

July 20, 2016

To Whom It May Concern,

Please find attached the Towns of Portola Valley, Los Altos Hills and Woodside's response to the May 2016 FAA report entitled "Northern California Initiative – Executive Summary – Feasibility Study." Our communities appreciate the opportunity to comment on the report and provide our collective response.

In this report, you will find four basic conclusions:

1. As a result of the FAA designating a number of solutions as "not feasible," Mid-Peninsula communities are only left with one potential idea for further review.
2. The report provides technical responses that challenge many of the "not feasible" conclusions made by the FAA and we therefore believe additional follow-up and analysis is required.
3. A concern that the construct of the FAA's ongoing process with affected communities does not require the FAA to provide proactive ideas of their own, or a timeline for the implementation of any ideas generated.
4. A flaw in the process as it has been undertaken is to not include those responsible for the control of aircraft in the Phase One analysis.

While our communities continue to support the ongoing Congressional Select Committee process and trust that it will provide tangible, actionable concepts for FAA review and adoption, we hope that this report also demonstrates that the current process must be amended to provide residents with a clear outcome, and a commitment that this conversation does not end with the completion of the Select Committee's work.

Our communities recognize that not all noise issues may be solvable, but it is our hope that any plan will work to remedy the most issues while not forcing problems on neighboring communities.

Thank you for your consideration of this report.

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## *Williams Aviation Consultants*

### **Analysis of the portions of the FAA initiative to Address Noise Concerns of Santa Cruz/Santa Clara/San Mateo/San Francisco Counties, Compiled at the Requests of Representatives Farr, Eshoo and Speier relative to aircraft landing at San Francisco International Airport (SFO). Phase One actions.**

**Prepared by Williams Aviation Consultants at the request of the Towns of Portola Valley, Los Altos Hills and Woodside.**

**July 20, 2016**

#### **BACKGROUND:**

In May, 2015 the FAA published the “northern California Initiative” document which contained the initial recommendations presented by the public to the FAA to address and remedy the noise issues faced by a number of Bay Area and Santa Cruz communities as a result of changes to the instrument flight procedures into San Francisco International Airport (SFO), including the addition of many satellite based navigation arrivals.

In November, 2015 the “FAA Initiative to Address Noise Concerns in Santa Cruz/Santa Clara/San Mateo/San Francisco Counties’ was released. The initiative included recommendations to the published procedures as well as detailing the three phases in which these recommendations will be considered by the FAA.

The FAA provided a response to the recommendations originally contained in the November 15 document and identified this response as completing Phase one of the initiative. The document provided was 34 pages in length with 17 pages applicable to the analysis of SFO arrivals. An additional 65 pages were contained in the Appendices. Both the document and appendices’ were undated and contained no authorship information other than “The FAA”. The document states that the data contained therein “documents the results of the first phase, a detailed analysis and preliminary feasibility study conducted by the FAA”. The document states that a “more detailed analysis supporting the response is found in the Appendices”.

## ANALYSIS:

### 1. Instrument Flight Procedures/Airspace

Part 1 a Altitude Adjustments: Raising the floor and ceiling of existing SERFR and BRIXX arrivals.

Part 1 a i Evaluate raising the altitude at MENLO waypoint to 5000 feet or establish a new waypoint to allow for crossing the MENLO area closer to 5000 feet,

The FAA rejects raising the crossing altitude at MENLO to 5000 feet because such an increase would “create too steep of a descent gradient to the RWY for IFR operations”. Apparently no consideration was given to moving the entry point into the Bay southeast of MENLO as suggested by several communities including Portola Valley, Los Altos Hills and Woodside. This relatively minor location shift would allow crossing populated areas at or above 5000 feet and not be too steep a descent gradient. The idea of moving the entry point into the Bay on the SERFR should be feasible and therefore referred to Phase 2 review. The FAA also states traffic conflicts and changes in route based on traffic to be a consideration in this determination even though the Air Traffic Control (ATC) personnel responsible for the control of these aircraft have not been consulted.

Part 1 b Track

Part 1 b iii Analyze moving the ILS/Visual Approach to RWY 28L offshore’

Part 1 b iv Analyze offsetting Visual Approaches until passing San Mateo Bridge.

Part 1 b v Analyze the impact of non-charted visual approaches to RWY 28.

The FAA determined these proposals to be not feasible. The use of offset instrument approaches to both runways 28L and 28R during bad weather conditions is, with today’s technological capability, not feasible. In earlier documents the term Non-charted visual approaches was not defined. If these procedures are, in fact, Flight Management Systems (FM)S duplicates of published approaches, it is not an issue of significance.

Part 1 c Waypoint

Part 1 c i On the SERFR arrival, analyze moving EPECK waypoint south to approximately 36 54 52.8N and 121 56 32.7W, add restriction to speed of 280 knots and altitude of 15,000 feet.

Part 1 c iii Evaluate adding a new waypoint roughly over the Highway 17 summit area between EPICK and EDDYY, with at least 10,000 feet and 250 knot restriction.

Two waypoint suggestions on the SERFR were analyzed. One suggested moving EPICK and adding altitude and speed restrictions. The other added a new waypoint with altitude and speed restrictions. Both these suggestions were rejected because the resultant procedure would remove “the option of executing an OPD for the entire SERFR STAR”. Because these changes were specific and the FAA forbid any technical conversations to occur during the process of developing these suggestions, there is no way of knowing if a relatively minor change in the proposal would have been acceptable

to the FAA. This is a flaw in the process used by the FAA throughout. It, unfortunately, allows the FAA to reject almost all suggestions on some technical ground. The inclusion of speed restrictions on any published procedure is normally because the ATC environment requires it. For citizen groups to include such restrictions in their proposals is counterproductive.

- Part 1 d      Speed
- Part 1 d i     Analyze moving speed adjustments over water instead of over land.
- Part 1 d ii    Analyze reducing the speed on the current SERFR arrival.
- Part 1 d iii    Analyze data to determine compliance with the requirement to maintain 250 knots or less below 10,000 feet Mean Sea Level (MSL).

Three proposals were analyzed. One suggested that speed adjustments be made over water instead of over land and that the speed on the SERFR be reduced. Surprisingly the FAA determined these two initiatives to be Feasible; the first to be so determined. Unfortunately the planned action does little or nothing to accomplish the stated goals. The FAA's answer is to modify the Class B airspace to encompass the current SERFR STAR. While this may allow aircraft to fly an OPD procedure, it does nothing to alleviate the current issue of aircraft being vectored at low altitude over the peninsula. The FAA admits that 50%+- of aircraft on the SERFR/BSR are taken off those routes by ATC and vectored for sequencing into SFO. There is no reason to believe this will change with the modification to the Class B airspace. There is no indication those aircraft being vectored will only receive speed reductions over water.

The third suggestion was to determine compliance with the 250 knot rule for aircraft operating below 10,000 feet. This is currently part of the Code of Federal Regulations and for citizen groups to include the investigation of what amounts to pilot compliance actions in their proposals is counterproductive. The FAA determined this to be not feasible.

- Part 1 e      Holding Patterns
- Part 1 e i     On the SERFR arrival, study current use of the holding pattern at EPICK and the possibility of moving the holding pattern to WWAVS.

The suggestion was to reduce/eliminate holding at EPICK. The fact that a holding pattern is published is of little significance. The fact that holding at EPICK is extremely rare, less than 1/2 of 1%, is the real issue. This level of use is insignificant. The FAA determined this to be not feasible.

- Part 1 f      PBN Procedures
- Part 1 f i     Evaluate proposed PBN arrival procedures from local groups for feasibility, fly-ability and safety concerns.
- Part 1 f ii    Evaluate the effect of dispersing flight tracks over a wider range.
- Part 1 f iv    Study the possibility of new SFO RNP approaches which will serve RWYs 28 L/R and follow the BSR ground track, curved out over the Bay crossing MENLO at 5000-6000 feet.

Three proposals were analyzed.

One suggestion was to transition aircraft on the SERFR back to the BSR prior to EPICK. These changes move the SERFR route slightly and would be difficult to discern from the ground in the more populated areas on the peninsula. This is the second proposal found to be feasible by the FAA.

The second proposal involved developing PBN procedures which would disperse flights over a wider area. This includes parallel routes. The FAA rejected this proposal because dispersion of flight is already occurring. The FAA states: “in order to accommodate the volume of traffic merging into the Bay Area airports without increasing ground delays, traffic is typically vectored off their respective procedure”. Many peninsula towns and cities have identified the aircraft being vectored as the primary source of the increased noise they are experiencing. While the FAA appears to admit this activity is occurring, they refuse to discuss or analyze any possible solution. While the vectoring of aircraft may cause some dispersion, if aircraft are routinely and repeatedly placed over the same communities, it can hardly be called equitable. **Figure E 1** in the appendices, shown below, depicts the tracks of those aircraft receiving vectors. Every aircraft is vectored west of the published route. If this was truly equal distribution, some aircraft would be vectored east of the published procedure.

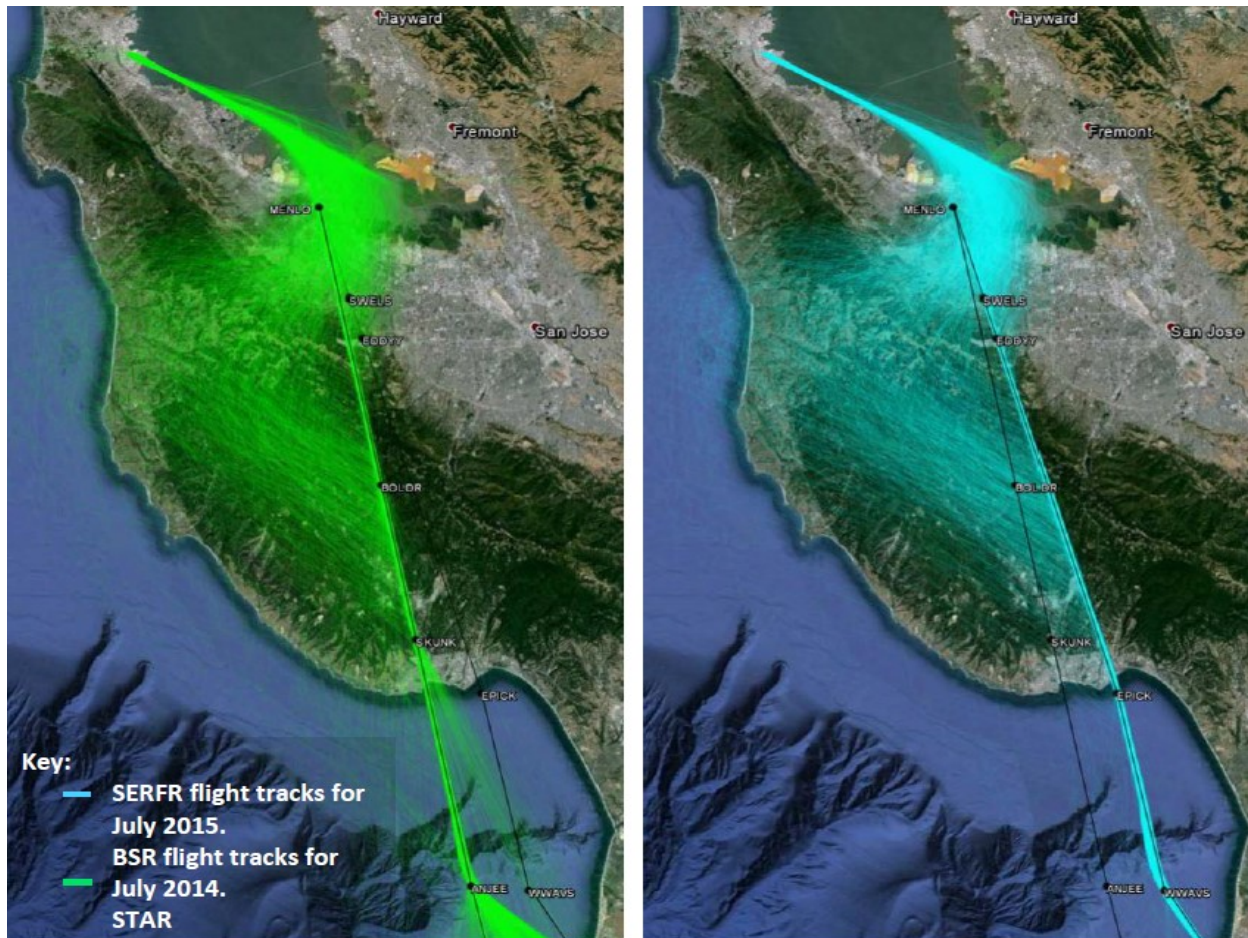


Figure E.1: Comparison of how the BSR and the SERFR were flown

The third proposal suggests a new RNP procedure to Runways 28 L&R which “curve out over the Bay crossing MENLO at 5000-6000 feet”. No graphics of this procedure have been provided but it appears the FAA will reject, as they did in this case, any higher crossing altitude at MENLO. The FAA should, however, analyze establishing a waypoint southeast of MENLO that would allow a crossing altitude of 5000 feet or higher and be RNP compliant. The BSR/SERFR would terminate at this new waypoint.

Part 1 f iii Was determined to be feasible and is now in Part 3 d, Nighttime Operations.

## **Part 2 Air Traffic Control**

**Planned Action:** The FAA assessment, to this point, has not included input from those responsible for the control of aircraft in the impacted airspace. It is only during the next phase (Phase 2) that the people with direct knowledge of how aircraft are routed, the altitudes used in any given area and the ability to assist in the development of realistic alternatives that would meet FAA criteria and provide some overflight relief to residents will occur. The cart is firmly before the horse. So far the FAA has rejected almost all of the proposals for procedural revision brought forward by the impacted communities. The only exceptions appear to be a Class B airspace change which according to the FAA will solve everybody’s problems and a minor revision to the SERFR STAR that moves the route slightly to the west. The entire Phase one process appears to have been designed to eliminate any proposal that would alter traffic flows over the peninsula without asking those who actually know if they could be viable.

Part 2 a Sequencing and Vector Points

Part 2 a i Analyze adjusting air traffic activity in the vicinity of Woodside VOR including altitudes/

The idea that 17% of oceanic arrivals cross Woodside VORTAC below 8000 feet is unacceptable to the residents impacted by these aircraft. The ATC facility has in place a local requirement that 8000 feet is the minimum altitude for oceanic arrivals over Woodside. The fact that some airlines prefer to use an unpublished procedure that is in conflict with local criteria is not justification for the FAA to allow it to occur. The statement that “for safety reasons it is not feasible to raise these arrivals to 8000 feet MSL” is false. A review of this issue is certainly feasible. In addition, the Town of Woodside is impacted by many of those aircraft being vectored off the SERFR STAR (see **Figure E. 1**).

Part 2 a ii a and Part 2 a ii c were determined to be feasible and are now in Part 3 d, Nighttime Operations.

Part 2 b Use of Descend Via

Part 2 b i Increase use of descend via procedures.

The FAA states the modification to the Class B airspace will allow Descend via procedures to be applied to the SERFR STAR. There is no indication that this will reduce the 50% of those aircraft that will be taken off the published procedure and vectored over the peninsula. This is the second adjustment attributable to the Class B modification.

- Part 2 c      Class B Containment
- Part 2 c i     Analyze current versus historic data to determine trends and risks to aircraft exiting and reentering Class B airspace.

The FAA has determined this to be “not applicable” due to the proposed change to Class B airspace. The requested analysis was offered to support increasing the altitudes on the SERFR STAR. This initiative is also listed in Part 3 d, Nighttime Operations.

- Part 2 d      Speed Brakes
- Part 2 d ii    Work with stakeholders to determine feasibility of reducing the use of speed brakes and other surface controls over land.

While the FAA states that this suggestion is feasible, they fail to state if the potential reduction in the use of speed brakes on the SERFR after the Class B airspace modification will provide any benefit. In fact, since 50% of aircraft on the SERFR are vectored off the published procedure, any noticeable change in noise is doubtful. This is the third determination based on the Class B airspace change.

- Part 2 e      Runway Usage
- Part 2 e i     Study the feasibility of increasing the use of RWY 10.

The suggestion was to study an increase in the use of Runway 10. Due to terrain Runways 10 L&R have very high weather minimums and would be of minimal benefit for day to day use. It is likely runways 28 L&R will be the primary arrival runways for the foreseeable future. This initiative is included in Part 3 d, Nighttime Operations.

Part 2 e ii and Part 2 e iii were determined to be feasible and are now in Part 3 d, Nighttime Operations

- Part 2 f      Instrument Flight Procedures (IFP)
- Part 2 f iii    Study the use of offset visual approaches in lieu of straight in visual approaches.

An offset visual approach to RWY 28L would be of limited use. It could not be used in concert with the existing offset visual approach to RWY 28R. The use of offset instrument approaches to both runways 28L and 28R during bad weather conditions is, with today’s technological capability, not feasible.



Part 2 f iv and part 2 f vi were determined to be feasible and are now in Part 3 d, Nighttime Operations.

Part 2 g i and Part 2 g ii appear to have been moved into the Traffic Management Section, Part 3.

### **Part 3 Traffic Management**

**Planned Action:** The FAA assessment, to this point, has not included input from those responsible for the control of aircraft in the impacted airspace. It is only during the next phase (Phase 2) that the people with direct knowledge of how aircraft are routed, the altitudes used in any given area and the ability to assist in the development of realistic alternatives that would meet FAA criteria and provide some overflight relief to residents will occur.

- Part a Equitability, Opposite Direction Operations (ODO)
- Part 3 a i Review the current nighttime operations to determine if they adequately address preferential RWY use.
- Part 3 a ii Evaluate the effect of dispersing flight tracks over a wider range or developing multiple parallel RNAV procedures.

In response to the request to “review the current nighttime operations to determine if they adequately address preferential RWY usage” the FAA stated that this was not feasible on numerous technical grounds. The evaluation consisted almost exclusively on the potential traffic conflicts that might occur if any given departure procedure were to be moved. This analysis was conducted, based on the FAA’s own admission, without the input of those responsible for resolving those conflicts on a day to day basis. The FAA response also stated that, because of the volume of traffic, arriving aircraft were routinely vectored off their assigned route, dispersion of aircraft noise occurred. While the vectoring of aircraft may cause some dispersion, if aircraft are routinely and repeatedly placed over the same communities, it does not meet the definition of equitable. This response also fails to recognize that traffic volume is significantly reduced during nighttime hours and the noise impacts are potentially more pronounced due to the quieter ambient conditions.

A second evaluation was conducted on the suggestion to disperse flight tracks over a wider area by developing multiple parallel RNAV procedures. This was rejected based, to a significant degree, on the FAA’s mistaken belief that radar vectors constitute an equitable distribution of noise.

- Part 3 b Interactions and Agreements
- Part 3 b i Review facility agreements for possible changes to aircraft set up and sequencing.
- Part 3 b ii Review facility agreements to ensure they are effective and efficient with regard to routing and speeds.



- Part 3 c Time Based Flow Management (TBFM)
- Part 3 c ii Review the impact of using TBFM on current noise issues.

The FAA has determined that a review of facility agreements 1) “for possible changes to aircraft set up and sequencing” and 2) “to ensure they are effective and efficient with regard to routing and speeds” as well as “the impact of using TBFM on current noise issues” are feasible. These determinations were made on the basis that, at some point in the future, Class B airspace will be modified which will allow more aircraft to utilize OPD procedures and the FAA will develop and implement more effective metering programs. Except for the modification of Class B airspace, these adjustments do not alter any existing procedures.

- Part 3 d Nighttime Offloads/Routes
- Part 3 d i Review nighttime operations.
- Part 3 d ii Review cargo flight operations to determine if previous actions have adequately addressed all issues.

The FAA has determined the following initiatives to be feasible:

- Part 1 f iii Study the feasibility of creating new transitions for the NIITE departure for airports to southbound destinations.
- Part 2 a ii a Focus on leaving aircraft over water as long as feasible.
- Part 2 a ii c Keep aircraft on the NIITE departure to at least the NIITE Waypoint as much as possible.
- Part 2 e i Study the feasibility of increasing the use of RWY 10.
- Part 2 e ii Study the feasibility of increasing the use of RWY 01 for departures. Study the feasibility of proceduralizing the 050 departure heading off RWY 01 at night.
- Part 2 e iii Study the necessity of extending nighttime operations at SFO. According too the SFO Standard Operating Procedure, the preferred Runway for operations between 0100 and 0600 local time is departing Runway 10 and landing Runway 28.
- Part 2 f iv Study the usage of GAP departure.
- Part 2 f vi Study the feasibility of increasing the use of the SSTIK departure during the day and the NIITE departure at night.
- Part 2 g ii Assess potential options for night operations.

The FAA has determined the above items to be feasible. Unfortunately they do not obligate the FAA to take any action other than study (3 times), analyze (2 times), focus, assess, review or do “as much as possible”. Even if the FAA completes these tasks in a forthright and honest manner, there is no requirement or incentive for the FAA to make a single substantive change as a result.

Two additional initiatives were determined to be not feasible.

Part 3 d iii Review utilizing the current BSR for late night cargo arrivals.

This was rejected because “analysis indicates that moving cargo flights to the BSR would result in minimal change” (sic). The FAA analysis was limited to numbers collection and the feasibility was determined solely on that basis. The fact remains that 16 cargo flights use the SERFR STAR between 6 and 7 AM daily and no noise impact data was obtained. It is doubtful that placing these 16 aircraft on the BSR arrival instead of the SERFR STAR would cause any adverse operational impact on the ATC system.

Part 3 d iv Review the current nighttime operations to determine if they adequately address preferential RWY usage.

The FAA has elected to reject this initiative based on the complexity and volume of Bay Area airport traffic volume. While this may have some validity during the day, there are many periods during overnight hours when revised runway usage and procedures could be used. This suggestion only asks that the current situation be “reviewed”.

Part 4 and Part 5 were not specifically addressed. Some subject matter is included in other parts of this document.

## **CONCLUSION:**

Our review of the FAA document confirmed an inherent flaw with the ongoing process between affected communities and the FAA: it appears that it is the affected communities’ responsibility to provide the FAA with mitigation options. By adopting this structure, the FAA does not seem to possess any accountability to actually come up with a set of solutions. As was the case for the FAA Phase One response, it simply responded to the bulk of the collective community proposals. The FAA has yet to offer any of their own solutions. In addition, The FAA did not analyze the solutions proposed by Sky Posse Palo Alto in October of 2015, specifically, the rebalancing of SFO arrivals from the north to fly over the Bay (east leg) vs. down the Peninsula (west leg) and using the full length of the Bay for some southern arrival flights.

In addition to not offering any proactive solutions, the FAA has agreed to make only one actual procedural or operational change affecting SFO arriving aircraft. They intend to modify the Class B airspace to encompass the current SERFR arrival procedure. This change will not alter the flight track of a single aircraft and will not change the altitude requirement on any published procedure. No timeframe of design specifics for this change have been provided so a more in-depth analysis of potential impacts’ is not possible.

Every other initiative agreed to by the FAA consists of their willingness to review, study, focus, assess or evaluate the subject in Phase two.

Unfortunately Phase two consists of another level of review during which “modifications may be made to the proposed procedure and/or airspace or operating procedures using the guidance found in current FAA Orders, directives and labor agreements which includes conducting the Environmental Review; Safety Risk Management (SRM); and appropriate public outreach”. In other words the FAA doesn’t have to do anything it doesn’t want to do.

The FAA Phase one assessment has not included input from those responsible for the control of aircraft in the impacted airspace. It is only during the next phase (Phase Two) that the people with direct knowledge of how aircraft are routed, the altitudes used in any given area and the ability to assist in the development of realistic alternatives that would meet FAA criteria and provide some overflight relief to residents might occur. The FAA has rejected almost all of the proposals for procedural revision brought forward by the impacted communities. The only exception appears to be a minor revision to the SERFR STAR that moves the route slightly to the west. The entire Phase one process appears to have been designed to reject any proposal that would alter traffic flows over the peninsula and do this without asking those who actually know if it could be viable.

As a result, we are forced to assume that not only will community input will not be an integral part of any Phase two process, but that the FAA will not be offering its own solutions. This leads us to believe that the process itself is flawed and that a clearer understanding of what the FAA will be responsible for after the Select Committee completes its work is necessary.