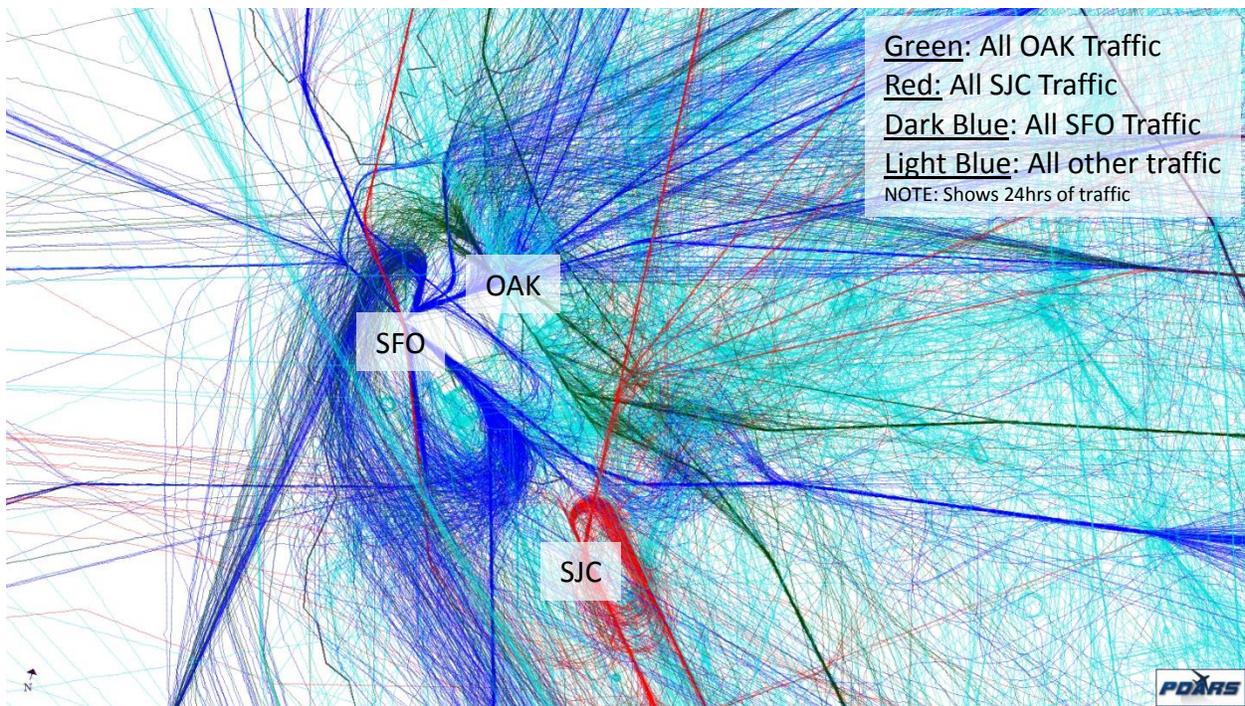


FAA Initiative to Address Noise Concerns of Santa Cruz/Santa Clara/San Mateo/San Francisco Counties

Compiled at the Requests of Representatives Farr, Eshoo and Speier

Executive Summary

Northern California airspace is very complex, with traffic from several major airports, smaller regional airports and military activity. All arrival and departure procedures within the Northern California airspace are interconnected, interdependent and were designed to improve safety and efficiency within the National Airspace System (NAS).



Longstanding issues with, as well as changes to, the Northern California TRACON instrument approach and departure procedures have generated noise concerns from local residents of Santa Cruz, Santa Clara, San Mateo and San Francisco Counties. In meetings and correspondence with congressional offices and local community representatives, the Federal Aviation Administration (FAA) has received recommendations to adjust the current published procedures. In response, the FAA has undertaken the following noise initiative to explore such modifications. Airspace and air traffic procedures are highly dependent upon each other within the NAS and must be evaluated collectively to ensure safety and efficiency.

This initiative will be comprised of three phases. During the first phase, the will 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,

potential procedural modifications including speed/altitude adjustments, airspace changes and possibility of moving existing waypoints. An assessment of impacts to operations at the surrounding airports and associated procedures will be completed. In addition, coordination with the local stakeholders will be conducted during this first phase.

During the second phase, 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. During phase three, the FAA will implement procedures; conduct any required airspace changes and additional negotiated actions, as needed.

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”). As such, although not specifically detailed within this noise initiative, the FAA’s procedures and standards for evaluating noise impacts associated with all potential modifications to currently published procedures—consistent with FAA Order 1050.1F (effective July 16, 2015)—will be followed and undertaken before implementing any airspace 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 Northern California (NorCal) Optimization of Airspace and Procedures in the Metroplex (OAPM).

Initiative:

Phase One: Initial Analysis, Feasibility, and Coordination

1. Instrument Flight Procedures/Airspace:

Planned Action: The FAA will conduct a detailed analysis to include preliminary feasibility from a procedures/criteria perspective and fly-ability from an aircraft perspective. Procedures will be analyzed, modeled, and flown in flight simulators. An assessment of the impact to operations and other procedures will be completed. The analysis should indicate whether the potential procedural changes could be made to effectively reduce noise.

- a. Altitude adjustments:** Raising the floor and/or ceiling of existing procedures may allow the FAA to do the same for other procedures and reduce noise concerns in certain locations.
 - i. Analyze raising the floor and ceiling of existing SERFR and BRIXX arrivals. (AJV-WOSG)
 - a) Evaluate raising the altitude at MENLO waypoint to 5,000 feet or establish a new waypoint to allow for crossing the MENLO area closer to 5,000 feet.
 - ii. Analyze reducing impacts of SSTIK, WESLA, and CNDLE departures. (AJV-WOSG)

Detailed Analysis: Started October 2, 2015

Fly-ability Assessment: Started February 23-24, 2016

Operational Assessment: Started February 23-24, 2016

Feasibility Determination: Completed February 24, 2016

Stakeholder Feedback: TBD

Initial Environmental Review: TBD

Safety Assessment: TBD

- b. Track adjustments:** Where possible, tracks should be adjusted away from areas of concern and moved over water versus land.

- i. Analyze moving the SSTIK and PORTE departures more over water. (AJV-WOSG)
- ii. Analyze reducing the impacts of SSTIK, WESLA, and CNDLE departures. (AJV-WOSG)
- iii. Analyze moving the ILS/Visual Approach to Runway 28L offshore. (AJV-WOSG)
- iv. Analyze offsetting Visual Approaches until passing the San Mateo Bridge. (AJV-WOSG)
- v. Analyze the impact of non-charted visual approaches to RWY 28 (AJV-WOSG)

NOTE: There are three charted visual approaches to San Francisco (SFO). Two are FAA published approaches, the TIPP TOE VISUAL and the QUIET BRIDGE VISUAL. The third approach is owned by United Airlines and is a special charted visual, also available to other airlines. If changes are made to the procedure, the FAA would request that United Airlines and each airline that uses this procedure update their databases.

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c. Waypoint Adjustments:

- i. On the SERFR arrival, analyze moving EPICK 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. (AJV-WOSG)
- ii. Analyze making adjustments to PORTE departure to maximize offshore routing. (AJV-WOSG)

- iii. Evaluate adding a new waypoint roughly over the Highway 17 summit area, between EPICK and EDDYY, with at least a 10,000 feet and 250 knot restriction. (AJV-WOSG)

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Safety Assessment: TBD

d. Speed Adjustments:

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

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e. Holding Patterns

- i. On the SERFR arrival, study current use of the holding pattern at EPICK and the possibility of moving the holding pattern to WWAVS. (AJV-WOSG)

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f. PBN Procedures:

- i. Evaluate proposed PBN arrival procedures from local community groups for feasibility, fly-ability and safety concerns. (AJV-WOSG)
- ii. Evaluate the effect of dispersing flight tracks over a wider range. (AJV-WOSG)
- iii. Study the feasibility of creating new transitions for the NIITE departure for airports to southbound destinations. (AJV-WOSG)
- iv. Study the possibility of new SFO RNP approaches that will serve Runways 28 L/R that follow the Big Sur ground track, curved out over the Bay crossing MENLO at 5000-6000 feet. (AJV-WOSG)

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Operational Assessment: Started February 23-24, 2016

Feasibility Determination: Completed February 24, 2016

NOTE: Additional analysis being conducted on 1, f, iii

Stakeholder Feedback: TBD

Initial Environmental Review: TBD

Safety Assessment: TBD

2. Air Traffic Control:

Planned Action: The Western Service Center, on behalf of the Air Traffic Director of Operations, will work with the facilities to assess what opportunities exist to modify operations. Part of this assessment will include looking at the possibility of adjustments during reduced volume night operations, even if day operations cannot be changed. If changes can be made there will need to be a safety assessment, controller training, pilot briefings, and the SFO community roundtable may need to be engaged.

- a. **Sequencing and Vector Points:** There may be actions air traffic controllers can take to reduce noise concerns such as assessing whether changes can be made to vectoring aircraft over water more.
 - i. Analyze adjusting air traffic activity in the vicinity of Woodside VOR including altitudes. (AJT, AJV-WOSG)
 - ii. Analyze adjusting air traffic to eliminate early turns over land. (AJT, AJV-WOSG)
 - a) Focus on leaving aircraft over water as long feasible.
 - b) Keep aircraft on the SSTIK departure until the SSTIK waypoint before turning.
 - c) Keep aircraft on the NIITE departure to at least the NIITE Waypoint as much as possible.

Detailed Analysis: Started October 2, 2015

Fly-ability Assessment: Started February 23-24, 2016

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Feasibility Determination: Completed February 24, 2016

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Initial Environmental Review: TBD

Safety Assessment: TBD

b. Use of Descend Via:

- i. Increase use of descend via procedures. (AJT, AJV-WOSG)
- ii. Increase use of descend via procedures for international flights. (AJT, AJV-WOSG)

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Initial Environmental Review: TBD

Safety Assessment: TBD

c. **Class B Containment:** Some current procedures, as designed, are not fully contained within the existing SFO Class B airspace.

i. Analyze current versus historic data to determine trends and risks to aircraft exiting and reentering Class B airspace. (AJT, AJI, AJV-WOSG)

ii. Analyze current RNAV arrival and departure procedures to determine necessity and feasibility of redesign. (AJT, AJI, AJV-WOSG)

iii. Analyze current RNAV arrival and departure procedures to determine necessity and feasibility of redesigning Class B airspace. (AJI, AJV-WOSG)

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Operational Assessment: Started February 23-24, 2016

Feasibility Determination: Completed February 24, 2016

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Initial Environmental Review: TBD

Safety Assessment: TBD

d. **Speed Brakes:**

i. Study the potential reduction and/or elimination of the use of speed brakes and conduct a track analysis to determine flight characteristics,

utilizing the Aviation Safety Information Analysis and Sharing (ASIAS) database. (MITRE CAASD)

- ii. Work with stakeholders to determine feasibility of reducing the use of speed brakes and other surface controls over land. (AJV-WOSG)

Status: MITRE CAASD is studying the potential of modeling the application of speed brakes including flight characteristics and the impacts of weather. The FAA is awaiting the outcome that study.

Runway Usage:

- i. Study the feasibility of increasing the use of Runway 10. (AJT)
- ii. Study the feasibility of increasing the use of RWY 01 for Departures (AJT, AJV-WOSG).
- iii. Study the feasibility of proceduralizing the 050 departure heading off RWY 01 at night. (AJT, AJV-WOSG)
- iv. Study the necessity of extending nighttime operations at SFO. According to the SFO Standard Operating Procedure, the preferred Runway for operations between 0100 and 0600 local time is departing Runway 10 and landing Runway 28. (AJT, AJV-WOSG)
- v. When weather conditions permit, study the increase in use of the Shoreline 7 Departure off RWY 28R or 28L. (AJT, AJV-WOSG)

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Feasibility Determination: Completed February 24, 2016

Stakeholder Feedback: TBD

Initial Environmental Review: TBD

Safety Assessment: TBD

e. Instrument Flight Procedures (IFP):

- i. Study the feasibility of creating new transitions for the NIITE departure for airports to southbound destinations. (AJV-WOSG)

- ii. When weather operations permit, study the use of the Shoreline7 departure off of Runway 28R or 28L. (AJT, AJV-WOSG)
- iii. Study the use of offset visual approaches in lieu of straight in visual approaches. (AJT, AJV-WOSG)
- iv. Study the usage of GAP departure. (AJT, AJV-WOSG)
- v. Study whether international and domestic aircraft are handled the same by Air Traffic Control (ATC). (AJT, AJV-WOSG)
- vi. Study the feasibility of increasing the use of the SSTIK departure during the day and the NIITE departure at night. (AJT, AJV-WOSG)

Detailed Analysis: Started October 2, 2015

Fly-ability Assessment: Started February 23-24, 2016

Operational Assessment: Started February 23-24, 2016

Feasibility Determination: Completed February 24, 2016

NOTE: Additional analysis being conducted on 2, e, i

Stakeholder Feedback: TBD

Initial Environmental Review: TBD

Safety Assessment: TBD

- f. **Opposite Direction Operations (ODO):** Operational changes related to ODO may have increased noise concerns at night in certain locations.
 - i. Review recent implementation of ODO procedures and their impacts in the San Francisco Bay area. (AJT, AJI, AJV-WOSG)
 - ii. Assess potential options for night operations. (AJT, AJI, AJV-WOSG)

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Operational Assessment: Started February 23-24, 2016

Feasibility Determination: Completed February 24, 2016

Stakeholder Feedback: TBD

Initial Environmental Review: TBD

Safety Assessment: TBD

3. Traffic Management

Planned Action: The Western Deputy Director of System Operations, on behalf of the Air Traffic Director of Operations, will work with the Western Service Center and local facilities to evaluate the actions and suggestions below. During the analysis, the focus will be on use of traffic management tools and initiative to ensure current practices are as effective and efficient as possible for the potential reduction of noise concerns.

a. Equitability: Concentration of noise should be reviewed, especially during nighttime operations.

i. Review the current nighttime operations to determine if they adequately address preferential Runway usage. (AJT, AJV-WOSG)

NOTE: According to the SFO Standard Operating Procedure, the preferred Runway for operations between 0100 and 0600 local time is departing Runway 10 and landing Runway 28.

ii. Evaluate the effect of dispersing flight tracks over a wider range or developing multiple parallel RNAV procedures. (AJT, AJV-WOSG)

Detailed Analysis: Started October 2, 2015

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Operational Assessment: Started February 23-24, 2016

Feasibility Determination: Completed February 24, 2016

NOTE: Additional analysis being conducted on 3, a, ii

Stakeholder Feedback: TBD

Initial Environmental Review: TBD

Safety Assessment: TBD

b. Interactions and agreements: Facility agreements between Northern California TRACON (NCT), Oakland Air Route Traffic Control Center (ARTCC) (ZOA), and Los Angeles ARTCC (ZLA) might be amended to reduce the need for off-course vectors and speed adjustments to potentially reduce noise concerns in certain locations.

- i. Review facility agreements for possible changes to aircraft set up and sequencing. (AJT, AJV-WOSG)
- ii. Review facility agreements to ensure they are effective and efficient with regard to routing and speeds. (AJT, AJV-WOSG)

Detailed Analysis: Started October 2, 2015

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Feasibility Determination: Completed February 24, 2016

Stakeholder Feedback: TBD

Initial Environmental Review: TBD

Safety Assessment: TBD

- c. **Time Based Flow Management (TBFM):** The use of TBFM to enhance sequencing may reduce the need for off course vectors and speed adjustments and may reduce noise concerns in certain locations.

- i. Review the current and projected status of using TBFM procedures. (AJT, AJV-WOSG, AJR)
- ii. Review the impact of using TBFM on current noise issues. (AJT, AJV-WOSG, AJR)

Detailed Analysis: Started January 8, 2016

Fly-ability Assessment: Started February 23-24, 2016

Operational Assessment: Started February 23-24, 2016

Feasibility Determination: TBD

Stakeholder Feedback: TBD

Initial Environmental Review: TBD

Safety Assessment: TBD

- d. **Nighttime Offloads/Routes:** Communities want a focus on reducing noise concerns at night.

- i. Review nighttime operations. (AJT, AJV-WOSG)

- ii. Review cargo flight operations to determine if previous actions have adequately addressed all issues. (AJT, AJV-WOSG)
- iii. Review utilizing the current Big Sur for late night cargo arrivals. (AJT, AJV-WOSG)
- iv. Review the current nighttime operations to determine if they adequately address preferential Runway usage. (AJT, AJV-WOSG)

NOTE: According to the SFO Standard Operating Procedure, the preferred Runway for operations between 0100 and 0600 local time is departing Runway 10 and landing Runway 28.

Detailed Analysis: Started October 2, 2015

Fly-ability Assessment: Started February 23-24, 2016

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Feasibility Determination: Completed February 24, 2016

Stakeholder Feedback: TBD

Initial Environmental Review: TBD

Safety Assessment: TBD

4. Operators:

Planned Actions: AJV will engage Airlines for America (A4A) and The International Air Transport Association (IATA) nationally to solicit perspective and input into defined issues. Operator involvement needs to be discussed, especially if the FAA does not utilize the roundtable concept to work issues with stakeholders. It is assumed that the Office of the Associate Administrator for Airports (ARP) would want some level of input or engagement as SFO should also be involved directly in these conversations.

- a. **Use of speed brakes:** Operators can focus on reducing the use of speed brakes. Pilots have the sole responsibility to determine when speed brakes should be used. (A4A, IATA)

Detailed Analysis: TBD

Fly-ability Assessment: TBD

Operational Assessment: TBD

Feasibility Determination: TBD

Stakeholder Feedback: TBD

Initial Environmental Review: TBD

Safety Assessment: TBD

- b. Runway choices:** Operators may request more “fly friendly” Runways, especially at night, to reduce noise concerns in certain locations. (A4A, IATA, SFO, AJV-WOSG)

Detailed Analysis: Started January 8, 2016

Fly-ability Assessment: Started February 23-24, 2016

Operational Assessment: Started February 23-24, 2016

Feasibility Determination: TBD

Stakeholder Feedback: TBD

Initial Environmental Review: TBD

Safety Assessment: TBD

- c. IFP choices:** Operators can file “fly friendly” procedures, especially at night, to reduce noise concerns in certain locations. (A4A, IATA, SFO, AJV-WOSG)

Detailed Analysis: Started January 8, 2016

Fly-ability Assessment: Started February 23-24, 2016

Operational Assessment: Started February 23-24, 2016

Feasibility Determination: TBD

Feasibility Determination: TBD

Stakeholder Feedback: TBD

Initial Environmental Review: TBD

Safety Assessment: TBD

- d. Nighttime Offloads/Routes:** Communities want a focus on reducing noise concerns at night. (A4A, IATA, AJV-WOSG, SFO)

Detailed Analysis: Started January 8, 2016

Fly-ability Assessment: Started February 23-24, 2016

Operational Assessment: Started February 23-24, 2016

Feasibility Determination: TBD

Feasibility Determination: TBD

Stakeholder Feedback: TBD

Initial Environmental Review: TBD

Safety Assessment: TBD

- e. **Early Turns:** Operators can assist ATC in ensuring as much as possible of a flight is over water versus over land by not requesting early turns on course. (A4A, IATA, AJV-WOSG)

Detailed Analysis: Started January 8, 2016

Fly-ability Assessment: Started February 23-24, 2016

Operational Assessment: Started February 23-24, 2016

Feasibility Determination: TBD

Stakeholder Feedback: TBD

Initial Environmental Review: TBD

Safety Assessment: TBD

- f. **International air carrier execution of Optimized Profile Descents (OPDs):** AJV will reach out to IATA to discuss and get input and perspective on this issue. (IATA, AJV-WOSG)

Detailed Analysis: Started January 8, 2016

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Operational Assessment: Started February 23-24, 2016

Feasibility Determination: TBD

Stakeholder Feedback: TBD

Initial Environmental Review: TBD

Safety Assessment: TBD

5. Community Engagement

- a. **Community Forums:** Addressing noise concerns in a densely populated and operationally complex area like Northern California is best done in a forum (such as existing and/or new roundtables) that includes community leaders and is supported by the FAA and Bay Area Airports. (AWP, AGI)

Status: The three Congressional Offices will appoint elected officials to assist in the establishment of the Select Committee on behalf of the communities of San Francisco, San Mateo, and Santa Cruz counties. The Select Committee will accept public input, review FAA plans and make recommendations on issues identified in the NorCal Initiative, and focus mainly on issues beyond the scope of the SFO Roundtable. The SFO Roundtable will review and comment on initiatives close in and at the airport. Aircraft noise issues identified the FAA's NorCal Initiative, will be a basis for the engagement of this Select Committee. Once the Select Committee is formally stood-up, the FAA will keep the committee informed on the progress of the Initiative and provide any necessary technical support, as appropriate.

- b. **San Carlos Airport:** Apart from the efforts described in this report, there are ongoing conversations with communities around the airport that are concerned about the increase in flights and noise. (AWP)

Status: In Fall 2015, the FAA Western Pacific Regional Administrator and the FAA Airports District Office met with San Mateo County Supervisor, staff from Representative Jackie Speier's office, San Carlos Airport, various local elected officials, and select community leaders in response to a request from the county supervisor to meet and discuss Surf Air operations. The county supervisor outlined issues including Surf Air's increase in daily operations from 2 per day a few years ago to more than 20 a day currently, the approach path over flying communities at low altitude, and the airports inability to place restrictions on operations due to the Airport Noise Capacity Act (ANCA). FAA followed up with a letter addressing ANCA and explained the FAR Part 161 process. Subsequent to the meeting, the county supervisor requested another meeting with FAA Air Traffic and Surf Air to discuss options for potential mitigation. FAA agreed to meet and is waiting for the meeting to be scheduled.

Phase Two: Modifications and Review

Based on the outcome of the initial analysis, feasibility and coordination, modifications may be made to the proposed procedures 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. NOTE: Phase Two Milestones have been added to Phase One.

Phase Three: Implementation

Based on the outcome of the modifications and review phase and assuming the proposed procedure(s) meet the purpose and need, as well as all applicable environmental laws and requirements, the controller workforce and operators will be trained/briefed on any operational or procedural changes before publication and operational use. Milestones for the final phase will be determined, as needed.