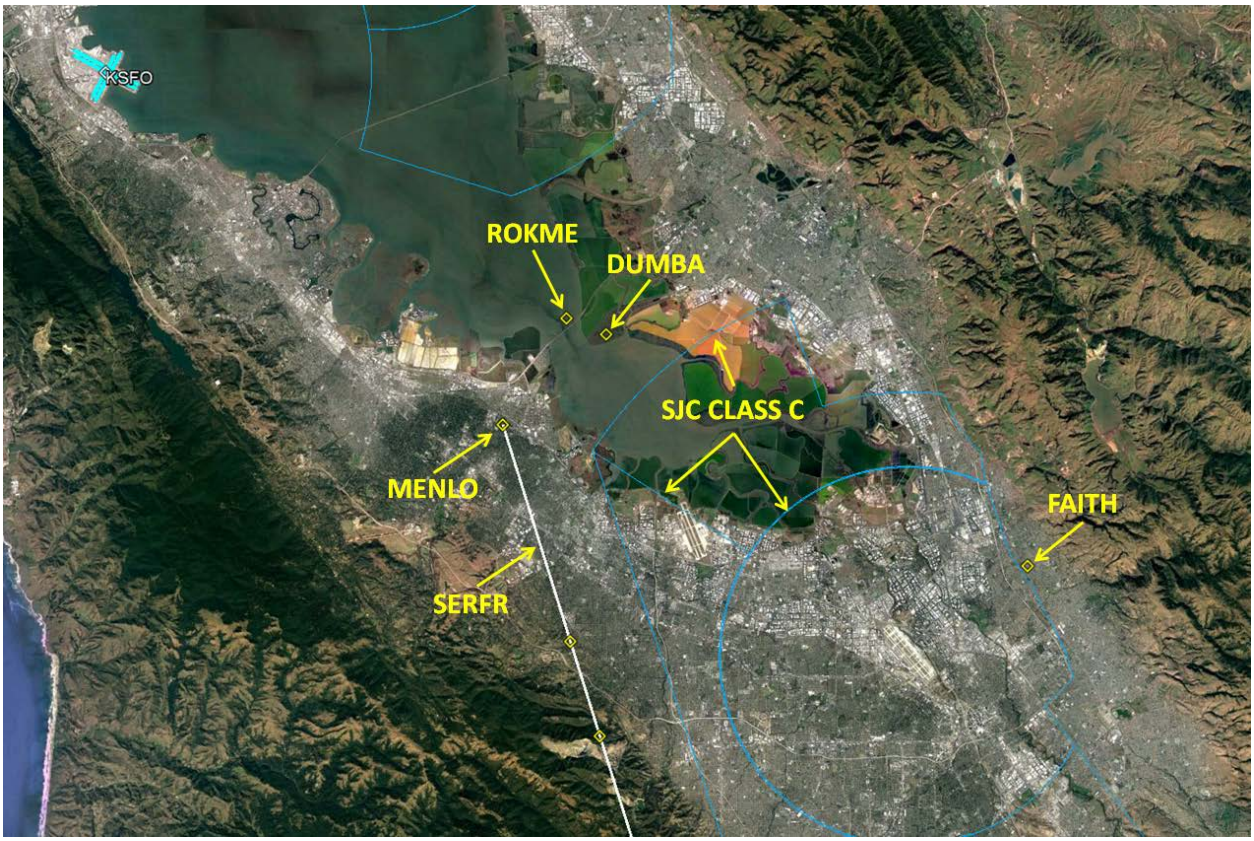

Figure D3: Airspace Limitations

Using a different waypoint east or north of MENLO, or ROKME or DUMBA.

As identified in previous meetings with the Select Committee and SFO Roundtable, the Bay Area airspace is very complicated due to the presence of three major airports in close proximity to each other. As illustrated above in Figure D3, SJC airspace lies two miles to the east of the SERFR arrival. Without coordination with the SJC controller, NCT must keep their aircraft at a minimum of 1.5 miles away from SJC's airspace. Directing aircraft to ROKME, DUMBA or points east or north, will encroach upon SJC's airspace, which the FAA cannot endorse. The FAA cannot endorse modifying SJC's Class C airspace, as that would limit SJC's ability to safely manage aircraft. For more information, please refer to Appendix E.

Using FAITH waypoint, or a new arrival that terminates east of the bay.

This recommendation conflicts with the Recommendation to increase the use of BDEGA East downwind arrivals. Routing aircraft arriving from the south to an arrival from the east would add more aircraft to an already saturated arrival stream, thereby reducing the available gaps for BDEGA arrivals to be routed to the East downwind. For more information, please refer to Appendix A 1.11 and 3.12.

Shifting traffic that historically arrives from the South to a route that terminates east of the Bay (FAITH/DYAMD) would impact routes that currently arrive from the east and north, as well as shift aircraft noise. Please refer to the FAA's comment in response to 1.28

1.24 The FAA decrease the size of the altitude windows on the SERFR procedure or path so that aircraft crossing EPICK do so at a higher altitude.

The SERFR arrival is an Optimized Profile Descent (OPD) arrival, meaning it was designed to reduce leveling off that is commonly seen during a conventional arrival. The SERFR arrival, as with all OPDs, contains narrowing sets of altitude restrictions as it progresses to the end point (MENLO) that were designed to create a smooth, stable transition from the arrival to the approach. Raising the altitudes on the arrival would jeopardize an aircraft's ability to fly a stabilized arrival / approach. Additionally, the SERFR arrival is procedurally separated from SFO / OAK departure traffic (SSTIK / CNDEL), passing below these departures. Raising the altitudes of the SERFR arrival will negatively affect the SSTIK and CNDEL departures. This is illustrated in Figure D4 (looking east @ 20° angle), where the green tracks are aircraft flying the SERFR arrival, and the pink tracks are aircraft flying the SSTIK / CNDEL departures.

For more information about the SERFR STAR Amendment, please refer to Appendix E.

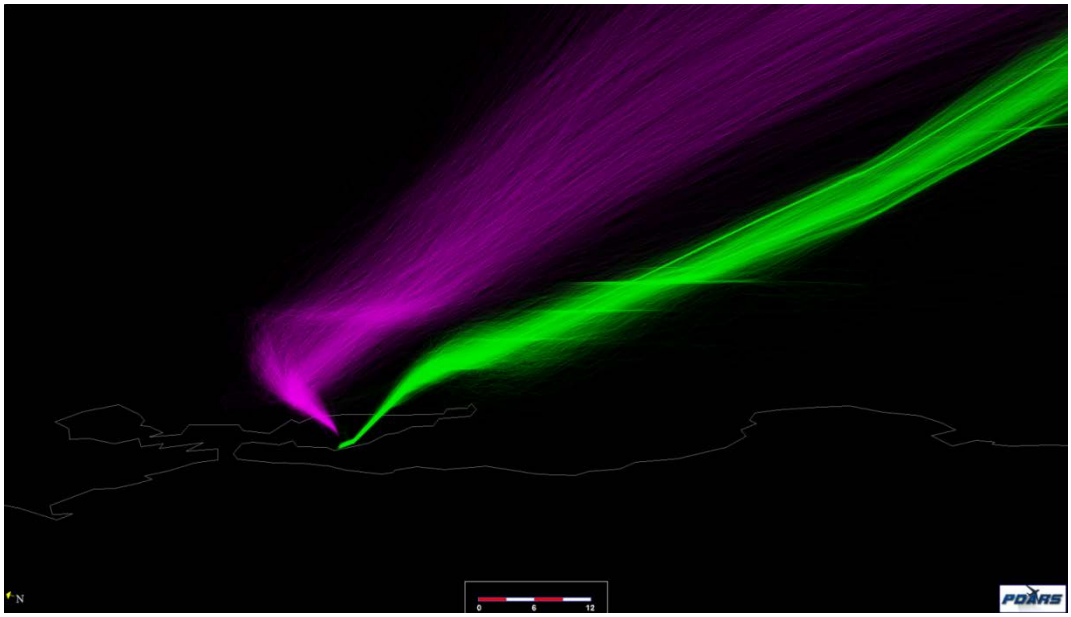

Figure D4: SSTIK / CNDEL Departures (Pink) and SERFR Arrivals (Green)

1.25 The arrival procedure for SERFR, or any subsequent route in this sub-region, be designed, if possible, to allow aircraft to reduce speed early, while over the Monterey Bay.

Speed control and vectoring are tactical decisions used by ATC to establish and maintain the sequence of aircraft to the airport. The FAA cannot support restricting when ATC may or may not use a vital component of its sequencing tools.

1.26 The FAA determine the feasibility of increasing the glide slopes of SFO Runways 28R and 28L to the maximum extent consistent with safety and the Committee's goal of noise mitigation.

Please refer to Appendix D, 1.19, as these share similar recommendations.

1.27 To the greatest extent possible, while still ensuring the safety of the aircraft, that the altitude be increased for all flight procedures/paths into and out of SFO.

Please refer to Appendix D, 1.19 and 1.21, as these share similar recommendations.

1.29 The FAA raise vectoring altitudes to maximum feasible altitudes over the Mid-Peninsula, with a focus on higher altitudes in the vicinity of the MENLO waypoint.

Please refer to Appendix D, 1.19 and 1.21, as these share similar recommendations

For more information, please refer to Appendix E.

2.2 Explain the limitations of using the BDEGA East downwind.

Please refer to Appendix A, 1.11 for information on BDEGA East downwind limitations, as these share similar recommendations.

Create an RNP arrival procedure down the bay, creating a curved arrival path over the bay.

Please refer to Appendix D, 2.3 for information on an RNP arrival procedure, as these share similar recommendations.

2.3 Reinstate the FINSH transition in order to facilitate use of the BDEGA East downwind, and create a "connection" between FINSH waypoint and a turn on to 28R for the FMS Bridge Visual, Quiet Bridge Visual or similar approach to 28R.

The Runway 28R and 28L transition (that contained the FINSH waypoint) was removed due to safety concerns. The issue stemmed from the necessity of pilots to program a transition into their FMS when issued the Standard Terminal Arrival (STAR) descent by the Center controller. However, this happens well before the TRACON controller advises the aircraft what runway and associated transition to expect – which is determined by traffic demands and sequencing needs as the aircraft gets closer to the airport. This led to a number of pilots arbitrarily selecting a transition, resulting in aircraft not flying as controllers expected, frequency congestion and confusion during their approach and landing - a critical phase of flight. The FAA does not support the reinstatement of separate runway transitions to SFO's Runway 28R and 28L.

2.5 Determine if the BDEGA West downwind can be flown at a higher altitude or over compatible land uses.

Please refer to Appendix D, 1.21 for more information regarding aircraft flying at higher altitudes, as these share similar recommendations.

Please refer to Appendix A, 1.28 for more information regarding compatible land use, as these share similar recommendations.

2.8 The FAA increase the in-trail spacing of aircraft on the SERFR arrival, flying the procedure as charted, which will decrease the need for vectoring.

The SERFR and DYAMD arrivals contain 68% of SFO's arrival traffic. The SERFR arrival typically contains aircraft arriving from points to the South and Southeast, such as LAX, SAN, PHX and MMMX (Mexico City). The DYAMD arrival typically contains aircraft from points to the East, such as DEN, ATL, BOS, EWR, JFK, LAS and ORD. These aircraft are directed to their respective arrival because it's the shortest and most efficient route. The FAA is continuously working to improve aircraft setup and sequencing between facilities.

Increase the altitude of the arrivals on the assigned routes as well as the vector traffic.

Please refer to Appendix D, 1.21 for information regarding increasing altitudes, as these share similar recommendations.

2.9 NIGHTTIME: Determine if arrivals from the south (such as on the SERFR/BSR) could instead file a route which would terminate to the east of the Bay for an approach to Runway 28R.

Please refer to Appendix D, 1.23 for information regarding a route that would terminate east of the Bay, as these share similar recommendations.

2.10 NIGHTTIME: Whenever aircraft fly over residential areas, the RT requests that every effort be made to keep aircraft at a higher altitude than typical daytime altitudes.

Please refer to Appendix D, 1.21 for information regarding increasing altitudes, as these share similar recommendations.

Consider using extra flight distance over the Bay to 28R to dissipate extra altitude (BDEGA and Oceanic to East Downwind).

Regarding extra flight distance down the Bay, complications with using extra flight distance for aircraft flying down the Bay to descend include OAK airspace to the North, the Runway 28R final to the South, and OAK final aircraft / DYAMD arrival aircraft to the East. Please refer to Appendix D, 1.19 and 1.21 for information regarding increasing altitudes, as these share similar recommendations, and the principles (regarding airspace constraints) can be applied here.

BDEGA arrivals assigned East downwind.

Please refer to Appendix A, 1.11 for information regarding BDEGA arrivals to the East downwind, as these share similar recommendations.

Oceanic arrivals to East downwind.

Procedurally changing an aircraft's downwind (West downwind to East) will result in a shift of aircraft noise. Also, please see the FAA's comment in response to 1.28

SERFR/BSR arrivals to east of the Bay.

Please refer to Appendix D, 1.23 for information regarding SERFR/BSR arrivals to east of the Bay, as these share similar recommendations.

2.11 The FAA increase the in-trail spacing of aircraft on the DYAMD arrival to allow additional opportunities for aircraft to use the BDEGA East arrival, Down the Bay.

Please refer to Appendix D, 2.8, as these share similar recommendations. Additionally, this recommendation conflicts with the Recommendation to route aircraft from the south to an arrival east of the bay (Appendix D, 1.23), which would *increase* the number of aircraft arriving from the east.

2.15 Determine the feasibility of creating dual offset (VMC or IMC) RNAV, RNAV (RNP) or other type of approach to Runway 28L and to Runway 28R.

Part of the procedure development process is to ascertain how a proposed procedure could be separated from all surrounding procedures. Such separation is required in order for the procedure to be published. This allows ATC to place an aircraft on the published procedure with the certainty that it is automatically separated from all other aircraft on other published procedures. The FAA researched publishing an offset approach to RWY 28L in its NorCal Phase One Report, 1.b.iii. and Appendix C. While this request was for a single offset approach to only Runway 28L, in actuality it was also evaluated against the existing offset approach to Runway 28R (an offset approach to Runway 28L would not operate in a vacuum). This research determined that an offset approach to Runway 28L would not have the required separation standards with the Runway 28R offset approach, making it untenable. Because this research included both the offset approaches to Runway 28L and 28R, the FAA considers this recommendation as redundant.

2.16 In VMC, aircraft should cross the vicinity around the MENLO waypoint and at or above 5,000 feet MSL. Aircraft within the vicinity of MENLO should use the 5,000' altitude when able.

Please refer to Appendix D, 1.19 and 1.21 for information regarding increasing altitudes, as these share similar recommendations.

For more information, please refer to Appendix E.

2.21 NIGHTTIME: Determine if Runway 10 take-offs can be authorized to use the NIITE. If not, create a departure to allow Runway 10 take-offs to make a left turn up the Bay to NIITE waypoint.

The NIITE departure procedure once contained a transition for both SFO Runways 01 and 10, but the Runway 10 transition was removed due to safety concerns. The issue stemmed from some pilots not correcting their FMS when their departure runway changed, resulting in the aircraft turning in the wrong direction on climb-out. The FAA does not support the reinstatement of a Runway 10 transition to the NIITE departure procedure.

2.22 NIGHTTIME: Determine if aircraft can file for SFO QUIET Departure or the OAK SILENT Departure and then be vectored in accordance with NCT SOPs out to GOBBS and then southbound.

The SFO QUIET Departure is no longer a published procedure.

Please refer to Appendix C, 3.23 for more information regarding the recommendation to route aircraft via the Pacific Ocean and the GOBBS waypoint.

2.23 NIGHTTIME: While awaiting authorization for Runway 10 departures to use the NIITE DP, the RT requests that aircraft be vectored to mirror the NIITE DP.

Please refer to Appendix D, 2.21, as these share similar recommendations. This reference applies to vectored aircraft as well, as ODO applies to all aircraft in an opposite direction configuration.

Please refer to Appendix D, 2.27 for more information regarding Opposite Direction Operations, as these share similar recommendations.

2.25 NIGHTTIME: Is there any ability to eliminate or raise the 3,000' altitude limit on straight-out departures?

The FAA cannot agree with this recommendation as the GNNRR and WESLA contain a 3,000 foot altitude restriction for Runway 28 departures that may be required for safety. This altitude restriction provides the required minimum vertical separation with Runway 01 departures that turn over the top of the Runway 28 departures. This restriction can be waived by ATC if there are no traffic conflicts.

The GAP SEVEN departure, which does not have a published 3,000 foot altitude restriction, is a non-RNAV departure procedure and is used as much as possible. However, when traffic dictates, these aircraft must be stopped at 3,000 feet.

2.27 NIGHTTIME: Using the decommissioned DUMBARTON EIGHT procedure, create either an RNAV overlay of this procedure or create a new procedure with the same fixes used as waypoints for Runway 10L/R.

The FAA does not support creating a departure procedure off Runways 10 L/R for nighttime operations. This would be counter to current FAA criteria for Opposite Direction Operations (ODO). Creating a procedure that contradicts this program is simply not permissible under ODO criteria. ODO at a busy airport, such as SFO, is rarely used due to ODO's inherent safety concerns and its necessary inefficiencies.

2.31 Determine if a revised southbound transition (with additional waypoints) for the CNDEL procedure could "contain" the flight paths further west (GOBBS and south) to allow expanded clear space for possible modification of the SSTIK departure.

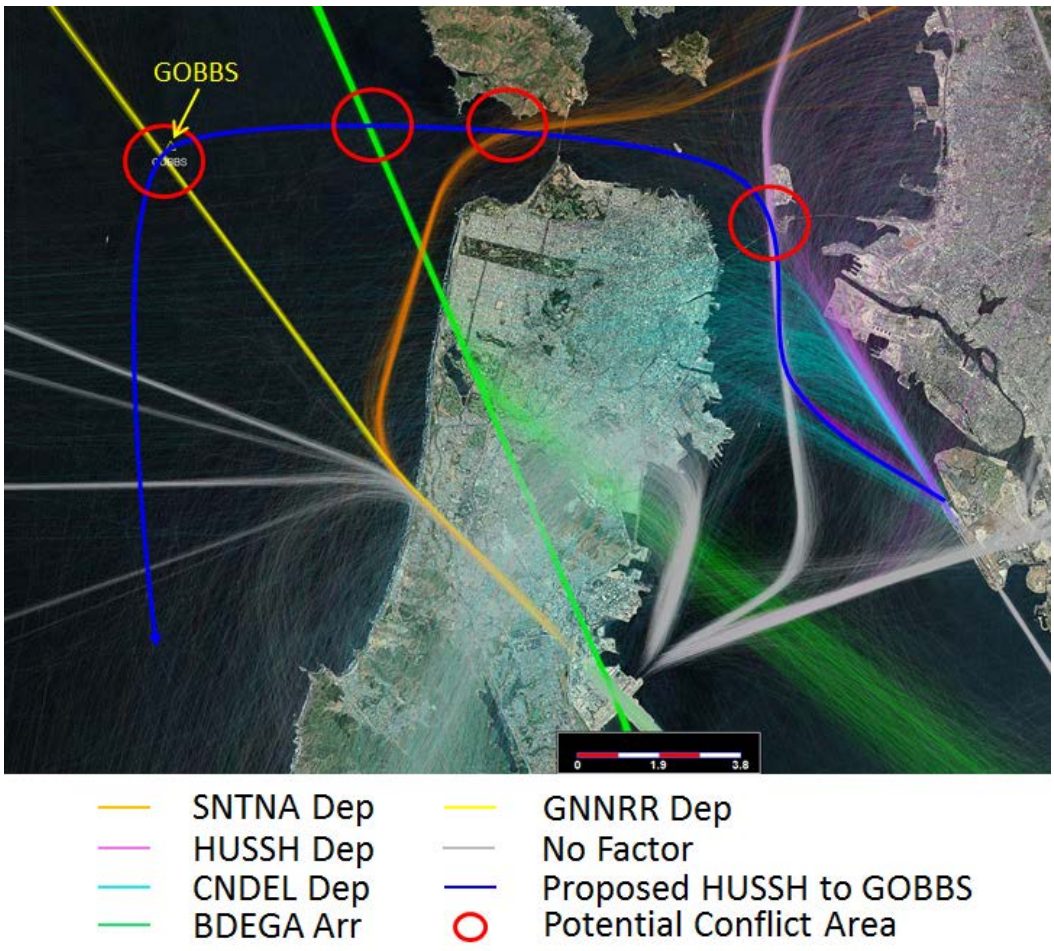

Figure D5: Graphical Depiction of Routes

In the above image (Figure D5), the teal tracks represent current CNDEL departures, while the pink tracks represent current HUSSH departures. The blue line approximates the FAA's understanding of the Roundtable's recommendation – that the CNDEL departures (teal), a day and nighttime departure procedure, be routed on a track approximating the blue line to GOBBS, then South. CNDEL, as it is published today, is designed to be laterally separated from SSTIK

departures while at the same time passing underneath BDEGA arrivals from the North. The Roundtable recommendation of rerouting CNDEL departures to a HUSSH departure with a transition to GOBBS (blue line) would put those aircraft in conflict (denoted by red circles) with multiple streams of traffic: SNTNA departures that are climbing out in the opposite direction, BDEGA arrivals, and GNNRR departures climbing out to the Northwest. Additionally, when faced with the prospect of having to fly Northwest-bound to GOBBS before turning in the direction of their destination (South / Southeast), OAK departures will likely file routes that will turn East over Oakland and its suburbs, shifting noise to those communities. The FAA does not support this recommendation.

Please refer to Appendix C, 3.23 for more information regarding shifting aircraft noise to communities near the Bay and Golden Gate Bridge, as well as increased flying distance.

2.32 Determine if a southbound transition for CNDEL could effectively use flight over bodies of water to gain altitude before flying over populated areas.

Please refer to Appendix D, 2.31, as these share similar recommendations.

2.34 Use Bay and Pacific Ocean for overflights as much as possible. From SSTIK, direct aircraft to GOBBS and south.

This request seems to have two possibilities: From SSTIK, direct aircraft west across the peninsula (similar to GNNRR) to the ocean, and then south; or from SSTIK, direct aircraft up the Bay, over the Golden Gate Bridge to GOBBS, then south.

From SSTIK, direct aircraft west across the peninsula (similar to GNNRR) to the ocean, and then south.

The current SSTIK and CNDEL departures are dependent on each other – making a change to one affects the other procedure (see Appendix A, 2.30). Routing SSTIK aircraft to the west, across the peninsula to the ocean and south would likely necessitate CNDEL departures to be routed up the Bay, over the Golden Gate Bridge to GOBBS, and south. This recommendation would introduce operational strain to an already complex radar environment. Please refer to Appendix D, 2.31, as these share similar recommendations.

From SSTIK, direct aircraft up the Bay, over the Golden Gate Bridge to GOBBS, then south.

Please refer Appendix D, 3.74, as these share similar recommendations.

2.35 Create an RNAV overlay of the OFFSHORE ONE procedure to guide aircraft higher over the Bay before turning to a waypoint located in the ocean.

The OFFSHORE departure procedure is a conventional procedure. It has been replaced by the YYUNG transition on the SSTIK and WESLA departure procedures, both of which are RNAV procedures. However, it has never been activated due its close proximity to military airspace. These procedures have since been corrected and are awaiting publication. There are no plans to develop any additional OFFSHORE RNAV overlays of the existing conventional procedure.

2.36 Use the OFFSHORE ONE procedure for aircraft departures. Higher altitude over water is preferred.

Please refer to Appendix D, 2.35, as these share similar recommendations. The Department of Transportation and the FAA Administrator have prioritized the creation of Next Generation Air Transportation System (NextGen). One of the stated goals of this activity is to develop and implement satellite-based arrival/departure procedures. Increasing the use of conventional procedures would be counterproductive to the Agency's vision and is not supported.

2.38 Move SSTIK N + E as much as feasible to allow maximum altitude gain before turning to fly over land using the historic SEPDY waypoint as a guide.

Due to a change in criteria, the SSTIK waypoint is in the process of being moved 0.44 NM to the East-Southeast of its present position. The FAA does not support moving SSTIK north due to the close proximity to OAK procedures.

Create an additional waypoint over the ocean to guide aircraft over water to PORTE such as the legacy WAMMY waypoint associated with the OFFSHORE procedure.

Please refer to Appendix D, 2.34, as these share similar recommendations.

Determine if the minimum altitude required at SSTIK can be raised before a left turn (vicinity of SSTIK).

Please refer to Appendix A, 2.37, as these share similar recommendations.

Determine if a reduced airspeed (~220kts) can be required until after established in the left turn from SSTIK so aircraft climb at a higher angle of climb approaching land.

Please refer to Appendix D, 3.71, as these share similar recommendations.

2.39 The RT requests that the FAA determine if any aircraft were assigned or re-assigned-- via preferential runway or otherwise– from one departure or arrival to a different departure or arrival.

The FAA does not track when an aircraft's arrival procedure or departure procedure is changed. These types of changes are typically undertaken for safety related reasons.

2.41 The FAA determine if upgraded radar display equipment or notations on the map using symbols would be helpful to TRACON controllers to increase the use of less impactful areas if vectoring is required for safety for departing and arriving flights.

NCT is equipped with the latest RADAR equipment available to FAA TRACONs, to include STARS, FUSION and ADS-B.

Adding notations and / or symbols to RADAR maps is not a step that is taken lightly in the FAA. Every effort is made by the FAA to reduce RADAR map clutter for safety.

3.2 Increase the in-trail spacing of aircraft on the SERFR arrival, flying the procedure as charted, which will decrease the need for vectoring.

Please refer to Appendix D, 2.8, as these share similar recommendations.

Increase the altitude of the arrivals on the assigned routes as well as the vector traffic.

Please refer to Appendix D, 1.19 and 1.21 for information regarding increasing altitudes, as these share similar recommendations.

3.4 Reinstatement of BDEGA FINSH transition in order to facilitate increased use of the east downwind ("down the Bay") to Runway 28R.

Please refer to Appendix D, 2.3, as these share similar recommendations.

3.5 Increase in-trail spacing on the SERFR Arrival, on the DYAMD Arrival (to allow an increase in the BDEGA East Downwind).

Please refer to Appendix D, 2.8, as these share similar recommendations.

Determine if an increase in the BDEGA in-trail spacing would decrease vectoring.

Please refer to Appendix A, 2.6, as these share similar recommendations.

3.7 Airlines file oceanic flight plans that follow the path of BDEGA arrival for an FAA assigned east downwind for Runway 28R (down the Bay procedure) instead of flying over the peninsula.

The FAA understands this to mean Oceanic arrivals from the West would be routed North to join the BDEGA arrival in the vicinity of SFO for an immediate transition to the East downwind. Please refer to Appendix D, 2.10, as these share similar recommendations.

3.8 Airlines file routes from the south to a point east of the Bay in order to use a noise-friendlier approach to Runway 28R.

Please refer to Appendix D, 1.23, as these share similar recommendations.

3.10 Determine if the BDEGA transition to FINSH can be reinstated. If so, determine a timeline for this revised procedure to be included for publication.

Please refer to Appendix D, 2.3, as these share similar recommendations.

3.16 Research the feasibility of creating dual offset RNAV, RNAV (RNP) or other type of approach to Runway 28L and to Runway 28R which would create two offset paths closer to the middle of the Bay with both Runway 28L path and 28R path remaining well clear of Foster City and other bayside communities until past the San Mateo Bridge when aircraft would then line up with each runway for landing.

Please refer to Appendix D, 2.15, as these share similar recommendations.

3.21 NCT use its longstanding noise abatement procedure to vector Runway 10 L/R departing aircraft up the Bay (approximate heading of 330°), then vector as needed for routes of flight such as from NIITE to GOBBS (if the destination is to the west or south), in accordance with its SOP.

Please refer to Appendix D, 2.21, as these share similar recommendations. This reference applies to vectored aircraft as well, as ODO applies to all aircraft in an opposite direction configuration.

Please refer to Appendix C, 3.23 for more information regarding the recommendation to route aircraft to the Pacific Ocean and the GOBBS waypoint.

3.24 The NIITE departure and all transitions be amended to include authorization for its safe use by aircraft taking off from Runway 10 L/R.

Please refer to Appendix D, 2.21, as these share similar recommendations.

3.29 NCT use a longstanding TRACON procedure for aircraft taking off on Runway 10 L/R by vectoring them north up the Bay (using an approximate 330°heading) and then, if westbound, vectoring them to the Pacific Ocean.

Please refer to Appendix D, 2.21, as these share similar recommendations. This reference applies to vectored aircraft as well, as ODO applies to all aircraft in an opposite direction configuration.

Please refer to Appendix C, 3.23 for more information regarding the recommendation to route aircraft to the Pacific Ocean and the GOBBS waypoint.

3.34 Create a procedure that includes the ability of aircraft to depart Runway 10 L/R on a heading that isn't in the direct path of aircraft arriving on Runway 28, such as making an immediate left turn after takeoff or flying to the east of the Runway 28 arrival path to provide lateral separation; for vertical separation, use altitude restrictions for the departing aircraft.

Please refer to Appendix D, 2.27, as these share similar recommendations.

3.35 Create a Runway 10L/R RNAV departure that mirrors the decommissioned DUMBARTON EIGHT procedure, keeping aircraft over the bay to gain altitude before turning.

Please refer to Appendix D, 2.27, as these share similar recommendations.

3.37 Consistently use the effective noise abatement procedures such as the long-standing TRACON nighttime noise abatement procedure for aircraft taking off from Runway 10, to fly an approximate 330° heading up the Bay and thence out the Golden Gate.

Please refer to Appendix D, 2.21, as these share similar recommendations. This reference applies to vectored aircraft as well, as ODO applies to all aircraft in an opposite direction configuration.

Please refer to Appendix C, 3.23 for more information regarding the recommendation to route aircraft to the Pacific Ocean and the GOBBS waypoint.

3.40 NIGHTTIME: While awaiting authorization to use NIITE departure from Runways 10, (or in the failure to obtain such authorization), the RT requests that aircraft be vectored to mirror the NIITE DP.

Please refer to Appendix D, 2.21, as these share similar recommendations. This reference applies to vectored aircraft as well, as ODO applies to all aircraft in an opposite direction configuration.

Please refer to Appendix C, 3.23 for more information regarding the recommendation to route aircraft to the Pacific Ocean and the GOBBS waypoint.

3.41 NIGHTTIME: While awaiting the publication of this NIITE/HUSSH southbound transition, determine if aircraft can file for SFO QUIET SEVEN departure or the OAK SILENT departure and then be vectored in accordance with NCT SOPs out to GOBBS waypoint and then southbound.

The SFO QUIET Departure is no longer a published procedure.

Please refer to Appendix C, 3.23 for more information regarding the recommendation to route aircraft via the Pacific Ocean and the GOBBS waypoint.

3.43 NIGHTTIME: Determine if there is any ability to eliminate the 3,000' MSL altitude restriction on straight-out departures.

Please refer to Appendix D, 2.25, as these share similar recommendations.

3.46 NIGHTTIME: when feasible, during nighttime hours and VMC conditions -- *if any flights fly over sensitive areas* -- every effort be made which would allow aircraft to remain higher than typical and are vectored so as to approach single stream using noise-friendlier approaches to land on Runway 28R.

Please refer to Appendix D, 1.19 and 1.21 for information regarding increasing altitudes, as these share similar recommendations.

Please refer to Appendix A, 1.17 and 2.13, as these share similar recommendations.

If an arrival *must* be made over Woodside (Oceanic) or the Peninsula (BDEGA) or from the south (SERFR), every effort should be made to keep aircraft higher than typical.

Please refer to Appendix D, 1.19 and 1.21 for information regarding increasing altitudes, as these share similar recommendations.

3.48 Determine if Runway 10 take-offs can be authorized to use the NIITE. If not, create a departure to allow Runway 10 take-offs to make a left turn up the Bay to NIITE waypoint.

Please refer to Appendix D, 2.21 and 2.27, as these share similar recommendations.

3.49 Reinstate the FINSH transition to the BDEGA arrival in order to facilitate increased use of the BDEGA East downwind ("down the Bay") to Runway 28R or the establishment of a similar east downwind transition if there are technical concerns with the original design.

Please refer to Appendix D, 2.3, as these share similar recommendations.

3.51 The SFO RT will work with airline representatives and the FAA to request that all nighttime arrivals from the south (SERFR) file for a routing and Arrival that would terminate east of the Bay for connection to an approach to SFO Runway 28R.

Please refer to Appendix D, 1.23, as these share similar recommendations.

3.55 Use the Bay and Pacific Ocean for overflight as much as possible. From the CNDEL waypoint, direct aircraft to a waypoint in the Pacific Ocean – potentially to the GOBBS waypoint in the ocean then to the WAMMY waypoint.

Please refer to Appendix D, 2.31, as these share similar recommendations.

3.59 Determine if the actual flight tracks of aircraft after CNDEL waypoint could be "contained" to a more limited area such as west of the eastern shore of the Bay (perhaps by an additional waypoint) that would decrease potential conflicts with the SSTIK departure airspace to enable the SSTIK departure to be flown as published.

Please refer to Appendix D, 2.31, as these share similar recommendations.

3.60 Determine if a southbound transition for the CNDEL procedure could effectively use flight over bodies of water to enable aircraft to gain altitude before flying over noise-sensitive land uses without interfering with a possible expanded SSTIK departure path or shifting noise to other communities.

Please refer to Appendix D, 2.31, as these share similar recommendations.

3.61 Utilizing the OAK HUSSH departure procedure during daytime hours should help avoid conflicts with SFO SSTIK, reduce the need for vectoring, increase the separation between these flight paths, and increase safety. From CNDEL, direct aircraft to GOBBS and south.

Please refer to Appendix D, 2.31, as these share similar recommendations.

3.68 For aircraft with destinations in Southern California use the OFFSHORE ONE departure.

Please refer to Appendix D, 2.36, as these share similar recommendations.

3.69 For aircraft with southeast destinations use the TRUKN departure with a transition at TIPRE or SYRAH.

Capacity of a departure procedure is finite. Capacity cannot be added as you would by adding a lane to a freeway. This recommendation would combine aircraft currently assigned two departure procedures (SSTIK and TRUKN) to one departure procedure (TRUKN). Aircraft departing to the southeast would be restricted to a single departure that conflicts with the prevalent recommendations for wider dispersal of traffic made throughout both the Select Committees and SFO Roundtable's documents.

Additionally, changing an aircraft's departure direction (left turn to a right turn) will result in a shift of aircraft noise. Please see the FAA's comment in response to 1.28

This is consistent with the legacy procedure of using the SFO departure procedure where aircraft were vectored eastbound to the LINDEN VORTAC, a ground-based navigational aid.

The Department of Transportation and the FAA Administrator have prioritized the creation of Next Generation Air Transportation System (NextGen). One of the stated goals of this activity is to develop and implement satellite-based arrival/departure procedures. Increasing the use of conventional procedures would be counterproductive to the Agency's vision and is not supported.

3.70 Determine the feasibility of depicting the SEPDY waypoint on the scopes in an effort for aircraft to stay over the Bay as long as possible. This would allow aircraft additional time to climb over the Bay before turning.

SEPDY is a reporting point from the conventional PORTE and OFFSHORE departure procedures, which are rarely used. The SSTIK RNAV departure, which serves as PORTE and OFFSHORE's replacement for nearly all southbound aircraft, does not include the SEPDY reporting point.

Aircraft that file to fly a published departure enter that departure into their FMS once cleared for it, which happens when the aircraft is still on the ground. Under optimal conditions, once airborne the aircraft flies the departure procedure with little to no ATC intervention. Depicting SEPDY on the controller's scope would not change this. Aircraft that fly the SSTIK departure would still turn, without ATC instruction, at the SSTIK waypoint as published in the procedure. Adding notations and / or symbols to RADAR maps is not a step that is taken lightly in the FAA. Every effort is made by the FAA to reduce RADAR map clutter.

3.71 Determine if a reduced climb airspeed can be assigned until reaching 3,000' MSL or other higher altitude; a slower airspeed will allow the aircraft to climb to a higher altitude in a shorter distance before overflying noise-sensitive land uses.

Aircraft that fly the SSTIK procedure, as with other procedures, use the aircraft's FMS to follow the procedure's requirements, while also safely accounting for the individual aircraft characteristics, e.g. heavier aircraft typically are slower to climb and take longer to turn than lighter aircraft – the FMS accounts for this.

Determine if the minimum required altitude for ATC to initiate a left turn can be raised.

Per FAA criteria, the SSTIK contains a minimum altitude of 520' before a left turn can be initiated toward the SSTIK waypoint.

3.72 Move the SSTIK waypoint north and east as much as feasible to allow maximum altitude gain before turning west to fly over land, using the legacy SEPDY waypoint as a guide. Remain over the Pacific Ocean until attaining a high altitude.

Please refer to Appendix D, 2.38, as these share similar recommendations.

3.73 Create an OFFSHORE RNAV overlay.

Please refer to Appendix D, 2.35, as these share similar recommendations.

3.74 Create a SSTIK transition to GOBBS. Similar to the NIITE procedure, aircraft would depart on the SSTIK procedure flying up the Bay instead of over the peninsula to approximately the GOBBS intersection, then onto a waypoint in the ocean such as WAMMY. This could be used for aircraft with southerly destinations in California.

This recommendation is similar to Appendix C, 3.23, with notable exceptions. This recommendation is for flights during the daytime, as well as nighttime. The recommendation in Appendix C, 3.23 is only tenable because of the significant reduction in traffic during nighttime hours. The increased traffic during daytime operations would magnify the **Congestion** issue to an unsustainable level. The **Noise Shifting** and **Flying Distance** issues also remain concerns.

3.78 The SFO Roundtable will work with the SFO noise office and TRACON to research use of the legacy LINDEN VORTAC transition to determine why it has not been used within the last few years and determine which city pairs can utilize this corridor via TIPRE or SYRAH.

Please refer to Appendix D, 3.69, as these share similar recommendations.

3.79 Determine any conflicting airspace issues which would not be available for the location of a new SSTIK waypoint.

Please refer to Appendix D, 2.38, as these share similar recommendations.

4.5 Fly over the Bay until the SSTIK waypoint, by moving SSTIK N + E as much as feasible to allow maximum altitude gain before turning to fly over land using the historic SEPDY waypoint as a guide.

Please refer to Appendix D, 2.38, as these share similar recommendations.

Preferably, the SSTIK should be flown to GOBBS, then to WAMMY, before flying to PORTE, so that planes are flying over water, rather than people's homes.

Please refer Appendix D, 3.74, as these share similar recommendations.

4.9 SSTIK: That the Bay, and waypoints such as GOBBS and WAMMY in the ocean be used for overflight as much as possible.

Please refer Appendix D, 3.74, as these share similar recommendations.

4.13 Move SSTIK north and east as much as feasible to allow maximum altitude gain before turning to fly over land using the historic SEPDY waypoint as a guide.

Please refer to Appendix D, 2.38, as these share similar recommendations.

The Roundtable would ultimately prefer a SSTIK procedure that utilizes the entire Bay out to GOBBS, then to WAMMY and then to PORTE.

Please refer Appendix D, 3.74, as these share similar recommendations.

4.16 Utilizing the HUSSH departure procedure during daytime hours should help avoid conflicts with SSTIK, reduce the need for vectoring, increase separation between these flight paths, and increase safety. The Roundtable would ultimately prefer a CNDEL procedure that utilizes the entire bay out to GOBBS, then to WAMMY and then to PORTE.

Please refer to Appendix D, 2.31, as these share similar recommendations.

4.19 Determine the feasibility of creating an RNAV (RNP) dual offset approach to Runway 28R and 28L.

Please refer to Appendix D, 2.15, as these share similar recommendations.

4.30 The BDEGA TWO procedure include the waypoints for a down the Bay procedure, as done in BDEGA ONE.

Please refer to Appendix D, 2.3, as these share similar recommendations.

4.31 Determine altitudes to turn aircraft for vector purposes that minimizes noise.

Aircraft vectoring is a tactical decision used by ATC to establish and maintain the sequence of aircraft to the airport. Due to safety considerations, the FAA cannot support a restriction on when ATC may or may not use a vital component of its sequencing tools.

4.34 When weather conditions dictate the use of these runways (10L/R & 19L/R), we encourage the use of FOGGG as published and not vector off the procedure.

The FOGGG departure procedure has a high climb gradient, requiring aircraft to cross the FOGGG waypoint at 4,000 feet MSL. Because the Oakland arrival passes underneath this at 3,000 feet MSL, there is no room for error (minimum vertical separation between aircraft is 1,000 feet). Many aircraft have been unable to meet this requirement, primarily due to aircraft performance limitations (weight, weather, etc). Because aircraft have difficulty meeting the minimum safety requirements for separation, this has led to the FOGGG departure being unused.

4.38 Define the airspace limitations to the north and east for placement of a waypoint to replace SSTIK. Present these limitations to the Roundtable in graphic and memo formats.

Please refer to Appendix D, 2.38, as these share similar recommendations.

4.43 Create an RNAV overlay, or create a new procedure, based on the decommissioned DUMBARTON EIGHT procedure for aircraft departures from Runway 10L/R to keep aircraft over the Bay.

Please refer to Appendix D, 2.27, as these share similar recommendations.

4.46 Create a RWY 10R procedure for aircraft to depart RWY 10R, then turn up the Bay to join the NIITE.

Please refer to Appendix D, 2.21 and 2.27, as these share similar recommendations

4.48 Allow aircraft to climb unrestricted on the GNNRR procedure.

Please refer to Appendix D, 2.25, as these share similar recommendations.

Aircraft depart without a top altitude restriction when flying "out the gap" on Runway 28L/R and consider the use of the GAP 7 departure that has no top altitude restriction instead of the GNNRR.

Please refer to Appendix D, 2.25, as these share similar recommendations.

APPENDIX E: SERFR STAR Amendment

SERFR STAR Amendment

The SERFR STAR and the 11 Instrument Approach Procedures that tie into the SERFR STAR are scheduled to be amended on February 1, 2018. The SERFR1 is not fully contained in the San Francisco International Airport (SFO) Class Bravo airspace. The changes being made do not capture any of the Select Committee / SF Roundtable recommendations, rather they are a result of design work to address safety and operation concerns regarding the Class Bravo containment of the current SERFR STAR. Controllers at Northern California TRACON have had to stop the descent on every SERFR arrival since its implementation on March 5, 2015 to keep the aircraft within the SFO Class Bravo airspace. Even though the SFO Class Bravo is being re-designed to contain the SERFR arrival, the FAA determined that the SERFR STAR introduced unacceptable risk into the NAS and issued a Corrective Action Report mandating that the STAR be amended. To contain the STAR within the existing Class Bravo airspace and to comply with procedural design criteria, the STAR will end at EDDYY, a point approximately 6NM southeast of MENLO at 6,000 ft. The instrument approach procedures that tie into the SERFR star will also be amended to maintain connectivity, removing MENLO from all procedures. The Instrument Approach Procedures (IAPs) will all begin at EDDYY (6nm SE of MENLO) and will proceed from there direct to SIDBY (replaces MENLO, with a crossing restriction of at or above 4,000 feet) and then their respective Initial Fix (IF). These changes are due to updated procedural design criteria. For example, the ILS RWY 28R today goes from MENLO to CEPIN. On February 1, 2018 it will go from EDDYY to SIDBY, then to CEPIN, resulting in shifting the flight track approximately .25nm east of MENLO. The changes being implemented in February 2018 to the SERFR and the associated IAPs, do not preclude nor will they interfere with any additional changes that are being considered as a result of the Select Committee's recommendations. Nor does the SERFR STAR amendment affect the timeline or design of the proposed replacement optimized, idle-power descent arrival procedure into SFO. (The Select Committee recommendations have generally referred to a 'replacement optimized STAR over the BSR flight track or an "optimized BIG SUR procedure."').