AGENDA

SANTA CLARA/SANTA CRUZ COUNTIES AIRPORT/COMMUNITY ROUNDTABLE

Regular Meeting of the Roundtable

July 28, 2021
1:00 – 4:00 PM PDT

This meeting will be conducted in accordance with State of California Executive Order N-29-20, dated March 17, 2020. All members of the Committee will participate by video conference, with no physical meeting location.

Members of the public wishing to observe the special meeting live may do so at:
https://www.youtube.com/channel/UCtPEqHsvTSnRcJUCQxX2Ofw?view_as=subscriber
Youtube.com → SCSC Roundtable Channel

Public comment will occur for each agenda item. Members of the public wishing to comment on an item on the agenda may do so in the following ways:

1. Email comments to scscroundtable@gmail.com by 3:00 p.m. on July 27, 2021. Emails will be forwarded to the Committee. Emails received after 3:00 p.m. and prior to the Chair announcing that public comment is closed may be noted or may be read into the record by the Chair at the meeting (up to 3 minutes) at the discretion of the Chair. **IMPORTANT:** *Identify the Agenda Item number in the subject line of your email. All emails received will be entered into the record for the meeting.*

2. Provide oral public comments during the meeting (up to 3 minutes) by following the link to register in advance to access the meeting via Zoom Webinar: https://esassoc.zoom.us/j/83361873873

    a. You will be asked to enter an email address and a name. Your email address will not be disclosed to the public. After registering, you will receive an email with instructions on how to connect to the meeting. If you prefer not to provide an email, you may call in to the meeting (listed below) and view the live stream on the SCSC Roundtable YouTube Channel.

    Dial: +1 669 219 2599 or +1 213 338 8477 or +1 346 248 7799 or +1 206 337 9723 or +1 646 518 9805 or +1 470 250 9358 or 833 548 0282 (Toll Free) or 877 853 5247 (Toll Free) or 888 788 0099 (Toll Free) or 833 548 0276 (Toll Free)

    Webinar ID: 833 6187 3873

    b. When the Chair announces the item on which you wish to speak, click the "raise hand" feature in Zoom. Speakers will be notified shortly before they are called to speak.

    c. When called to speak, please limit your comments to the time allotted (up to 3 minutes, at the discretion of the Chair).

    d. For those individuals participating by phone, you may use the following controls as appropriate.

    Press *9 - Raise hand

    Press *6 - Toggle mute/unmute

1.	**Welcome/Review of the Meeting Format** – *Evan Wasserman, Roundtable Facilitator*	Information
2.	**Call to Order and Identification of Members Present** – *Chairperson Bernald*	Information
3.	**Consent Agenda** **a)** Neighborhood Environmental Survey letter to Congressional Offices - *Chairperson Bernald* Authorize the Chairperson, with full SCSC Roundtable approval, to send a letter to the Congressional Representatives encouraging them to continue conveying Roundtable positions on aircraft noise impacts and FAA noise research.	Information/ Action
4.	**Draft FAA Advisory Circular on Airport Compatible Land Use** – Chris Jones*, Roundtable Facilitator* - Authorize the Chairperson, with full SCSC Roundtable approval, to prepare and send a comment letter to the FAA based on feedback from the SCSC Roundtable regarding the Draft Advisory Circular prior to the August 6, 2021 comment period deadline.	Information/ Action
5.	**Ad Hoc Committee Report** – *Chairperson Bernald* - Update regarding the Ad Hoc Committee's ongoing discussions with the Cities Association.	Information
6.	**Budget Summary** – *Chairperson Bernald* - Provide direction on the Fiscal Year 2021-2022 budget after presentation of the budget considerations to the full SCSC Roundtable. - Request approval for an expenditure of $3,000.00 for costs of Legal Counsel Kirsten Powell to prepare an amended Memorandum of Understanding (MOU) between the SCSC Roundtable and the Cities Association. Funding for this expenditure will come from the SCSC Reserves account.	Information/ Action
7.	**Chair's Report** – *Chairperson Bernald*	Information
8.	**SCSC Roundtable Elections** – *Evan Wasserman, Roundtable Facilitator* - Vote to elect SCSC Roundtable Chairperson / Vice Chairperson for the remainder of the 2021 term, only to be serving until January 2022, in order to re-align with the election schedule outlined in the bylaws.	Information/ Action
9.	**Oral Communications/Public Comment** on Items not on the Agenda- *Speakers are limited to a maximum of two minutes or less depending on the number of speakers. Roundtable members cannot discuss or take action on any matter raised under this agenda item.*	Information
10.	**Potential Topics for Future SCSC Roundtable Consideration** – Roundtable Members	Information
11.	**Adjournment** – *SCSC Roundtable Chairperson*	

Materials to be provided during the meeting:

- Presentation of the electronic agenda packet

IFP Gateway Memo and Attachments

memorandum

date	July 15, 2021
to	Roundtable Members and Interested Parties
cc	
from	Steve Alverson, Santa Clara/Santa Cruz Counties Airport/Community Roundtable Facilitator
subject	Review of the Federal Aviation Administration (FAA) Instrument Flight Procedures (IFP) Information Gateway

The FAA's Instrument Flight Procedures Information Gateway ("IFP Gateway") is a website used by the FAA to distribute aircraft instrument flight procedure details ("charts") to the general public.[1] The FAA also uses the IFP Gateway to share its IFP Production Plan, which includes details on IFPs under development or amendment along with development status and tentative publication dates. Environmental Science Associates (ESA) monitors the IFP Gateway for proposed changes to IFPs associated with Norman Y. Mineta San Jose International Airport (SJC), San Francisco International Airport (SFO), and Oakland International Airport (OAK). Changes to IFPs associated with these airports may affect communities in Santa Clara and Santa Cruz counties.

The FAA publishes IFPs on a 56-day publication cycle. The most recent publication date was June 17, 2021. The following information provides details on the IFP development process and IFPs under development or amendment.

Stages of IFP Development

Development of IFPs typically follows five stages, described below. Depending on the nature of the IFP development or amendment, not all of these stages may occur.

1. **FPT (Flight Procedures Team):** This team reviews potential IFPs for feasibility and coordinates IFP development with relevant FAA lines of business and staff offices.
2. **DEV:** Procedure development.
3. **FC (Flight Check):** The FAA performs a flight inspection of the procedure.
4. **PIT (Production Integration Team):** This team prepares procedure details to support publication.

[1] https://www.faa.gov/air_traffic/flight_info/aeronav/procedures/

5. **CHARTING:** Procedures are made available to the public, typically in graphical, text, and electronic formats.

IFP Development Status Indicators

The following terms are employed by the FAA to identify the status of the IFP during the development process.

At Flight Check	The procedure is with FAA staff responsible for flight inspection.
Awaiting Publication	The procedure has been developed and is awaiting an upcoming publication date.
Awaiting Cancellation	The procedure will be removed from FAA flight procedure databases on an upcoming publication date.
Complete	Procedure development has finished.
On Hold	Procedure development has been paused while awaiting further information.
Pending	Detailed development of the procedure will begin in the future.
Published	The procedure has been made publicly available.
Terminated	Development has terminated for the procedure.
Under Development	The procedure is being developed by the FAA.

Key Terms

The following acronyms are employed by the FAA to describe the IFP, including some of the navigational equipment necessary to accommodate the IFP.

ATC	Air Traffic Control
AMDT	Amendment
CAT	Category
DME	Distance Measuring Equipment
DP	Departure Procedure
FPT	Flight Procedures Team
GPS	Global Positioning System
GLS	Ground-Based Augmentation System (GBAS) Landing System
IAP	Instrument Approach Procedure
ILS	Instrument Landing System
LOC	Localizer
LDA	Localizer Type Directional Aid
RNAV	Area Navigation
RNP	Required Navigation Performance
RWY	Runway
SA	Special Authorization
SID	Standard Instrument Departure
STAR	Standard Terminal Arrival Route
TBD	To Be Determined

Management of FAA IFP Production During the COVID-19 Pandemic

On April 16, 2020, the FAA issued a memorandum (distributed with the May 27, 2020 IFP Gateway memorandum) discussing changes to IFP production during the COVID-19 pandemic. FAA noted that IFP production has been impacted by precautions taken to protect the health and safety of FAA Flight Inspection aircrews[2] due to the pandemic. Among the work that may continue during the pandemic is completion of IFP procedure amendments that do not require flight inspection; periodic IFP reviews and inventory maintenance; compilation and utilization of a list of completed IFP work that can be flown by Flight Inspection aircrews if operations are warranted; and coordination with FAA Flight Inspection Operations on IFP requests associated with National Airspace System Safety/Efficiency. This includes IFP related requests such as returning navigational aids to service and providing support to Flight Inspection Operations by ensuring satisfaction of IFP requirements at Focus 40 airports. IFP requirements include satisfaction of instrument approach procedure prerequisites, collection of airport land survey data, collection of airport data, and satisfaction of an initial environmental review. Both OAK and SFO are Focus 40 airports. SJC is not a Focus 40 airport. The memorandum further states that no new or amended IFP will be validated by Flight Inspection without prior FAA approval.

IFP Status

The following tables provide status updates on IFP production for procedures serving OAK, SFO, and SJC. Information highlighted in turquoise has been updated since the May 18, 2021 SCSC Roundtable IFP Gateway Review.

Norman Y. Mineta San Jose International Airport				
IFP in Production Plan	**Type of IFP**	**Status**	**Scheduled Publication Date**	**Additional Notes (If Applicable)**
RNAV (GPS) Y RWY 30L, AMDT 4	IAP	Under Development	12/02/2021	No further information available on the IFP Gateway at this time.
RNAV (GPS) Y RWY 30R, AMDT 4	IAP	Under Development	12/02/2021	No further information available on the IFP Gateway at this time.
RNAV (RNP) Z RWY 12L, AMDT 2B	RNAV STAR	Under Development	12/02/2021	This procedure was previously removed from the IFP Gateway. It is now under development. No further information available on the IFP Gateway at this time.
RNAV (RNP) Z RWY 12R, AMDT 3B	RNAV STAR	Under Development	12/02/2021	This procedure was previously removed from the IFP Gateway. It is now under development. No further information available on the IFP Gateway at this time.
RNAV (RNP) Z RWY 30L, AMDT 4	IAP	Under Development	12/02/2021	No further information available on the IFP Gateway at this time.
RNAV (RNP) Z RWY 30R, AMDT 3	IAP	Under Development	12/02/2021	No further information available on the IFP Gateway at this time.

[2] The FAA's Flight Inspection Operations Group is responsible for ensuring the safety of instrument flight procedures in the National Airspace System. Flight Inspection aircrews evaluate and validate ground and space-based navigational aids and conduct airborne inspection of all instrument flight procedures under both ideal and adverse weather conditions.

Norman Y. Mineta San Jose International Airport				
IFP in Production Plan	**Type of IFP**	**Status**	**Scheduled Publication Date**	**Additional Notes (If Applicable)**
STAR BRIXX (RNAV) THREE SAN JOSE CA KSJC	IAP	Published	6/17/2021	Aircraft on the BRIXX are either vectored off the procedure at the BRIXX waypoint or fly the entire procedure before transitioning to an RNAV approach procedure. The amendments to the procedure address safety issues by increasing separation between arrivals to SFO on the SERFR STAR and aircraft arriving into SJC. The amendments are also intended to fulfill a subset of the recommendations submitted by the Select Committee on South Bay Arrivals to modify the procedure. Changes to the procedure include the following: • Remove current YADUT waypoint (WP) (the prior terminal WP) from the procedure. • Move the JILNA WP 1.3 nautical mile (NM) southwest. Make JILNA WP the terminal WP. • Add 105º heading after JILNA WP. • Remove Minimum En Route Altitudes (MEAs) from Common Route to conform to air traffic control criteria. • Rename procedure the BRIXX THREE RNAV STAR (BRIXX THREE). Procedure changes were Categorically Excluded (CatExed) with FAIRGROUDS VISUAL RWY 30 L/R, AMDT 8, RNAV (RNP) Z RWY 30L, AMDT 3, and RNAV (RNP) Z RWY 30 R, AMDT 2 approach procedures on 12/01/2020.
FAIRGROUDS VISUAL RWY 30 L/R, AMDT 8	IAP	Published	6/17/2021	To allow for a more efficient transition from the BRIXX THREE STAR, three approach procedures were amended and some waypoint locations were moved. The prior version of the BRIXX THREE terminated at the YADUT waypoint (WP). YADUT was removed from the BRIXX THREE STAR and the BRIXX THREE STAR now terminates at the JILNA WP, which was moved from its old location to a point 1.3 nautical mile (NM) to the southwest. The FAIRGROUNDS visual approach now begins at the JILNA WP. The YADUT WP was also moved. Procedure changes were CatExed under NEPA on 12/01/2020 as a group with the RNAV (RNP) Z RWY 30L, AMDT 3 and RNAV (RNP) Z RWY 30 R, AMDT 2 IAPs, and the BRIXX (RNAV) THREE STAR.

Norman Y. Mineta San Jose International Airport				
IFP in Production Plan	**Type of IFP**	**Status**	**Scheduled Publication Date**	**Additional Notes (If Applicable)**
RNAV (RNP) Z RWY 30L, AMDT 3	IAP	Published	6/17/2021	To allow for a more efficient transition from the BRIXX THREE STAR, three approach procedures were amended and some waypoint locations were moved. The prior version of the BRIXX THREE terminated at the YADUT waypoint (WP). YADUT was removed from the BRIXX THREE STAR and the BRIXX THREE STAR now terminates at the JILNA WP, which was moved from its old location to a point 1.3 nautical mile (NM) to the southwest. Both the RNAV (RNP) Z RWY 30L, AMDT 3 and RNAV (RNP) Z RWY 30 R, AMDT 2 IAPs begin at the JILNA WP. Procedure changes were CatExed under NEPA on 12/01/2020 as a group with the FAIRGROUDS VISUAL RWY 30 L/R, AMDT 8, and the BRIXX (RNAV) THREE STAR.
RNAV (RNP) Z RWY 30R, AMDT 2	IAP	Published	6/17/2021	
STAR SILCN (RNAV) FIVE SAN JOSE CA KSJC	IAP	Published	6/17/2021	The procedure notes were amended to change transition references from east/west to landing north/south to avoid pilot confusion. Changes were made to reduce pilot confusion. Procedure changes were CatExed on 11/04/2020.
SID SPTNS (RNAV) ONE SAN JOSE CA KSJC	RNAV SID	Pending	1/27/2022	No further information available on the IFP Gateway at this time.
SID TECKY (RNAV) FOUR SAN JOSE CA KSJC	RNAV SID	Pending	1/27/2022	No further information available on the IFP Gateway at this time.
STAR RAZRR (RNAV) FIVE SAN JOSE CA KSJC	RNAV STAR	Pending	1/27/2022	No further information available on the IFP Gateway at this time.
STAR SILCN (RNAV) FOUR SAN JOSE CA KSJC	RNAV STAR	Pending	1/27/2022	No further information available on the IFP Gateway at this time.

San Francisco International Airport				
IFP in Production Plan	**Type of IFP**	**Status**	**Scheduled Publication Date**	**Additional Notes (If Applicable)**
GLS RWY 19R, Orig	GLS IAP	Under Development	12/2/2021	No further information available on the IFP Gateway at this time.
GLS RWY 28L, Orig.	GLS IAP	Under Development	12/2/2021	No further information available on the IFP Gateway at this time.
GLS RWY 19L, Orig.	GLS IAP	Under Development	12/2/2021	No further information available on the IFP Gateway at this time.
GLS RWY 28R, Orig.	GLS IAP	Under Development	12/2/2021	No further information available on the IFP Gateway at this time.
ILS or LOC RWY 19L, AMDT 23	IAP	Under Development	12/2/2021	No further information available on the IFP Gateway at this time.

San Francisco International Airport				
IFP in Production Plan	**Type of IFP**	**Status**	**Scheduled Publication Date**	**Additional Notes (If Applicable)**
RNAV (GPS) RWY 19L, AMDT 4	IAP	Under Development	12/2/2021	No further information available on the IFP Gateway at this time.
RNAV (GPS) RWY 19R, AMDT 4	IAP	Under Development	12/2/2021	No further information available on the IFP Gateway at this time.
TIPP TOE VISUAL RWY 28L/R, AMDT 3	IAP	Pending	1/27/2022	No further information available on the IFP Gateway at this time.
SAHEY FOUR (RNAV)	RNAV SID	Awaiting Publication	8/12/21	This procedure replaces the SAHEY THREE (RNAV) SID reported in the last memo. Summary of changes made: final segments of the CISKO, EBAYE, AND LOSHN transitions deleted from the procedure; transitions now terminate at KTINA, SUSEY, and KAYEX fixes, edited procedure pilot notes. Procedure amendments reduce pilot confusion, provide ATC ability to remove coordination between approach control and ARTCC. Procedure changes were CatExed with changes made to OAK procedures KATFH THREE RNAV SID and CNDEL FIVE SID and SFO procedures SSTIK SID and WESLA SID on 12/07/20.
SSTIK FIVE (RNAV)	RNAV SID	Awaiting Publication	8/12/21	This procedure replaces the SSTIK FOUR (RNAV) SID reported in the last memo. Summary of changes made: final segments of the CISKO, EBAYE, AND LOSHN transitions deleted from the procedure; transitions now terminate at KTINA, SUSEY, and KAYEX fixes, edited procedure pilot notes. Procedure amendments reduce pilot confusion, provide ATC ability to remove coordination between approach control and ARTCC. Procedure changes were CatExed with changes made to OAK procedures KATFH THREE RNAV SID and CNDEL FIVE SID and SFO procedures SAHEY FOUR SID and WESLA SID on 12/07/20.
WESLA FIVE (RNAV)	RNAV SID	Awaiting Publication	8/12/21	This procedure replaces the SID WESLA FOUR (RNAV) SID reported in the last memo. Summary of changes made: final segments of the CISKO, EBAYE, AND LOSHN transitions deleted from the procedure; transitions now terminate at KTINA, SUSEY, and KAYEX fixes, edited procedure pilot notes. Procedure amendments reduce pilot confusion, provide ATC ability to remove coordination between approach control and ARTCC. Procedure changes were CatExed with changes made to OAK procedures KATFH THREE RNAV SID and CNDEL FIVE SID and SFO procedures SAHEY FOUR SID and SSTIK FIVE SID on 12/07/20.

San Francisco International Airport				
IFP in Production Plan	**Type of IFP**	**Status**	**Scheduled Publication Date**	**Additional Notes (If Applicable)**
STINS FOUR	STAR	Published	6/17/2021	This procedure was amended by removal of the Santa Rosa VOR from the procedure chart. No courses, tracks, or altitudes were changed. Procedure changes were CatExed on 06/01/2020.
GNNRR THREE (RNAV) SID	SID	Pending	4/20/2023	No further information available on the IFP Gateway at this time.
MOLEN NINE DEPARTURE	SID	Pending	1/27/2022	No further information available on the IFP Gateway at this time.

Oakland International Airport				
IFP in Production Plan	**Type of IFP**	**Status**	**Scheduled Publication Date**	**Additional Notes (If Applicable)**
CNDEL FIVE (RNAV) SID OAKLAND CA KOAK	RNAV SID	Awaiting Publication	8/12/2021	The CNDEL FOUR SID, published 09/13/18, remains in effect. This procedure serves departures to the southeast. Summary of changes made: final segments of the CISKO, EBAYE, AND LOSHN transitions deleted from the procedure; transitions now terminate at KTINA, SUSEY, and KAYEX fixes; updated route description for all runways from “climb heading” to “climb on heading”; updated airport name from “METROPOLITAN OAKLAND INTL” to “METRO OAKLAND INTL. Procedure changes were CatExed with changes made to KATFH THREE RNAV SID and SFO procedures SAHEY SID, SSTIK SID, and WESLA SID on 12/07/20.

Oakland International Airport				
IFP in Production Plan	**Type of IFP**	**Status**	**Scheduled Publication Date**	**Additional Notes (If Applicable)**
KATFH THREE (RNAV) SID OAKLAND CA KOAK	RNAV SID	Awaiting Publication	8/12/2021	The KATFH TWO SID, published 08/20/15, remains in effect. This procedure serves departures to the southeast. Summary of changes made: final segments of the CISKO, EBAYE, AND LOSHN transitions deleted from the procedure, transitions now terminate at KTINA, SUSEY, and KAYEX; updated route description for all runways from “climb heading” to “climb on heading”; updated airport name from “METROPOLITAN OAKLAND INTL” to “METRO OAKLAND INTL.; deleted Takeoff Obstacle Notes and added “See Form 8260-15A, Takeoff Minimum and Obstacle Departure Procedures (ODP)”; Changed chart “Top Altitude 3000” to “Top Altitude: Assigned by ATC–FPT/ATC request”; Added “Maintain ATC assigned altitude” to DP route description. Procedure changes were CatExed with changes made to CANDL FIVE RNAV SID and SFO procedures SAHEY SID, SSTIK SID, and WESLA SID on 12/07/20.

SCSC Roundtable Draft NES Letter

SANTA CLARA/SANTA CRUZ COUNTIES
AIRPORT/COMMUNITY ROUNDTABLE
PO Box 3144
Los Altos, CA 94024

July 28, 2021

Office of the Honorable Anna Eshoo
698 Emerson Street
Palo Alto, California 94301

Office of the Honorable Ro Khanna
3150 De La Cruz Blvd
Suite 240
Santa Clara, CA 95054

Office of the Honorable Jimmy Panetta
100 W. Alisal Street
Salinas, CA 93901

Subject: SCSC Roundtable Recommendations Regarding the FAA's Neighborhood Environmental Survey Results

Dear Ms. Eshoo, Mr. Khanna, and Mr. Panetta,

The SCSC Roundtable is submitting the following input regarding the FAA's Neighborhood Environmental Survey (NES) for review and response by congressional offices:

The NES found that people are now more highly annoyed by aircraft noise at lower noise levels than those established in previous studies using dose-response annoyance curves. This is not a surprise to the SCSC Roundtable members and our constituents, who have long held that the DNL 65 dB threshold and reliance on the DNL metric does not adequately capture the full impact of aircraft noise, especially at locations several miles from an airport. For example, based on the FAA's significance criteria, the NorCal Metroplex Environmental Assessment (EA) concluded there would be no new noise impacts from implementing the NorCal Metroplex flight procedures in 2015. However, since implementation of the NorCal Metroplex procedures, thousands of aircraft noise complaints have been filed, investigations have been conducted, committees have been formed, and the SCSC Roundtable has been created to address the increased, adverse noise impacts. The NES validates these impacts, and it is now time for Congress to act.

The SCSC Roundtable makes the following recommendations:

1. **Reduce the Impact Threshold Noise Levels**

   We recommend reducing the threshold noise levels as measured by DNL as a short-term solution and mitigating the impacts above the new threshold. Scientific evidence has clearly indicated that the current DNL 65 dB impact threshold must be lowered. The results of the NES suggest that a level of DNL 47 dB would result in the same level of annoyance now as was associated with the DNL 65 dB when it was first established in the early 1980s.

   The SCSC Roundtable recommends that Congress immediately establish DNL 50 dB as the aircraft noise impact threshold for National Environmental Protection Act (NEPA) and 14 CFR Part 150 noise analyses. As long as the DNL metric is used in the preparation of noise analyses under NEPA, 14 CFR Part 150, and other federal statutes, it should be lowered to DNL 50 dB.

The SCSC Roundtable also recommends that Congress establish that noise sensitive land uses exposed to aircraft noise levels of DNL 50 dB and higher are considered impacted and that the FAA be required to develop mitigation measures to reduce aircraft noise exposure to levels below DNL 50 dB.

2. **Adopt and Use Alternative Metrics and Thresholds**

   The use of a single metric (DNL) and threshold (65 dB) to assess "Significant Impacts" is inadequate and does not meet the Congressional requirement for a metric that provides "a highly reliable relationship between projected noise exposure and the surveyed reactions of people to noise" (1979 Aviation Safety and Noise Abatement Act (ASNA)."

   To more correctly assess and then mitigate the impact of aircraft noise for people on the ground while developing a new national framework that is consistent with the results of the NES and the requirements of ASNA, the FAA should adopt and use alternative metrics and thresholds.

   Intermittent noise is profoundly different from ambient noise. The Roundtable further recommends that the FAA be required to identify noise sensitive areas where low noise levels (daytime and nighttime) below DNL 50 are an aspect of the setting, and then conduct additional analyses using alternate noise metrics (e.g., Time Above [TA], Number Above [NA]) to identify any reportable noise increases and potential mitigation.

3. **Fully Fund the Recommendations**

   The SCSC Roundtable recommends that Congress provide adequate funding on an ongoing basis to accomplish Recommendations 1, *Reduce the Threshold Noise Levels*, and 2, *Adopt and Use Alternative Metrics and Thresholds*.

4. **Develop a Timeline**

   The SCSC Roundtable recommends that the FAA should quickly develop a timeline for implementing the above recommendations regarding changing the DNL impact threshold, determining how to mitigate noise effects in areas exposed to DNL 50-65, implementing a policy to use alternative metrics to better evaluate noise, and developing a new framework to comply with ASNA.

Finally, we hope the FAA is cognizant of its critical role in communicating with the public and other stakeholders. As the FAA implements changes in response to the NES study and other developing information – whether on its own initiative or in conformance with Congressional direction – we urge that the FAA provide basic study data and accessible and understandable interpretations of its research findings and subsequent policies. The SCSC Roundtable members look forward to continuing to help our local governments in communicating with the public about aircraft noise issues. We want to thank you for considering the SCSC Roundtable's recommendations and for continuing to support our efforts to reduce aircraft noise for our constituents.

On behalf of the SCSC Roundtable, thank you for your attention to these requests. We look forward to your response in the near future.

Sincerely,

Mary-Lynne Bernald
Chairperson, SCSC Roundtable

Draft FAA AC-150/5190-4B

U.S. Department
of Transportation
Federal Aviation
Administration

Advisory Circular

Subject: Airport Land Use Compatibility Planning

Date: DRAFT **AC No:** 150/5190-4B
Initiated By: APP-400

1 Purpose.

- This Advisory Circular (AC) is intended to help a broad audience understand the effects of incompatible land use on the safety and utility of airport operations, and identify compatible land use development tools, resources and techniques to protect surrounding communities from adverse effects associated with airport operations.
- This AC describes the major incompatible land uses that conflict with or are impacted by operations at local public-use airports. These include residential use within airport noise contours; airspace obstructions and hazards to safe navigation to and from the airport such as tall structures, light, glare, electronic/radio, smoke or other atmospheric interference emanating from nearby land uses; land uses that attract birds and other wildlife hazards to the airport and its immediate environs; and land uses with concentrations of people or property within airport runway protection zones.
- Airport-compatible land uses are defined as those uses that can coexist with a nearby airport without constraining the safe and efficient operation of the airport, or exposing people living or working nearby to unacceptable levels of noise or hazards.
- The intent of this document is to inform, educate, and increase awareness about land use compatibility issues related to airports and community development. This AC provides broad, general guidance to communities across the country on airport compatible land use planning. Because the Federal Aviation Administration (FAA) does not have the l authority to directly control land uses and land use decisions are often made at the local level, it is important that local land use planners understand the implications of land use compatibility between airports and their local communities. The guidance in this AC does not replace any local land use regulations that may be in place.
- Through federal grant assurances, airport sponsors and owners are obligated to pursue all reasonable and appropriate actions to secure and promote compatible land use and development within their local areas. Airports owned and operated by the same jurisdiction that is the land use authority (e.g. city or county owned airport) are expected to adequately control land use near the airport and prevent new incompatible development. Airports that are located within multiple jurisdictions or have no land use

authority are expected to remain vigilant of incompatible development proposals within the airport environs, and take reasonable and appropriate action to mitigate incompatible land use and promote compatible development.

- Nothing in this AC creates or modifies existing airport planning or design standards, or creates new requirements for airports, communities or FAA personnel. Rather, it consolidates and updates previous guidance on these matters, including information on tools and resources that the FAA has created since the preceding AC was published in 1987.

2 Application.

- This document is intended for a diverse audience. This includes airport sponsors, airport management, developers, local and regional land use planners that are focused on transportation, economic development, natural resource conservation, and related topics; local elected and appointed officials; FAA officials and other governmental agencies (federal, state and local); and others who play a role in achieving and maintaining airport land use compatibility.
- This AC provides resources to assist airport and state and local community planning efforts with the development of effective airport land use compatibility plans. Sample airport land use compatibility plan content, and airport overlay and compatibility zoning ordinances, are included in the AC appendices.
- The information contained in this AC is not all-inclusive. Applicability will vary on a case-by-case basis due to state and local land use planning regulations.
- This AC does not constitute a regulation, and is not legally binding in its own right. It will not be relied upon as a separate basis by the FAA for affirmative enforcement action or penalty. Conformity with this AC is voluntary, and nonconformity will not affect rights and obligations under existing statutes and regulations, except for the projects described in subparagraphs 2 and 3 below:
  1. The standards and processes contained in this AC are specifications the FAA considers essential for the fidelity of Residential Sound Insulation Programs.
  2. Use of these standards and guidelines is mandatory for projects funded under Federal grant assistance programs, including the Airport Improvement Program (AIP). See Grant Assurances #34 and #21.
  3. This AC is mandatory, as required by regulation, for projects funded by the Passenger Facility Charge program. See PFC Assurance #9.

     Note: This AC provides one, but not the only, acceptable means of meeting the requirements of 14 CFR Part 139, Certification of Airports.

3 Cancellation.

This AC cancels AC 150/5190-4A, *A Model Zoning Ordinance to Limit Height of Objects around Airports*, dated December 14, 1987. It also cancels FAA Memorandum, "Interim Guidance on Land Uses Within a Runway Protection Zone," dated September 27, 2012.

4 Feedback on this AC.

If you have suggestions for improving this AC, you may use the Advisory Circular Feedback form at the end of this document.

Bob Craven
Director, Office of Airport Planning and Programming

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CHAPTER 1. INTRODUCTION

1.1 Need for Guidance.

1.1.1 FAA encourages and assists local airport sponsors and their community land use planning authorities with undertaking their best efforts to secure compatible land use development and planning within the airport environs. Airports that accept federal money through the Airport Improvement Program (AIP) must comply with all FAA Grant Assurances. These include but are not limited to Assurances 19, Maintenance and Operation; 20, Hazard Removal and Mitigation; and 21, Compatible Land Use. These assurances are based on statutory requirements. Because these assurances require airports to take appropriate and reasonable actions to promote and maintain airport land use compatibility, the FAA is publishing this Advisory Circular (AC) to provide guidance to airports and other stakeholders on how to accomplish these actions.

1.1.2 Although there are various federal resources on the topic of land use compatibility, historically there is no single, comprehensive land use guidance tool for airports and local communities. This AC is intended to serve as a resource to help airports comply with their grant assurances concerning all the compatible land use issues, including obstructions and hazard to airport navigation, airport noise, wildlife attractants and protection of persons and property on the ground. It references FAA regulations and guidance concerning compatible land use and development within the airport environs, such as Part 77 and Part 150 of Title 14 of the Code of Federal Regulations (CFR) and FAA Advisory Circulars (AC) 150/5300-13, *Airport Design,* and 150/5020-1, *Airport Noise Control and Compatibility Planning for Airports.*

1.1.3 This AC should be used as a starting point in addressing land use compatibility issues. Because land use planning and regulation is a power reserved to the states and political subdivisions of states, readers should refer to appropriate state legislation and guidance before formulating land use compatibility plans and programs. Additionally, local municipalities should review relevant ordinances, and other national and local guidance for a comprehensive understanding of each airport scenario.

1.2 Organization of the AC.

This AC is organized into the following chapters:

- Chapter 1: Introduction – Defines the concept of land use compatibility and its importance.
- Chapter 2: Land Use Compatibility Concerns – Identifies the land uses that may cause concern near airports.
- Chapter 3: Roles and Responsibility of Stakeholders – Addresses the various stakeholders at all levels and their responsibilities in achieving compatible land use.
- Chapter 4: Airport and Local Land Use Planning Coordination – Describes the various methods for planning coordination at the local level.

- Chapter 5: Tools and Techniques for Land Use Compatibility – Provides numerous methods and resources that can be employed to promote and achieve land use compatibility.
- Appendices – Includes additional resources related to airport land use compatibility:
  - Appendix A – Glossary
  - Appendix B – FAA Office of Airports
  - Appendix C – FAA Land Use-Related Regulations and Guidance
  - Appendix D – List of Crops Posing Particular Wildlife Attractant Problems
  - Appendix E – Sample Airport Land Use Compatibility Plan
  - Appendix F – Example Airport Land Use Compatibility Overlay Zoning Ordinance

1.3 History of Land Use Compatibility.

1.3.1 Airport land use compatibility has been a topic of discussion ever since flight began. It was formally recognized as an issue in 1952 when President Harry S. Truman commissioned the development of a report entitled "The Airport and its Neighbors" (commonly known as the Doolittle Report). The Doolittle Report documented the need to protect and preserve airports from incompatible land uses and protect people on the ground within the vicinity of airports from nuisances caused by airport and aircraft operations. Since that publication, guidance documents and programs have been created with the goal of supporting compatible land use near airports. As time has passed and development pressures have increased, the need for planning that addresses noise impacts to homes near airports and airport land use compatibility has grown between the 1960's and the present day.

1.3.2 National guidance on land use has been historically through three primary ACs:

- AC 150/5050-6, *Airport Land Use Compatibility Planning,* published in December 1977 (cancelled);
- AC 150/5020-1, *Noise Control and Compatibility Planning for Airports,* published originally in August 1983 at the initiation of FAA Airport noise compatibility planning programs, see Section 5.4 for description of FAA noise programs under 14 CFR 150; and
- AC 150/5190-4, *A Model Zoning Ordinance to Limit Height of Objects around Airports,* published in December 1987.

1.3.3 This AC supersedes AC 150/5190-4A, which focused primarily on height limitations. This revised AC accounts for both height and broader land use compatibility considerations. Appendix C includes a brief summary of federal land use regulation and guidance.

1.3.4 Other topics (such as wildlife attractants, noise, and airport and airspace design-related issues) are addressed in other FAA documents. This results in airport sponsors and local land use planners cross-referencing a number of resources to obtain a comprehensive picture of the issues related to compatible land use planning.

1.3.5 FAA guidance can help state, county, and local governments improve compatible land use planning. Increasing demand for land use development near airports will continue to impact airport operations and planned development. Consequently, it is important that airport sponsors act proactively with their local communities to promote compatible land use planning. Application of the tools and techniques described in this AC and the referenced FAA directives will help airport sponsors develop the coordinated compatible land use planning methods with their communities.

1.4 Value of Aviation.

1.4.1 The value of the U.S. air transportation network is evident on and off-airport, and at the local, regional, and national levels. Several national studies have been conducted to quantify this value, both directly and indirectly, across the aviation industry. According to the 2016 FAA report, *Economic Impact of Civil Aviation on the U.S. Economy*, civil aviation is responsible for nearly 11 million jobs, with over $446 billion in earnings and $1.6 trillion in total economic activity.

AIRPORT OPERATIONS/ACTIVITIES

Airports support a wealth of operations beyond general leisure and business travel and air cargo movement. Some examples include:

- Remote access
- Medical transport
- Surveillance
- Aerial firefighting
- Law enforcement
- International protection
- Research
- News reporting
- Visitation by VIP

1.4.2 The economic impact of airports in the U.S. was evaluated in Airport Cooperative Research Program (ACRP) Report 138, *The Role of U.S. Airports in the National Economy*. According to the report, airports directly support over two million jobs that total nearly $148 billion in labor income. When multiplier effects are considered, U.S. airports support $768 billion in total value added to the national economy.

1.4.3 In 2013, the General Aviation Manufacturers Association (GAMA) commissioned an economic study on the value of general aviation (GA) in the U.S. entitled *Contributions of General Aviation to the U.S. Economy*. This study found that GA supports 1.1 million jobs, with $69 billion in labor income and $219 billion in national economic output.

1.4.4 In addition to the economic value, airports provide qualitative benefits to a local community. This includes efficient trade, tourism accessibility, transportation safety, and expanded national and global health and research resources.

1.4.5 While the value of aviation can be evaluated in a number of ways (quantitatively and qualitatively), it is clear that the aviation system within the U.S. is significant to economies and communities at the local, regional, and national levels.

1.5 Benefits of Compatible Land Use Planning.

1.5.1 Compatible land use planning can benefit both the airport and the local community. While the benefits of compatible land uses are the same whether development exists or not, the cost of eliminating incompatible uses is much greater than the cost of effective, coordinated planning to prevent incompatible uses in the first place. Many stakeholders outside of airport property benefit from these planning efforts. The FAA encourages local communities/municipalities to consider these benefits when assessing the value of compatible land use planning.

1.5.2 Benefits range from continued value of the transportation infrastructure and transportation system, to continued support for business, leisure travel, and tourism, to reduction in noise-sensitive uses near airports, among many others. These benefits are recognized at all levels (local, regional, statewide, and national) and by many interest groups. Discussion of compatibility planning benefits is divided into the following sections:

- Benefits to the aviation system
- Benefits to people near airports
- Benefits to local and regional jurisdictions

1.5.3 Benefits to the Aviation System.

The opportunity for increased development, both on and near an airport, can benefit an airport and the local community financially. Likewise, protecting an airport's approaches and complying with design standards provides clear operating areas for aircraft utilizing an airport.

1.5.3.1 Opportunities for Airport Development.

Planning for compatible development can provide more opportunities for the efficient development of on-airport property (both aeronautical and revenue producing) and expansion of airport facilities. When incompatible uses are developed near airports, the airport may not be able to expand to meet increasing airport user needs or take advantage of beneficial on-airport development. Mitigating these incompatible developments after the fact to make room for an airport expansion can be extremely expensive. Instead, airport sponsors are urged to work proactively with local jurisdictions to plan for the airport's future development needs by identifying (early in the planning process) land use patterns and growth that are compatible with both current and anticipated airport use and local community needs.

1.5.3.2 **Preservation of Airport and Aircraft Operations.**

1.5.3.2.1 Incompatible land use has the potential to impact airports and aircraft operations in several negative ways. Not only does it raise concerns regarding potential aircraft accidents, incompatible land uses can limit the functionality and utility of an airport. For example, incompatible land uses, such as structures, that encroach into protected airspace may eventually cause displacement of a runway's threshold in order to maintain safety margins. A displaced threshold shortens the usable length of the runway and therefore limits the types of aircraft that can operate on a runway.

1.5.3.2.2 In addition to preserving airport facilities, encouraging the development of compatible uses at and around an airport can eliminate or reduce the need for pilots to follow modified flight paths or other costly noise abatement procedures if nearby development is in noise-sensitive areas.

1.5.3.3 **Protection of Airport Approaches and Departures.**

The most critical areas surrounding an airport are the approach and departure zones for airport runways. Because aircraft landing or departing from an airport frequently occupy this airspace, it is important to assess land uses directly underneath these zones for compatibility with aircraft operations. Continually monitoring and evaluating land uses in these areas can ensure the airport continues to operate safely and efficiently.

1.5.3.4 **Reduced Potential for Litigation.**

1.5.3.4.1 Another benefit of compatibility planning is a reduced potential for litigation. Litigation that stems from land use compatibility issues can be costly for all parties involved, including an airport's sponsor (which is often the local municipality). If airport administration/management makes diligent efforts to encourage a compatible environment (existing and future), the risk of entering litigation to resist or prevent land use incompatibility can be significantly reduced. Coordinated airport and land use compatibility planning works to prevent potential site development conflicts that could otherwise result in costly and wasteful litigation to prevent incompatible development.

1.5.3.4.2 In general, airport sponsors may expect litigation costs to include attorney's fees, staff time, and the amount of settlement (if any). The magnitude of costs depends upon the type of litigation, duration and outcome, and can vary drastically from one scenario to the next. Case studies in ACRP Report 27 indicate there have been cases that have cost thousands of dollars on the low-end to millions of dollars on the high-end.

311 1.5.3.5 **Compliance with Airport Design Standards.**

312 1.5.3.5.1 Encouraging compatible uses near an airport can help provide or protect
313 runways of the appropriate dimensions for use by the most critical aircraft.
314 Airport design standards are addressed in FAA AC 150/5300-13, *Airport*
315 *Design.* These should be considered when looking at compatible land use
316 issues. When incompatible development surrounds an airport, it can be
317 challenging for the airport sponsor to provide a runway that complies with
318 airport design safety standards.

319 1.5.3.5.2 Sponsor implementation of compatible land use controls and monitoring for
320 incompatible development will help mitigate and prevent hazards to flight.
321 It will also help protect people and property on the ground near airport
322 runways.

323 1.5.3.6 **Avoidance of Hazardous Wildlife Attractants.**

324 1.5.3.6.1 FAA AC 150/5200-33, *Hazardous Wildlife Attractants on or Near Airports*,
325 advises that specific land use developments such as wastewater treatment
326 facilities, wetlands mitigation, dredge spoil containment areas, and solid
327 waste landfills be located at least 5,000 feet away from the end of a runway
328 at an airport that primarily serves piston-type aircraft, and at least 10,000
329 feet away if the airport serves turbojet aircraft. Airport sponsors who are
330 actively involved with their local planning entity are more likely to be
331 aware of proposals for these types of uses, and can work to maintain
332 compliance with AC 150/5200-33 and applicable regulations. See Section
333 2.2.3 for a discussion of the land use location and land use characteristics
334 that contribute to wildlife attractant hazard conditions, and require sponsor
335 evaluation and actions to prevent or mitigate hazards.

336 1.5.3.6.2 Not only do wildlife strikes pose a risk to aircraft occupants and people on
337 the ground, they are almost always fatal to the wildlife. Because of this,
338 land use compatibility planning can also protect wildlife by encouraging
339 habitat preservation or development away from airports.

340 1.5.4 Benefits to People near Airports.

341 An efficient airport contributes to the well-being of the public it serves, both
342 economically and by providing essential and desired aviation services. The benefits of
343 land use compatibility planning extend beyond an airport's property line and into the
344 surrounding community. Compatible land uses protect the people who live and work
345 near the airport by moderating potential effects whenever possible. Using the tools in
346 this AC and referenced resources, airports and local jurisdictions can evaluate land use
347 compatibility on an individual basis.

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1.5.4.1 **Community Awareness of Airport Compatible Land Use Planning.**

1.5.4.1.1 To fully realize the benefits of compatible land use planning, the local community needs to understand the concept of compatibility. Raising awareness in the local community about the effects of incompatibility and the benefits of compatibility can foster a collaborative relationship between the community and the airport in which thoughts and concerns from both perspectives are shared.

1.5.4.1.2 This can be accomplished in many ways, such as hosting an open house at the airport or airing a short educational segment on airport/local community social media outlets. Communities that understand the reasons for compatibility planning are more likely to be supportive of compatible land use planning efforts in the future.

1.5.4.1.3 Federally obligated airports should work with the FAA to ensure any outreach they conduct is within their grant obligations (e.g. acceptable airport revenue use practices).

1.5.4.2 **Reduced Noise Exposure.**

Planning that reduces or prevents noise-sensitive uses around an airport benefits the community by reducing the number of people exposed to aircraft noise and by improving the quality of life for nearby residents. When noise-sensitive uses already exist around an airport, techniques such as noise abatement and noise mitigation can help reduce the effects of airport noise. 14 Code of Federal Regulations (CFR) Part 150, *Airport Noise Compatibility Planning* and FAA AC 150/5020-1 also provide valuable guidance and resources. See Section 2.2.1 of this AC for more information on airport noise compatibility programs.

1.5.4.3 **Opportunities for Compatible Community Development.**

Collaboration between airports, local jurisdictions, and private property owners/developers during long-term planning can identify compatible uses that support economic development on and around an airport. By keeping compatibility concerns in mind during planning phases, stakeholders can be more confident about proposed investment and development, and avoid costly investment in incompatible uses.

1.5.5 Benefits to Local and Regional Jurisdictions.

1.5.5.1 Local and regional jurisdictions are often the owners and sponsors of public airports. Therefore, they have a responsibility to maintain compatibility between the airport and the local community. Coordinated land use compatibility planning greatly benefits local and regional jurisdictions over the long-term. Developing the needed coordination structures and relationships can be challenging, and may require several years of continued

effort, but it can result in mutually desired compatible land use plans and development results.

1.5.5.2 An example of compatibility planning benefits at the local and regional level is in Panama City, Florida, with the construction of the Northwest Florida Beaches International Airport (ECP). This airport replaced the former Bay County International Airport.

1.5.5.2.1 The new airport and redevelopment of the closed airport was planned jointly by the State of Florida Department of Community Affairs (DCA), Bay County, and the Panama City – Bay County Airport Authority and Industrial District (Airport Authority). The new airport location was largely undeveloped. These entities developed a new land use sector plan to identify the location of planned airport infrastructure and defined an Airfield Compatibility Use Special Treatment Zone (ACUSTZ) around the airport. Under the land use sector plan, incompatible uses (according to FAA criteria) are located outside of the defined ACUSTZ.

1.5.5.2.2 Stakeholder efforts (especially the Airport Authority, in cooperation with the state and local jurisdictions) resulted in a coordinated land use plan and framework for development that meets the community's vision and protects the new airport for planned operations to serve the community.

1.5.5.3 Compatible land use planning at existing airport locations also greatly benefits the local community and their airport facilities. Zoning and development permitting and planning that precludes introduction of incompatible development provides long-term benefits and cost savings to a community (versus the cost of incompatible development). To secure these benefits, airports that are owned by the local land use jurisdiction should ensure effective land use controls are enforced within the airport environs under their jurisdiction. The FAA encourages airports without land use authority within the airport environs to remain vigilant and advocate for compatible development and land use controls whenever opportunities arise.

1.5.5.3.1 Reduced Potential for Complaints.

Compatibility planning to minimize noise-sensitive uses near airports is the most effective way to reduce complaints from the local community. Planning for mitigation or prevention of noise sensitive uses is the key consideration for effective coordinated land use planning. This applies to both airport development and off-airport land uses in areas affected by aircraft noise.

1.5.5.3.2 Development Revenues and Taxes.

In many instances, compatible land uses provide higher property tax payments and demand fewer services. For example, industrial uses often have a higher tax rate than residential uses. Open space and agricultural

uses demand fewer services (subject to wildlife attractant evaluation). Evaluation of potential land use options may create a potential win-win situation where development is both more compatible and lucrative for the local municipality. Airport compatibility planning can encourage this kind of development. It can also reduce the potential that infrastructure investment may not be usable when land use compatibility is ultimately considered.

1.5.5.3.3 Reduced Mitigation Cost for Incompatible Development.

- It is usually less costly for local jurisdictions to plan and prevent the development of incompatible land uses than to mitigate problems later. Airport owners and operators, as well as other jurisdictions, can be held liable, directly or indirectly, for at least a portion of mitigation costs stemming from effects of incompatible land uses near the airport.
- ACRP Report 27, *Enhancing Airport Land Use Compatibility*, explored the impact of mitigation measures on local municipalities/entities/airports through several case studies. In some cases, airports proposed strategies to reduce hours of operation as a mitigation effort to reduce noise impacts. However, the impact on the economic viability of the airport by limiting its utility may not be acceptable. There are also legal impediments to outright restrictions for federally obligated airports. Other airports (such as the Fort Lauderdale Executive Airport in Ft. Lauderdale, Florida) have implemented preferential runway and flight track use to move noisy operations away from the most noise-sensitive areas, which can also limit airport utility.
- In other cases, airports (such as the Indianapolis International Airport) have implemented noise compatibility programs that include mitigation such as sales assistance, sound insulation, land acquisition, and other measures to mitigate incompatible development.
- In conclusion, when incompatible development is not prevented, higher costs are being incurred locally: (1) for property acquisition and other mitigation measures, (2) due to reduced tax revenue from devalued incompatible land use, and (3) local economic impacts due to reduced airport utility and efficiency.

1.6 Consequences of Incompatible Development.

1.6.1 Incompatible land uses such as those that pose physical obstructions, create visual distractions, and attract wildlife can threaten the safety of aircraft operations. They can also affect the safety of persons located near the airport environs. In addition, encroachment of incompatible land uses around airports may create physical constraints to safe and efficient aircraft operations, and challenges for airport capacity expansion.

1.6.2 The effects of airport operations on incompatible land uses—especially noise impacts on residential areas—can create a negative perception of the airport in the local community. Airport operations can be perceived as generating negative effects on the local community, especially noise disturbances on incompatible land uses. Community opposition generated by off-site airport effects can:

- Lead to delays in airport development or require redevelopment;
- Constrain capacity expansion;
- Restrict airport operations;
- Result in more stringent environmental requirements (including greater environmental impact analysis and mitigation requirements);
- Increase public outreach requirements; and
- In some cases, lead to litigation.

1.6.3 From a broader perspective, according to the U.S. Government Accountability Office (GAO), "constraints on efforts to expand airports or aviation operations could affect the future of aviation because the national airspace system cannot expand as planned without a significant increase in airport capacity." The national aviation system cannot accommodate the projected doubling or tripling of air traffic in the coming decades without additional airports and runways (GAO, 2008). This broader perspective, combined with the local community effects, demonstrates the wide range of potential impacts of incompatible development on the national, regional, and local economy, as well as neighbors to individual airports across the country.

1.6.4 On-Airport Economic Considerations.

When incompatible land uses result in community opposition to airport operation and expansion, there are economic consequences, such as project delays, which may result in additional costs to implement a project. For example, a delayed capacity expansion project leads to a variety of costly outcomes. These include persistent aircraft delays; diversion of aircraft to other airports; or, in extreme cases, the need to build a replacement airport at another site.

1.6.5 Off-Airport Economic Considerations.

1.6.5.1 Airports are local economic engines. They stimulate local economic activity, create employment, and generate income for local residents. When incompatible land uses around airports constrain airport use and efficient air service, local and regional jurisdictions cannot realize the full potential of airports to generate positive regional economic impacts. In addition, incompatible land use development can increase the risk of exposure to aviation accidents and expose neighboring residents to adverse

environmental effects. These impacts are another cost of incompatible land uses near airports.

1.6.5.2 Coordinated compatible land use planning on the airport and in the airport environs seeks to balance development demands to optimize the benefit of the airport location to the community, and preclude hazards and adverse impacts of incompatible development on local airport and aviation facilities.

CHAPTER 2. LAND USE COMPATIBILITY CONCERNS

2.1 Definition of Compatible Land Use.

Airport-compatible land uses are those that can coexist with a nearby airport without constraining the safe and efficient operation of the airport, or exposing people living or working nearby to significant noise impacts of hazards. Occasionally, a land use may not be easily classified by type as compatible or incompatible. It may need to be more closely evaluated on a case-by-case basis. Although this chapter outlines the general characteristics of land uses that influence compatibility, individual state, regional, and local sources should be consulted. Various municipalities have adopted guidance that may provide more specific detail on airport land use compatibility issues.

2.2 Evaluation of Airport Land Use Compatibility.

There are five base characteristics (or areas of consideration) to evaluate when assessing the compatibility of a specific land use. These include aircraft noise, airspace, wildlife, visual/atmospheric interference, protection of people and property, and development density. In addition to assessing a land use against these base characteristics, state and local criteria (if applicable) need to be considered when addressing land use compatibility. Because the FAA has a limited regulatory role in land use planning, the local, regional, and state provisions will likely take precedence in local land use decision making.

2.2.1 Aircraft Noise.

2.2.1.1 Aircraft noise is a primary concern when addressing airport land use compatibility. Aircraft operations can create sound levels that produce noise-induced annoyance in communities near airports, as well as specific effects such as speech interference and sleep disturbance. A tremendous amount of research has been done on this topic within FAA and in the aviation industry.[1] For example, there are numerous ACRP reports such as the following that can provide additional information on aircraft noise:

- ACRP Report 27: *Enhancing Airport Land Use Compatibility*
- ACRP 11-01/Topic 01-05 Legal Research Digest 5: *Responsibility for Implementation and Enforcement of Airport Land-Use Zoning Restrictions*
- ACRP 11-01/Topic 03-01 Legal Research Digest 12: *Fair Disclosure of Airport Impacts in Real Estate Transfers*

[1] As of the date of publication of this draft Advisory Circular, the FAA is actively conducting research to evaluate whether there is a scientific basis for updating the current threshold for defining significant noise. The FAA is also conducting research on sleep disturbance and other aspects of how noise may affect communities.

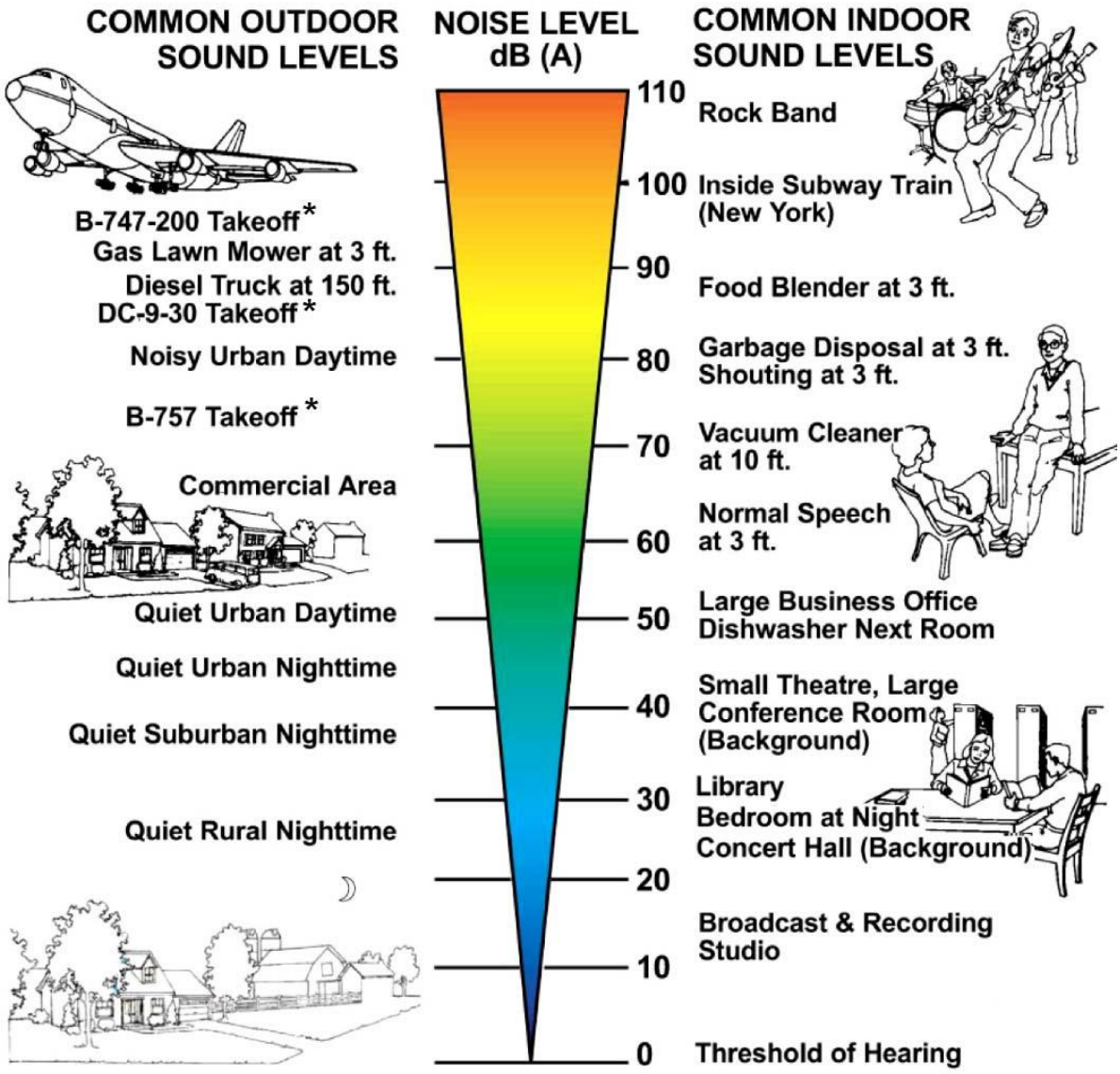
2.2.1.2 Several factors influence the perceived noise impact of aircraft operations near an airport. Common factors include:

- Proximity of a land use to an airport's flight patterns;
- Residents/occupants noise sensitivity: noise annoyance and interference to daytime and nighttime activities;
- Building materials used to reduce interior noise levels;
- The surrounding environment ambient noise level;
- Perception and acceptance of the necessity of existing aircraft noise;
- The typical day/night hours of aircraft operations;
- The number and frequency of aircraft operations; and
- The type of aircraft using an airport.

2.2.1.3 Aircraft noise effects are of concern as they can affect the quality of life for residents in their homes, and affect those using or residing in noise-sensitive facilities near airports. These include schools, places of worship, hospitals, parks, and recreational facilities.

2.2.1.4 **Figure 2-1** illustrates the noise level (dB(A)) of some common indoor noise sources, and how they compare to common outdoor sound levels.

Figure 2-1. Noise Level of Common Sounds



* 2 Miles from Brake Release

Source: FAA

2.2.1.5 As described in 14 CFR Part 150, *Airport Noise Compatibility Planning*, exterior noise levels at or above Day-Night Average Sound Level (DNL) 65 decibels (dB) are considered incompatible with residences and some other noise sensitive land use. **Table 2-1** shows land use compatibility with aircraft noise located within a range of decibel dB DNL measured noise levels. For more information on the compatibility of specific land uses with various levels of aircraft noise, refer to 14 CFR Part 150. In addition, see Section 4.2.2 for further discussion of FAA supported airport noise compatibility programs (NCP) developed under 14 CFR Part 150.

Table 2-1. Land Use Compatibility with Yearly Day-Night Average Sound Levels (DNL)

Land Use	Yearly Day-Night Average Sound Level (DNL) in Decibels					
	Below 65	65-70	70-75	75-80	80-85	Over 85
Residential						
Residential, other than mobile homes and transient	Y	N(1)	N(1)	N	N	N
Mobile home parks	Y	N	N	N	N	N
Transient lodgings	Y	N(1)	N(1)	N(1)	N	N
Public Use						
Schools	Y	N(1)	N(1)	N	N	N
Hospitals and nursing homes	Y	25	30	N	N	N
Churches, auditoriums, & concert halls	Y	25	30	N	N	N
Government services	Y	Y	25	30	N	N
Transportation	Y	Y	Y(2)	Y(3)	Y(4)	Y(4)
Parking	Y	Y	Y(2)	Y(3)	Y(4)	N
Commercial Use						
Offices, business and professional	Y	Y	25	30	N	N
Wholesale/Retail -bldg matrls/hardware/farm equip.	Y	Y	Y(2)	Y(3)	Y(4)	N
Retail trade – general	Y	Y	25	30	N	N
Utilities	Y	Y	Y(2)	Y(3)	Y(4)	N
Communication	Y	Y	25	30	N	N
Manufacturing & Production						
Manufacturing – general	Y	Y	Y(2)	Y(3)	Y(4)	N
Photographic and optical	Y	Y	25	30	N	N
Agricultural (except livestock) and forestry	Y	Y(6)	Y(7)	Y(8)	Y(8)	Y(8)
Livestock farming and breeding	Y	Y(6)	Y(7)	N	N	N
Mining and fishing	Y	Y	Y	Y	Y	Y
Recreational						
Outdoor sports arenas and spectator sports	Y	Y(5)	Y(5)	N	N	N
Outdoor music shells, amphitheaters	Y	N	N	N	N	N
Nature exhibits and zoos	Y	Y	N	N	N	N
Amusements, parks, resorts and camps	Y	Y	Y	N	N	N
Golf courses, riding stables and water recreation	Y	Y	25	30	N	N

Note: The designations contained in this table do not constitute a federal determination that any use of land covered by the program is acceptable or unacceptable under federal, state, or local law. The responsibility for determining the acceptable and permissible land uses and the relationship between specific properties and specific noise contours rests with the local authorities. FAA determinations under Part 150 are not intended to substitute federally determined land uses for those determined to be appropriate by local authorities in response to locally determined needs and values in achieving noise compatible land uses.

Key: Y (yes) = Land use and related structures compatible without restrictions.
N (no) = Land use and related structures are not compatible and should be prohibited.
25, 30, 35 = Land use and related structures generally compatible; measures to achieve Noise Level Reduction of 25, 30, 35 dB must be incorporated into design and construction of structure.

Notes:

(1) = Where the community determines that residential or school uses must be allowed, measures to achieve outdoor to indoor Noise Level Reduction (NLR) of at least 25 dB and 30 dB should be incorporated into building codes and be considered in individual approvals. Normal residential construction can be expected to provide a NLR of 20 dB, thus the reduction requirements are often stated as 5, 10, or 15 dB over standard construction and assume mechanical ventilation and closed windows year-round. However, the use of NLR criteria will not eliminate outdoor noise problem.

(2) = Measures to achieve NLR 25 dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas or where the normal noise level is low.

(3) = Measures to achieve NLR 30 dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas or where the normal noise level is low.

(4) = Measures to achieve NLR 35 dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas or where the normal noise level is low.

(5) = Land use compatibility provided special sound reinforcement systems are installed.

(6) = Residential buildings require an NRL of 25 dB.

(7) = Residential buildings require an NRL of 30 dB.

(8) = Residential building not permitted.

Source: 14 CFR Part 150, Appendix A, Table 1 (as published in 1984).

602 2.2.2 Airspace.

603 2.2.2.1 The most common airport land
604 use compatibility concerns are the
605 need to: maintain unobstructed
606 space for aircraft to maneuver
607 above ground; protect;
608 navigational facilities; and protect
609 of existing and future airport
610 capacity. Airspace can be
611 physically obstructed by tall
612 structures and vegetation; visually
613 obstructed by glare, light
614 emissions, dust, smoke, etc.; and
615 atmospherically disrupted by
616 thermal plumes.

617 2.2.2.2 The following sections discuss
618 these airspace issues and the
619 applicable standards and
620 regulations that protect the
621 nation's airspace. Appendix C
622 includes a detailed description of
623 land use guidance resources and
624 applicable regulations, some of
625 which are specific to airspace
626 protection.

627 2.2.2.3 Structure Height – 14 CFR Part
628 77/Obstruction Evaluation (OE)
629 Processes and Surfaces.

630 2.2.2.3.1 The FAA has a system of
631 standards and notification
632 procedures to protect the national
633 airspace from physical
634 obstructions. 14 CFR Part 77,
635 "Safe, Efficient Use and
636 Preservation of Navigable
637 Airspace," establishes standards
638 for determining and defining
639 objects that may pose potential
640 obstructions to air navigation.
641 While design standards contained
642 in AC 150/5300-13, *Airport*
643 *Design*, are intended to protect
644 specific ground areas, 14 CFR

AIRSPACE TERMS

Approach Minimum: The height above ground at which a pilot must have the airfield in sight to continue on approach to land. When obstructions exist to runway approaches, the approach minimums are raised, which can limit the utility of the airport in times of reduced visibility or low cloud cover.

Hazard: An existing or proposed object that the FAA, as a result of an aeronautical study, determines will have a substantial adverse effect upon the safe and efficient use of navigable airspace by aircraft, operation of air navigation facilities, or existing or potential airport capacity.

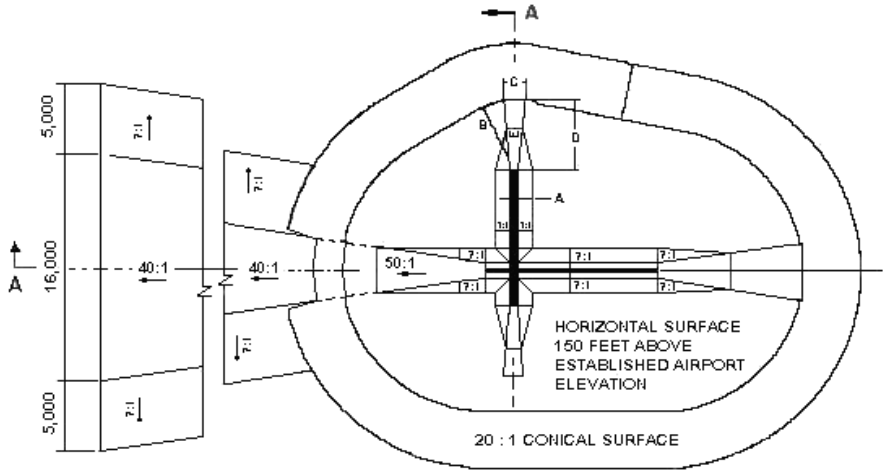
Imaginary Surfaces: Three-dimensional airspace areas that surround a runway and are used by the FAA through 14 CFR Part 77 to evaluate whether a structure or vegetation is or could be a hazard to air navigation. The dimensions of the imaginary surfaces are dependent upon individual runway characteristics.

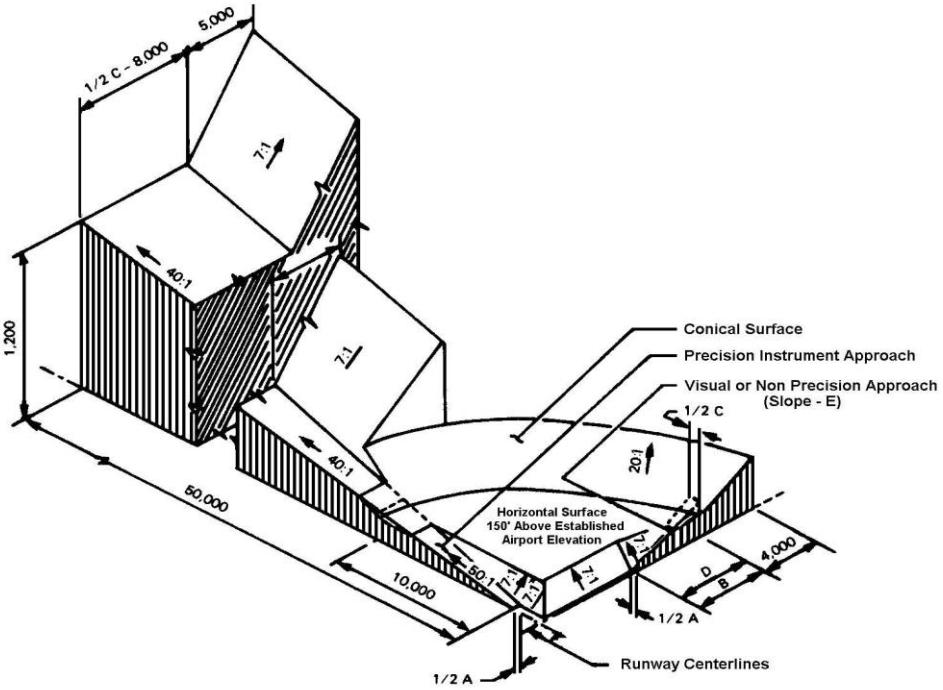
Obstacle: An existing object at a fixed geographical location or which may be expected at a fixed location within a prescribed area with reference to which vertical clearance is or must be provided during flight operation.

Obstruction: An object of greater height than any of the heights or surfaces presented in Subpart C of 14 CFR Part 77, Standards for Determining Obstructions to Air Navigation or Navigational Aids or Facilities.

Part 77 was developed by the FAA to protect specific airspace areas near an airport. The airspace areas governed by 14 CFR Part 77 are called "imaginary surfaces." **Figure 2-2** illustrates the imaginary surfaces in plan and isometric views.

Figure 2.2 Part 77 Imaginary Surfaces





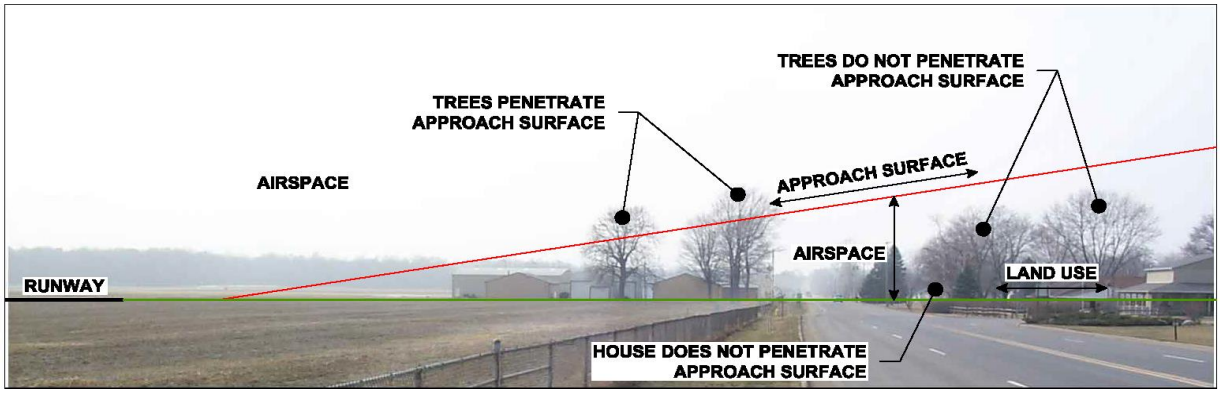
Source: https://www.ngs.noaa.gov/AERO/oisspec.html

2.2.2.3.2 When objects (existing or proposed) such as structures or vegetation penetrate the imaginary surfaces, they are considered "obstructions" to air navigation. The FAA has the authority to evaluate obstructions to determine whether they are or could be a "hazard" to air navigation. Federal airport grant assurances require the airport owner/sponsor to take all reasonable actions to remove, mitigate and prevent the introduction of obstructions to airport navigation approaches.

2.2.2.3.3 The presence of tall structures near an airport may be a hazard to air navigation. Tall structures include man-made objects (such as buildings, cell/radio/TV/MET towers, and wind farms), natural objects (such as tall trees), and terrain (high ground in airport approaches). Tall structures can reduce the utility of an airport and increase the chances of an aircraft collision with the structures. Aircraft approaching an airport under instrument flight conditions (periods of low visibility, such as nighttime or low cloud ceilings) follow a defined set of flight procedures. The height of objects along a runway approach course and in the missed approach segment has a direct effect on these procedures. **Figure 2-3** illustrates tall trees that are penetrating a runway approach surface (specific surface as defined by FAA AC 150-5300-13). A tall structure obstruction to airspace may prompt an increase in the minimum visibility and cloud ceiling criteria that a pilot must follow. These changes may increase the likelihood that aircraft will not be able to land at an airport during inclement weather.

2.2.2.3.4 In **Figure 2-3**, the tall trees must be trimmed or removed to maintain a clear runway approach. Unmitigated hazards may raise the runway approach minimums, resulting in the reduced utility and use of the affected runway.

Figure 2-3. Penetration of an Approach Surface by Tall Trees



2.2.2.3.5 Pursuant to 14 CFR Part 77, proponents of various construction and site alteration projects, on or off airport, must file notice with FAA to determine if the proposed construction or alteration creates a hazard to air navigation.

2.2.2.3.6 During Airport Layout Plan (ALP) review processes, FAA reviews and approves proposed development and construction on federally obligated airports that the FAA finds would materially impact the safe and efficient operation of aircraft at, to, or from the airport or that would adversely affect the safety of people or property on the ground adjacent to the airport as a result of aircraft operations, or that would adversely affect the value of prior federal investments to a significant extent.

2.2.2.3.7 For proposed development off airport property, and for proposed development on airport property that does not fall within the FAA's ALP approval or other regulatory authority, FAA does not approve or disapprove the construction of a structure. Rather, FAA comments on the possible impact to the national airspace system. As required by 14 CFR Part 77.9, "Construction or alteration requiring notice," any person or organization who intends to sponsor construction or alterations listed below must notify the FAA for an FAA obstruction evaluation.

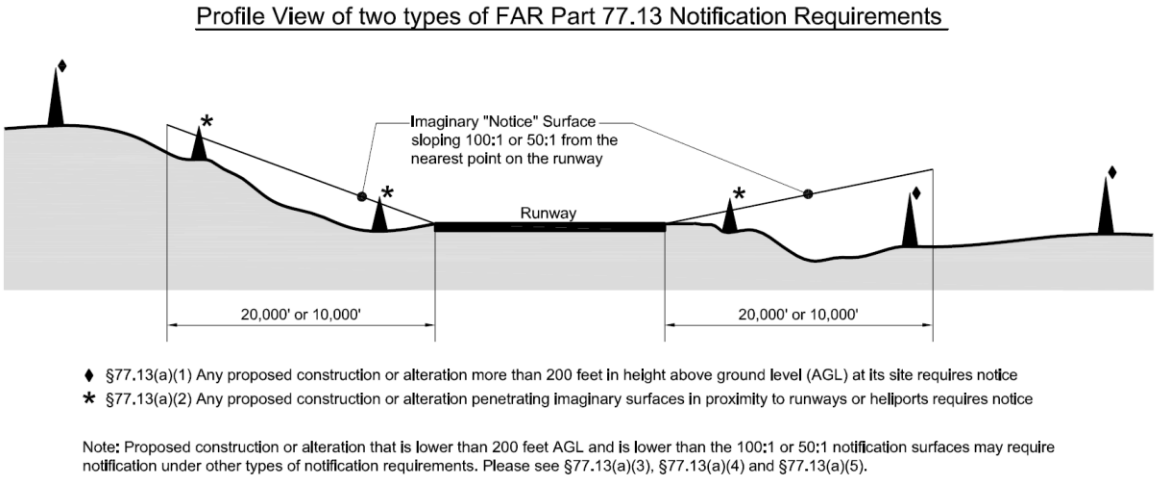
- Any construction or alteration that is more than 200 feet above ground level (AGL), regardless of location.
- Any construction or alteration that exceeds an imaginary surface extending outward and upward at any of the following slopes:
  - Penetrates a 100-to-1 slope for a horizontal distance of 20,000 ft. from the nearest point of the nearest runway of each airport described in 14 CFR Part 77. 9(d), with its longest runway more than 3,200 ft. in actual length, excluding heliports.
  - Penetrates a 50-to-1 slope for a horizontal distance of 10,000 ft. from the nearest point of the nearest runway of each airport subject to notice described in 14 CFR Part 77.9(d), with its longest runway no more than 3,200 ft. in actual length, excluding heliports.
  - Penetrates a 25-to-1 slope for a horizontal distance of 5,000 ft. from the nearest point of the nearest landing and takeoff area of each heliport described in 14 CFR Part 77.9(d).
- Any highway, railroad, or other traverse way for mobile objects, of a height which, if adjusted:
  - Upward 17 feet for an Interstate Highway that is part of the National System of Interstate and Defense Highways where overcrossings are designed for a minimum of 17 feet vertical distance;
  - Upward 15 feet for any other public roadway;
  - Upward 10 feet or the height of the highest mobile object that would normally traverse the road, whichever is greater, for a private road;
  - Upward 23 feet for a railroad;

- For a waterway or any other traverse way not previously mentioned, an amount equal to the height of the highest mobile object that would normally traverse it; and
- Would exceed the standard of the first two bullets, above.

- Any construction or alteration on any of the following airports and heliports:
  - A public use airport listed in the Airport/Facility Directory, Alaska Supplement, or Pacific Chart Supplement of the U.S. Government Flight Information Publications;
  - A military airport under construction, or an airport under construction that will be available for public use;
  - An airport operated by a federal agency or the DOD; and
  - An airport or heliport with at least one FAA-approved instrument approach procedure.

2.2.2.3.8 **Figure 2-4** illustrates two instances where 14 CFR Part 77 notification is required to allow the FAA to make a determination as to whether the proposed construction or alteration would create a hazard to air navigation.

Figure 2-4. Profile View of Sample Instances Requiring 14 CFR Part 77 Notification



Source: ACRP Report 38, *Understanding Airspace, Objects, and Their Effects on Airports.*

2.2.2.3.9 The FAA launched a notice criteria tool (https://oeaaa.faa.gov/oeaaa/external/gisTools/gisAction.jsp?action=showNoNoticeRequiredToolForm) that allows the user (airport sponsor, developer, and local municipality) to input locational and dimensional information about a proposed development to determine if they are required to file notice with FAA. If a notice is

required, the proponent will submit FAA Form 7460, "Notice of Construction or Alteration," to FAA for review.

2.2.2.3.10 In addition to evaluation of the imaginary surfaces in 14 CFR Part 77, airport and aircraft operators also consider whether obstructions exist to the airspace surfaces created by Terminal Instrument Procedures (TERPS) and one-engine inoperative (OEI) obstacle identification surface (OIS). More detail on TERPS and OIS is in Section 2.2.2.4 and Section 2.2.2.5, respectively.

2.2.2.3.11 The FAA evaluation usually results in one of three determinations on proposed construction:

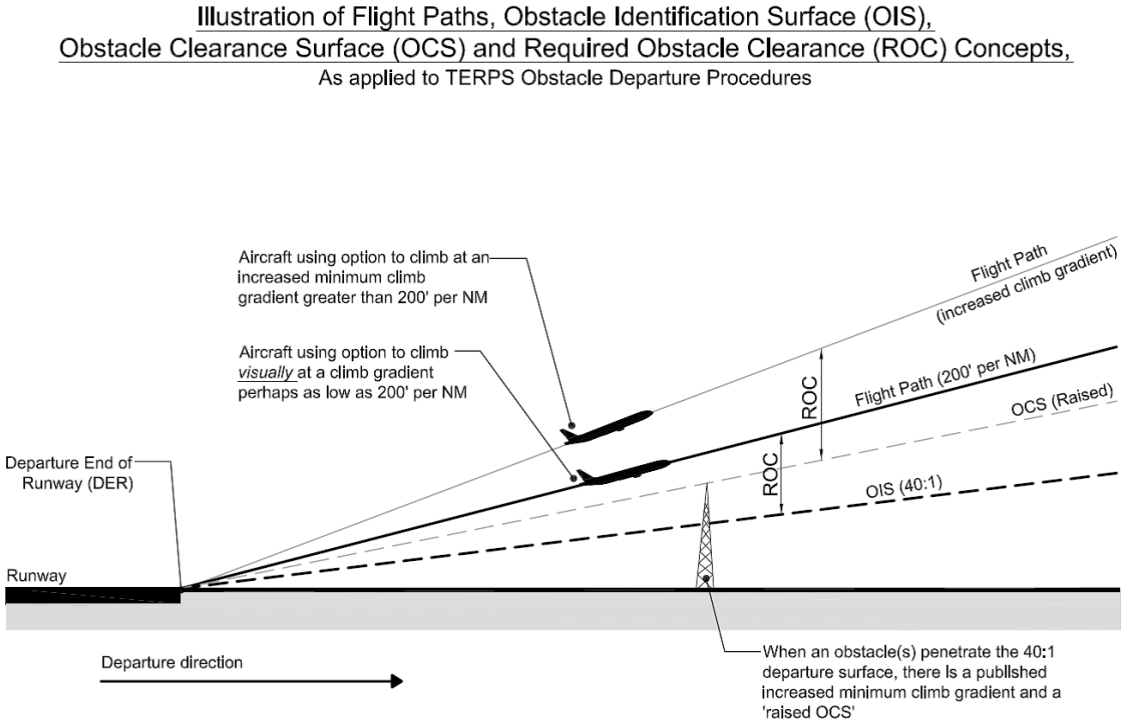
- Determined to be a hazard to air navigation;
- Determined not to be a hazard to air navigation; or
- Determined not to be a hazard with certain mitigation measures, such as lighting or marking.

2.2.2.3.12 As stated, though developers must submit FAA Form 7460, FAA does not have the authority to stop off-airport construction. Therefore, it is critical for local communities to create the height restrictions that prevent and/or mitigate structures that could be obstructions or hazards to air navigation.

2.2.2.4 Structure Height – Terminal Instrument Procedures (TERPS)**.**

FAA Order 8260.3, "United States Standard for Terminal Instrument Procedures (TERPS)," contains standards for designing and evaluating terminal instrument procedures at any location over which the U.S. has jurisdiction. TERPS criteria are used primarily by FAA when developing instrument flight procedures. Similar to 14 CFR Part 77, TERPS places constraints on the airspace in the vicinity of an airport. This may impact which land uses are compatible beneath those surfaces. TERPS surfaces are generally lower than 14 CFR Part 77 surfaces along the runway approaches, but may extend farther from the airport (e.g. 10 nautical miles compared to 10,000 feet). Operational TERPS surfaces will be modified due to alterations in the design of a flight procedure or because of the construction of new obstacles. TERPS criteria are designed to provide a margin of safety – a required obstacle clearance (ROC) – between aircraft in flight and permanent objects such as vegetation, terrain, and man-made objects. TERPS operational surfaces always must be clear of and above obstructions. **Figure 2-5** illustrates flight path modifications as applied to TERPS.

Figure 2-5. Flight Path Modifications as Applied to TERPS



Source: ACRP Report 38, *Understanding Airspace, Objects, and Their Effects on Airports.*

2.2.2.5 Structure Height – One-Engine Inoperative Obstacle Identification Surface (OIS).

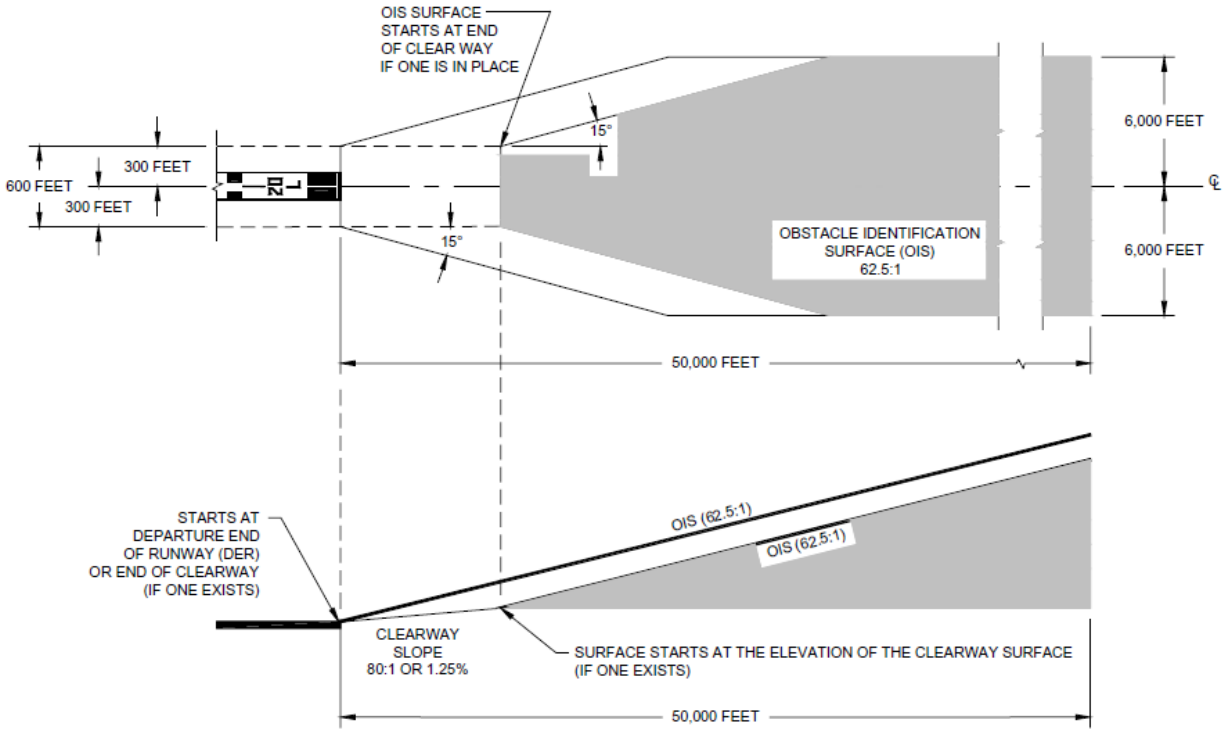
2.2.2.5.1 A two-engine Transport Category Aircraft must be able to climb at a slope of 62.5 feet horizontally to 1 foot vertically (62.5:1) with one engine inoperative in order to receive its FAA operating certificate (see 14 CFR §§25.111 and 25.115). This requirement is the basis for the one-engine inoperative (OEI) obstacle identification surface (OIS).

2.2.2.5.2 The OIS is a departure surface that is used by airlines when planning takeoff weights to avoid obstacles. Pursuant to 14 CFR §§121.189 and §135.379, each airline must calculate the appropriate OIS for individual aircraft operating at specific airports. Airports with runways that support air carrier operations must identify the OIS departure surfaces. These begin at the runway/clearway end at a width of 600 feet, and extend at a slope of 62.5:1 for a horizontal distance of 50,000 feet, with an outer width of 12,000 feet. The OIS is much larger than the surfaces established in 14 CFR Part 77 and TERPS, as illustrated in **Figure 2-6**. Airlines are notified of any object that penetrates the OIS for flight planning purposes.

2.2.2.5.3 Because the OIS is much larger than 14 CFR Part 77 and TERPS imaginary surfaces, it is difficult to coordinate the potential effects to airspace and airport operations if an obstruction exists. Although FAA does not have a

direct role in the protection of the OEI OIS airspace, protection of this airspace can be critical to preserve the viability of commercial air service at airports. Therefore, airport owners/sponsors and land use authorities need to consider it when evaluating compatible land uses near airports.

Figure 2-6. One Engine Inoperative (OEI) Obstacle Identification Surface (OIS)



Source: ACRP Report 38, *Understanding Airspace, Objects, and Their Effects on Airports.*

2.2.2.6 New Airports/Landing Fields**.**

2.2.2.6.1 The airport owner/sponsor needs to consider and evaluate potential local land use impacts when planning and developing a new airport.

2.2.2.6.2 Form 7480-1, "Notice of Landing Area Proposal[2]," works in conjunction with 14 CFR Part 157, *Notice of Construction, Alteration, Activation and Deactivation* to identify potential incompatibility. The regulation requires notification to the FAA 90-days prior to constructing or establishing a new airport (along with construction, alteration, deactivation, or change to the use of an existing airport). As stated in the regulation (14 CFR Part 157.1,

[2] See https://www.faa.gov/forms/index.cfm/go/document.current/documentNumber/7480-1.

"Applicability"), notice is not required for temporary or intermittent use of a site that is not established as an airport.

2.2.2.6.3 When completing a Form 7480-1, the form asks the project proponent to identify any obstructions (buildings, power line wires, roads, railroads, towers, etc.) within the vicinity of the runway(s). Existing or planned incompatible development such as schools, churches and residential communities that may be impacted by noise, and waste disposal sites within a five-mile radius (see "Wildlife and Bird Attractants," Section 2.2.3), may affect development. FAA will consider and comment on potential hazards to air navigation due to land use compatibility conflicts. However, the local municipality is ultimately responsible for permitting development through local zoning, and other state or local land use and development ordinances and processes.

2.2.2.7 Military Airspace Areas**.**

2.2.2.7.1 In addition to the areas defined for civil airports, communities should consider military operational areas, ranges, and bases when planning for land use compatibility. The Department of Defense (DOD) Office of Economic Adjustment (OEA) established two programs, one in the 1970s and one in the 1980s, to promote land use compatibility near military installations.

2.2.2.7.2 The first is the Air Installation Compatibility Use Zones (AICUZ) Program. This program establishes policies and guidelines to protect military operational compatibility by avoiding incompatible development that would prevent military installations from changing or expanding to meet new mission requirements.

2.2.2.7.3 The second program, the Joint Land Use Study (JLUS) Program, complements the AICUZ program. Through this program, the OEA provides technical and financial assistance to state and local governments to plan and implement strategic plans that support civilian growth and development that is compatible with military operations.

2.2.2.8 Visual, Atmospheric and Electronic Interference**.**

Maintaining an unobstructed view for pilots is a critical element of land use compatibility. In addition to physical obstructions, visual obstructions, electronic interference, or atmospheric disturbances can also pose hazards to flight. Many aircraft operations take place without navigational aids and operate under Visual Flight Rules (VFR). Maintaining visual clarity as the pilot transitions to the visual segment of an Instrument Flight Rule (IFR) flight plan (i.e. transitioning from looking at flight instruments to looking outside the cockpit windows) is critical for pilot control and a safe airport approach. Limiting atmospheric interference (such as the air turbulence from thermal plumes) near airports is critical to maintaining aircraft control.

Electronic interference is also a compatible land use consideration. This includes high-energy use, production or transmission facilities, or installations on an institutional, commercial, or industrial property that may affect navigational aids (NAVAIDs). The following sections discuss the concerns related to visual, atmospheric, and electronic interference. ACRP Report 108, *Guidebook for Energy Facilities Compatibility with Airports and Airspace*, provides research findings on some of these land use concerns.

2.2.2.8.1 Visual Obstructions.

- Open mining and construction activities can produce dust or other particulate matter that impact airport visibility. Dust can be picked up by the wind and create a dangerous situation for pilots trying to navigate through the area without instrumentation.
- Glare reflecting into and impacting flight approaches to an airport may be caused by the reflection of light off water bodies and shiny building materials used in proposed or existing development. Glare reflected back to the airport approaches at a particular angle can temporarily impair a pilot's vision during low-level flight operations, and can therefore be dangerous.
- Light emissions are also a potential concern, especially when large light concentrations shine upward in a flight path or towards the runway environment. These concentrated emissions can adversely affect a pilot's visual ability during evening hours, storm events, fog/smog, and other periods of reduced visibility.
- Other sources of light emissions include lighting in linear patterns that could be mistaken by pilots for airport operational areas. Furthermore, bright lights can cause momentary visual impairment for pilots as they pass between darkness into well-lit areas. Additionally, certain colors of neon lights (especially red and white) are a concern near airports and military installations because they can interfere with night vision goggles used by pilots.
- Large billboards using flashing/changeable message LED-illuminated signs near airports are a concern because they may distract pilots. Airport and zoning officials should carefully evaluate the potential impacts before approving these proposals. Some state and local jurisdictions have enacted sign and structure lighting use controls/standards (in their zoning and permitting ordinances) to protect against direct, intense light near airport approaches.
- Laser light shows or devices used in amusement parks, stadium events, or other outdoor productions should be regulated within the airport environs. This includes preventing lasers from being directed towards the flight pattern or airport approaches where they could affect aircraft. In addition, local awareness and law enforcement against inadvertent or

malicious direction of lasers towards airport approaches, or at aircraft, is important.

- Smoke, steam and smog can hinder a pilot's ability to navigate aircraft due to reduced visibility. Smog is hard to control because it is common over large cities (it is usually present as a blanket of blurriness), but source-points of smoke and steam can be better controlled. Smoke and/or steam stacks are a typical element of industrial operations or large institutional facilities. Local land use authorities should carefully consider placement of these elements in an airport's environs.

2.2.2.8.2 Atmospheric Interference.

- Land use planning around an airport should account for impacts to aviation from facilities that produce atmospheric interference, such as thermal exhaust plumes. FAA has determined thermal exhaust plumes can disrupt flight in the vicinity of an airport. The effect can vary greatly depending on several factors: local winds, ambient temperatures, stratification of the atmosphere, size, height, and number of the stack(s) emitting the plume(s), proximity to airport and flight paths, temperature and vertical speed of the effluent, and the size and speed of aircraft. When evaluating the potential impact of the exhaust plume(s), airport owners/operators should consider the traffic pattern, approach and departure corridors, and any existing or planned flight procedures.

- To aid review of the potential location of thermal exhaust plume facilities, the FAA contracted with MITRE Corporation to develop a thermal exhaust plume model. The model predicts the size and severity of the plume(s) in order to better understand potential atmospheric interference. The "Exhaust-Plume-Analyzer" is available at http://www.mitre.org/research/technology-transfer/technology-licensing/exhaust-plume-analyzer.

2.2.2.8.3 Electronic Interference.

- Land uses that can produce electronic interference should be carefully considered when located near an airport. Electronic interference can affect navigational aids used by pilots during takeoff and landing. Interference can be direct interference with the navigation signal (i.e. transmitting locally on a frequency that is close to the NAVAID frequency or a harmonic of that frequency) or indirect interference (through adverse reflections, blocking of the signal by structures, or some interfering activity at a location).

- For example, alternative energy sources are being used near or on airport property. Wind energy generated by turbines is a concern due to adverse effects to radio aids to navigation and radar (as well as the height of the turbines, which can become an obstruction to flight).

950 2.2.3 Wildlife & Bird Attractants.

951 2.2.3.1 From 1988 to 2015, reported wildlife strikes killed more than 262 people
952 and destroyed over 247 aircraft worldwide. According to the FAA report,
953 *Wildlife Strikes to Civil Aircraft in the United States, 1990-2015*, the
954 number of annual wildlife strikes reported to FAA has increased over
955 seven-fold: from 1,851 in 1990 to a record 13,795 in 2015. Birds were
956 involved in 95.8% of total reported strikes, terrestrial mammals in 1.6%,
957 bats in 2.3%, and reptiles in 0.3%. Over this 27-year period, civilian
958 aircraft strikes in the US resulted in 26 human fatalities. Sixty-eight aircraft
959 were destroyed or damaged beyond repair.

960 2.2.3.2 Of the wildlife strikes reported to FAA, the majority happened at or below
961 500 feet above ground level (AGL). Nearly twice as many strikes occurred
962 during the landing (final approach or landing roll) phase of flight than
963 during takeoff run and climb.

964 2.2.3.3 Based on the preceding, aircraft collisions with wildlife are steadily
965 increasing each year and threaten aviation safety. Factors that contribute to
966 this increasing threat include:

967 • Populations of large bird and mammal species commonly involved in
968 strikes have increased over the last few decades and are adapting to
969 living in urban environments, including airports.

970 • According to the 2018 FAA Terminal Area Forecast (TAF), the number
971 of operations at towered airports is expected to increase from over 50
972 million in 2017 to over 65 million in 2045.

973 • Older three and four engine aircraft are being replaced with newer,
974 more efficient two-engine aircraft. In the event of multiple engine
975 ingestion, aircraft with two engines may have vulnerabilities not shared
976 by three or four engine aircraft. Additionally, the newer, quieter
977 engines may not be as easily detected by birds to avoid collision.

978 2.2.3.4 ACRP Report 32, *Guidebook for Addressing Aircraft/Wildlife Hazards at*
979 *General Aviation Airports,* identifies the six most hazardous species or
980 species groups for fixed-wing aircraft having one or two engines weighing
981 less than 59,525 pounds:

982 • Deer

983 • Gulls/Terns

984 • Geese

985 • Ducks

986 • Raptors

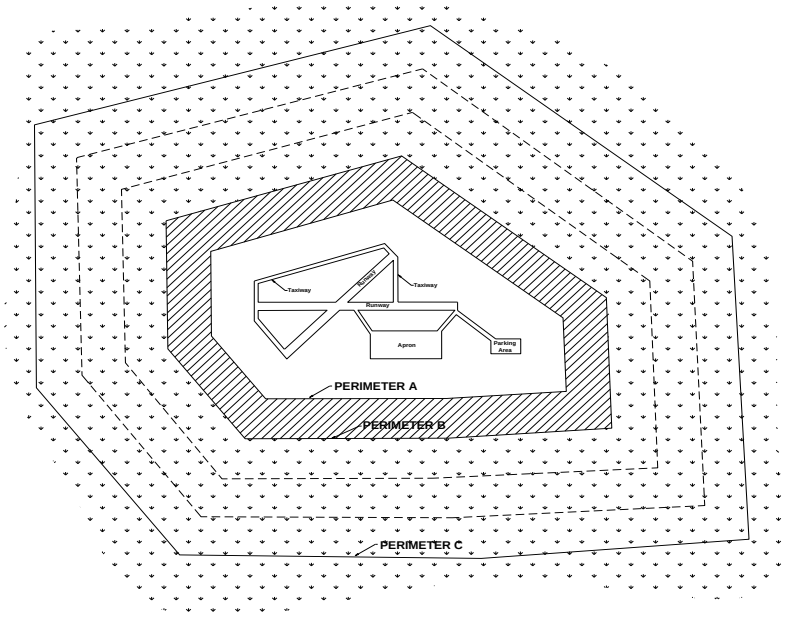
987 • Vultures

2.2.3.5 Minimizing land uses near airports that attract wildlife reduces the likelihood of wildlife strikes. With the majority of strikes occurring at or below 500 feet AGL, it is critical for airport owners/operators and local land use authorities to plan for compatible uses near airports and avoid uses that attract wildlife. There are typically three categories of attractants: food, shelter/cover, and water. Common attractants include certain agricultural or aquaculture activities, architectural features, landscaping, surface mining, waste disposal sites, wastewater treatment facilities, and wetlands. ACRP Report 32 includes a more detailed discussion of the uses considered attractive to wildlife.

2.2.3.6 FAA AC 150/5200-33, *Hazardous Wildlife Attractants on or Near Airports*, defines wildlife attractants as "any human-made structure, land use practice, or human-made or natural geographic feature that can attract or sustain hazardous wildlife within the landing or departure airspace, or Airport Operations Area (AOA)." **Figure 2-7** shows the areas around an airport to prevent wildlife attractants.

2.2.3.7 See Section 5.5.1, *Wildlife Hazard Management Plans*, for a description of needed plans and assessments developed under FAA AC 150/5200-33. See Appendix D for a U.S. Department of Agriculture (USDA) listing of plants that are attractive to wildlife and should be avoided on or near airports.

Figure 2-7. Wildlife Hazard Separation Distances



PERIMETER A: For airports serving piston-powered aircraft, hazardous wildlife attractants must be 5,000 feet from the nearest air operations area.

PERIMETER B: For airports serving turbine-powered aircraft, hazardous wildlife attractants must be 10,000 feet from the nearest air operations area.

PERIMETER C: 5-mile range to protect approach, departure and circling airspace.

Source: Graphic Developed by FAA Central Region Airports Division based upon guidance in FAA AC 150/5200-33, *Hazardous Wildlife Attractants on or Near Airports.*

2.2.4 Runway Protection Zones (RPZs).

2.2.4.1 The purpose of the Runway Protection Zone (RPZ) is to enhance the protection of people and property on the ground. This is best achieved through airport owner control over RPZs. Airport owner control over RPZs may be achieved through:

- Ownership of the RPZ property in fee simple;
- Possessing sufficient interest in the RPZ property through easements, deed restrictions, etc.;
- Possessing sufficient land use control authority to regulate land use in the jurisdiction containing the RPZ;
- Possessing and exercising the power of eminent domain over the property; or

- Possessing and exercising permitting authority over proponents of development within the RPZ (*e.g.*, where the sponsor is a State).

2.2.4.1.1 Control is preferably exercised through acquisition of sufficient property interest and includes clearing RPZ areas (and keeping them clear) of incompatible objects and activities. The FAA recognizes, however, that land use compatibility within RPZs is often complicated by land ownership, environmental, geographical and other considerations.

2.2.4.2 RPZs are trapezoidal in shape, centered about the extended runway centerline, and typically located off each runway end. The full standards and dimensions for RPZs are in FAA Advisory Circular 150/5300-13A, *Airport Design*. This AC replaces the FAA's "Interim Guidance on Land Uses Within a Runway Protection Zone," dated September 2012.

2.2.4.3 Expectations of Airport Sponsors.

The FAA expects all airport sponsors to comply with FAA Grant Assurances. These include, but are not limited to, Assurances 19 (Operations and Maintenance) and 21 (Compatible Land Use). Sponsors should take appropriate measures to protect against, remove, or mitigate land uses that introduce incompatible development within RPZs.

2.2.4.4 Existing Incompatible Land Uses.

2.2.4.4.1 The FAA expects airport sponsors to seek all possible opportunities to eliminate, reduce, or mitigate existing incompatible land uses. Examples may include land acquisition, land exchanges, right-of-first-refusal to purchase, agreements with property owners on land uses, easements, or other such measures. The FAA also expects sponsors to actively consider and evaluate available options anytime there is an ALP update or master plan update, and to be vigilant for any other opportunities that may arise from time to time (especially to purchase land) to eliminate or minimize existing incompatibilities. The FAA expects airport sponsors to document their efforts to demonstrate they are complying with relevant FAA Grant Assurances.

2.2.4.4.2 **Table 2-2** outlines expectations of airport sponsors for existing incompatible land uses within RPZs.

Table 2-2. Expectations of Airport Sponsors - Existing Incompatible Land Uses

Type of Land Use Control	Expectations of Airport Sponsors
If the airport sponsor owns or has total land use control (e.g., sponsor is the land use control authority and regulates land use in the local jurisdiction)	Because the sponsor has total land use control, the FAA considers it a reasonable expectation that the sponsor will establish and enforce the necessary zoning controls to enable it to address existing incompatible land uses when the opportunity arises.
If the sponsor has potential influence (*e.g.*, Airport Authority without zoning control)	Because the sponsor has at least some influence over land use control, the FAA considers it a reasonable expectation that the sponsor will seek to establish the necessary zoning controls to enable it to address existing incompatible land uses when the opportunity arises.
If the sponsor has no land use control (*i.e.*, RPZ land falls in another jurisdiction)	Even though the sponsor has no land use control, the FAA still considers it a reasonable expectation that the sponsor will actively watch for opportunities to establish the necessary zoning controls to enable it to address existing incompatible land uses when the opportunity arises. FAA will consider financial assistance to a public-sector sponsor for land acquisition even if they have no land use control, but only if the sponsor can demonstrate that they are taking all appropriate steps available to enhance control and mitigate existing risks.

2.2.4.4.3 The FAA will consider requests from eligible airport sponsors for AIP funding, in accordance with the AIP handbook, to help secure ownership or land use control if it helps eliminate existing incompatible land uses, and prevent future ones. FAA also expects airport sponsors to consider RPZ protection an "airside need," a high priority for financial planning purposes.

2.2.4.5 Proposed Incompatible Land Uses.

The FAA expects the airport sponsor to take active steps to prevent or mitigate proposed incompatible land uses. The FAA will not always require an airport sponsor to acquire land in order to meet the RPZ standard. However, the FAA does expect the airport sponsor to actively seek opportunities to prevent or mitigate risks associated with proposed incompatible land uses within the RPZ. Sponsors should actively monitor conditions and object publicly to proposed incompatible land uses, and to make it a high priority (financially or otherwise) to acquire land or otherwise establish land use controls that prevent incompatible uses. The FAA expects airport sponsors to document their efforts so that they can demonstrate that the airport is complying with its grant assurances. **Table 2-3** summarizes expectations of airport sponsors for new/proposed incompatible land uses within RPZs.

Table 2-3. Expectations of Airport Sponsors - New Incompatible Land Uses

Type of Land Use Control	Expectations of Airport Sponsors
If the airport sponsor owns or has total land use control (*e.g.*, sponsor is the land use control authority and regulates land use in the local jurisdiction)	Because the sponsor has total land use control, the FAA expects that the sponsor will establish all necessary protections to prevent new incompatible land uses.
If the sponsor has potential influence (*e.g.*, Airport Authority without zoning control)	FAA expects the sponsor to take all appropriate steps available to establish and exercise zoning controls necessary to prevent any new incompatible land uses. The FAA recognizes that the standard of "appropriate action, to the extent reasonable" does not mean in this case that the sponsor can always prevail. Rather, the FAA expects the sponsor to demonstrate and document a reasonable effort.
If the sponsor has no land use control (i.e., RPZ land falls in another jurisdiction)	Even if the sponsor has no land use control, FAA still expects the sponsor to actively pursue and consider all possible steps to secure land necessary to prevent any new incompatible land uses. The FAA recognizes that the standard of "appropriate action, to the extent reasonable" may not succeed. Even so, the FAA expects the sponsor to demonstrate and document a reasonable effort. FAA expects the airport sponsor to adopt a strong public stance to oppose incompatible land uses and to communicate the purpose of the RPZ and associated risks to the proponent, and to actively consider measures such as land acquisition, land exchanges, right-of-first-refusal to purchase, agreements with property owners regarding land uses, or other such measures. For a privately owned reliever in such circumstances, the FAA will still consider helping with land acquisition, but the sponsor needs to demonstrate a viable long-term plan that these measures will ultimately protect the airport against encroachment.

2.2.4.5.1 FAA will consider requests from eligible airport sponsors for AIP funding, in accordance with the AIP Handbook, to help prevent new incompatible land uses. However, FAA also expects sponsors to identify these opportunities early enough for land to be acquired at a reasonable cost (*i.e.*, not waiting until there is a proposed development that artificially increases the cost of the land).

2.2.4.6 **Airport Sponsor's Alternatives Evaluation Process.**

2.2.4.6.1 As stated, the FAA expects the airport sponsor to take active steps (in accordance with Grant Assurances 19 and 21) to prevent or mitigate any new incompatible land use within the RPZ. Because Assurance 21 requires sponsors to take "appropriate action, to the extent reasonable," the FAA expects sponsors to proactively identify a full range of alternatives and prepare a sufficient evaluation to be able to draw a conclusion about what is "appropriate and reasonable." The evaluation may include the development of a long-term, strategic land acquisition plan.

2.2.4.6.2 Potential new incompatible land uses within an RPZ might be caused by one or more circumstances, including (but not limited to):

- An airfield project (e.g., runway extension, runway shift);[3]
- A change in the critical design aircraft that increases the RPZ dimension;
- A new or revised instrument approach procedure that increases the RPZ dimension;
- A local development proposal in the RPZ; or
- Other circumstances.

2.2.4.6.3 The sponsor should submit an alternatives evaluation to the FAA unless the land use is permissible without further evaluation per FAA AC 150/5300-13. The land uses, which require no further evaluation, are listed again immediately below:

- Farming that meets airport design standards;
- Irrigation channels that meet the requirements of AC 150/5200-33 and FAA/USDA manual, Wildlife Hazard Management at Airports;
- Airport service roads, as long as they are not public roads and are directly controlled by the airport operator;
- Underground facilities, as long as they meet other applicable design criteria (such as Runway Safety Area [RSA] requirements); or
- Unstaffed NAVAIDs and facilities, such as equipment for airport facilities that are considered fixed-by-function in regard to the RPZ.

[3] Please note that these projects are limited to existing airports. The FAA would not support incompatible uses in RPZs for new airports or new runways.

2.2.4.7 **Items Typically Included in the Airport Sponsor's Alternatives Evaluation**.

2.2.4.7.1 Airport sponsors should submit an alternatives evaluation to FAA early in the planning process for any on-airport development within the RPZ. When the proposed land use development is not on airport property, the sponsor should engage and coordinate with the Airports District Office (ADO) as soon as they are aware of proposed development. The sponsor should begin the process of evaluating alternatives within 30 days of becoming aware of the development within the RPZ.

2.2.4.7.2 The following items are typically necessary for the FAA to fully assess a sponsor's alternatives evaluation. The FAA acknowledges, however, that the scope of the analysis will likely vary depending on the size of the airport, the type/number of operations, and any other unique considerations. The airport sponsor is encouraged to meet with the FAA before conducting the evaluation to discuss the appropriate level of evaluation needed.

- Sponsor's statement of the purpose and need of the proposed action (airport project, land use change or development).
- Identification of any other interested parties and proponents.
- Identification of any federal, state and local transportation agencies involved.
- Analysis of sponsor control of the land within the RPZ.
- Summary of all alternatives considered including:
    - Alternatives that preclude introducing the incompatible land use within the RPZ (e.g., zoning action, purchase, and design alternatives such as the implementation of declared distances, displaced thresholds, shifting the runway, shortening the runway, raising minimums)
    - Alternatives that minimize the impact of the land use in the RPZ (e.g. routing a new roadway through less of the RPZ, etc.)
    - Alternatives that mitigate risk to people and property on the ground (e.g., tunneling, depressing and/or protecting a roadway through the RPZ, implementing operational measures to mitigate any risks, etc.)
- Narrative discussion and exhibits or figures depicting the alternative.
- Rough order of magnitude cost estimates associated with each alternative, regardless of potential funding sources.
- A practicability assessment based on the feasibility of the alternative in terms of cost, constructability, operational impacts, and other factors.

2.2.4.8 **FAA Assessment of the Airport Sponsor's Alternatives Evaluation**.

2.2.4.8.1 The FAA expects the airport sponsor to submit their alternatives evaluation to the ADO (or Airports Regional Office for regions that do not have ADOs). The ADO will review and provide a response to the evaluation. However, for any unusual cases, the ADO will consult with the Regional Office and, if necessary, FAA's Airport Planning and Environmental Division (APP-400) for FAA Headquarters review. Depending on the circumstances, APP-400 will also include the Airport Engineering Division (AAS-100) and the Compliance Division (ACO-100) in Headquarters review.

2.2.4.8.2 The ADO must assess the sponsor's alternatives evaluation and recommendations for any ALP change or airspace determination that involve new incompatible use or development within an airport RPZ. The ADO's assessment will ensure that the sponsor provides a comprehensive evaluation that includes the appropriate items from Section 2.2.4.7, and that the sponsor has met the expectations described in **Table 2-2** or **Table 2-3**, as applicable.

2.2.4.8.3 It is not the FAA's decision whether the sponsor should accede to a new incompatible land use. Rather, FAA's assessment is limited to whether the airport has made an adequate effort to pursue and give full consideration to appropriate and reasonable alternatives. The FAA will not approve or disapprove the airport sponsors preferred alternative. The FAA will only evaluate whether the sponsor has completed an acceptable level of alternatives analysis before the sponsor makes the decision to allow or not allow the proposed land use within the RPZ. In some cases, coordination with other federal, state, or local agencies may be necessary.

2.2.4.8.4 If the FAA agrees that the sponsor's alternative analysis is acceptable, then the FAA's ALP approval, if any, or airspace determination must include the following statement:

> "This ALP approval (and/or airspace determination) does not constitute FAA approval of incompatible land uses within any Runway Protection Zone. Nor does it relieve the airport sponsor of its obligations under Assurances 19 and 21. Rather, it represents a conclusion by the FAA that the sponsor has conducted a sufficient level of analysis to make its own decision about the risks associated with the proposal."

2.2.4.8.5 If the FAA determines that the sponsor's alternatives analysis is insufficient, then the FAA will provide the appropriate feedback and guidance.

2.2.5 Local Regulation of Concentrations of People (Development Density).

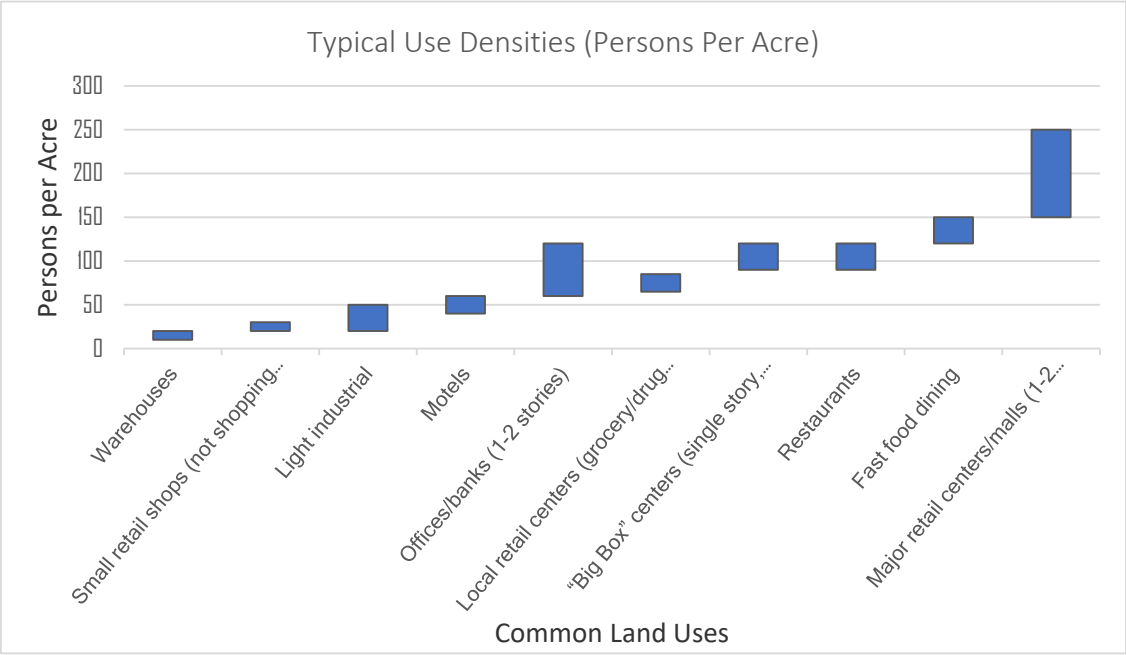
2.2.5.1 The number of people concentrated in an area near an airport is the land use characteristic tied most closely to the consequences of aircraft accidents. The most direct method of reducing the potential severity of an aircraft accident to the people and property in proximity to an airport is to limit the maximum number of structures and/or people in areas close to an airport. Limiting the number of structures around airports may also reduce the severity of an aircraft accident to passengers on board the aircraft.

2.2.5.2 There are two types of accidents that have the potential to impact land uses near the airport. One is an accident where the aircraft is descending, but is flying largely under directional control of the pilot. The other is one involving a loss of control. Limits on usage density—the number of structures/people per acre—are most effective when they account for both types of potential aircraft accidents.

2.2.5.3 Concentrated populations present a greater risk for severe consequences in the event of an uncontrolled accident at that location. The risk is even greater when the land use includes occupants with limited mobility or who need supervision or assistance in evacuating, such as hospital patients or schoolchildren.

2.2.5.4 Limiting the average usage density over a site, coupled with designated areas of open space, reduces the risks associated with either type of accident. Land use compatibility policies need to address both of these circumstances. In some instances, states have published airport land use compatibility measures, including allowable density levels. **Figure 2-8** illustrates the densities within the 2011 California Airport Land Use Planning Handbook, which is often the most widely referenced document for land use compatibility densities. For military airports, safety recommendations are included as part of the AICUZ (Air Installation Compatibility Use Zones) program (see Section 2.2.2.7.2).

Figure 2-8. Typical Use Densities



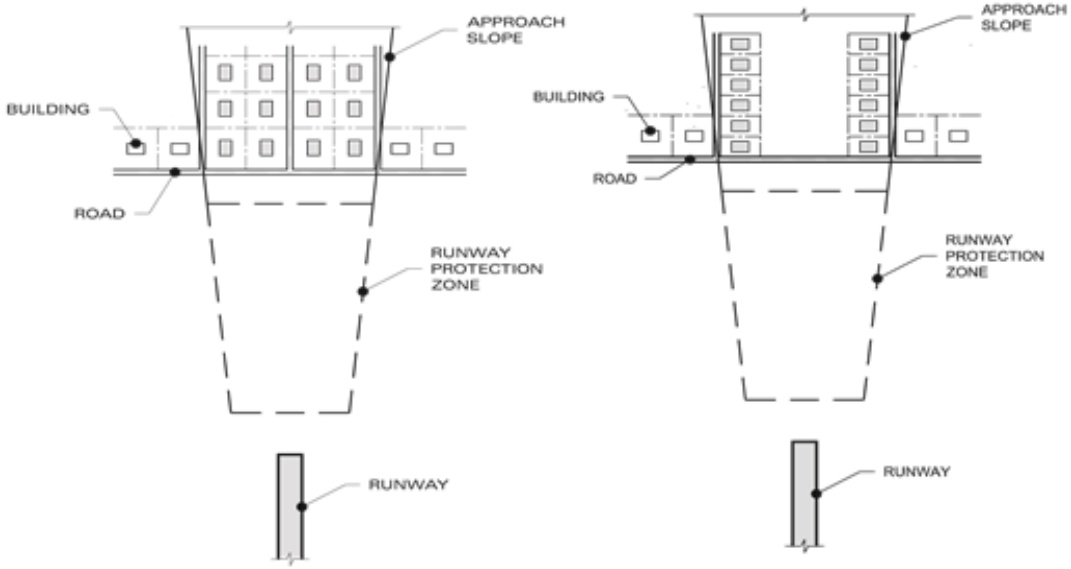
Source: Based on California Airport Land Use Planning Handbook, 2011.

2.2.5.5 In general, the lower the density, the greater the level of compatibility a use will have with aircraft operations. In many instances, an airport and the local community should evaluate density near an airport, taking into account the density of the overall area. For example, if a GA airport is located well outside of a developed area and there are expanses of open space that border the airport, it is important to establish land use controls that will maintain this open area and establish low permissible densities for the area around the airport. In comparison, in most developed areas where large amounts of development may have already taken place and higher residential densities and nonresidential intensities are more likely, the goal would be to require any ensuing development to be at or below the current levels. This essentially focuses on making the current situation no worse. **Figure 2.9** illustrates some general levels of density – high, medium, and low - as it relates to residential land uses.

Figure 2-9. Residential Samples of Densities

2.2.5.5.1 In instances where structures and development can be relocated on a parcel to allow for optimal open space within the approach and departure areas of an airport, the more compatible a use will be with aircraft operations. Maintaining or creating open space within areas of aircraft movement is critical, as it provides clear areas where aircraft can land in the event of an emergency. **Figure 2-10** illustrates a sample modified parcel layout to minimize development within a runway's approach slope, using the same square footage of area within the space. Note that the lots are obviously smaller with more open/common space, which may require special use permits or some form of local approval that is often tied to an airport zoning ordinance or overlay zone.

Figure 2-10. Modified Parcel Layout



2.3 Compatibility of Land Use Types near the Airport.

In community planning documents, land uses are generally classified into one of seven major categories (see **Table 2-4**). These include residential, commercial, industrial and mining, institutional, infrastructure/utilities/energy production, agricultural and open space, and parks and recreational land use. A general discussion of each land use type is provided in the following sections. Because individual communities can categorize these in different ways, it will be important for specific communities to tailor their use of this information to their specific needs.

Table 2-4. Land Use Compatibility Chart

Land Uses	Noise Sensitivity	Concentration of People	Tall Structures	Visual Obstructions	Wildlife & Bird Attractants
Residential Uses	I	I	P	P	P
Commercial Activities	I	I	P	P	P
Industrial and Mining Activities	N	P	P	P	P
Institutional Activities	I	I	I	I	I
Infrastructure/Utilities/ Energy Production Activities	N	N	I	I	P
Agriculture and Open Space Activities	N	N	N	I	I
Parks and Recreation Activities	I	P	P	P	P

Key:
I = *Impact*
P = *Possible Impact*
N = *No Impact*

2.3.1 Residential Uses.

2.3.1.1 A residential use includes dwellings used to house people as their residence/domicile. Typically, residential use includes single-family homes (detached, attached, condominium) and multifamily developments such duplexes through four-plex, apartment complexes, dormitories, transient housing, and mobile home parks. As the nation's population continues to increase, residential development often encroaches upon what was once

open space surrounding airport property. Some airports are now completely surrounded by residential development. In planning for new residential development in proximity to an airport, local interagency coordination is vital, especially within an airport's approaches, departure areas, and areas of greater noise exposure.

2.3.1.2 Developments for temporary or short-term occupancy (not permanent residence or domicile) such as hotels, motels, and campgrounds are considered commercial land use. Although these uses may differ from conventional residential use and housing in their sensitivity to noise, they pose similar concerns relative to concentrations of people (also see commercial uses in Section 2.3.2, below).

2.3.1.3 In instances where residential uses cannot be prevented near an airport, there are techniques that can be used to minimize or mitigate the effects of such incompatible development. A few of these include:

- Placement of residential structures on the outer edge of a parcel rather than directly underneath a runway's approach or departure path outside of RPZs (see Section 2.2 for further information).
- Disclosing noise impact and discouraging residential development within 65 dB DNL noise contour.
- Decreasing the allowable density in residential uses near an airport.
- Minimizing the development of multi-family residential units (apartments, etc.).
- Requiring developers to use sound-insulating building materials to minimize aircraft noise effects.

2.3.2 Commercial Uses.

2.3.2.1 Land uses classified as commercial involve the sale of products or services for profit. The most common land use compatibility issues with commercial uses are safety impacts to the commercial use, visual interference, and wildlife attractant impacts to aircraft and the airport. Commercial uses are specifically discouraged from RPZs due to the density issues that they can pose. Using the tools in this AC and other referenced resources, the compatibility of a specific commercial use may be evaluated on an individual airport basis. Because there are a wide variety of commercial uses, the actual activities onsite often require special review and evaluation by local planners to determine compatibility with airport influence areas. Because diverse compatibility issues can arise between an airport and nearby commercial land uses, it is difficult to summarize the benefits or detriments created by commercial development.

2.3.2.2 Sample factors to consider when determining compatibility of a commercial use include, but are not limited to:

- The time of operation and occupancy (e.g., all day, evenings only, 24 hours, etc.).
- The size of the commercial buildings and their lighting, height and facility characteristics (e.g., boutique shop, big-box stores, mega-mall, etc.).
- Anticipated occupancy (e.g., a few employees, waves of customers, sustained large crowds, etc.).
- Method of trash containment for large commercial uses (e.g., evaluate if wildlife attractant, holds hazardous materials, or benign).
- Parking lot lighting patterns for large commercial uses (e.g., use of LED, shielding, zoning allowances, etc.).
- Outdoor uses (e.g., assembly of people, patios where aircraft noise may be an issue).
- Amount of open space around the structures (e.g., approach clearances, parking lots, green space, etc.).

2.3.3 Industrial and Mining Uses.

2.3.3.1 Industrial development can include materials processing, materials assembly, product manufacturing, and storage of finished products. The most common land use compatibility issues with industrial uses are height of structures, visual interferences, and wildlife attractant impacts to aircraft and the airport. Industrial/manufacturing uses are specifically discouraged from RPZs due to the assembly of persons/occupancy density issues that they can pose. Using the tools in this AC and other referenced resources, the compatibility context and specific use may be evaluated on an individual airport basis. A range of uses are classified in this land use type from heavy manufacturing plants with tall smoke stacks to a small product distribution center. Historically, industrial parks were composed solely of industrial uses, however now they often include a mix of industrial businesses, manufacturing facilities, office parks, and research and development complexes within the same geographic area. Occasionally, hotels, restaurants, and retail activities develop along the fringes of industrial parks to provide necessary support facilities and stimulate economic development within these areas. Light manufacturing or research and development facilities are often less of a concern with reduced staff levels and partial, traditional hours of operation.

2.3.3.2 Mining and natural resource extraction (minerals, petroleum, natural gas, etc.) can cause visual obstructions with the generation of dust at the extraction sites, as well as intense lighting used to illuminate areas for night work. Tall structures can also be a concern, depending on the type of equipment used. FAA AC 150/5100-20, *Guidance for Oil and Gas*

Development at Obligated Airports, describes existing FAA requirements concerning oil and gas development on or nearby airports.

2.3.3.3 Some of the main concerns typically associated with industrial and/or mining uses include:

- Number of employees on site;
- Hours of operation (manufacturing plants that run 24 hours a day with three shifts);
- Tall towers or stacks that can obstruct flight;
- The presence of smoke or steam from processing facilities;
- Thermal plumes that can cause turbulence;
- Intense lighting around facilities;
- Dust generation;
- Storage of flammable materials; and
- Water retention/detention areas.

2.3.4 Institutional Uses.

2.3.4.1 Institutional uses include educational facilities (preschool through college), health care facilities (hospitals, clinics, nursing homes, assisted living facilities), and religious assemblies (churches, tabernacles, mosques). Because the majority of these facilities are used by individuals who may not be able to respond to an emergency situation without assistance, they are generally considered to have a lower level of compatibility and are discouraged in proximity to an airport.

2.3.4.2 The most common land use compatibility issues with institutional uses are safety and noise impacts to institutional uses. Institutional uses are specifically discouraged from RPZs due to the density issues that they can pose. The largest difference between institutional uses and all other land use types is based on the assumption that many of the people who utilize an institutional use may need additional assistance to respond to an aircraft emergency, including the evacuation of a facility. An example of this issue is evacuating patients from a hospital. These users are most often present in concentrations, which makes it even more difficult to respond to an emergency situation.

2.3.4.3 In addition to concerns regarding evacuation and other emergency response procedures, institutional uses are typically more sensitive to aircraft noise. Disruption in a classroom, hospital, or worship environment may be considered an impact to students, patients, and congregations.

2.3.5 Infrastructure/Utilities/Energy Production Uses.

2.3.5.1 Infrastructure activities include a variety of land uses such as above ground utilities, cellular communication towers, water towers, water treatment plants, wastewater treatment plants, streets and highways, sanitary landfills, and energy production uses such as wind turbines and solar panels. One of the most common land use compatibility issues with infrastructure uses is the height impacts to aircraft, such as cellular towers, wind turbines, and large-scale power transmission structures that can be hundreds of feet tall and can create an obstruction to flight in their vicinity. Depending on their location and height, proponents may need to submit an aeronautical study to the FAA through the 7460 Form –Notice of Proposed Construction or Alteration, which can be accessed at https://oeaaa.faa.gov/oeaaa/external/portal.jsp (see Section 2.2.2.3 for additional information on the 7460 Form). As stated earlier, through this process, the FAA has the opportunity to find the proposed use either a hazard or not a hazard to air navigation, recommend appropriate marking and lighting to make objects visible, identify obstacles on aeronautical charts, and revise published data and issue a Notice to Airmen (NOTAM) if necessary.

2.3.5.2 In addition to height concerns, some of these uses can be attractive to wildlife (such as landfills and water treatment plants). This could increase the risk of wildlife strikes if placed within the approach or departure corridors or traffic pattern around an airport. Electronic interference can be generated by uses such as wind turbines that can impact radio aids to navigation and RADAR signals when clustered together in large concentrations. Industrial uses emitting thermal plumes above their smoke/exhaust stack heights may impact safe flight near airports. The aeronautical impacts in addition to the height of structures are still being discovered that may warrant compatible land use evaluation.

2.3.5.3 Limiting concentrations of people associated with transportation infrastructure in proximity to an airport is ideal. When possible, limiting transportation modes within the approach or departure zones can minimize the potential for catastrophic effects should an aircraft incident occur. Because many airports are already located in developed areas, citing a specific distance between an airport and these other modes becomes unrealistic, as they may already exist in proximity to the airfield. Although some of these uses may not be able to be relocated, techniques such as down shielding lighting along highways and railroads can help to mitigate some of their impact (visual obstructions). Additional techniques such as adding roadway signage alerting vehicles to the RPZ, or prohibiting stopping and standing in the RPZ is recommended. Airports should also work with their local transportation department to avoid locating stoplights near the edge of the RPZ to prevent queues from building into the RPZ. The goal is to minimize the overall impact based upon the various issues

discussed in this chapter (visual obstructions, concentrations of people, etc.).

2.3.5.4 State and local planning and design of infrastructure development away from airport operating environs is encouraged. Due to the wide variety of land uses that fall within the infrastructure/utilities/energy production category, there are a number of concerns related to infrastructure land uses that vary depending on the individual use at a location near an airport. Therefore, FAA recommends that each proposed development or improvement of infrastructure within the vicinity of an airport be assessed for compatibility issues prior to construction.

2.3.6 Agriculture and Open Spaces.

2.3.6.1 Agriculture and open space activities are most commonly defined as any use related to farming, including both man-made and naturally occurring water resources. The most common land use compatibility issues with agriculture and open space uses are wildlife attractant impacts to aircraft and the airport. These uses are often perceived as the most compatible of land use types near an airport due to the limited populations associated with them and reduced noise sensitivity. However, they can have significant wildlife management concerns.

2.3.6.2 Certain crops can be very attractive to wildlife for both food sources as well as roosting habitats (see Appendix D for a listing of crops from the USDA). Agricultural activities are not uncommon near airports, especially in the Midwestern and plains states. Open water such as rivers, lakes, and detention/retention ponds can be attractive to wildlife and are cause for concern.

2.3.7 Parks and Recreation/Entertainment Uses, including Sports Arenas.

2.3.7.1 A wide variety of public and commercial recreational land uses can be classified here, including (as but a few illustrative examples) public parks, public use and access national monuments, wildlife refuges, wilderness areas, community tennis centers, drive-in theaters, and professional race tracks. These uses typically take place outdoors, although some take place indoors such as skating rinks, health clubs, and sports arenas. The most common land use compatibility issues with parks and recreation uses are safety impacts to recreational uses. Due to the wide variety of uses, development sizes can play an important role in the level of compatibility. For example, a neighborhood park that has open space would typically be considered more compatible than an aquatic center that has large areas for parking and limited open space. Uses such as golf courses that include water or wildlife habitat features need to be prevented or mitigated for any potential wildlife attractants that may pose a hazard to a nearby airport.

Public areas that are used for educational or performance purposes may also be noise sensitive uses.

2.3.7.2 In addition to the size and use of the development, lighting can be a concern for recreational uses because associated parking lots are often lit with high-density lights. Moreover, facilities that are used at night such as baseball fields and tennis courts are also illuminated with bright lights that can create visual challenges for pilots.

2.3.7.3 Another factor to consider is the density of the use. For example, a casino will often have a greater density because customers and staff occupy the facility 24 hours a day, compared to a golf course which has a larger footprint but is operational only during daylight hours and at a lower density.

CHAPTER 3. ROLES AND RESPONSIBILITIES OF COMPATIBLE LAND USE STAKEHOLDERS

3.1 Overview of Stakeholders.

3.1.1 This Chapter discusses the roles and responsibilities for land use compatibility as they relate to the multiple levels of government and interested community groups involved in planning for land development around airports. Airport land use compatibility planning requires coordination among diverse groups, including public agencies, airport leaders, and citizens. Stakeholders with the airport in developing compatible land use planning include:

- Airlines and other aeronautical users
- Airport-based businesses
- Traveling public
- Business community
- Educational institutions
- Healthcare institutions
- Real estate developers
- Metropolitan planning organization
- Transportation agencies
- Recreational facilities

3.1.2 This is because the responsibility for airport land use compatibility planning does not normally rest with one agency or a single group. The tasks, authority, and responsibilities are divided between federal, state, regional, and local groups and organizations. In addition, the airport's geographic area of influence will often encompass several jurisdictions that may or may not have a sponsor or ownership interest in the airport. Airport and community planners have unique stakeholder relationships locally that can be used to develop effective coordination agreements for their compatible land use planning efforts (also see Chapter 4).

3.1.3 Federal and state agencies develop guidelines and recommendations to protect airports and the associated airspace, while local government officials, planners, airport sponsors, and community members implement and enforce the land use programs. Other groups, including regional transportation agencies, local economic development corporations and transit services, all make plans and financial investments that drive land development and land use patterns. **Table 3-1** is a more complete listing of the various stakeholders.

1524 **Table 3-1. Summary of Airport Related Stakeholders**

Section	Category	Description
3.2	Local Government Stakeholders	Elected and appointed bodies from cities, villages, townships and counties Planning and zoning officials Regional/Metropolitan Agencies (transportation, economic development, planning coordination)
3.3	Airport Related Stakeholders	Governing Body / Airport Sponsor Airport Manager Airport Users (airlines, FBOs, local pilots)
3.4	Non-Aviation Stakeholders	Shipping companies Rental car companies Cargo handling services Local citizens living near airports
3.5	Organized Groups in Surrounding Jurisdictions	Chamber of Commerce Economic development organizations Civic and volunteer organizations
3.6	General Public	Community leaders Business travelers Local business owners
3.7	Real Estate and Development Interests	Realtors Land development companies Large landholders near the airport Land use attorneys
3.8	State Government Stakeholders	State Aeronautical Departments Department of Agriculture Department of Economic Development Department of Environmental Quality Department of Historic Preservation Department of Community Health and Human Resources
3.9	Federal Government Stakeholders	Department of Transportation (DOT) Federal Aviation Administration (FAA) Army Corps of Engineers Department of Defense Department of the Interior

Section	Category	Description
		Department of Transportation Environmental Protection Agency Federal Communication Commission

3.2 **Local Government Stakeholders.**

3.2.1 Whether it is passing a local airport zoning ordinance or coordinating with nearby municipalities that may be affected by airport operations within their jurisdiction, numerous planning and permitting entities and individuals in local government are in a position to regulate land use. They can also be stakeholders in land use compatibility planning at an airport. In fact, the responsibility for implementing land use compatibility plans rests with local officials and authorities to enact and enforce land use development and zoning regulations. Airport stakeholders can work with these individuals and bodies, as well as with planning and zoning staff, to provide input on land use compatibility through the comprehensive planning process that will help with decisions about zoning districts, densities, and airport overlay zones.

3.2.2 Local land use decisions that promote airport land use compatibility have a bearing on continuing federal support of needed airport improvements. This is because federal grant dollars come with a number of conditions through their grant assurances, all of which an airport agrees to in order to protect the public investment. One of these, Grant Assurance 21, Compatible Land Use, stipulates in part that the airport sponsor "*will take appropriate action, to the extent reasonable, including the adoption of zoning laws, to restrict the use of land adjacent to or in the immediate vicinity of the airport to activities and purposes compatible with normal airport operations, including landing and takeoff of aircraft.*" Under the grant assurance, an airport sponsor or airport owner that also holds local land use authority is expected to develop appropriate policy and procedures to secure land use compatibility within its jurisdiction. Airport sponsors that do not have the land use authority to regulate the land use within an adjoining jurisdiction should still work cooperatively with that local land use authority to implement appropriate land use policy.

3.2.3 An airport sponsor should solicit and employ the cooperation of all of its neighboring local jurisdictions to promote the benefits of compatible land use for their community. Primary local government stakeholders include elected/appointed officials, planning and zoning officials, and regional agencies and authorities.

3.2.4 Elected/Appointed Bodies.

Coordination and communication between elected and appointed officials and airport sponsors is vital to effectively implement and enforce land use compatibility initiatives because most land use decisions are vested with local governments. Local government stakeholders represent a diverse group that includes cities, villages, townships, counties, as well as regional planning organizations, transportation agencies and local economic

development agencies. To be most effective in their land use decision making, these stakeholders need to understand both the adverse effect that incompatible land use can have on a local airport and the negative effects airport operations can have on surrounding land uses. Conversely, these groups need to be well informed regarding the positive economic impact that an airport brings to the community and the ways that compatible land use can occur near an airport when state and local regulations call for land use categories, densities, and site development requirements that protect the operation of the airport. An airport has a positive economic impact on the region in terms of jobs and income as well, and the airport can be crucial in attracting new businesses and skilled employees to an area. Leaders of regional and local economic development agencies that recognize the high value of airports to the community can play a leading role in advocacy.

3.2.5 Planning & Zoning Officials.

3.2.5.1 Local planning and zoning agencies derive land use powers from a variety of sources, including state legislation and state constitutions. Officials in these agencies are the "front-line" in the land use decision-making process. They are responsible for the two primary tools available for local guidance and control (respectively) of land uses around airports: the Comprehensive Plan and the Zoning Ordinance.

3.2.5.2 The Comprehensive Plan is a guidance document that explains the community's goals and objectives regarding future development. This document often has a 30- or 40-year planning horizon. This is a longer-term than the typical 20-year focus of an Airport Master Plan. In addition to guiding local land use regulation, the Comprehensive Plan also guides investment decisions laid out in the Capital Improvement Program. These community investments often provide the public infrastructure to support economic development in prescribed locations.

3.2.5.3 The Zoning Ordinance is the regulatory document that defines and controls land use zones, and provides development standards and requirements within each zone. The base zoning district designations define general land use types that are permitted within the geographic limits of the zone. Categories typically include titles such as agriculture, residential, commercial, industrial, and institutional (which are explained in Section 2.3). Districts may be divided into sub-categories, which may add further definition to a zoning district. The zoning ordinance defines which uses are permitted, the type of development approval needed, and the lot development requirements in each district. For instance, an R-1 residential zoning district may allow single-family development on one-acre lots with administrative approval. An R-2 residential zoning district may allow duplex dwellings on quarter acre lots. The local land use authority should understand that land use types, densities, and design characteristics are all important to providing compatible land uses near an airport. The local

planning official is well positioned to provide information and advocate for compatible land uses within the local land use framework.

3.2.6 Regional Agencies.

3.2.6.1 Regional agencies such as Metropolitan Planning Organizations (MPOs) are in a position to provide regional guidance related to airport compatible land use planning. Regional agencies may be able to serve as a neutral facilitator when coordination among multiple local governments is needed to provide for comprehensive airport compatibility throughout an airport influence area. An MPO is a group comprised primarily of local elected officials that serve as a forum for local decision making on transportation system and regional planning matters.

3.2.6.2 MPOs can serve as an important link in the compatible land use process because they are looking at the transportation system in a broader geographic area. This regional perspective often corresponds more directly to the area where land use effects are found because airport protection zones often cross multiple jurisdictional lines. An MPO ensures that state and federal laws pertaining to regional transportation planning are implemented in each metropolitan planning area. An MPO can bring the airport director into the conversation as a committee member, and open lines of communication between the airport and the land use professionals in the region. MPOs plan for future transportation investments using federal and local funds, which are then factored into local land use plans. Transportation investments and enhancements are known to be drivers of private economic development.

3.2.6.3 MPOs have the ability to look beyond individual municipal boundaries to assess land use effects and mitigation measures for the benefit of the larger area of influence. For instance, a new highway exit can be expected to generate a cluster of highway commercial development near the exit ramp, as well as residential and industrial development in the area. If this highway exit is located near an airport approach area, this stimulated growth may be detrimental to the compatibility goals of the airport. Consequently, coordination on the type of investment becomes important.

3.3 Airport Related Stakeholders.

Airport related stakeholders include those responsible for airport administration and management as well as airlines, airport businesses/Fixed Base Operators (FBOs) and local pilots. The specific stakeholders will vary depending on the size and type of airport. At smaller airports, administration and management may be carried out by a single airport manager, and local pilots are responsible for aircraft operations. Larger airports may operate with a multiple-person airport administration, and commercial airline service with administrative staff employed at the airport. At airports of all sizes, the local airport stakeholders are responsible for working with local government stakeholders to maintain

and even increase land use compatibility between the airport and the surrounding community. The specific roles and responsibilities of each airport representative are discussed in more detail in the following sections. In general, airport representatives need to take actions that raise the visibility and public awareness of the airport as a part of the land use planning conversation.

3.3.1 Governing Body/Airport Sponsor.

3.3.1.1 Airport influence areas usually span more than one municipal boundary. Therefore, it is typical to need the support of multiple local agencies to address local land use for a single airport. The airport sponsor should seek to establish a working relationship and open lines of communication with the local government officials and planning and zoning staff within the airport area of influence. An airport sponsor with land use authority (provided by state law or owning city or county) should ensure compatible land use is maintained and protected in the airport environs, typically by enforcement of adequate zoning code within the airport area of influence (see Appendix F for sample airport overlay zoning ordinance). If the airport sponsor or owner is not the local land use authority (adjoins other independent jurisdictions, etc.), the sponsor should still pursue cooperation with their neighboring land use authorities to advocate the airport interest for compatible land use and development.

3.3.1.2 Whether the local land use authority or not, the airport sponsor is expected to promote and facilitate compatible land use decisions locally in a variety of ways. This includes attendance at public meetings and participation on local land use and development committees, either as a member or as a guest speaker to promote airport compatibility. The sponsor can take the time and provide needed information and resources about airport land use compatibility, development initiatives at the airport, and the economic impact of the airport. The sponsor should advocate for the airport in the larger community and build a reputation as a valuable resource to the community. Through active involvement in the local government activities, the airport sponsor will be in a position to be informed and involved in the early stages of planning, and will be able to work cooperatively with the local government.

3.3.2 Airport Manager.

3.3.2.1 The airport manager is the airport stakeholder in the best position to keep watch for local land use issues in the adjacent communities and the surrounding areas. The airport manager can strengthen relationships with local planning agencies by providing them with informative airport and aviation documents (e.g., Airport Master Plan, relevant FAA guidance and grant assurance obligations, economic impact studies, ACRP reports, etc.) and by participating in community planning activities and encouraging community participation in airport planning activities. In this role, the

airport manager can be a resource to local planning agencies for information related to land use compatibility. The airport manager should be aware of regular meeting schedules for planning commissions and elected boards, review the agenda prior to the meeting and be prepared to comment on land use related issues that may affect the airport. The airport manager may also be able to participate in the site plan review process associated with the review and permitting of new land use developments. The airport manager should also use available FAA tools such as the Obstruction Evaluation/Airport Airspace Analysis (OE/AAA) website to search for new cases around their airport (https://oeaaa.faa.gov/oeaaa/external/portal.jsp).

3.3.2.2 As part of the community planning review process, the airport manager can support new development that does not create incompatible land uses, endanger the safe operations of the airport or expose the public to excessive noise or risks. This review process for planned development near the airport can often be established by the airport manager working to secure planning coordination with their local planning officials. See Chapter 4 for discussion of the coordination opportunities available to airport sponsors and their local planning agencies.

3.3.3 Airport Users: Airlines, Fixed Base Operators (FBOs) and Local Pilots.

3.3.3.1 Airport users, including airlines, FBOs, and local pilots are another group of airport stakeholders representing a diverse network of people within a community. Airport users may also attend local public meetings concerning proposed zoning and land use changes, and development proposals. Airlines and FBOs, as well as some local aircraft owner/operators, including local pilots, have an economic interest in the airport. They can raise community awareness of the airport as an economic resource and discuss the impacts of incompatibility. Through participation in community conversations, airline staff, FBO staff, and pilots can raise the visibility of the airport as a place of employment and as a valuable service to local businesses travelers, cargo operator needs, and emergency service providers. This can help garner support for land use decisions that prevent incompatible development and preserve the continued safe operation of the airport.

3.3.3.2 In addition to actively promoting land use compatibility, airport stakeholders need to be good neighbors. Pilots, FBOs, and commercial airlines may be in a position to help mitigate or avoid some of the negative effects that aircraft operations can have on adjacent land uses -- especially noise related effects. Airport users can show their support for land use compatibility by participating in efforts to reduce noise, as well as by becoming involved in efforts to prevent new incompatible uses. Specifically, pilots should operate their aircraft in a prudent manner to reduce noise effects on local land uses. This includes adhering to local voluntary noise abatement procedures, and posted traffic patterns during

approach and departure operations. Pilots can show their support for these efforts to the community by attending local noise abatement council meetings.

3.4 Non-Aviation Stakeholders.

3.4.1 In addition to specific aviation interests, there are other non-aviation related stakeholders that should be involved in the planning process. These stakeholders may include those that support aviation activities such as shipping companies, parking services, rental car companies, utilities, taxi/car services, cargo handling services, and local transit agencies. Additionally, there are business stakeholders that locate near an airport due to economic gains as a result of their location, such as hotels, restaurants, and industrial users. Often these stakeholders have significant interest in land use surrounding the airport, and its potential impact to the airport and airport business.

3.4.2 Organized Groups / Non-governmental Organizations (NGOs) in the Surrounding Jurisdictions.

Local community groups, including business, social and recreational organizations such as civic and volunteer organizations, the Chamber of Commerce, sport clubs, homeowner associations, and so on offer forums for public engagement regarding land use education with a ready-made organizational structure. These groups usually have established meeting times, email lists, newsletters, websites, and other means of getting information out to their membership. The airport manager and airport sponsor can identify these groups in the community and take the initiative to reach out and provide information and education about airport land use compatibility. Airport managers and sponsors can develop a presentation that can be given in a meeting setting and text that can be included in newsletters and other written communication. When information about the value of land use compatibility and the value of the airport to the community is shared with interested citizens, they can then influence land use decision making, both individually and collectively.

3.4.3 Residents and Community Stakeholders.

3.4.3.1 Local citizens – individually and organized in neighborhood associations - living near the airport can also be a critical partner in the land use planning process because they directly influence the decisions made by local planners, elected officials, and other policymakers. Local citizens can also bring an important perspective to the community conversation in their personal role as neighbors, travelers and employees. Public education about land use compatibility on or near airports will help establish open lines of communication between all parties and set the stage for future dialogues. When the local residents understand how the airport and surrounding areas interact, they can participate more effectively in an airport compatible land use and development conversation.

3.4.3.2 The airport manager and the airport sponsor may provide the needed education and outreach to the local residents, neighborhood organizations, and community interests to support coordination on airport and community compatible land use planning programs. Informed residents will challenge land use development proposals that potentially conflict with airport safety, expand noise exposure, or create adverse economic impact to their community. Informed residents are more likely to accept proposals shown to represent mutually compatible development.

3.4.3.3 Community leaders, frequent travelers, and local business owners can each bring a unique view of the relationship between the airport and its environs, and may offer different perspectives on the economic value of the airport or noise impacts. Members of the public can raise awareness of land use compatibility issues at public meetings, through social media, or in the press, and can challenge decision-makers to address potential safety, noise or economic impacts.

3.4.4 Real Estate and Development Interests**.**

3.4.4.1 Real estate professionals in a community, both businesses and individuals, should be included in the compatible land use discussion. As the agent and professional market consultants for landowners and development interests, realtors are in a position to be responsive stewards for compatible land use and development at the airport, and the market area around it. In order to fill this role, real estate professionals need to be educated about land use compatibility and the effect a nearby airport can have on different types of land use and development. They can be included in local land use planning discussions as a member of the planning commission, a participant in a focus group, or a speaker at a public meeting.

3.4.4.2 Their participation may be especially valuable because they can often speak from experience about the effect of noise over residential properties, and they understand tools such as avigation easements and disclosure notices. These tools are available to encourage land use compatibility as a part of property sales near an airport or in the approach areas, and are used to alert developers or a future tenant to potential compatibility concerns before development takes place. In some cases, education alone may be enough to encourage real estate developers to implement compatible land use strategies. A shift away from the concept of “caveat emptor” (buyer beware) places more legal responsibility on the realtor and selling owner to represent the property fairly and accurately to buyers. In some states, laws require disclosure of airport noise or location (as well as other environmental issues) in real estate purchase contracts.

3.5 State Government Stakeholders.

Agencies at the state level can support airport compatible land use planning efforts in many ways, such as providing funding for airport sponsors to develop land use compatibility plans and supporting legislation that requires or encourages land use planning efforts for communities with airports. Coordination with state agencies is important to align compatibility efforts at all levels. The following sections discuss common state agencies that can impact airport land use compatibility and should be consulted with as appropriate.

3.5.1 State Aeronautical Departments.

Each state has its own unique combination of authorities and resources that can help support local airport sponsors in the pursuit of compatible land use within the vicinity of airport property. State level guidance and support from each state aeronautical department can promote land use compatibility through initiatives ranging from information and education, to voluntary land use guidance, to mandatory land use requirements. State and local funding of compatible land use planning and zoning efforts is available in some states.

3.5.2 Other Agencies.

3.5.2.1 Many state departments and agencies can affect land use compatibility planning if their areas of interest and expertise overlap with the aviation sector. Communication and coordination between the aeronautics departments and other agencies can help to align land use compatibility guidance and other program goals.

3.5.2.2 Other state agencies should be included in the dialogue because of the potential to align land use compatibility and other development goals. The specific name and role of the departments will vary depending on the specific structure of the individual state governments. In general, however, the following agencies should be considered:

- Departments of Agriculture: In many cases, agriculture is compatible with airport operations. However, open water sources and crops that provide food and shelter for wildlife may increase wildlife hazards when they are located near airports. The state department of agriculture can work with the agricultural community to discuss land use compatibility and address issues, especially as it relates to minimizing wildlife hazards.

- Departments of Economic Development: Typically, a state department of economic development has many tools to encourage new commercial and industrial development including economic incentives (i.e. grants) and marketing functions. Policymakers in this department can encourage growth in places that will be compatible for both the business and the airport operations. They can also help promote the economic value of the airport as a business development tool.

- Departments of Environmental Quality or Management: This department is normally responsible for the implementation and regulation of a host of environmental features, including some related to water such as wetlands and floodplains. Because open water is also a wildlife attractant, environmental regulations can work at cross-purposes with the safety needs of the airport. The state environmental department can help identify solutions that encourage land use compatibility and environmental goals.

- Departments of Historic Preservation: Typically, the state historic preservation office is tasked with preserving structures that meet established criteria. These criteria may impact actions that could address compatible land uses. For instance, a structure may be a hazard to airport operations. This office may also review National Environmental Policy Act (NEPA) documents for certain airport development projects.

- Departments of Community Health and/or Human Resources: These departments may be involved in siting new institutional and health care facilities. There may be land use compatibility concerns with these facilities when they are near an airport. Engaging these departments in dialogue about land use compatibility in the early planning stages can help alleviate those concerns.

3.5.2.3 Likely, other state agencies will need to be consulted beyond the ones listed above. Consultation is on a case-by-case basis.

3.6 Federal Government Stakeholders.

While the FAA is the primary agency responsible for airport-related land use issues, other federal agencies are also involved in more limited ways because they have an impact or decision-making authority over issues that directly or indirectly affect land use issues. Much like the various state agencies discussed in Section 3.8, a number of federal agencies may have a role or responsibility to regulate and review various aspects of airport development and land use compatibility issues.

3.6.1 DOT, Federal Aviation Administration (FAA).

3.6.2 The U.S. Department of Transportation (DOT), the parent organization of the FAA, has a mission that is focused on the transportation of people and goods by highway, rail, air and other modes. In some instances, federal actions regarding other modes of transportation can affect airport land use compatibility. The FAA can coordinate with the other DOT modal administrations on these projects.

3.6.3 The FAA is the primary agency responsible for federal guidance relevant to land use compatibility as it relates to the national aviation system. In some instances, the development of other types of transportation infrastructure can raise issues or conflicts with aviation facilities, which needs to be considered carefully. Conversely, there may

be mutual benefit in some instances where careful and coordinated multimodal planning can provide synergistic benefits to both aviation and surface transportation, which in turn can greatly benefit a community or region. Such issues should be explored as early as possible in the planning process.

3.6.4 Title 14 of the Code of Federal Regulations (CFR), FAA Orders, and FAA Advisory Circulars (AC) are the primary tools FAA uses at the national level to preserve, protect, manage, and grow the national air transportation system.

3.6.4.1 The FAA guides land use compatibility through funding programs in several ways. For airports that are part of the National Plan of Integrated Airport Systems (NPIAS), the Airport Improvement Program (AIP) can provide funding for master planning, land acquisition (including fee simple and avigation easements), and noise related mitigation measures. FAA Order 5100.38, *AIP Handbook*, provides guidance and sets forth policy and procedures used in the administration of the AIP (and can be found on FAA's website at https://www.faa.gov/airports/aip/aip_handbook/).

3.6.4.2 Airport sponsors may accept AIP grant funding for eligible airport planning and development. FAA funding provides a contractual aspect to land use compatibility through the airport sponsor's grant assurance obligations to FAA. When accepting an AIP grant, the airport sponsor agrees to maintain safe and compliant airport use and operations conforming to FAA grant assurances—including agreeing to protect their airport from incompatible land uses. As well as an obligation to be vigilant to prevent incompatible development, FAA grant funding can be an important incentive to promote airport land use compatibility with their local land use and development community.

3.6.4.3 The FAA provides guidance for establishing airport planning and design standards that are important to the overall planning process. This includes the creation of a master plan and the development of an Airport Layout Plan (ALP). Additionally, system planning, airspace review, and general education of stakeholders are also supported by FAA guidance documents, as well as direct staff involvement when requested or required. A discussion of these guidance documents and their associated use in the planning process is included in Chapter 4.

3.6.5 Department of Defense (DOD).

With branches including the Air Force, Army, Navy and others, the Department of Defense (DOD) often has operational areas both on the ground and in the air that can affect civilian airport operations with regards to approaches and flight routes. Coordination with them is crucial to ensuring compatible land use and development.

3.6.6 Army Corps of Engineers (Corps).

The Corps often becomes involved in airport land use compatibility planning when an airport is near significant bodies of water, has extensive wetland impacts or has development near navigable waterways. Because the Corps has a fundamentally different set of statutory authorities and obligations, early coordination is crucial to finding mutually acceptable solutions.

3.6.7 Department of the Interior (DOI).

DOI has a wide range of responsibilities including wildlife (e.g., threatened and endangered species, migratory birds), wilderness areas and wildlife refuges, and national parks. Agencies within DOI (e.g., the U.S. Fish & Wildlife Service, National Park Service, Bureau of Land Management, etc.) may have an interest in land use planning that protects natural resources in the vicinity of airports and may have a formal role in some situations (e.g. Section 7 consultations under the Endangered Species Act).

3.6.8 Environmental Protection Agency (EPA).

This agency provides national guidance and oversight for a number of environmental topics that often have direct implications on airport facilities (*e.g.*, deicing, wetlands, storm water runoff, air quality, etc.). The EPA establishes standards and regulations under many environmental statutes, such as the Clean Air Act, the Clean Water Act, and the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA, more commonly known as Superfund). In many cases, EPA delegates implementation of these programs to the states. EPA also has a mandate to review environmental impact statements (EIS) prepared by all federal agencies under NEPA.

3.6.9 Federal Communication Commission (FCC).

The FCC can often be a partner with the FAA when addressing issues such as cellular towers and radio navigation. Coordination with them regarding the location of cellular towers or other communication-based towers that extend into the national airspace system is critical.

3.6.10 Other Federal Agency Stakeholders for Compatible Land Use Planning.

Other federal agencies that have development programs can have specific interests in airport compatible land use planning efforts and can participate in the process. These agencies include the Department of Agriculture, Department of Energy, Department of Health and Human Services, and the Department of Housing and Urban Development.

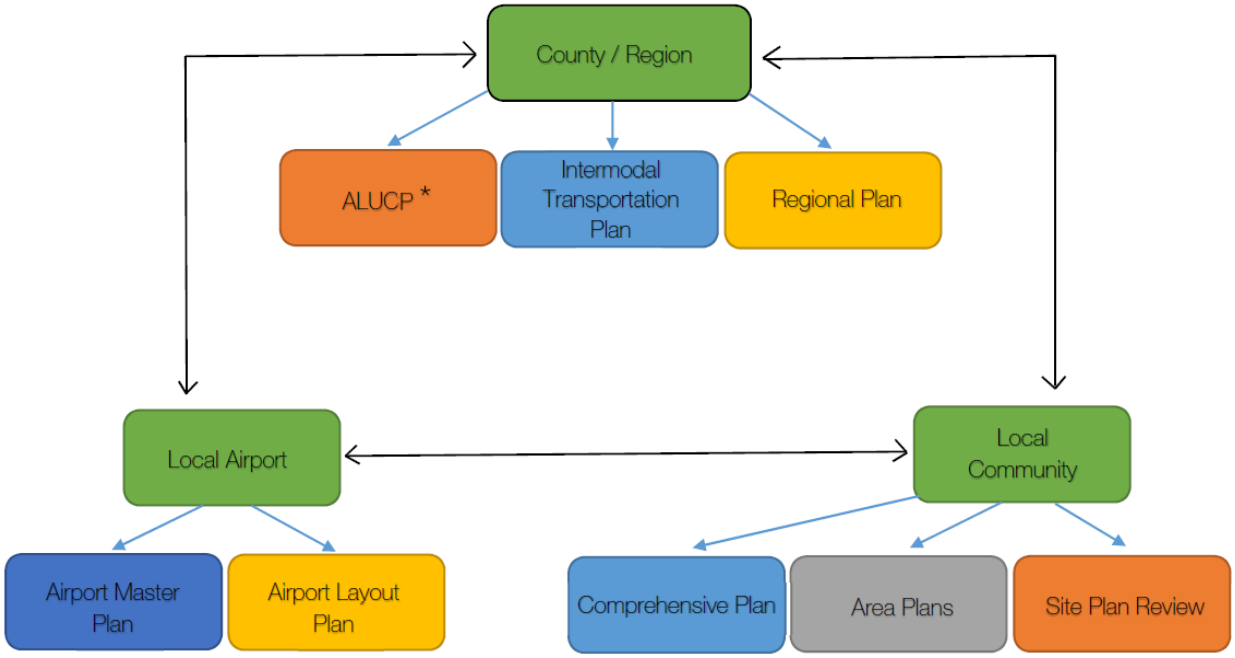
CHAPTER 4. AIRPORT AND LOCAL LAND USE PLANNING COORDINATION

4.1 Airport and FAA Participation in Local and Regional Planning.

4.1.1 Airports, local governments, and regional planning agencies are all responsible for the preparation of long-range development plans. These plans establish the fundamental policies intended to guide development decisions through the future. **Table 4-1** on the following page lists the planning documents and processes that are reviewed in this chapter that are generally applicable to the airport and land use planning discussion.

4.1.2 **Figure 4-1** below illustrates the relationship between the local airport, the community, and the larger region as it relates to these plans. Coordination among the airport sponsor, various FAA offices (ADOs and Regional Offices), local governments, and regional planning agencies is important to ensure that these plans, to the extent they influence airport-vicinity development, are coordinated and help to promote airport land use compatibility.

Figure 4-1. General Relationship of Planning Strategies



* ALUCP – Airport Land Use Compatibility Plan
(if applicable – predominantly applies to airports in California)

1976 **Table 4-1. Airport, Local Government, and Regional Planning Documents and Processes**

Sec.	Tool	Agency	Description/ Function
Airport-Sponsored			
4.2.1	Airport Master Plan & Airport Layout Plan (ALP)	Airport	The master plan is a narrative report that documents the airport's existing conditions and projects future growth and development needs. The ALP is a graphic report that documents the existing and future configuration and development of an airport.
4.2.1	14 CFR Part 150 Noise Compatibility Programs	Airport	A Part 150 Noise Compatibility Program evaluates and implements voluntary noise mitigation techniques inside and outside the property boundary to enhance compatibility with surrounding land uses. The Part 150 process is entirely voluntary on the part of the airport. There are over 250 airports nationwide that have elected to implement FAA approved Part 150 noise compatibility programs.
Military-Sponsored			
4.3.1	Air Installation Compatible Use Zone Studies (AICUZ)	Department of Defense	The Air Installation Compatible Use Zone (AICUZ) program promotes compatible land development in areas surrounding military air bases subject to aircraft noise and accident potential.
4.3.2	Joint Land Use Studies (JLUS)	Department of Defense	The Joint Land Use Study (JLUS) is designed to identify encroachment issues confronting a military installation and civilian community, as well as to recommend strategies to address the issues in the sponsoring community's comprehensive plan and zoning regulations.
Regional Plans			
4.4.1	Intermodal Transportation Plan	Region	A long-range transportation plan to meet the mobility needs of people and businesses throughout a metropolitan area or region including multimodal investment strategies.
4.4.2	Joint or Regional Plans	Region	A plan completed jointly, or cooperatively, by more than one community, often created to address a resource that spans across several communities. This can be an effective way to address land use effects and compatible land use needs of an airport.
4.4.3	Airport Land Use Compatibility Plan	Region	A plan to promote compatibility between airports and the land uses that surround them; required by law in California.

Sec.	Tool	Agency	Description/ Function
Local Government Plans and Activities			
4.5.1	Comprehensive Plan / General Planning	Local Community	A strategic long-range plan that documents the community's existing conditions and projects future growth and development needs.
4.5.2	Area Plans	Local Community	A plan adopted as part of a community's master plan that focuses on a specific geographic area (i.e., neighborhood, downtown) or specific topic (i.e., transportation, recreation). An Airport Master Plan can be adopted as an area plan by the community.
4.5.3	Development Site Plan Reviews	Local Community	The review and approval of the physical site design of a proposed development by the planning commission including building location and height, parking layout, drainage, lighting and landscaping.
4.5.4	Planning Forums	Local Community	Formalized staff committees of local government planners and airport staff to review and discuss development trends and specific projects.

4.1.3 The authorities to develop, implement, and enforce land use programs and decisions rest predominantly with local governments. The FAA advises airport operators to be involved in the preparation of city and county comprehensive plans so that they can advocate for airport interests and provide their specialized expertise to the planning team. The FAA can also be a helpful partner in comprehensive planning to the extent that airport and aviation interests are affected. By providing authoritative information about the scope and limitation of the federal role in land use compatibility and airspace protection, the FAA can provide information needed to encourage local governments to exercise the degree of planning and regulatory control needed to protect the airport.

4.1.4 The FAA encourages airport operators to be vigilant and coordinate with local governments to ensure that they are routinely given information about proposed development activity in the airport environs. An airport's area of influence, including airspace, noise impact area, and areas of safety concern can cross multiple jurisdictions, so it is important that the airport operator engage with all affected jurisdictions.

4.1.5 Effective coordination allows airport operators the opportunity to review and comment on those proposals. In areas subject to considerable development pressure, local government planners and airport staff can create formal staff committees that meet regularly to review and discuss development trends and specific projects. In addition to building important relationships among the participants, this coordination can improve the likelihood that airport compatibility considerations are addressed early in the development process. It also gives the airport operator the opportunity to keep local government officials informed of airport improvement and development projects in a timely manner.

4.2 Airport-Sponsored Plans.

Two key plans create a blueprint for the future development of airport facilities. These include the Airport Master Plan (which evaluates current and future airport use, among other factors) and Airport Layout Plan (which graphically depicts airport facilities, as they exist today and are planned for the future). In additional to these two plans, the 14 CFR Part 150 Noise Compatibility Program, can evaluate current and anticipated airport noise exposure levels around an airport in order to address measured noise impacts on noise sensitive land use. Following are descriptions of these plans.

4.2.1 Airport Master Plans and Airport Layout Plans (ALPs).

4.2.1.1 The guiding principle of the airport planning process is to develop a safe and efficient airport through the use of acceptable planning standards. The Airport Master Plan and Airport Layout Plan (ALP) are the two primary planning resources that discuss the existing conditions of an airport, as well as project future growth and development. The Airport Master Plan is a narrative report that describes the existing conditions at the airport, forecasts future use and facility needs, and provides a narrative justification for proposed development. The ALP documents the existing and future configuration and development of an airport in a graphic manner. ALPs are required for those airports that are part of the National Plan of Integrated Airport Systems (NPIAS). A master plan report is recommended for those airports that anticipate future growth. Every federally obligated airport is required to maintain a current ALP as a condition of its grant assurances.

4.2.1.2 Airport Master Plans follow the guidelines set forth in FAA AC 150/5070-6, *Airport Master Plans.* Acceptable Airport Master Plans should aim to include, at a minimum, an inventory of existing conditions, aviation forecasts, alternatives development, a capital improvements plan and public involvement. Airports are encouraged to involve the FAA in the master planning process, to provide continuity prior to ALP development airspace reviews. FAA's role is to provide guidance and technical information on current standards and initiatives, as well as to approve the aviation forecast. FAA does not approve but instead accepts an Airport Master Plan report meeting applicable FAA requirements. The FAA does, however, review and approve the aviation forecast, and reviews and approves each airport’s Airport Layout Plan in accordance with the FAA’s authorizing statute.

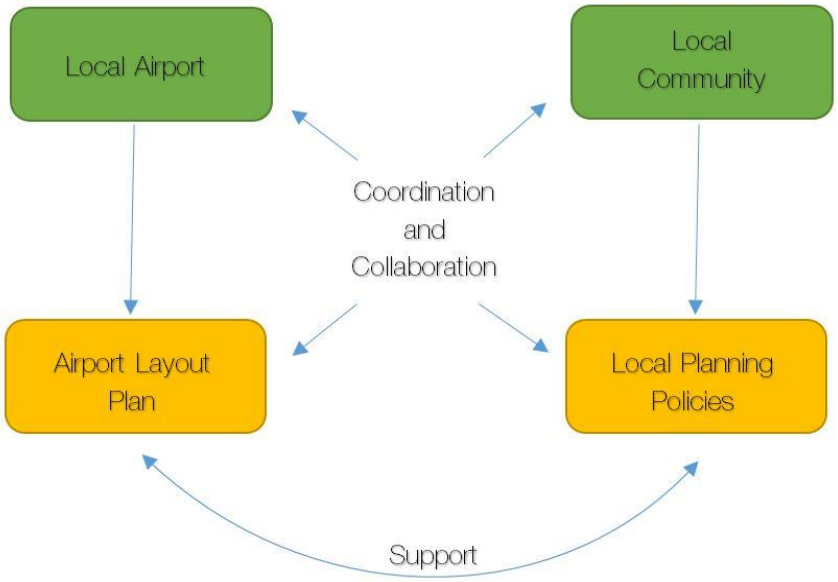
4.2.1.2.1 The ALP illustrates the airport boundaries, including all existing and planned facilities as discussed in an Airport Master Plan or indicated in a planning process that may not be part of a master plan report. An ALP is the culmination of the planning process and details the planned growth and development for an airport typically over a 20-year planning horizon. One of the sheets in an ALP is the "Land Use Plan," which indicates the current land uses around an airport, outside of the airport property line. This information is helpful in understanding existing and potential future conditions, however it is not intended to govern or regulate land uses

around an airport. While it is not a mechanism to achieve compatibility on its own, it can be shared with the local elected/appointed bodies to help them be better informed about the airport.

4.2.1.2.2 The local community, including planning agencies and administrators (e.g., the Mayor's office, City Council), should be invited to participate in an airport's planning process so the community is informed about the airport's long-term development plan. An ALP should be available and shared with local communities to inform them about an airport's plans for development. By having a chance to provide input on the long-term development plans of an airport, the community can inform the FAA of concerns or information before projects are initiated. This should be a two-way communication process: the community should have an opportunity to contribute to the process and be informed about how their input was considered.

4.2.1.2.3 **Figure 4-2** illustrates the ideal relationship between an airport and its local community in developing coordinated plans and policies that promote compatibility. The community can also coordinate with an airport in planning for other systems that serve the airport such as public utilities, local streets, transit service, and public safety and emergency response teams. AC 150/5050-4, *Citizen Participation in Airport Planning,* provides guidance for airports to engage the local community in airport planning efforts (such as ALP development), and tools and techniques to encourage participation. Airports are encouraged to blend the recommendations provided in this updated AC into their master planning process.

Figure 4-2. Planning Relationships that Promote Compatibility



4.2.2 14 CFR Part 150 Noise Compatibility Programs.

The Aviation Safety and Noise Abatement Act (ASNA) required the FAA to: 1) establish a single system of measuring noise; 2) establish a single system for determining the exposure of individuals to noise resulting from airport operations; 3) identify land uses normally compatible with various exposures of individuals to noise; and 4) to address noise impacts on existing incompatible uses. The resulting federal regulation, 14 CFR Part 150, *Airport Noise Compatibility Planning*, prescribes the procedures, standards and methodology governing the development, submission, and review of airport noise exposure maps (NEMs) and airport noise compatibility programs (NCPs), including the process for evaluating and approving or disapproving those programs. The Part 150 process is entirely voluntary on the part of the airport. However, many airports have reaped significant benefits from the process, which provides a structured approach to collaboration between the airport, airlines and other user groups, neighboring communities and the FAA (including air traffic controllers and the specialists who design the arrival and departure paths for aircraft in flight). Also see AC 150/5020-1, *Noise Control and Compatibility Planning for Airports*, for FAA guidance for sponsor development and implementation of noise compatibility programs developed for FAA approval under 14 CFR Part 150.

4.3 Military-Sponsored Plans.

Communities that are home to military air bases have two main planning studies that are sponsored by the Department of Defense. The goal of these studies is to promote compatible uses (military and civilian) near the military installations to maintain safe military air operations. Section 4.3.1 and Section 4.3.2 provide additional information on each of these studies.

4.3.1 Department of Defense Air Installation Compatible Use Zones (AICUZ) Studies.

The Air Installation Compatible Use Zone (AICUZ) program promotes compatible land development in areas surrounding military air bases subject to aircraft noise and accident potential. The AICUZ studies describe three basic types of constraints that affect or result from aircraft operations, including height restrictions, noise zones, and accident potential zones. They also include a list of land use guidelines. The AICUZ zones are similar to civilian airport overlay zoning districts, although the accident potential zone is derived from military accident data and does not necessarily correlate with the dimensions established for the Runway Protection Zone (RPZ) described in FAA design standards.

4.3.2 Department of Defense Joint Land Use Studies (JLUS).

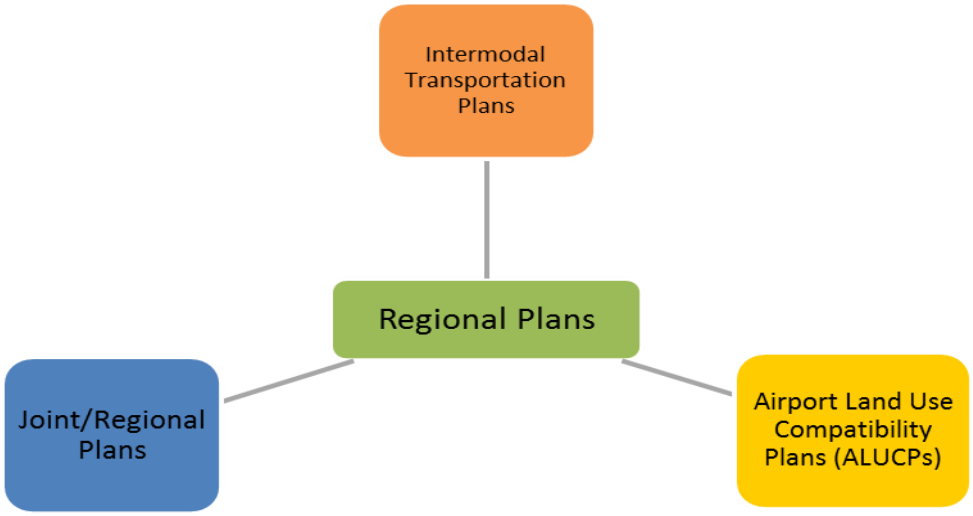
The Joint Land Use Study (JLUS) is a basic planning process designed to identify encroachment issues confronting a military installation and civilian community, as well as to recommend strategies to address the issues in the sponsoring community's comprehensive plan and zoning regulations. A JLUS is produced by and for a local jurisdiction (or multiple jurisdictions) where the military installation is located. It is intended to benefit both the local community and the military installation by combining the AICUZ program with the JLUS program. According to the 2006 Joint Land Use

Study Program Guidance Manual, the JLUS is conducted in a collaborative manner involving a number of stakeholders, such as local elected officials, planning commissioners, local military base command staff, community business leaders, chambers of commerce, homebuilders, real estate interests, and affected residents.

4.4 Regional Plans.

Airports can affect areas much larger than the immediate surrounding area. As shown in **Figure 4-3**, communities may work together on a regional planning level.

Figure 4-3. Common Regional Plans



4.4.1 Intermodal Transportation Plans.

4.4.1.1 The national airspace system is part of a larger transportation network that includes highways, local streets, rail, ports, transit and non-motorized transportation. As such, airport administrators should be part of multimodal transportation planning efforts. Metropolitan Planning Organizations (MPOs) are often the agencies responsible for developing long-range transportation plans with multimodal investment strategies. The airport planning process should be conducted in coordination with local MPOs (if applicable) in order to meet the mobility needs of people and businesses throughout a metropolitan area.

4.4.1.2 Trips using air transportation also include other modes of transportation from origin to final destination. Options for local ground transportation access to an airport are important for business and leisure travelers as well as airport employees. Connections to the highway system, shipping ports and rail lines are important for the movement of cargo. For these reasons, the aviation mode should be included in the intermodal planning process.

Multimodal planning efforts are encouraged to allow for greater development of the transportation systems that take advantage of the existing infrastructure, as well as the future needs of these systems.

4.4.2 Joint / Regional Plans.

Regional plans are completed jointly, or cooperatively, by more than one community. Communities choose to join together to produce regional plans for a variety of reasons. Often the reason or the driver is a resource that spans across several communities. Examples of this include watersheds, non-motorized trail systems, and regional transit. Airports also have impacts beyond one local community even if they are located within in a single jurisdiction. As a result, regional or joint plans may be appropriate to address airport land use concerns. Regional planning for airports can be an effective way to address land use effects and compatible land use needs of an airport.

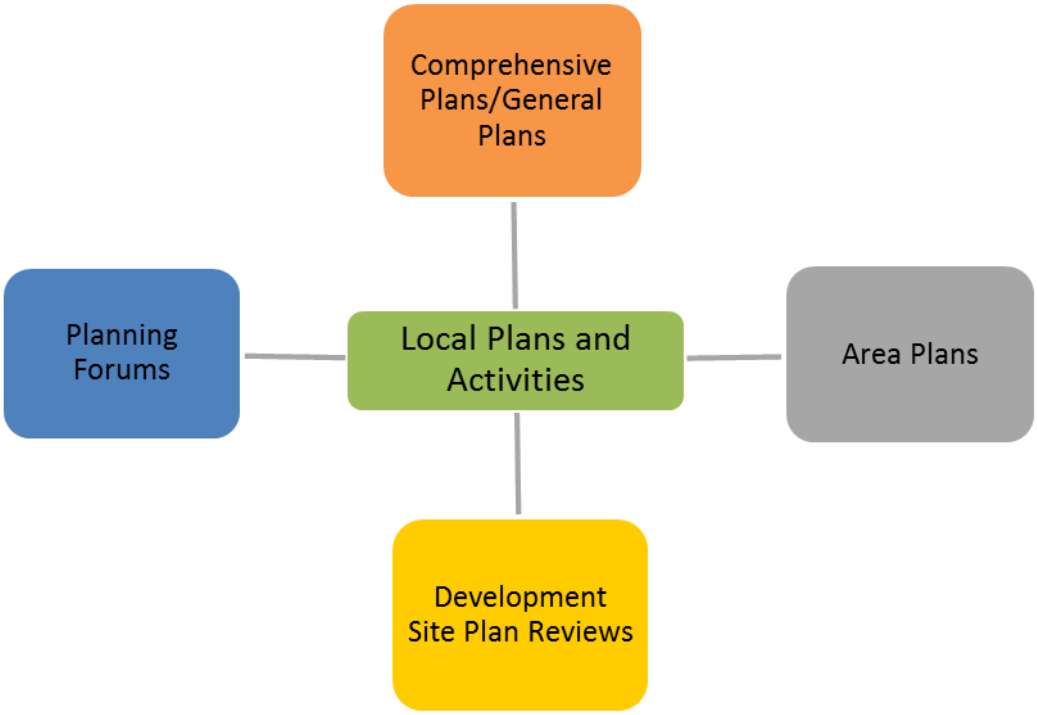
4.4.3 Airport Land Use Compatibility Plans.

An Airport Land Use Compatibility Plan (ALUCP) is a term given to a specific plan developed to look at compatibility around an airport. The State of California requires counties that have public use airports to develop ALUCPs. Airport Land Use Commissions (ALUCs) are tasked with overseeing them. The basic function of an ALUCP is to promote compatibility between airports and the land uses that surround them, and therefore it is a tool that can be used at airports of all sizes and types across the country – not just in California. The plan needs to define an airport influence area or other planning boundary that is large enough to protect an airport and persons on the ground around it. The FAA recommends that it also contain federal and state airport design criteria, safety areas, noise areas, and overflight areas with land use controls unique to the local community. Through due diligence in implementing the guidelines included in an ALUCP, communities can accommodate compatible growth and development of airports while still allowing for growth and development in the community. These ALUCPs are not regulatory documents, rather they provide background and framework to support or guide the implementation of an airport zoning ordinance, which is the regulatory document. Appendix E provides a checklist of ALUCP content and links to some existing commission plans.

4.5 Local Governments Plans and Activities.

The local government often has a variety of planning processes and documents that are in place to help guide growth according to the values and vision of the community. These plans can incorporate airport-sponsored planning efforts (see Section 4.2) and vice versa to align airport compatible land use needs with community growth. Information on the four common local plans and activities shown in **Figure 4-4** is provided in the following sections.

Figure 4-4. Common Local Plans and Activities



4.5.1 Comprehensive Planning / General Planning.

A local comprehensive plan, also called a general plan in some states, is a strategic long-range document that sets forth policies for a community's long-term growth and development. A comprehensive plan generally includes maps, charts, and text to explain a plan's goals and objectives. The purpose of traditional comprehensive planning and general plans is to provide for organized community growth, development, and land use. These plans are well suited to incorporate airport elements. Local comprehensive plans should reference local Airport Master Plans and ALPs or even adopt the Airport Master Plan as an area plan (see Section 4.5.2). This will set the stage for local land use decision makers to make coordinated decisions regarding compatible land use around an airport's jurisdictional boundary. The importance of an Airport Master Plan and associated ALP is highlighted when a local municipality recognizes the documents as part of the comprehensive plan.

4.5.2 Area Plans.

A community comprehensive/general plan may include area plans that address specific geographic areas such as individual neighborhoods or Central Business District (CBD) areas, or specific topics such as roads or recreation. Because area plans have a more narrow focus, they also provide a higher level of planning detail. An Airport Master Plan can be adopted by a community as an area plan for an airport and the surrounding affected areas, depending on local regulations. The additional detail provided by airspace protection zones and noise contours can set the stage for more detailed land use regulations for compatible land use around an airport.

4.5.3 Development Site Plan Reviews.

Approval by the local planning commission with a site plan approval is usually required for new development in a community (other than low density, single-family housing). Site plan approval is the review and approval of the physical site design, including building location and height, parking layout, drainage, lighting, and landscaping. Uses with off-site effects such as smoke, glare, or vibration usually require a conditional use permit (or "special use permit"). A conditional use permit allows the local jurisdiction to place operating restrictions on the proposed use as a condition of approval. The permitting process can address airport land use compatibility through a general performance statement (i.e. must be compatible with airport operations) or through specific design standards. As part of site plan review, comments are often requested from service providers and regulatory agencies. Through this same process, an airport manager or an airport sponsor could also be asked to review and comment on the site plan. Whether it is general performance standard, specific site development standards, or direct engagement from the airport administration, there are several ways the site plan review process can be used to review or even guide new development.

4.5.4 Planning Forums.

In areas subject to considerable development pressure, formalized staff committees of local government planners and airport staff can be formed to meet regularly to review and discuss development trends and specific projects. In addition to building important relationships among the participants, this coordination can improve the likelihood that airport compatibility considerations can be addressed early in the development process. It also gives the airport operator the opportunity to keep local government officials informed of airport improvement and development projects in a timely manner.

CHAPTER 5. TOOLS AND TECHNIQUES FOR LAND USE COMPATIBILITY

5.1 Overview of Tools and Techniques.

5.1.1 Many tools and techniques have been developed over the years to promote airport land use compatibility. Unfortunately, in many instances these tools and techniques go unused by local communities and airports. Some tools have proven to be effective in many different settings; others are highly specialized and are suitable only in special cases. The key stakeholders in the land use compatibility planning process – airports and local governments (and, to a lesser extent, regional planning agencies) – have access to different sets of tools, which can be utilized. Effective airport land use compatibility usually depends on the cooperation of these stakeholders in designing a comprehensive system of land use compatibility plans and regulations.

5.1.2 The selection of appropriate tools and techniques should follow comprehensive airport and land use planning processes, as described in Chapter 4. The plans developed through those processes provide the overall policy direction that is essential to structuring appropriate land use compatibility initiatives and building the public support needed to implement those initiatives. If land use regulations to promote airport land use compatibility are envisioned, the FAA advises that the rationale and the basis for those regulations be clearly documented in airport and land use compatibility plans for the regulations to withstand legal scrutiny.

5.1.3 **Table 5-1** lists the tools and techniques that are briefly discussed in this chapter. For each tool or technique, the entity with primary implementation authority is noted, as are the land use compatibility factors that can be most effectively addressed through the use of the tool or technique. Application/implementation of any of these tools should be assessed on a case-by-case basis to address specific airport and community needs. In many instances, more than one tool or technique may be required.

2248 **Table 5-1. Overview of Land Use Compatibility Tools and Techniques**

Tool/ Technique	Entity with Primary Authority	Potential Compatibility Concerns Addressed				
			Safety			
		Noise	Concentrations of People	Wildlife Attractants	Airspace	
					Tall Structures	Visual & Atmospheric Issues
Land Use Regulations						
Overlay Zoning	Local government	X	X	X	X	X
Compatible Use Zoning	Local government	X	X	X	X	X
Standalone Airport Zoning	Local government or, in some states, airport operator	X	X	X	X	X
Transfer of Development Rights	Local government	X	X	X	X	X
Subdivision Regulations	Local government	X	X			
Building Codes	Local government	X	X		X	
Project Review Standards	Local government	X	X	X	X	X
Property Acquisition Techniques						
Fee Simple Acquisition	Airport operator	X	X	X	X	X
Purchase Options, Land Contracts, Life Estates	Airport operator	X	X	X	X	X
Avigation Easements	Airport operator	X	X	X	X	X
Purchase of Development Rights	Airport operator	X	X	X	X	X
Conservation Easements	Airport operator	X	X	X	X	X
Lease or Sale of Airport Land Subject to Compatible Use Conditions	Airport operator	X	X	X	X	X
Noise Mitigation Techniques						
Sound Insulation	Airport operator or local government	X				

Tool/ Technique	Entity with Primary Authority	Potential Compatibility Concerns Addressed				
			Safety			
					Airspace	
		Noise	Concentrations of People	Wildlife Attractants	Tall Structures	Visual & Atmospheric Issues
Sound Barriers	Airport operator	X				
Environmental Management Techniques						
Wildlife Hazard Management Plans	Airport operator			X		
Natural Features Inventory and Mitigation	Airport operator			X		
Notification Techniques						
State-mandated Fair Disclosure*	State legislature	X	X			
Deed Restrictions	Local government		X	X	X	X
Nonsuit Covenants and Hold Harmless Agreements	Local government	X	X			X
Disclosure Notices	Local government	X			X	
Education and Communication Techniques						
Community Outreach	Airport operator	X		X	X	X
Local Government Involvement	Airport operator	X	X	X	X	X
Outreach to Airport Users	Airport operator	X				
Airport and FAA Participation in Local and Regional Planning	Airport operator	X	X	X	X	X
Airport and FAA Participation in Professional Planning Organizations	Airport operator	X	X	X	X	X
Coordination with Real Estate Agents and Brokers	Airport operator	X	X		X	
Use of Social Media	Airport operator	X		X	X	X
Use of Focus Groups	Airport operator	X	X	X	X	X

Tool/ Technique	Entity with Primary Authority	Potential Compatibility Concerns Addressed				
		Noise	Safety			
			Concentrations of People	Wildlife Attractants	Airspace	
					Tall Structures	Visual & Atmospheric Issues
Education of State Legislators and Legislative Staff	Airport operator	X	X	X	X	X

*Legal Research Digest 12 Fair Disclosure and Airport Impact Statements in Real Estate Transfers.

5.2 Land Use Regulations.

Local governments are empowered by state law to exercise land use regulatory power to promote the public health, safety, and welfare. Zoning can be one of the most effective ways to achieve land use compatibility near airports, because it regulates (by allowing or prohibiting) specific land uses in defined areas. Land use regulations are powerful tools for promoting airport land use compatibility, because they can regulate specific land uses and require development conditions to mitigate potential adverse effects on airports and aviation in defined areas. Most often, local land use regulations are enacted and administered by the municipality in which an airport is located (or by the county if the airport is in unincorporated territory). Zoning, the most powerful of the land use regulatory tools, can be used to both regulate land uses and land use characteristics, such as building height, bulk, site orientation, and design features. **Table 5-2** summarizes the types of land use regulations that can be used to foster compatible development near airports. Each is discussed in the following sections.

2265 **Table 5-2. Land Use Regulatory Tools and Techniques**

Technique	Description	Key Value	Primary Shortcoming	When to Use
Overlay Zoning	Supplements the provisions of underlying zoning by prohibiting incompatible uses and placing conditions on potentially sensitive land uses.	Reduces the potential for development of hazards and incompatible land use.	Has limited effect on existing incompatible land use.	In undeveloped areas and in areas where infill and redevelopment is possible to protect against future incompatible uses.
Extraterritorial Zoning	Municipal zoning authority extended out to adjoining jurisdictions within the airport influence area.	Creates a unified land use compatibility regulatory structure throughout a larger part of the airport influence area than would otherwise be possible.	Can be politically sensitive. Requires coordination between municipality and other entities to ensure effective administration.	Where authorized by state law and where the municipalities involved are unable or unwilling to establish airport land use compatibility zoning.
Compatible Use Zoning	Conventional zoning for compatible commercial or industrial use.	Readily understood by the public, developers, and elected officials. Most uses allowed in these zoning districts are airport-compatible.	Unsuitable for very large areas, because demand for those uses is likely to be insufficiently strong. Zoning districts may also allow certain sensitive uses (such as noise-sensitive institutions).	Where there is realistic opportunity for industrial or commercial development. Should be supplemented with overlay zoning when possible.

Technique	Description	Key Value	Primary Shortcoming	When to Use
Standalone Airport Zoning Ordinances	Special ordinances specifically intended to regulate obstructions and, sometimes, land use around airport.	Typically, state enabling legislation provides for a multi-jurisdictional structure, ensuring that the regulations can extend throughout an airport influence area.	Often, state legislation allows only for the regulation of potential hazards and obstructions. Requires a strong lead administrative agency and close coordination among participating jurisdictions. Limited effectiveness in situations where incompatible development already exists around an airport.	When airport influence area includes several jurisdictions and where the likelihood of close coordination among the jurisdictions is good.
Transfer of Development Rights	A zoning system allowing property owners in defined zones to buy rights for additional development density or intensity from property owners in designated sending zones to remove density from the primary location.	Allows buildable value to be shifted to a different site, maintaining taxable property.	Complex system that requires highly expert technical analysis to ensure that the original allocation of development rights is appropriate to achieve the desired effect.	Appropriate in high-growth areas with sophisticated developers and planning agencies.
Subdivision Regulations	Regulations governing the division of land, the dedication of public rights-of-way, and utility easements.	Provides a means to secure avigation easements and require fair disclosure measures for development in airport-impacted areas.	Often the limited scope does not allow the direct regulation of land uses.	Where airport influence areas include substantial amounts of undeveloped land.

Technique	Description	Key Value	Primary Shortcoming	When to Use
Building Codes	Regulations governing building materials and methods. May include standards for the sound insulation of noise-sensitive buildings.	Provides clear standards ensuring that noise-sensitive buildings are properly treated to attenuate outdoor noise and non-reflective building materials are used to reduce glare.	Proper construction and installation of materials requires rigorous attention to detail, necessitating thorough building inspection. May increase cost of construction.	Where the development of land uses is expected within noise exposure areas or approach paths.
Project Review Standards	Standards and guidelines for the review of development actions, such as site plan reviews, re-zonings, variances, etc.	Ensures systematic consideration of land use compatibility factors in the review of development proposals subject to approvals.	Effectiveness depends on internal leadership and advocacy in the administering agencies.	Where development activity is expected within the airport influence area.

5.2.1 Overlay Zoning.

5.2.1.1 A zoning overlay is a form of zoning that applies specific standards within an area without changing the basic, underlying zoning of the property. Airport compatibility overlay zoning can be used to impose special standards relating to noise, safety of those on the ground, flight safety, airspace protection, or even disclosure. Within airport compatibility overlay zones, noise-sensitive land uses might be prohibited or conditionally allowed if mitigated (*e.g.*, sound insulated, disclosure, etc.) for compatible use with airport noise exposure. Land use characteristics posing risks to flight safety, such as smoke or water vapor, lighting mimicking airport approach lighting, or bird attractants, can also be prohibited. Height limitations designed to protect critical airspace can also be implemented through overlay zoning.

5.2.1.2 To be legally defensible, overlay-zoning boundaries should be established to correspond to the geographic areas within which the specific impacts of concern occur. That is, noise-based regulation is defined by airport noise contours; height limitations to protect airspace are based on the boundaries of critical airspace, such as 14 CFR Part 77 airport vicinity obstruction

surfaces or TERPS surfaces. See Appendix F for a sample airport land use compatibility overlay-zoning ordinance.

5.2.2 Extraterritorial Zoning.

5.2.2.1 Airports are often located at the edges of their host municipalities. The areas of airport influence, including noise exposure contours and critical airspace, often extend over large areas beyond the boundaries of the host municipalities. Where the areas of airport influence extend into unincorporated areas, some cities, depending on state enabling legislation, are able to exercise extraterritorial zoning control. That is, they are empowered to use their zoning power outside their municipal limits.

5.2.2.2 The exercise of extraterritorial zoning can be an effective way to extend land use compatibility controls across a greater portion of the airport influence area than would otherwise be possible. Coordination with the local government(s) will likely be necessary to ensure that adoption of the regulations is politically acceptable. After adoption, continued coordination between the city and county governments is advisable to ensure that development applications are correctly routed to the local planning and building department(s) for processing.

5.2.3 Compatible Use Zoning.

5.2.3.1 The establishment of zoning allowing only compatible industrial or commercial uses near airports can be effective in preventing some kinds of incompatible development, but the technique has several potential limitations. Perhaps the most serious limitation is that standard commercial or industrial zoning lacks the flexibility to efficiently address all attributes of land uses that may create airport compatibility problems. The regulations applying in standard industrial and commercial zones limit land uses to those that are compatible with industrial and commercial development. Often, certain kinds of noise-sensitive institutions, such as hospitals or schools, are allowed in such districts. Standard commercial and industrial zoning also can allow design features that may be hazardous to aircraft in flight, such as smoke, vapor, thermal plumes, or bird attractants.

5.2.3.2 Another limitation of compatible use zoning is the need to balance the supply of industrial and commercial-zoned land with demand. If the market for commercial or industrial-zoned land is weak, and if property owners perceive that they are effectively being prevented from developing their land, they can exert political pressure or, in extreme cases, sue in court to force rezoning of the land. This can occur if the total supply of commercial and industrial land vastly exceeds overall demand or if the land, which has been zoned for commercial and industrial use, is not yet ripe for such development or is ill suited for those uses because of site problems, poor access, or inadequate water and sewer service.

5.2.4 Standalone Airport Zoning Ordinances.

5.2.4.1 Many states authorize the establishment of specialized Airport Zoning Ordinances. These statutes are usually separate from those authorizing general-purpose land use planning and zoning. In many cases, the statutes authorize the means through which multiple jurisdictions can coordinate in creating a regional approach to airport land use compatibility regulation. Some statutes, for example, authorize the creation of multi-jurisdiction airport zoning commissions. In some states, however, the scope of authority is limited to airspace protection or the avoidance of creating hazards to flight, rather than granting broader land use regulatory authority.

5.2.4.2 A particular challenge of stand-alone airport zoning ordinances is the need incorporate them into the development permitting processes of local governments. It is essential for one of the participating jurisdictions to take a lead administrative role, and to maintain ongoing coordination with the other jurisdictions and the airport to ensure the effective administration and enforcement of these ordinances.

5.2.5 Transfer of Development Rights.

5.2.5.1 Transfer of Development Rights (TDR) programs are based on the principal that land ownership actually involves the ownership of a bundle of rights to the land. According to this theory, a property owner can sell or transfer some of the rights to the use of his or her property without surrendering the title to the entire property. TDR programs intended to guide the pattern of development in a community are typically adopted through zoning ordinances. The community is divided into sending and receiving zones, and development rights, expressed as maximum permitted densities or floor area ratios (FARs), are allocated to all properties in each zone. Properties in the receiving zones may be developed to higher densities or FARs than allowed under the zoning if the property owner is able to purchase additional development rights from a property owner in a sending zone. The idea is to create economic incentives to limit development in the sending zones and to concentrate development in the receiving zones.

5.2.5.2 TDR programs tend to be most effective in high-growth areas. Airport operators and local governments interested in exploring the use of TDR programs should consult with legal counsel to verify that the technique is allowed under state law.

5.2.6 Subdivision Regulations.

5.2.6.1 Subdivision regulations control the platting of land by establishing site-planning standards, including standards for lot layout, the placement of utilities, and the dedication of public rights-of-way and easements. Some jurisdictions have used subdivision regulations to promote compatible

development in airport environs by requiring the consideration of aircraft noise at the time public officials are reviewing the plat. This might take the form of requiring further noise attenuation features in site design or decreasing or shifting the density of portions of the development. Unless subdivisions are extremely large, however, the altering of lot patterns and shifts in residential density would be of little consequence in reducing noise exposure for residences.

5.2.6.2 Subdivision regulations can also be used to dedicate avigation easements. Legal counsel should be consulted before adopting such provisions as this area of land use law is undergoing change.

5.2.6.3 Some jurisdictions have incorporated fair disclosure requirements into their subdivision regulations to help ensure that people purchasing lots are made aware that the property is within an airport influence area and may be exposed to aircraft noise before they close on the purchase of the property. Fair disclosure provisions may take any of several forms, as discussed in Section 5.6.

5.2.7 Building Codes.

5.2.7.1 Building codes regulate the construction of buildings and set standards for materials and construction techniques to protect the health, safety, and welfare of occupants. Building codes address structural concerns, ventilation, and thermal insulation and apply to new construction and major alterations to existing structures. A good use of building codes for local land use compatibility is to address noise. For example, building codes can require sound insulation for residential and other noise sensitive facilities constructed in areas subject to high levels of aircraft noise.

5.2.7.2 Because of the complexity of building technology, most cities and counties in the United States have long relied on model building codes prepared by specialized standards organizations. Today in the United States, the International Building Code is the model code that is in widespread use.[4] It applies to all nonresidential construction, including multi-family development over three stories. The International Residential Code applies to dwellings and townhouses up to three stories.[5] These standard codes do not include provisions for sound insulation to protect occupants from especially high levels of exterior noise. Thus, local governments that wish

[4] http://www.iccsafe.org.
[5] http://shop.iccsafe.org/codes/2018-international-codes-and-references/2018-international-residential-code-and-references.html.

to provide standards for the attenuation of significant aircraft noise levels should adopt measures to supplement the standard building codes.

5.2.7.3 A particularly effective way to administer building code provisions for sound insulation is in tandem with airport compatibility overlay zoning. The overlay-zoning ordinance would stipulate the types of land uses that require sound insulation within the various noise exposure contours. The building code would include provisions explaining how the sound insulation requirements can be achieved.

5.2.8 Project Review Standards.

5.2.8.1 Planning staffs, planning commissions, zoning boards of appeals, and local governing bodies are often required to use judgment in making recommendations and decisions on community development actions such as site plan approvals, rezoning and subdivision applications, and proposed public improvement projects. Project review standards and guidelines can provide a structured way for decision-makers to consider airport land use compatibility as they review development proposals.

5.2.8.2 Project review standards can be incorporated into zoning ordinances or prepared as administrative guidelines for use by project planners as they analyze development proposals and prepare recommendations for planning commissions, boards of zoning appeals, and governing bodies. Project review standards should include provisions ensuring that airport representatives are informed of the proposed development projects so that they have an opportunity to review and comment on the proposals.

5.2.8.3 Project review standards are recommended to include guidance to ensure that noise compatibility, the safety of people on the ground, flight safety, and airspace protection are considered during review and approval of development proposals.

5.3 Land Acquisition Techniques.[6]

Numerous acquisition techniques are available for airports that are trying to achieve or maintain compatible land use around their facilities. **Table 5-3** provides a summary of these techniques, and a detailed description of each is provided in the following sections.

[6] AIP funding requirements for land acquisition (e.g., eligible airport use, good title, compliance with the federal Uniform Relocation Act, etc.) are described in the FAA AIP Handbook, FAA Order 5100.38.

2430 **Table 5-3. Property Acquisition Tools and Techniques**

Technique	Description	Key Value	Primary Shortcomings	When to Use
Fee Simple Acquisition	Complete purchase of land and all improvements on the property.	Airport operator gains complete control over property and any future development. Can be an effective means of noise mitigation as well as preventing encroachment.	High cost. Land removed from tax rolls unless converted to compatible land use. Maintenance obligation for airport operator.	Land ownership for planned aeronautical development land, RPZs and redevelopment of land subject to significant noise levels under noise compatibility program measures.
Purchase Options, Land Contracts, Life Estates	Method to position the airport operator for future acquisition of the property.	Provide flexibility to airport operators and sellers, while assuring airport operator of ultimate ability to acquire the property and minimizing near-term costs.	Initial costs may be small, but full acquisition costs must inevitably be paid. Land ultimately removed from tax rolls unless converted to compatible land use. Maintenance obligation for airport operator.	To secure ownership of RPZs, areas subject to high noise levels, and areas beneath runway approaches. Use when acquisition is not urgent or when limited funding is available in the near-term.

Technique	Description	Key Value	Primary Shortcomings	When to Use
Avigation Easements	A conveyance of airspace over another property for use by the airport. Easement rights acquired typically include the right-of-flight of aircraft; the right to cause noise, dust, etc.; the right to remove all objects protruding into the airspace together with the right to prohibit future obstructions or interference in the airspace; and the right of ingress/egress on the land to exercise the rights acquired.	May be less expensive than fee simple acquisition; land remains on the tax rolls. May provide more positive control than zoning. May be conveyed "outright" or in exchange for sound insulation under an airport noise compatibility program.	Outright easement acquisition as sole noise compatibility measure (i.e. without sound insulation) does not alter existing property noise exposure on a property.	Use when needed to gain right to remove obstructions (i.e. trim trees), prevent future obstructions on the property, prevent incompatible use or development of RPZ. An easement conveyance for an airport noise compatibility program (NCP) acknowledges the property has been mitigated under the NCP.
Purchase of Development Rights	The rights to develop the property for incompatible uses are purchased by the airport operator and held in perpetuity.	Prevents development of incompatible uses. Potentially less costly than fee simple acquisition. Keeps land on the tax rolls. Compensates property owner for keeping land undeveloped.	Difficult to establish fair market value. In areas experiencing development pressure, development rights may cost nearly as much as the entire property.	In rural areas where compatible use zoning or noise overlay zoning is not feasible. Prevent development within current or planned RPZ and approaches.

Technique	Description	Key Value	Primary Shortcomings	When to Use
Purchase of Conservation Easements	Easements that preserve land in an undeveloped state.	Prevents development of incompatible uses. Potentially less costly than fee simple acquisition. Keeps land on the tax rolls. Compensates property owner for keeping land undeveloped.	Difficult to establish fair market value.	In wetlands, forest areas, prime farmland, and other areas with important environmental or scenic attributes.
Sale or Lease of Airport Land Subject to Compatible Use Conditions	Release of airport-owned land that is not needed for airport purposes.	Returns land to the tax rolls. Revenue earned by the airport can be used for airport development or noise mitigation purposes. Long-term land use compatibility is assured.	Requires thorough long-term planning to ensure that the land will not be needed for a future airport purpose.	When airport has very large tracts of land that will clearly not be needed for airport development.

5.3.1 Fee Simple Acquisition.

Fee simple acquisition involves the purchase of an entire property, including structures and facilities, as well as the air and mineral rights. This is often the most effective mitigation strategy to protect an airport because the airport assumes sole ownership of the property, allowing the airport sponsor to maintain the property in a compatible manner. Airport sponsors should own, if possible, land within the Object Free Areas (OFAs) and Runway Protection Zones (RPZs) while taking into account the costs and physical limitations associated with individual parcels. Where development already exists in RPZs, other methods of control, such as easements and/or deferred possession via land contracts or purchase of development rights, may be more effective long-term solutions for clearance. To the extent practicable, land acquisition should include adequate areas surrounding the runways to protect approach and departure surfaces for both existing and planned runways and runway extensions.

5.3.2 Purchase Options, Land Contracts, Life Estates.

5.3.2.1 If property acquisition is not immediately feasible or necessary, deferred acquisition techniques may be effective. One of these techniques is known as a “purchase option” where the airport sponsor pays a property owner an agreed upon sum of money to secure the right to purchase the property during a specified period of time. The FAA issued a guidance document in 1997 entitled, *Report to Congress on Potential for Use of Land Options In*

Federally Funded Airport Projects.[7] This document details the requirements and limitations of land option contracts for airport development projects.

5.3.2.2 Another deferred purchase technique is known as a "land contract," where the airport sponsor pays a property owner a specified amount in multiple installments (monthly, bi-annual, etc.), which go toward the purchase of the property when it is no longer being used and occupied by the selling property owner. These contracts have an agreed upon term, after which the airport operator takes possession of the property

5.3.2.3 A third technique is the purchase of a life estate. The property owner retains the right of occupancy until death, or until he or she no longer desires to occupy the property as their permanent residence.

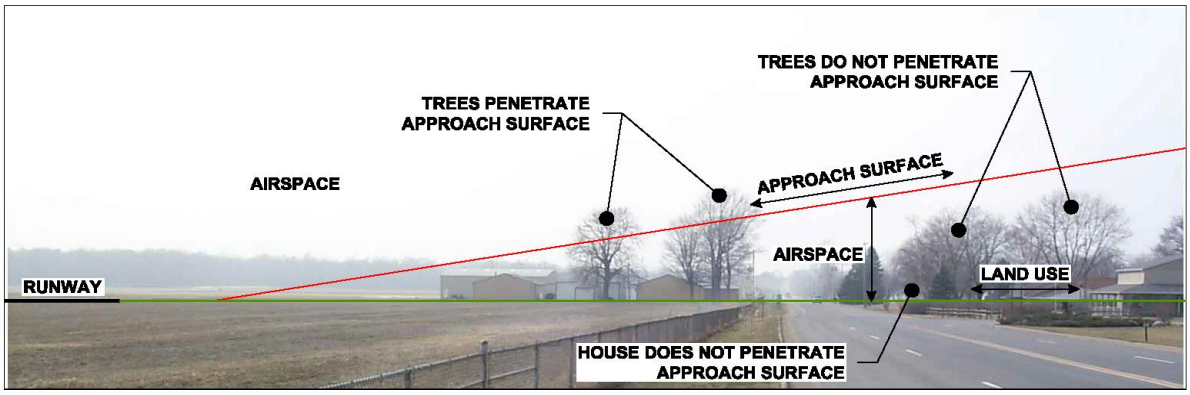
5.3.3 Purchase of Avigation Easements.

5.3.3.1 An easement is a right or privilege that one party has to the limited use of the property of another party. Avigation easements are often purchased by airport sponsors to protect the surrounding airspace from encroachments and land from incompatible development (such as incompatible development in RPZs or future RPZs). Avigation easements, which are attached to the deed and run with the land, can also include notices that the property is subject to aircraft noise and other airport-related effects. They can also include non-suit covenants protecting the airport operator from lawsuits related to lawful use of the property as stipulated in the easement document.

5.3.3.2 Avigation easements are effective in helping airport operators protect critical airspace by enabling access to ensure that vegetation remains clear of the airspace. **Figure 5-1** illustrates a penetration of trees to an approach surface, which an airport may remedy with an avigation easement and removal of the trees. The easement would include the right to remove the penetrating tree, as well as the perpetual right to remove trees that may become penetrations in the future. Such an easement would also typically limit the construction of any new structure that would penetrate this surface or creation of any land use that would be detrimental to aircraft operations within the described easement area.

[7] U.S. Department of Transportation, Federal Aviation Administration, *Report to Congress on Potential for Use of Land Options in Federally Funded Airport Projects*. Report of the Secretary of Transportation to the United States Congress, Washington, D.C., December 1997.

Figure 5-1. Tree Obstruction in a Runway Approach



5.3.3.3 Avigation easements often provide more positive control than zoning and are applicable when fee simple purchase is unnecessary (e.g., where surface use below overflight elevation is compatible). In addition, because the land can remain in private ownership, it remains on the tax rolls. It is important for airport operators to maintain a record of their avigation easements and actively manage the properties in order to be effective. Avigation easements providing for overflight to/from the airport run with the title of the land encumbered, and bind succeeding owners to the height and land use controls described in the easement. Easements protect the described airspace and compatible land use controls needed for current and planned development and operations at the airport. If subsequent future airspace needs exceed the land use or development controls of an existing easement, modified easement rights may need to be acquired by the airport to protect for expanded airspace controls over an easement-encumbered property.

5.3.4 Purchase of Development Rights.

5.3.4.1 As previously noted in the discussion of Transfer of Development Rights programs, land ownership involves a bundle of rights, including the right to develop the property to the extent allowed by law. The right to develop property has a value and it can be separated and sold apart from the entire fee. The purchase of development rights has most often been used to promote the preservation of environmentally sensitive areas and agricultural properties. The entity that purchases the development rights holds them in perpetuity, thereby restricting development on the subject property.

5.3.4.2 Airport operators can purchase development rights to promote airport land use compatibility (such as incompatible development in RPZs or future RPZs). In rural areas, this can be a cost-effective way to guarantee long-term land use compatibility while keeping the property on the tax rolls. In suburban and developing areas, the technique can be less effective as the value of the development rights can approach the value of the full fee simple land value.

5.3.5 Purchase of Conservation Easements.

5.3.5.1 Conservation easements have historically been purchased by nonprofit environmental organizations, and state natural resources and environmental protection agencies, to protect sensitive lands from development. The property owner maintains ownership of the land but surrenders the right to develop the property, as described in the easement document. Conservation easements can be adapted to promote airport land use compatibility by limiting the right to develop the property for any incompatible land uses.

5.3.5.2 Conservation easements are generally best used on agricultural, forest, wetland, scenic, or open space land to limit or prevent the development of incompatible land uses on or near airport environs.

5.4 Noise Mitigation.

Airport operators and local governments can use techniques to mitigate the adverse effects of noise on existing noise-sensitive land uses. A 14 CFR Part 150 Noise Compatibility Program (NCP) (see section 5.4.1 below) is a voluntary planning activity to assess the need for noise mitigation measures. An airport NCP may include aircraft noise abatement measures, such as preferential runway use programs, the use of noise-compatible flight routes, noise abatement departure procedures, and airfield modifications.[8] It may also include mitigation measures such as the acquisition of noise-sensitive property, the purchase of noise and avigation easements, sound insulation, and the construction of sound barriers. Sound insulation and airport sound barriers, summarized in **Table 5-4**, are discussed in the following sections.[9] Property acquisition and easements is discussed in above in Section 5.3.

Table 5-4. Noise Mitigation Tools and Techniques

Technique	Description	Key Value	Primary Shortcoming	When to Use
Noise Compatibility Program (NCP)	Comprehensive analysis and selection of noise mitigation and abatement	Provides extensive stakeholder participation in thorough	To be successful, requires considerable time and	When airport management concludes federal assistance is necessary to establish adequate noise

[8] Use restrictions cannot be mandatory upon users unless they are first approved by the FAA through 14 CFR Part 161, Notice and Approval of Airport Noise and Access Restrictions.

[9] Aircraft noise abatement procedures are beyond the scope of this AC. Refer to 14 CFR Part 150, FAA AC 150/5020-1, *Noise Control and Compatibility Planning for Airports*, FAA AC 150/5020-2, *Guidance on the Balanced Approach to Noise Management*, and FAA Order 8400.9, *National Safety and Operational Criteria for Runway Use Programs* for information on this topic.

Technique	Description	Key Value	Primary Shortcoming	When to Use
	measures including: Land acquisition Sound barriers Preferential runway Flight procedures Voluntary use restrictions based on noise Sound insulation of homes and schools	identification of means to improve and maintain land use compatibility; study supported by federal funds; can provide eligibility for federal funding of some measures; can establish productive working relationships among stakeholders.	involvement by airport staff, public, and airport users; may raise public expectations unless carefully managed.	mitigation/abatement measures for the airport.
Sound Barriers	Noise walls, earthen berms, dense stands of trees, ground runup enclosures that attenuate noise from aircraft ground operations	Reduces noise exposure in sensitive areas very near the airport that are exposed to airport ground noise.	Tend to be most effective over relatively short distances. Have no effect on overflight noise.	Use for noise-sensitive areas along the runway sidelines or where aircraft maintenance run-ups are common.
Sound Insulation	Measures used to attenuate outdoor noise in noise-sensitive buildings, such as housing, schools, nursing homes, places of worship, etc.	Can substantially reduce the levels of outdoor noise reaching the interior of buildings.	Reduces only the indoor noise levels. Effectiveness requires windows to be closed, necessitating air conditioning or closed-window fresh air circulation systems. Costs of construction materials.	Can be required through overlay zoning and building codes where the development of noise-sensitive land uses is allowed within relatively high-noise areas. Can be used as a noise mitigation measure for existing noise-sensitive land uses (homes, schools, etc.) exposed to noise above 65db DNL and eligible for sound insulation under a FAA-approved Noise Compatibility Program.

5.4.1 Noise Compatibility Program (NCP).

NCPs are intended to bring together various stakeholders to develop techniques to establish and maintain aircraft noise-compatible uses around an airport, and to address noise impacts on existing incompatible uses.

5.4.1.1 Participation is voluntary, but airports must complete a Part 150 Study (see Section 4.2.2 on 14 CFR Part 150 planning studies) in order to obtain FAA funding for most noise-mitigation measures - such as sound attenuation of existing residences or installation of noise monitors.[10] Eligibility for funding is only possible when Noise Exposure Maps (NEMS) are in compliance with the regulatory requirements and measures within the NCP, and are approved by the FAA. For description of NEM's as a notification tool under federal law, see Section 5.6.3.

5.4.1.2 NCPs evaluate and implement various noise abatement and mitigation measures, such as sound barriers and sound insulation. They may also include modified procedures for aircraft, such as designating areas for ground run-up usage. Certain noise-abatement measures do not require a Part 150 study, such as sound attenuation for schools. Airports also have the ability to use revenues from Passenger Facility Charges for noise mitigation actions even without the approval of a Part 150 NCP.[11]

5.4.1.3 Like a master plan process, Part 150 studies include a comprehensive public involvement strategy and encourage communication between various stakeholders. This provides a framework for productive working relationships among stakeholders that contribute to improved compatible land use decisions. FAA guidance to airport sponsors for Part 150 program development is provided in FAA AC 150/5020-1, *Airport Noise Control and Compatibility Planning.*

5.4.2 Sound Barriers.

Many airport operators have built sound barriers to lessen the effects of noise in noise-sensitive areas near airports. Sound barriers have limited applications and are typically used on airport property to shield nearby noise-sensitive areas from noise produced by aircraft on the ground. Earthen berms, walls or dense plantings of vegetation can be used to shield noise sensitive areas. Maintenance costs, in addition to initial construction costs, should be considered as part of the material selection process. Construction of Ground Run-up Enclosures (GREs), structures that house aircraft during engine run-ups for maintenance checks, may also be effective.

[10] FAA funding may be available for noise mitigation measures approved in an environmental record of decision for an airport development project. See FAA Order 5100.38, *Airport Improvement Program Handbook.*
[11] FAA Order 5500.1, *Passenger Facility Charges*, Subsection 4-6.

5.4.3 Sound Insulation.

Sound insulation is a noise mitigation measure that can be incorporated into many existing buildings to reduce the interior noise levels (new construction must conform to modern construction codes and techniques that provide sound insulation standards and requirements). Sound insulation is aimed at reducing aircraft noise within homes and other noise-sensitive structures. It is usually accomplished through the baffling of vents and the installation of acoustical windows, doors, additional insulation, and other materials that attenuate the transmission of noise into the structure. There are several guidance documents and handbooks that aid in the development and management of sound insulation programs, and to provide advice on sound attenuation materials and building techniques.[12] Naturally, sound insulation is only effective in attenuating noise inside structures. The outdoor noise environment remains unaffected. Sound insulation programs may be administered by airport operators or local governments.

5.5 Wildlife and Habitat Management.

Information included in this section is taken from *Wildlife Hazard Management at Airports: A Manual for Airport Personnel*, published through joint efforts by the FAA and the Department of Agriculture. Wildlife and habitat management tools, summarized in **Table 5-5**, are intended for use by airport operators to reduce potential hazards to aircraft operations caused by wildlife. Part 139 certificated airport operators are specifically required by federal regulations to take actions to alleviate wildlife hazards at their airports.[13] The following sections describe tools that airport operators can use to meet that obligation.

[12] See, for example, *Guidelines for Ensuring Longevity in Airport Sound Insulation Programs*, ACRP Report 105, Transportation Research Board, Washington, D.C., 2014;, *Guidelines for Airport Sound Insulation Programs*, ACRP Report 89, Transportation Research Board, Washington, D.C., 2013; Metropolitan Council, *Builders Guide: Mitigating Aircraft Noise in New Residential Construction*, St. Paul, MN, 2006; Wyle Research & Consulting, *Guidelines for Sound Insulation of Residences Exposed to Aircraft Operations*, prepared for the Department of the Navy, Naval Facilities Engineering Command, Washington, D.C., 2005.

[13] See 14 CFR 139.337, Wildlife Hazard Management.

Table 5-5. Wildlife and Habitat Management Tools and Techniques

Technique	Description	Key Value	Primary Shortcomings	When to Use
Wildlife Hazard Management Plans	The Wildlife Hazard Management Plan is developed to implement needed controls at and in the vicinity of the airport. A Wildlife Hazard Assessment identifies wildlife hazards in the airport vicinity and describes the measures to reduce and manage potential hazards.	Wildlife Hazard Assessment inventories and identifies existing wildlife activity and habitats to determine potential wildlife hazards.	Continuous monitoring and control measures must be used to reduce or eliminate wildlife attractants. In sensitive environmental areas, state and federal environmental officials will need to be involved to help in balancing needs for environmental protection and airport safety.	Should be used in accordance with federal regulations and FAA guidance where wildlife hazards exist.
Natural Features Inventory and Mitigation	Specific planning tool, which assesses vegetation and habitat in the airport vicinity.	Identifies habitat that may host wildlife potentially hazardous to aircraft movements and provides the information required to manage the potential hazards.	Problematic vegetation and habitat may be outside the airport, creating a challenge to remove, trim, mark, or manage.	Use where problematic vegetation and habitat are suspected. May require the purchase of land or easements to secure the right to mitigate potential hazards.

5.5.1 Wildlife Hazard Management Plans (WHMP).

The purpose of a Wildlife Hazard Management Plan (WHMP) is to minimize the risk to aviation safety, airport structures and equipment, and human health posed by populations of hazardous wildlife on and around an airport. Specific guidance about the content of a WHMP is provided in FAA Advisory Circular 150/5200-33[14] and in the *Wildlife Hazard*

[14] FAA Advisory Circular 150/5200-33B, *Hazardous Wildlife Attractants on or Near Airports*, August 8, 2007. See the FAA website for the current version.

Management at Airports manual.[15] A WHMP must identify and provide information on hazardous wildlife attractants on or near an airport (including an evaluation of land uses around an airport), and identify appropriate wildlife management techniques to minimize and mitigate those wildlife hazards (including land use changes). ACRP Report 32 provides guidance on identifying hazardous wildlife and establishing wildlife hazard control programs at GA airports.

5.5.2 Natural Features Inventory and Mitigation.

5.5.2.1 In order to protect navigable airspace and the safe movement of aircraft, airports should consider completing an inventory of existing vegetation within runway approaches and Runway Protection Zones (RPZs). A Natural Features Inventory identifies vegetation and habitat that supports wildlife by providing food and cover. From this inventory, mitigation measures can be developed that can reduce the likelihood of wildlife strikes or hazards on or near an airport by reducing, eliminating, or excluding natural features that support wildlife.

5.5.2.2 When evaluating vegetation concerns near airports, best practices should be utilized to minimize potential wildlife attractants. Most agricultural crops, especially cereal grains and sunflower, can attract wildlife during some phase of production. Trees and other landscaping plants that produce fruits or seeds are especially attractive to birds. Large expanses of grass and forbs can sometimes provide ideal habitats for rodent and insect populations that attract both avian and mammalian predators. Furthermore, grasses allowed to produce seed heads can provide a desirable food source for many flocking species. In addition to food, wildlife requires cover for resting, roosting, escape, and reproduction, and this cover can often be found among tall grasses and trees. By minimizing or eliminating food sources and vegetative cover, some wildlife hazards can be mitigated.

5.6 Notification Tools and Techniques.

5.6.1 Notification techniques are intended to provide information to prospective buyers of property near airports about the potential effects caused by airport and aircraft operations. The intent is to allow people to make fully informed decisions about the purchase of property in the airport vicinity. Presumably, people who are highly sensitive to noise or other airport-related effects would choose to avoid purchasing property exposed to those effects.

[15] Cleary, Edward C. and Richard A. Dolbeer, *Wildlife Hazard Management at Airports, A Manual for Airport Personnel*, 2nd Edition, U.S. Department of Transportation, Federal Aviation Administration and U.S. Department of Agriculture, Animal and Plant Health Inspection Service, 2005.

5.6.2 These techniques are best used in combination with land use compatibility regulations, such as residential sound insulation programs, or in areas more distant from the airport that are exposed to relatively low noise levels and higher altitude overflights. **Table 5-6** summarizes these notification techniques.

Table 5-6. Notification Tools and Techniques

Technique	Description	Key Value	Primary Shortcoming	When to Use
Noise Exposure Map	Federal statute, 49 U.S.C. §47506, provides that publication of FAA approved NEM may be constructive notice of airport noise exposure to prospective purchasers of property.	Provides public notice and limits liability of airport owners for home purchases subject to mapped noise levels.	Some communities misunderstand the NEMs and do not recognize that noise contours can change over time due to changes in airline industry activity levels and aircraft performance characteristics. Updates will be required.	Effective tool to disclose noise conditions within the airport environs. Serves as basis for airport voluntary noise measures. Compliant NEMs are basic component of airport voluntary noise compatibility planning programs.
State-mandated Fair Disclosure	State laws requiring the disclosure of information about the proximity of airports, airport noise levels, or zoning of properties offered for sale.	Provides the opportunity for prospective buyers to learn about potential airport-related effects on the property before deciding to purchase.	Not all prospective buyers fully understand the information that is provided. Airport has no defined role in this process.	This technique must be used by sellers and their agents as mandated by state law.
Covenants and Deed Restrictions	Legal document attached to the property title that may disclose the proximity of the property to the airport, potential airport-related effects on the property, and obligate owners to disclose this information to prospective buyers.	As a permanent part of the property record, it provides a means of disclosing potential airport-related effects to prospective buyers of property.	Often, covenants and deed restrictions are not made known to buyers until the time of closing on the property sale, which is often too late for a buyer to act on the information. Must be actively enforced by the airport for compliance.	Best used when state disclosure laws are weak. Covenants and deed restrictions could be required as conditions of approval of sensitive land uses within the airport influence area.

Technique	Description	Key Value	Primary Shortcoming	When to Use
Nonsuit Covenants and Hold Harmless Agreements	Legal contract between the property owner and the airport sponsor where property owner acknowledges the potential for airport-related effects on the property and agrees not to sue the airport for lawful airport operations and activity.	Typically used with an avigation or noise easement, airport owner is relieved of liability for lawful airport-related effects on the property.	Often, covenants and deed restrictions are not made known to buyers until the time of closing on the property sale, which is often too late for a buyer to act on the information. Does not prevent political action to oppose airport expansion or advocate operational restrictions.	Best used when state disclosure laws are weak. Covenants hold harmless agreements, and easements could be required as conditions of approval of sensitive land uses within the airport influence area.
Disclosure Notices	Actions required of developers to inform prospective buyers of potential airport-related effects on the property.	Informs prospective buyers of potential airport-related effects on the property.	Does not alter existing or future land issues, is an informative tool only. Effective only for the first round of buyers in a new development.	Best used when state disclosure laws are weak. Would apply to new subdivisions or planned unit developments in the airport influence area.

5.6.3 Noise Exposure Map (NEM).

As stated earlier, an NEM is another tool that depicts the land uses and levels of noise exposure around the airport, both for existing conditions and for forecast operations. NEMs are typically prepared as the first stage in a Part 150 Noise Compatibility Program and are submitted to the FAA. The Vision 100-Century of Aviation Reauthorization Act (Public Law 108-176) required FAA to make noise exposure and land use information from NEMs available to the public via the internet on its website, and has done so by providing links to airport web sites and NEMs or similar documents that are posted there. Under 49 U.S.C. §47506, *Limitations on recovering damages for noise*, an airport may submit an NEM to the FAA and publish a conforming public notice of the NEM. A person purchasing property is considered to have constructive knowledge of the noise exposure on a property with the prior publication of the airport's NEM, or is a given a copy of the NEM prior to purchase. Under the statute owners of property acquired after February 18, 1980 cannot recover damages for noise attributable to the airport unless the owner can show that after acquiring the property there was a significant change in the type or frequency of aircraft operations, airport layout, flight patterns or an increase in nighttime operations, and the damage result from the change or increase.

5.6.4 State-Mandated Fair Disclosure.

5.6.4.1 All states regulate the transfer of real estate through legislation and administrative regulations. Many states require that sellers of property and their agents disclose specific information about property when it is offered for sale, including, in some states, proximity to any nearby airports. Many states require the disclosure of land use regulations and zoning applying to property offered for sale.

5.6.4.2 Airport operators and local governments interested in promoting an awareness of potential airport-related effects among buyers of property should consult with legal counsel to ascertain the potential for state law to help in fulfilling this objective. In states requiring the full disclosure of zoning information, for example, the creation of an airport compatibility overlay-zoning district may be an effective way to promote the disclosure of potential airport-related effects among prospective buyers of property within the overlay boundary.

5.6.5 Covenants and Deed Restrictions.

5.6.5.1 Covenants or deed restrictions are recorded legal documents that are linked to the title of a property in perpetuity.[16] They are most commonly used by developers in establishing design standards or other performance standards to assure the maintenance of certain standards of quality in a new subdivision or other development project.

5.6.5.2 In some areas, covenants and deed restrictions have been used to promote the disclosure of potential airport-related effects in airport-vicinity development projects. The language of the deed restriction can include any of a variety of terms, including:

- Describing the nature of the airport-related effects to which the property is exposed.
- Noting the proximity of the airport and advising property owners to consult the airport operator for specific information about airport-related effects.
- Obligating the owner to disclose the deed restriction to prospective buyers whenever the property is offered for sale.
- Waiving the right of the property owner to sue the airport operator for lawful use of the airport and the airport-vicinity airspace.

[16] In some states, covenants expire after a given period unless they are renewed through specific action by the parties subject to the covenants.

5.6.5.3 Depending on the specific provisions of state law, local governments can also require the recordation of covenants and deed restrictions as a condition of zoning or subdivision plat approval. An airport operator can also purchase covenants or deed restrictions much like an avigation easement. Because they become a permanent part of the property record, covenants and deed restrictions can help to ensure that future buyers of property are made aware of the potential for airport-related effects on the property.

5.6.6 Nonsuit Covenants and Hold Harmless Agreements.

Nonsuit covenants and hold harmless agreements are legal contracts between a property owner and an airport sponsor that acknowledge the potential airport-related effects on incompatible land uses. A nonsuit covenant or hold harmless agreement is typically used together with an avigation or a noise easement, and is recorded and attached to the property title. These agreements legally record that a property owner acknowledges the potential for noise and other airport-related effects, and has agreed not to sue or hold the airport for any such effects. Because nonsuit covenants and hold harmless agreements become part of the property record, they can help to ensure that future buyers of property are made aware of the potential for airport-related effects on the property.

5.6.7 Disclosure Notices.

A disclosure notice is a way to make buyers aware of any land use compatibility issues that may arise on a piece of property near an airport, as well as the various easements, agreements, and rights that may already be in place on the property. Through the development permitting process, local governments can require developers to take certain actions to promote the disclosure of information about potential airport-related effects on new development projects. Examples include:

- The inclusion of statements on final subdivision plats disclosing the potential for airport-related effects, or even plotting noise contours on the plats.
- Requiring sales offices on the grounds of the development project to provide information about the location of the airport and any airport-related effects on the property.
- Posting of signs on the property, during the development and initial sales process, giving notice of the potential for aircraft overflights or other airport-related effects.

5.7 Education and Communication.

5.7.1 Successful public education and outreach programs are important in developing awareness in the community about the importance of airport land use compatibility. Over time, this can help build a constituency to support airport land use compatibility. When airport operators take the lead in providing information and participating in two-way communication with the public and other community leaders, enhancement of the airport operators' credibility can be a valuable result. This greatly improves the ability

of the airport operator to advocate persuasively for airport land use compatibility planning and can aid the success of those planning efforts.

5.7.2 The FAA's Community Involvement Manual describes practices and effective techniques to facilitate meaningful community involvement, including effectively engaging communities, encouraging exchange of information, and having community viewpoints heard. Refer to AC 150/5050-4, *Citizen Participation in Airport Planning*[17] and ACRP Report 15, *Aircraft Noise: A Toolkit for Managing Community Expectations*, for more detailed information. **Table 5-7** summarizes these education and communication techniques.

Table 5-7. Education and Communication Tools and Techniques for Airport Operators

Technique	Description	Key Value	Primary Shortcoming	When to Use
Community Outreach	Communication with the public to inform them about the airport and to solicit their views and ideas. This can include public workshops, community meetings, and informational newsletters.	Aids in community understanding of airport needs and constraints. May help to build local support for airport.	Sometimes can be used as a forum for anti-airport groups. Can be unsuccessful if there is a lack of public participation.	In airport planning processes and whenever an airport needs to build community awareness and support.
State DOT/Aeronautics/Aviation Departments	Participation, outreach to users, state legislature, local governments, FAA coordination.	Statewide efforts	Subject to state budget volatility.	Developing statewide capital improvement program, legislative agenda.

[17] Being updated and expanded simultaneously with the preparation of this draft update AC.

Technique	Description	Key Value	Primary Shortcoming	When to Use
Local Government Involvement	Encouraging participation by local government in airport planning and development efforts. This can be achieved through participation on advisory committees or during public involvement, meetings, etc.	Builds local governmental support and coordinated efforts for future community and airport development. Encourages open lines of communicatio n.	Coordinating and collaborating with multiple agencies with differing interests can be challenging.	Before, during, and after any major airport or community planning initiative or development project.
Outreach to Airport Users	Airport user actions can benefit the local community and encourage community appreciation.	Can build respect between airport users and local and community members.	Many of these programs are voluntary and may not be followed by all users.	Ongoing programs such as “Fly Quiet” are beneficial when a community is adversely impacted by noise during particular times of the day/night.
Airport, State DOT/Aeronautics and FAA Participation in Local and Regional Planning	Airport sponsors and FAA staff coordinating and participating with local governmental entities in community planning efforts. This can include attending public meetings.	Builds local governmental support and coordinated efforts for future community and airport development. Encourages open lines of communicatio n.	Coordinating and collaborating with multiple agencies with differing interests can be challenging.	Before, during, and after any major airport or community planning initiative or development project.

Technique	Description	Key Value	Primary Shortcoming	When to Use
Airport and FAA Participation in Professional Planning Organizations	Participation of airport sponsors and FAA staff in professional planning organizations to advocate for coordinated planning efforts between airports and local communities.	Raises awareness of a larger audience to the importance of coordinated land use planning efforts.	Presentations, training sessions, and article writing require a greater amount of preparation in advance.	When a specific industry group is targeted for collaboration.
Coordination with Real Estate Developers and Brokers	Educate real estate professionals and developers to advocate for compatibility.	Protects the interests of potential clients, and raises awareness of incompatibility prior to a purchase.	Not all real estate professionals or developers will fully understand the consequences of incompatibility. Some may minimize their significance for the purpose of completing the transaction.	Particularly helpful in communities that are experiencing a large amount of new development. To be successful, these education efforts must be conducted as early in the process as possible – before projects are developed or transactions are finalized.
Use of Social Media	Use of social media outlets such as Facebook, Twitter, and webpages.	Instant information push.	Only benefits those who are familiar with and use social media.	When instant communicatio n is needed or for easy information sharing at any time to a large audience.

Technique	Description	Key Value	Primary Shortcoming	When to Use
Use of Focus Groups	A group of people that generate feedback and gauge response to airport planning and development initiatives.	Generates information at a formative stage so adjustments can be made. Provides opportunity for engagement and information dissemination.	Most useful for larger projects with room for change; limited benefits for smaller-scale projects with pre-determined outcomes.	During the course of major planning of development initiative or on-going to maintain a flow of information and engagement.
Education of State Legislators and Legislative Staff	Outreach to elected and administrative officials that are in a position to make decisions regarding land use compatibility.	Establishing open lines of communicatio n with individuals who can impact funding and legislation related to land use compatibility.	Reaching these individuals and helping them understand the importance and impact of compatibility issues can be challenging.	When the support of officials is critical to the success of compatibility efforts. This could include prior to proposing state-wide legislation to allow for local airport sponsors to enact airport overlay zoning in their local community.

5.7.3 Community Outreach.

5.7.3.1 Many airport operators have established ongoing programs of public communication and outreach. The programs include distributing informational newsletters, providing informational programs and airport tours to local schools and interested citizens, and establishing dedicated noise complaint reporting systems. In addition to fostering communication, these programs help to demonstrate the airport operator's commitment as a fully participating member of the greater community.

5.7.3.2 During airport planning processes, including the preparation of master plans and 14 CFR Part 150 NCPs, public workshops and community meetings can encourage open dialogue among stakeholders, and to gain a better understanding of community interests and concerns. This gives the public an opportunity to be informed, become involved, and have their concerns

and views considered in decisions about the future of the airport and land use planning. Airport-area residents and community leaders can also be invited to serve on project advisory committees. These are ideal opportunities to inform the community about the connection between airport land use compatibility planning and community planning efforts. They also provide platforms for public education regarding the economic value of airports and the airport impact on the regional economy. Educational materials such as flyers and newsletters can be developed to support the discussion.

5.7.3.3 ACRP Report 15, *Aircraft Noise: A Toolkit on Managing Community Expectations*, provides information related to the public communication on the issue of airport noise issues.[18] It is a helpful resource for local communities for all types of community outreach.

5.7.4 Local Government Involvement.

Local governments are directly affected by many aspects of airport development and should be invited by airport operators to participate in airport planning processes. In addition to implications for land use compatibility, airport development plans can also affect road and transit systems and public utilities. City and county planners are appropriate participants in most airport planning projects. In addition, airport operators should maintain ongoing communications with city managers, county administrators, and local elected officials. Depending on the scope of the particular planning effort, the airport operator should also reach out to public works directors and city or county engineers.

5.7.5 Outreach to Airport Users.

5.7.5.1 Airport users and pilot organizations have an important stake in promoting airport land use compatibility. They can offer helpful technical advice and insights to the public, local government officials, and elected officials in the deliberations leading to the establishment of land use compatibility plans and programs. Businesses based at the airport or dependent on the airport for the transportation of personnel or the shipment of goods can also convincingly explain the economic importance of the airport to community leaders and elected officials.

5.7.5.2 Airport operators are in a good position to solicit the involvement of airport users in airport land use compatibility planning processes. Airport operators can coordinate with aviation trade organizations, such as the National Business Aviation Association (NBAA) and the Aircraft Owners

[18] *Aircraft Noise: A Toolkit on Managing Community Expectations*, ACRP Report 15, Transportation Research Board, Washington, D.C., 2009.

and Pilots Association (AOPA), in holding programs to inform airport user groups about land use compatibility needs and programs at the local airport.

5.7.5.3 Airport users are encouraged to follow voluntary noise abatement procedures that have been established at an airport. Consistent adherence to noise abatement policies is important to maintaining and strengthening the airport's partnership with local governments and residents, a critical factor in sustaining the goodwill required the local government to continue cooperating with the airport in land use compatibility planning. Airport operators should maintain communication with local pilots and aircraft operators to ensure that they understand local noise abatement procedures and the reasons for those procedures. By providing clear and consistent information to pilots, airport operators can enhance compliance with noise abatement procedures. Actions taken by airport operators include the publication of pilot guides, the publication of noise abatement procedures in the *Airport/Facility Directory*, the posting of informational brochures in pilot lounges, periodic meetings with leaseholders, the placement of signs on the airfield, and the issuance of NOTAMS.

5.7.6 Airport and FAA Participation in Local and Regional Planning.

5.7.6.1 The authority to develop, implement, and enforce land use programs and decisions rests predominantly with local governments. It is imperative that airport operators must be involved in the preparation of city, county, and regional comprehensive plans so that they can advocate for airport interests and provide their specialized expertise to the planning team. The FAA can also be a helpful partner in comprehensive planning to the extent that airport and aviation interests are affected. By providing authoritative information about the scope and limitation of the federal role in land use compatibility and airspace protection, the FAA can provide information needed to encourage local governments to exercise the degree of planning and regulatory control needed to protect the airport.

5.7.6.2 Airport operators should coordinate with local governments to ensure that they are routinely provided information about proposed development activity in the airport environs. This allows airport operators the opportunity to review and comment on those proposals. In areas subject to considerable development pressure, formalized staff committees of local government planners and airport staff can be formed to meet regularly to review and discuss development trends and specific projects. In addition to building important relationships among the participants, this coordination can improve the likelihood that airport compatibility considerations can be addressed early in the development process. It also gives the airport operator the opportunity to keep local government officials informed of airport improvement and development projects in a timely manner.

5.7.6.3 An airport's area of influence, including airspace, noise impact area, and areas of safety concern, can cross multiple jurisdictions, so it is important that the airport operator engage with all affected jurisdictions.

5.7.7 Airport and FAA Participation in Professional Planning Organizations.

Airport operators and FAA representatives can take the message of airport land use compatibility to the planning community through participation in professional planning organizations at the local, state, and national level, such as regional planning organizations, state planning organizations, and the American Planning Association (APA). This participation offers airport advocates the opportunity to network and extend the conversation through direct dialogue with non-aviation planning professionals, contribution of articles to publications, and presentations and training sessions at professional planning conferences. These networking and outreach activities can raise awareness of land use compatibility, open lines of communication, and provide a path for education and training.

5.7.8 Coordination with Real Estate Developers and Brokers.

5.7.8.1 Airport sponsors should reach out to the real estate community to ensure that sales agents and brokers understand the nature of airport-related effects in the community and understand how to get specific information about the airport in response to client questions and concerns. Airport sponsors should encourage real estate professionals to be forthcoming in explaining the nature of airport-related impacts to prospective buyers.

5.7.8.2 Depending on the scope of state real estate disclosure laws, airport sponsors may find some resistance among real estate professionals to the aggressive disclosure of potential airport-related impacts. Airport sponsors need to recognize that real estate professionals are often in the position of balancing the interests of property sellers and buyers. Nevertheless, by consistently providing accurate information about the airport and airport-related effects, airport operators can become trusted advisors and resources to the real estate industry.

5.7.9 Use of Social Media.

As social media comes into the communication mainstream, airports have a new set of tools for sharing information and generating dialogue on land use compatibility. An airport's website is often the central location for organizing and posting information. The website hosts information that can be viewed only when people visit the page. Popular social media tools push information out to subscribers and allow interactive communication. Other social media tools are available for specific purposes including posting video content, sharing photographs, and holding community conversations. Multiple social media tools can be used effectively in a coordinated fashion described in a social media plan and carried out by a social media coordinator. Airports also have the opportunity to monitor social media for valuable information about community concerns.

5.7.10 Use of Focus Groups.

5.7.10.1 Focus groups are used in marketing to generate feedback on new products and to gauge response to new marketing initiatives. Attendees receive an invitation to participate, and the activity is usually conducted as an interview, or a conversation led by a facilitator, and may include the use of keypad polling or other electronic tools. Focus groups can generate valuable information at a formative stage in product development when there is still an opportunity to make adjustments.

5.7.10.2 Focus groups can be used during formal airport planning processes, such as master planning or noise compatibility planning, to gain a deeper understanding of the nature of public concerns and interests than can be achieved through conventional public meetings and comment forums. They can also be effective ways to engage community leaders and local government officials in a planning process on an on-going periodic basis to maintain a communication link.

5.7.11 Education of State Legislators, Legislative Staff, and Administrative Officials.

5.7.11.1 State law establishes the framework within which airport land use compatibility plans and regulations are prepared and implemented. State legislatures are also responsible for funding any programs of airport planning assistance that may have been established. Airport sponsors should reach out and establish open lines of communication with their legislative representatives to keep them informed about airport-related needs and issues. Airport sponsors also have the opportunity participate in professional airport associations for the purpose of ensuring that state legislatures understand their perspectives when critical airport-related legislation is introduced. By working together through airport associations, airport sponsors can be effective advocates for critical legislation promoting airport land use compatibility.

5.7.11.2 Airport sponsors should also maintain communication with state and local agency officials with responsibilities relating to airport land use compatibility. This may include agencies responsible for overseeing or advising on municipal and county land use planning.

APPENDIX A. GLOSSARY

1. **Aeronautical Activities.** (FAA AC 150/5190-6, *Exclusive Rights at Federally Obligated Airports*)

   Any activity that involves, makes possible, or is required for the operation of aircraft, or that contributes to or is required for the safety of such operations. Activities within this definition, commonly conducted on airports, include, but are not limited to, the following: general and corporate aviation, air taxi and charter operations, scheduled and nonscheduled air carrier operations, pilot training, aircraft rental and sightseeing, aerial photography, crop dusting, aerial advertising and surveying, aircraft sales and services, aircraft storage, sale of aviation petroleum products, repair and maintenance of aircraft, sale of aircraft parts, parachute or ultralight activities, and any other activities that, because of their direct relationship to the operation of aircraft, can appropriately be regarded as aeronautical activities. Activities, such as model aircraft and model rocket operations, are not aeronautical activities.

2. **Aeronautical Study.** (FAA Form 7460-1, *Notice of Proposed Construction or Alteration*, general definition)

   A study performed pursuant to 14 CFR Part 77, "Safe, Efficient Use, and Preservation of the Navigable Airspace," concerning the effect of proposed construction or alternation on the use of air navigation facilities or navigable airspace by aircraft. The conclusion of each study is normally a determination as to whether the specific proposal studied would be a hazard to air navigation and/or a determination for marking and/or lighting. Aeronautical study is also made to define airspace requirements under 14 CFR 157 for planned airport development (e.g. such as a runway extension that may further extend surfaces off airport property thus affecting land use in the immediate area).

3. **Airport.** (14 CFR Part 1)

   An area of land or water that is used or intended to be used for the landing and takeoff of aircraft including its buildings and facilities, if any.

4. **Airport Influence Area.**

   The land use and people in the areas surrounding an airport which can be directly affected by the operation of the airport.

5. **Airport Improvement Program (AIP).** (FAA Order 5100.38)

   Chapter 471 of Title 49 U.S.C. establishes the general requirements and conditions for the Airport Improvement Program (AIP). AIP funding is used to develop a nationwide public-use airport system to meet the country's current and projected civil aviation needs. The airports comprising that system make up the National Plan of Integrated Airport Systems (NPIAS). FAA Order 5100.38, *Airport Improvement*

Program Handbook, provides details on administering the AIP. Not all activities identified in this AC may be eligible for AIP funding.

6. **Airport Layout Plan (ALP).** (14 CFR Part 152, Airport Aid Program)

The plan of an airport showing the layout of existing and proposed airport facilities on airport property.

7. **Airport Master Plan.** (FAA AC 150/5070-6)

An Airport Master Plan is a presentation of the phased development of a specific airport. It presents the research and logic from which the plan evolved and displays the plan in a graphic and written report. Master plans are applied to the modernization and expansion of existing airports and to site selection and planning for new airports, regardless of their size or functional role. It is desirable that Airport Master Plans be developed within the framework of metropolitan or regional plans or state airport system plans.

8. **Airport Overlay Zone.**

A zone intended to place additional compatible land use conditions on land impacted by the airport while retaining the existing underlying zone.

9. **Airspace.**

The space lying above the earth or above a certain area of land or water that is necessary to conduct aviation operations.

10. **Approach Minimum.**

The height above ground at which a pilot must have the airfield in sight to continue on approach to land. When obstructions exist to runway approaches, the approach minimums are raised, which can limit the utility of the airport in times of reduced visibility or low cloud cover.

11. **Approach Slopes.** (14 CFR Part 77)

The ratios of horizontal to vertical distance indicating the degree of inclination of the Approach Surface. The various ratios include:

- 20:1 – For all utility and visual runways extended from the primary surface a distance of 5,000 feet.
- 34:1 – For all non-precision instrument runways extended from the primary surface for a distance of 10,000 feet.
- 50:1/40:1 – For all precision instrument runways extending from the primary surface for a distance of 10,000 feet at an approach slope of 50.1 and an additional 40,000 feet beyond this at a 40:1 Approach Slope.

12. **Approach Surface.** (14 CFR Part 77)

A surface defined by 14 CFR Part 77, *Safe, Efficient Use, and Preservation of the Navigable Airspace*, that is longitudinally centered on the runway centerline and extends outward and upward from each end of the primary surface. An approach surface is applied to each end of each runway based on the type of approach available or planned for that runway end.

13. **Avigation Easement.** (FAA AC 150/5100-17, *Land Acquisition and Relocation Assistance for Airport Improvement Program Assisted Projects)*

An avigation easement is a conveyance of airspace over another property for use by the airport. The owner of an easement-encumbered property (servient property) has restricted use of their property subject to the airport sponsor's easement (dominant property) for overflight and other applicable restrictions on the use and development of the servient parcel. Easement rights acquired typically include the right-of-flight of aircraft; the right to cause noise, dust, etc.; the right to remove all objects protruding into the airspace together with the right to prohibit future obstructions or interference in the airspace; and the right of ingress/egress on the land to exercise the rights acquired. The avigation easement on the property shall "run with the land" and any future owners' use of the servient parcel is also restricted as described in the avigation easement.

14. **Comprehensive Land Use Plan.**

A governmental entity's official statement of its plans and policies for long-term land use and development. The plan includes maps, graphics and written proposals, which indicate the general location for streets, parks, schools, public buildings, airports and other physical development of the jurisdiction.

15. **Conditional Zoning.**

The imposition or exaction of conditions or promises upon the grant of zoning by the zoning authority.

16. **Federally Obligated Airport.**

An airport sponsor is considered to be a Federally Obligated Airport by either

- Accepting a federal AIP grant for development, equipment, or land; OR
- Accepting property through surplus property (bound by instruments of conveyance and statutory requirements found in 49 U.S.C. 47151, *et seq.*)

An airport sponsor accepting AIP funds must agree with certain obligations, called grant assurances.

17. **General Aviation (GA).**

Refers to all civil aircraft and operations that are not classified as air carrier, commuter or regional. The types of aircraft used in general aviation activities cover a wide spectrum from corporate multi-engine jet aircraft piloted by professional crews to amateur-built single-engine piston acrobatic planes, balloons and dirigibles.

18. **Hazard.**

An existing or proposed object that the FAA, as a result of an aeronautical study, determines will have a substantial adverse effect upon the safe and efficient use of navigable airspace by aircraft, operation of air navigation facilities, or existing or potential airport capacity.

Imaginary Surfaces. (14 CFR Part 77)

Those areas established in relation to the airport and to each runway consistent with 14 CFR Part 77 in which any object extending above these imaginary surfaces, by definition, is an obstruction.

- Transitional surface – The transitional surface extends outward and upward at right angles to the runway centerline and extend at a slope of seven feet horizontally for each one-foot vertically (7:1) from the sides of the primary and approach surfaces. The transitional surfaces extend to the point at which they intercept the horizontal surface at a height of 150 feet above the established airport elevation.
- Horizontal surface – The horizontal surface is a horizontal plane located 150 feet above the established airport elevation and encompasses an area from the transitional surface to the conical surface. The perimeter is constructed by generating arcs from the center of each end of the primary surface and connecting the adjacent arcs by lines tangent to those arcs.
- Conical surface – The conical surface extends upward and outward from the periphery of the horizontal surface at a slope of 20 feet horizontally for every one-foot vertically (20:1) for a horizontal distance of 4,000 feet.
- Approach surface – The approach surface is longitudinally centered on the extended runway centerline and extends outward and upward from the end of the runway primary surface. The approach slope of a runway is a ratio of 20:1, 34:1, or 50:1, depending on the approach type. The length of the approach surface varies from 5,000 to 50,000 feet and depends upon the approach type.

19. **Land Use Compatibility.**

Airport-compatible land uses are defined as those uses that can coexist with a nearby airport without constraining the safe and efficient operation of the airport or exposing people living or working nearby to unacceptable levels of noise or hazards.

20. **Land Use Controls.**

Measures established by state or local government that are designed to carry out land use planning. The controls include zoning, subdivision regulations, planned acquisition, easements, covenants, or conditions in building codes and capital improvement programs, such as the establishment of sewer, water, utilities, or their service facilities.

21. **Noise Compatibility Program (NCP).** (FAA AC 150/5020-1)

The purpose of such a program is to seek optimal accommodation of both airport operations and community activities within acceptable safety, economic and environmental parameters. That may be accomplished by reducing existing incompatible land uses in the vicinity of the airport and preventing the introduction of new incompatible land uses in the future. To that end, the airport proprietor and other responsible officials should consider a wide range of feasible alternatives of noise control actions and land use patterns.

22. **Noise Exposure Map (NEM).** (FAA AC 150/5020-1)

The NEM is a scaled map of the airport, its noise contours and surrounding land uses. The NEM depicts the levels of noise exposure around the airport, both for the existing conditions and forecasts for the 5-year planning period. The area of noise exposure is designated using the DNL (Day-Night Average Sound Level) noise metric.

23. **Obstacle.**

An existing object at a fixed geographical location or which may be expected at a fixed location within a prescribed area with reference to which vertical clearance is or must be provided during flight operation.

24. **Obstruction.**

An object of greater height than any of the heights or surfaces presented in Subpart C of 14 CFR Part 77, Standards for Determining Obstructions to Air Navigation or Navigational Aids or Facilities.

25. **Special Exceptions.**

Land uses that are not specifically permitted as a matter of right, but can be permitted in accordance with performance standards and other local criteria. Also known as "conditional uses."

26. **Variance.**

An authorization for the construction or maintenance of a building or structure, or for the establishment or maintenance of a use of land that is prohibited by a zoning ordinance. A lawful exception from specific zoning ordinance standards and regulations predicated on the practical difficulties and/or unnecessary hardships on the petitioner being required to comply with those regulations and standards from which an exemption or exception is sought.

27. **Zoning.**

An exercise of the police powers of the state, as delegated to local governments, designating the uses permitted on each parcel of land within the zoning jurisdiction.

28. **Zoning Ordinance.**

Primarily a legal document that allows a local government effective and legal regulation of uses of property while protecting and promoting the public interest.

APPENDIX B. FAA OFFICE OF AIRPORTS

The FAA Airports organization provides leadership in planning and developing a safe and efficient national airport system. The office has responsibility for all programs related to airport safety and inspections and standards for airport design, construction, and operation (including international harmonization of airport standards). The office also is responsible for national airport planning and environmental and social requirements and establishes policies related to airport rates and charges, compliance with grant assurances, and airport privatization. Within this organization, several headquarters offices and divisions are responsible for different programs. For FAA Airports contacts see http://www.faa.gov/airports/news_information/contact_info/.

Figure B-1. FAA Regional Offices

APPENDIX C. FAA LAND USE-RELATED REGULATIONS AND GUIDANCE

This appendix focuses on the primary FAA documents that guide land use related decisions or are related to land use concerns such as wildlife hazard management, noise effects, and safe and efficient use of airspace. Because state and local regulations vary depending on an airport's location, only FAA guidance is summarized in this appendix. However, it must be noted that the items addressed in this appendix be considered in conjunction with applicable state and local laws and regulations. In instances where regulations and/or guidance is contradictory from one governmental unit to another, coordination and negotiation is required with responsible jurisdictions to promote land use compatibility and to protect the safety of the airport operations. In addition, there are additional federal agencies that may have regulations or guidance, which may be applicable on a case-by-case basis and must be considered. **Table C-1** summarizes the sources of FAA regulations and guidance, each of which are discussed in more detail in the following sections.

Table C-1. FAA Planning and Development Regulations and Guidance

Source	Description
Airport Improvement Program (AIP) Grant Assurances	The AIP is an FAA program that provides grants to public agencies — and, in some cases, to private owners and entities - for the planning and development of public-use airports that are included in the National Plan of Integrated Airport Systems (NPIAS). Grant Assurances are the series of conditions that come with these federal grants for aviation projects. These assurances obligate an airport sponsor to protect the federal investment through the maintenance of a safe and unrestricted operating environment.
Code of Federal Regulations (CFR)	Title 14 of the CFR documents the rules prescribed by the FAA governing all U.S. aviation activities.
FAA Orders	Agency-wide orders that give direction and guidance for compliance with FAA directives.
FAA Advisory Circulars (ACs)	A single, uniform, agency-wide system that the FAA uses to deliver advisory material to the industry as a whole without creating or changing a regulatory requirement.
FAA Policy and Procedures Guidance, Standard Operation Procedures, Memorandums (PPMs) and Program Information Memorandums (PIMs)	The intent of FAA guidance documents is to discuss items that are already addressed in FAA published guidance. It does not revise existing guidance, but is intended to provide further explanation on a particular topic.
FAA Program Guidance Letters (PGLs)	Documents that add to or revise guidance about the administration of the AIP found in the AIP Handbook.

Source	Description
	Since 2008, new and revised PPMs have been designated “Regional Guidance Letters.”
Other FAA Documents	Additional manuals, reports, and documents developed by the FAA related to land use issues.

C.1 Airport Improvement Program (AIP) Grant Assurances.

C.1.1 Federal money for aviation projects comes with a series of conditions called ‘Grant Assurances.’ Grant assurances obligate an airport sponsor to protect the federal investment through the maintenance of a safe and unrestricted operating environment. When federal grant funds through the Airport Improvement Program (AIP) are accepted, the grant assurances are incorporated into the grant agreement and become part of the sponsor’s legal obligation. Several grant assurances specifically address and enhance airport land use compatibility, including the following:

- Grant Assurance 4 Good Title
- Grant Assurance 5 Preserving Rights and Powers
- Grant Assurance 6 Consistency with Local Plans
- Grant Assurance 7 Consideration of Local Interest
- Grant Assurance 19 Operation and Maintenance
- Grant Assurance 20 Hazard Removal and Mitigation
- Grant Assurance 21 Compatible Land Use

C.2 Code of Federal Regulations (CFRs).

C.2.1 Title 14 of the Code of Federal Regulations (CFR), entitled Aeronautics and Space, contains many regulations that have a bearing on airport land use compatibility issues. Title 14 is organized into six different Chapters, with each Chapter further divided into Subchapters, and each Subchapter further divided into Parts. Each “Part” within Title 14 deals with a distinct topic and/or type of activity and contains a varying amount of regulations. 14 CFR Part 150 addresses the Noise Compatibility Program and establishes the airport noise compatibility planning measures authorized under the Aviation Safety and Noise Abatement Act (ASNA). The Part 150 program is voluntary and open to all publicly owned, public-use airports included in the NPIAS. Participation is mandatory in order to obtain FAA funding for most noise-abatement measures. Part 150 focuses solely on noise compatibility issues. Safety and airspace protection concerns are not addressed except to the extent that they may affect or be affected by noise-related measures.

C.2.2 14 CFR Part 77 addresses objects affecting navigable airspace and establishes standards for providing notice to the FAA regarding proposed objects that may be obstructions to

air navigation. As previously discussed in Chapter 2, under Part 77, the FAA is authorized to undertake an airspace study to determine whether a structure (man-made or naturally occurring) is, or could be, a hazard to air navigation. The FAA is not authorized to regulate tall structures nor is there specific authorization in any federal statute that permits the FAA to limit structure heights or require structures to be lighted or marked. As a result, local land use controls are needed to support the findings of the FAA (hazards and non-hazards).

C.2.3 14 CFR Part 139.337, *Wildlife Hazard Management,* prescribes the specific issues that an airport sponsor must address in a wildlife hazard management plan for FAA approval. The plan is based upon a wildlife hazard assessment that is conducted by a wildlife damage management biologist. Part of the plan can be prepared by the biologist who conducts the wildlife hazard assessment; however, some parts can only be prepared by airport management. Wildlife hazard management plans are critical tools to promote compatible uses near airports and to mitigate effects of incompatible uses that are attractive to wildlife.

C.2.4 40 CFR Part 258, Subpart B, Criteria for Municipal Solid Waste Landfills, Location Restrictions establishes criteria for the expansion and/or development of new landfills with regard to airports. The regulation states that the owners or operators of new Municipal Solid Waste Landfills (MSWLF) units and lateral expansions within 10,000 feet of any runway end used by turbojet aircraft, or within 5,000 feet of any runway end used by piston-type aircraft only, must demonstrate that the units are designed and operated in a way that the MSWLF unit does not pose a bird hazard to aircraft. It also requires owners or operators proposing to site new MSWLF units and lateral expansions within a five-mile radius of any airport runway end used by turbojet or piston-type aircraft to notify the affected airport and the FAA. This regulation is imperative to mitigate wildlife attractants in an airport's vicinity, as landfills are incompatible land uses.

C.3 FAA Orders.

The FAA, as an agency within the Department of Transportation, has promulgated agency-wide orders (known as Agency Orders [AOs]) that give direction and guidance for compliance with FAA directives. In addition to regulations and ACs, several AOs exist that have some impact or relation to compatibility. These are discussed in this section.

- Order 5200.8, *Runway Safety Area Program,* was issued with the objective that all Runway Safety Areas (RSAs) at federally obligated airports and all RSAs at airports certificated under 14 CFR Part 139 conform to the standards contained in AC 150/5300-13A, *Airport Design*, to the extent practicable. Each FAA Regional Airports Division Manager is responsible for implementing the program and is responsible for making a determination as to whether the existing RSA of each runway within their region meets the current design standards and if not, for making a determination as to whether or not it is practicable to improve the RSA so that it will meet current standards. Whenever a project for a runway involves

construction, reconstruction, or significant expansion, the project must also provide for improving the RSA in accordance with the determination made.

- Order 1050.1, *Environmental Impacts: Policies and Procedures,* provides the FAA agency-wide policies and procedures for compliance with the National Environmental Policy Act of 1969 (NEPA) and for implementing regulations issued by the Council on Environmental Quality (40 CFR parts 1500-1508). This revision includes changes for clarification, consistency, addition of information, corrections, and editorial changes.
- Order 5050.4, *National Environmental Policy Act (NEPA) Implementing Instructions for Airport Actions,* supplements Order 1050.1, *Environmental Impacts: Policies and Procedures.* This order provides the Airports Division specific guidance on how to implement the requirements of NEPA, historical preservation, conservation, and other special purpose laws when performing actions specific to the Airports Division. FAA Order 1050.1 remains the overriding FAA order for implementing NEPA, and takes precedent in the event there is a conflict between the two orders.
- Order 5100.38, *Airport Improvement Program Handbook,* provides grant funding eligibility guidance to be used during the administration of the AIP.
- Order 5190.6, *FAA Airport Compliance Manual,* sets forth policies and procedures for the FAA Airport Compliance Program. The FAA Airport Compliance Program monitors the performance of airport owners to maintain a high degree of safety and efficiency in compliance to their airport design, construction, operation, and maintenance grant assurances and obligations.
- Order 7400.2, *Procedures for Handling Airspace Matters,* specifies procedures in the joint administration of the airspace program. It addresses actions associated with airspace allocation and utilization, obstruction evaluation, obstruction marking and lighting, airport airspace analysis, and the management of air navigation aids.

C.4 FAA Advisory Circulars (ACs).

The AC system provides a single, uniform, agency-wide system that the FAA uses to deliver advisory material to the industry as a whole. ACs provide guidance for complying with regulations and grant assurances but do not create or change a regulatory requirement. Several ACs exist that have some impact or relation to compatibility. They are discussed briefly here:

- FAA AC 150/5300-13, *Airport Design,* provides the basic standards and recommendations for airport design including information regarding approach procedures for RPZs, threshold-siting criteria, and instrument approach categories. The criteria contained in this document are the primary spatial standards for on-airport development.
- AC 70/7460-1, *Obstruction Marking and Lighting,* works within the requirements of 14 CFR Part 77 and requires that an entity proposing any type of construction or

alteration of a structure that may affect the National Airspace System is required to submit FAA Form 7460-1, Notice of Proposed Construction or Alteration.

- AC 150/5070-7, *Airport System Planning Process,* outlines the development of effective airport system planning documents, which provide guidance to establish a balanced integrated system of public-use airports consistent with state or regional goals. The goal of the airport system planning process is to identify, preserve, and enhance the aviation system to meet both current and future demand. Land use compatibility is discussed in many state and/or regional system plans; there is some discussion of land use compatibility planning elements.
- AC 150/5100-17, *Land Acquisition and Relocation Assistance for Airport Improvement Program Assisted Projects*, provides guidance to sponsors of an airport to develop land acquisition and relocation assistance procedures in conformance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (P.L. 91-646, as amended). This has relevance to the land use compatibility discussion if acquisition or relocation activities are undertaken as a method to mitigate incompatibility.
- AC 150/5020-1, *Noise Control and Compatibility Planning for Airports*, provides guidance for the implementation of 14 CFR Part 150, which allows for the development of an airport plan that establishes a compatible relationship between land uses and noise-related issues. This is accomplished by the reduction of incompatible land uses around airports and noise sensitive areas, and the prevention of additional incompatible land uses.
- AC 150/5020-2, *Guidance on the Balanced Approach to Noise Management*, provides guidance for noise control and compatibility planning for airports and the guidance for preparing airport noise exposure maps and airport noise compatibility programs implemented in 14 CFR Part 150, and the Aviation Safety and Noise Abatement Act of 1979.
- AC 150/5200-34, *Construction or Establishment of Landfills near Public Airports*, provides guidance regarding compliance with new federal statutory requirements that limit construction or establishment of municipal solid waste landfill (MSWLF) units near public airports, as they are major wildlife attractants.
- AC 150/5200-33, *Hazardous Wildlife Attractants On or Near Airports,* provides guidance regarding the types of land uses considered incompatible near airports due to their nature as wildlife attractants. These uses include, but are not limited to, wastewater treatment facilities, wetlands, dredge spoil containment areas, and solid waste landfills.
- AC 150/5050-4, *Citizen Participation in Airport Planning*, provides guidance for citizen involvement in airport planning. Although not mandatory for airport grant programs, it explains the need for early citizen participation.

C.5 **Other FAA Guidance Documents.**

- PPM 5190.6, *Guidance for Leases, Use Agreements and Land Releases,* consolidates all of the guidance provided in various FAA publications, policy letters, and other written documentation on the development of leases, use agreements, and land releases that are in accordance with an airport sponsor's federal obligations. The intent of this document is to reduce FAA and airport sponsor research efforts, enhance lease arrangements, and ensure that FAA interests are properly protected on leases and disposals of obligated airport land.
- *FAA Guidance for Management of Acquired Noise Land Inventory, Reuse, and Disposal,* provides guidance for airport sponsors and the FAA to meet the requirements of Grant Assurance 31 when acquiring land under airport noise compatibility programs. Grant Assurance 31 works to assure optimal use is made of the federal share of the proceeds from the disposal of noise land.
- *Wildlife Hazard Management at Airports, A Manual for Airport Personnel,* 2nd Edition, U.S. Department of Transportation, Federal Aviation Administration and U.S. Department of Agriculture, Animal and Plant Health Inspection Service, 2005.
- *Report to Congress on Potential for Use of Land Options in Federally Funded Airport Projects.* Report of the Secretary of Transportation to the United States Congress, Washington, D.C., December 1997.
- *Compliance Guidance Letter (CGL) 2018-3, Appraisal Standards for the Sale and Disposal of Federally Obligated Airport Property,* this CGL assists and informs FAA field offices, airport sponsors, and commercial appraisers on the appraisal process for the sale and leasing of federally obligated airport real property.

APPENDIX D. LIST OF CROPS POSING PARTICULAR WILDLIFE ATTRACTANT PROBLEMS

D.1 The USDA bulletin, "Plants Attractive to Wildlife," provides a list of cultivated plants that can attract wildlife. Wildlife can be attracted to specific cultivated plants as a food source and may be attracted to plants for shelter. According to the bulletin, crops and vegetation that should be discouraged within the vicinity of the airport's environs include, but are not limited to:

- Alfalfa
- Barley
- Corn
- Oats
- Sorghum
- Wheat
- Vineyards
- Apple trees
- Cherry trees

D.2 The presence of these types of crops and vegetation can provide wildlife with not only a food source but also shelter, which can serve as an attractant to various types of wildlife. For example, small mammals can be attracted to planted fields of row crops that provide cover. Large predatory birds are often attracted to these same areas because of the presence of the small mammals, birds, and rodents that hide in the crops and neighboring tall grasses. This can create a detrimental cycle of wildlife attractants that may lead to wildlife and bird strikes with approaching and departing aircraft. Coordination of land use concerns between airports, local communities, and local neighbors, such as farmers and horticulturists, is crucial to reduce the potential of wildlife strikes.

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APPENDIX E. SAMPLE AIRPORT LAND USE COMPATIBILITY PLAN

PURPOSE AND AUTHORITY OF AIRPORT LAND USE COMMISSION

To assist local agencies in ensuring compatible land uses in the vicinity of all new airports and in the vicinity of existing airports to the extent that the land in the vicinity of those airports is not already devoted to incompatible uses.

To coordinate planning at the state, regional, and local levels to provide for the orderly development of air transportation, while at the same time protecting the public health, safety, and welfare.

To prepare and adopt an Airport Land Use Compatibility Plan (ALUCP) pursuant to state and/or local law.

To review the plans, regulations, and other actions of local agencies and airport operators.

The powers of the Airport Land Use Compatibility Commission shall in no way be construed to give the commission jurisdiction over the operation of any airport.

In order to carry out its responsibilities, the commission may adopt rules and regulations consistent with its state or local authorization.

GENERAL ALUCP CONTENT CHECKLIST

Scope of the Plan. In a preface or introductory chapter, provide a clear statement describing the scope and function of the plan. Specifically:

- Refer to state or local statute, ordinance or resolution that provides for the formation of Airport Land Use Compatibility (ALUC) commission (as applicable) and requires preparation of an Airport Land Use Compatibility Plan (ALUCP) for the governing jurisdiction. Include the resolution that formed the ALUC and the resolution that adopts this ALUCP. The plan's purpose should be defined as a vehicle for conducting airport land use compatibility planning.
- Airport Identification: List the airport(s) addressed by the plan and the city or unincorporated county in which they are located.
- Airport Influence Area: Provide a general description and map of the area that comprises the jurisdiction of the ALUC. Also, include a map covering the planning boundary of the ALUCP if it varies from the Airport Influence Area boundary. (see AC at paragraph 4.4.3)
- Jurisdictions Affected: Identify all local jurisdictions and any military facilities that are affected by the ALUCP. Listing the general and specific plans of local jurisdictions also may be valuable.
- Limitations of the Plan: Note the limitations on ALUC jurisdiction over existing land uses; state, federal and tribal land; and airport operations as stated in the law and how they are applied by the individual ALUC.

Airport Information. Include essential information about the airport(s) that shows the ALUCP has been based upon an FAA-adopted Airport Master Plan (AMP) or Airport Layout Plan (ALP).

- Planning Status: Indicate the FAA approval date of the current ALP and activity forecasts (see below). Indicate local government or airport adoption date for the AMP.
- ALP: Include a copy of the FAA-approved ALP.
- Airport Activity: Document existing and projected airport operational levels. Include data indicating the known or estimated distribution of operations by type of aircraft, time of day, and runway used. As necessary, extend the 20-year forecasts included in adopted AMPs to ensure that the ALUCP reflects the anticipated growth of airport activity over a 20-year period.

Compatibility Policies and Criteria. State all policies and criteria as clearly, precisely, and completely as possible, in a separate chapter from background information. As appropriate, use tables to present primary criteria. Address each of the following compatibility concerns:

- Noise: Indicate maximum normally acceptable exterior noise levels for new residential and other noise-sensitive land uses. Note interior noise level standards.
- Overflight: Indicate how aircraft overflight noise concerns are addressed.
- Safety: Indicate maximum acceptable land use densities and intensities and the manner in which they are to be measured. List any uses explicitly prohibited from certain zones.
- Airspace Protection: Note reliance upon 14 CFR Part 77 and Terminal Instrument Procedures (TERPS) if relevant. If applicable, indicate policies addressing objects where ground level exceeds 14 CFR Part 77 criteria. List criteria regarding hazards to flight such as bird strikes, glare), wind turbines, visual obstructions (smoke, haze, etc.), thermal plumes (smoke stacks, cooling towers, etc.) and electronic interferences with flight operations at the airport.

Compatibility Zone Maps. For each airport, provide either a composite compatibility zone map or individual compatibility zone maps. On base map, identify roads, water courses, section lines, and other major natural and man-made features. Showing the local government zoning as a background layer is also helpful.

- Noise Contours: Show CNEL contours to be used for planning purposes.
- Compatibility Policies: If compatibility policies are based on separate assessment of compatibility concerns, indicate boundaries and dimensions of safety zones. When basing zones on guidelines, make adjustments as appropriate to reflect traffic pattern locations and other factors particular to each individual airport.
- FAA Airspace Protection Surfaces: Include map derived from FAR Part 77 standards indicating allowable heights of objects relative to the airport elevation. Indicate locations where ground exceeds these limits. Base map should show topography.

- Composite Compatibility Zones: When using compatibility criteria representing a composite of the above individual compatibility concerns (noise, overflight, safety, and airspace protection) provide a map showing the boundaries of each zone. Indicate distances of boundaries from the airport runways.
- Airport Influence Area (AIA): Clearly identify the AIA boundary on a map and with a written description.

Review Policies. Describe the process and list the steps that the ALUC will use in reviewing local government plans and projects.

- Types of Actions for ALUC Review: List the types of local government plans or projects that are to be submitted to the ALUC. Distinguish between mandatory and voluntary submittals.
- Project Information: List the types of information to be included when a project or plan is submitted for an ALUC consistency decision.
- Timing: Define when ALUC reviews are to be conducted and the time limits within which the ALUC must respond.
- ALUC Staff Responsibilities: Define staff duties in the ALUC compatibility review process.

Preliminary Review of Plans and Projects for Consistency determinations. Describe the steps involved when an affected local jurisdiction requests the ALUC to provide a preliminary assessment of the general plans, specific plans, and relevant land use ordinances and regulations prior to their official submission for an ALUC determination or prior to local approval. The ALUC should make a reasonable effort to identify any direct conflicts needing to be resolved as well as criteria and procedures that need to be defined in order for the local plans to be considered consistent with the ALUCP.

Land Use Information. Include maps such as the following:

- Existing Land Use Development: Show locations in the airport vicinity where development exists by using current, high-altitude aerial photographs, GIS data and available descriptive land parcel data.
- Planned Land Uses: Show locations in the airport vicinity where development is planned by including current general plan and zoning maps.

Discussion of Compatibility Issues. Discuss the basic concepts and rationale behind the compatibility policies and criteria.

Local Government Implementation. Discuss the general plan and any specific ALUCP consistency and documentation requirements. Refer local jurisdictions to the FAA AC 5190-4, *Airport Compatible Land Use Planning*, for sample airport compatibility criteria and implementation documents, such as:

- Land use density and intensities criteria near airports, see AC at 2.2.5,
- Real property disclosure methods, see AC at 5.6,
- Airport Overlay Zone Ordinance, see AC Appendix F, and

- State DOT and other State Agency guidance and programs.

Supporting Materials. For quick reference, include:

- State Aeronautics Act: Provide a copy of the current state laws pertaining to airport land use commissions, airport planning collaboration and consistency. Indicate the date of the most current legislative amendment.
- Title 14 Code of Federal Regulations Part 77: Provide a copy of regulations governing objects affecting navigable airspace.
- Glossary: Prepare a glossary of common aviation terms, particularly those associated with airport land use compatibility planning topics.
- A website link to the state aeronautics office.

EXAMPLE EXISTING ALUCPS

San Diego County Regional Airport Authority - http://www.san.org/Airport-Projects/Land-Use-Compatibility#118076-alucps

City of Ontario CA - http://www.ontarioplan.org/alucp-for-ontario-international-airport/

City/County Association of Governments (C/CAG) of San Mateo County CA - http://ccag.ca.gov/plansreportslibrary/airport-land-use/

APPENDIX F. EXAMPLE AIRPORT LAND USE COMPATIBILITY OVERLAY ZONING ORDINANCE

Sample Airport Land Use & Height Overlay Zoning Ordinance from Iowa Department of Transportation, Office of Aviation

1. Title and Authority:

The _____ AIRPORT LAND USE & HEIGHT OVERLAY ZONING ORDINANCE created by the _____ shall regulate and restrict the height of structures, objects, and growth of natural vegetation, as well as land uses; otherwise regulating the use of property, within the vicinity of the _____ Airport. Creation of appropriate zones and establishing the boundaries thereof, as well as providing for changes in the restrictions and boundaries of such zones is vested in this Ordinance. _____ Airport Land Use & Height Zoning Map is incorporated into and made part of this Ordinance. It is intended that such restrictions will be coordinated with the restrictions existing under the _____ County zoning ordinance.

2. Statement of Purpose and Findings

1. The _____ Airport is acknowledged as an essential public facility to the local community.
2. The creation or establishment of an airport hazard is a public nuisance and poses a potential concern to the surrounding communities served by _____ Airport.
3. There shall be no creation or establishment of a hazard that endangers public health, safety, welfare, or impacts an individual's quality of life, nor prevents the safe movement of aircraft at the _____ Airport.
4. For the protection of the public health, safety, and general welfare, and for the promotion of the most appropriate use of land, it is necessary to prevent the creation or establishment of airport hazards.
5. The prevention of airport hazards shall be accomplished, to the extent legally possible, by proper exercise of the police power.
6. The prevention of new airport hazards, and the elimination, removal, alteration, mitigation, or marking and lighting of existing airport hazards, are considered to be a public purpose for which _____ (City/County) may raise and expend public funds, as an incident to the operation of airports, to acquire or property interest therein.

3. Applicability

This ordinance encompasses the prescribed areas defined in this ordinance around the _____ Airport. See Exhibit A.

4. Definitions

Airport Overlay Zones

Zones intended to place height and land use conditions on land impacted by airport operations while retaining the existing underlying zone. The Title 14 Code of Federal Regulations Part 77 (14 CFR Part 77) Surfaces and runway protection zones have been combined to create five airport overlay zones. The five specific zones create a comprehensive area focused on maintaining compatible land use around airports.

Approach and Runway Protection Zone Map.

The Approach and Runway Protection Zone Map is compiled from the criteria in 14 CFR Part 77, "Objects Affecting Navigable Airspace." It shows the five-airport overlay zones affected by the Airport Overlay Zoning Ordinance, and includes the layout of runways, airport boundaries, elevations, and area topography. Applicable height limitation areas are shown in detail.

Conical Surface (Zone E) - The conical surface extends upward and outward from the periphery of the horizontal surface at a slope of 20 feet horizontally for every one-foot vertically (20:1) for a distance of 4,000 feet. It is the outermost zone of the overlay areas and has the least number of land use restriction considerations.

Horizontal Surface (Zone D) - The horizontal surface is a horizontal plane located 150 feet above the established airport elevation and begins at the edge of the transitional surfaces and primary surface for a distance of 5,000 feet for visual approach runways.

Primary Surface - The primary surface is longitudinally centered on a runway. When the runway has a specially prepared hard surface, the primary surface extends 200 feet beyond each end of that runway. When the runway has no specially prepared hard surface, the primary surface ends at each end of that runway. The width of the primary surface is 250 feet, or 50 feet beyond the marked edge of a turf runway.

Runway Protection Zone (RPZ) (Zone A) - The area off the end of the runway end designed to provide a clear area that is free of above ground obstructions and structures to enhance the protection of people and property on the ground. Zone A is intended to provide a clear area that is free of above-ground obstructions and structures.

Runway Approach Surface (Zone B) - A critical overlay surface that reflects the approach and departure areas for each runway at an airport. The approach surface is longitudinally centered on the extended runway centerline, extending outward and upward from the end of the runway. The approach slope for visual runways is 20:1 for a distance of 5,000 feet.

Transitional Surface (Zone C) - The transitional surface extends outward and upward at right angles to the runway centerline and extends at a slope of seven feet horizontally for each one-foot vertically (7:1) from the sides of the primary and approach surfaces. The transitional surfaces extend to the point at which they intercept the horizontal surface at a height of 150 feet above the established airport elevation.

Visual Approach.

An approach to an airport conducted with visual reference to the terrain.

5. Airport Overlay Zones

Airport overlay zones established by this Ordinance include all of the land lying beneath the runway protection zone, the approach surface, transitional surface, horizontal surface and conical surface. These zones are identified as A, B, C, D and E and are defined under the definition section, Table 5.1 and in Exhibit A.

Table 5.1 Dimensions for Airport Overlay Zones - Visual Runway

Zone	Inner Width	Outer Width	Length	Height or Slope
A (Runway Protection Zone – Begins at end of turf runway, 200' past hard surface runway)	250'	450'	1,000'	Not applicable
B (Approach zone - Begins at end of turf runway, 200' past hard surface runway)	250'	1,250'	5,000'	20:1
C width (Transitional Surface)		1,050'		7:1
D radius (Horizontal Surface)	Begins at edge of transitional surface	5,000'		150' above runway (excludes approach zone)
E radius (Conical Surface)	Begins at edge of horizontal surface	4,000'		20:1

6. Airport Zone Height Limitations and Lighting Requirements

Unless otherwise provided for in this Ordinance, no structure, object, natural vegetation, or terrain shall be erected, altered, allowed to grow or be maintained within any airport zone established by this Ordinance to a height in excess of the applicable height limitations established by this Ordinance in Table 5.1 and shown on Exhibit A, the "_____ Airport Zone Overlay Map."

Lighting and marking requirements will be determined through an FAA 7460-1 airspace analysis. The owner of any structure, object, natural vegetation, or terrain is hereby required to install, operate, and maintain such markers, lights, and other aids to navigation necessary to indicate to the aircraft operators in the vicinity of an airport the presence of an airport hazard.

7. Land Use Limitations within Airport Zones

Land uses defined below as compatible shall be issued a permit if they follow all provisions of this ordinance. Those land uses identified as 'not compatible' will not be permitted within Zones A-E. Land uses identified as 'additional review' will be evaluated by the land use administrator as to the potential impacts on the airport regarding noise, concentration of people, height, visual restrictions, wildlife attractions, flammable substances and electrical, navigational or radio interference.

_____ Airport

Zone Chart

C *= Compatible* ***AR*** *= Additional Review Required* ***NC*** *= Not Compatible*

Land Uses	Zone A	Zone B	Zone C	Zone D	Zone E
Single Family	**NC**	**AR**	**NC**	**AR**	**C**
Multi-Family, group living Uses	**NC**	**NC**	**NC**	**AR**	**C**
Permitted uses in "C" Commercial District	**NC**	**AR**	**AR**	**C**	**C**
Permitted uses in "M" Manufacturing District	**NC**	**AR**	**AR**	**AR**	**C**
Basic Utility Uses (i.e., utility substation facilities, electrical substations, water and sewer lift stations, water towers)	**NC**	**NC**	**NC**	**AR**	**C**
Sanitary landfills	**NC**	**NC**	**NC**	**NC**	**AR**
Solar power, generation equipment, wind generation, wind farms	**NC**	**NC**	**NC**	**AR**	**AR**
Communication transmission facilities	**NC**	**NC**	**NC**	**AR**	**AR**
Outdoor storage, signs and displays	**NC**	**AR**	**AR**	**AR**	**C**
General Community Service	**NC**	**AR**	**AR**	**AR**	**C**
Daycare Uses	**NC**	**NC**	**NC**	**AR**	**C**
Detention Facilities (i.e., prisons, jails, probation centers, juvenile detention homes, halfway houses)	**NC**	**NC**	**NC**	**AR**	**C**
Educational Facilities	**NC**	**NC**	**NC**	**AR**	**C**
Hospitals	**NC**	**NC**	**NC**	**AR**	**C**
Religious Assembly Uses	**NC**	**NC**	**NC**	**AR**	**C**
Communication Transmission Facility Uses (i.e., broadcast, wireless, point to point, emergency towers and antennae)	**NC**	**NC**	**NC**	**AR**	**AR**
Parking Uses (i.e., ground lots, parking structures)	**AR**	**C**	**AR**	**C**	**C**
Transportation Uses (i.e., highways, interstates, local and county roads)	**AR**	**C**	**C**	**C**	**C**
Utility Uses (i.e., solar power	**NC**	**NC**	**NC**	**AR**	**AR**

_____ **Airport** **Zone Chart**					
C *= Compatible*	***AR*** *= Additional Review Required*		***NC*** *= Not Compatible*		
Land Uses	Zone A	Zone B	Zone C	Zone D	Zone E
generation equipment, wind generators, wind farms)					
Farms *– plant and animal with no residential*	**AR**	**AR**	**AR**	**C**	**C**
Resident-related (i.e., single-family home, mobile home if converted to real property and taxed)	**NC**	**AR**	**NC**	**AR**	**C**
Grain bins, bulk fuel, grain elevator	**NC**	**NC**	**NC**	**AR**	**AR**
Man-made water retention, detention, wetlands	**NC**	**NC**	**NC**	**AR**	**AR**
Commercial Recreational Uses (i.e., facilities used for physical exercise, recreation, or culture)					
Outdoor recreation	**NC**	**AR**	**NC**	**AR**	**C**
Indoor recreational facilities	**NC**	**AR**	**NC**	**AR**	**C**
Parks	**NC**	**AR**	**NC**	**C**	**C**
Casino	**NC**	**NC**	**NC**	**AR**	**C**

8. Airport Zoning Map

The Airport Land Use & Height Overlay Zones established by this Ordinance are shown on the Exhibit A to this Ordinance. The Official Airport Land Use & Height Overlay Zoning Map, may be amended, and all notations, references, elevations, data, zone boundaries, and other information thereon, is hereby adopted as part of this Ordinance.

9. Ordinance Administration

It shall be the duty of the _____ referred to herein as the "Airport Zoning Administrator" to administer the regulations prescribed herein. Applications for permits and variances shall be made to the Airport Zoning Administrator upon forms furnished by the Airport Zoning Administrator. Applications for action by the Board of Adjustment shall be forthwith transmitted by the Airport Zoning Administrator should an applicant request review. Permit applications shall be either granted or denied by the Airport Zoning Administrator according to the regulations prescribed herein.

10. Airport Zoning Permits

It shall be the duty of the applicant to provide the Airport Zoning Administrator with sufficient information to evaluate the proposed action. This information shall include but not be limited to the following:

- Contact information

- Structure information
- Site information
- Drawing information
- Certification
- Identify current and potential compatibility concerns

The Airport Zoning Administrator shall evaluate the proposal based upon information provided by the applicant. The Airport Zoning Administrator shall approve the permit if after evaluation, the proposed project is found to be adequately compatible. Should the proposed project be found to be incompatible after review, the Airport Zoning Administrator shall deny the permit. Should the permit be denied, the applicant shall have the right to request a variance or an appeal as prescribed in this Ordinance.

11. Variances

Any person desiring to erect, alter, or increase the height of any structure, object, or to permit the growth of any natural vegetation, or otherwise use his property in violation with any section of this Ordinance, may apply to the Board of Adjustment for variance from such regulation. No application for variance to the requirements of this Ordinance may be considered by the Board of Adjustment unless a copy of the application has been submitted to the _____ Airport Zoning Administrator and the airport manager for an opinion as to the aeronautical effects of the variance.

12. Appeals

Any person, property owner, or taxpayer impacted by any decision of this Ordinance, may appeal to the Board of Adjustment. ***(Insert detail regarding procedures for the appeals process already in use by the adopting governing body.)***

13. Penalties

Any violation of this Ordinance or of any regulation, order, or ruling promulgated hereunder shall constitute a simple misdemeanor, and shall be punishable by a fine of not more than $_____ dollars or imprisonment for not more than _____ (year or month) or both; each day a violation continues to exist shall constitute a separate offense. ***(Insert detail regarding penalties already in use by the adopting governing body.)***

14. Conflicting Regulations

Where there exists a conflict between any of the regulations or limitations prescribed in this Ordinance and any other regulations applicable to the same area, whether the conflict be with respect to height or structures, the use of land, or any other matter, the more stringent limitation or requirement shall govern and prevail.

15. Severability

If any provision of this Ordinance or the application thereof to any person or circumstances is held invalid, such invalidity shall not affect other provisions or applications of the Ordinance, which can be

given effect without the invalid provision or application, and to this end, the provisions of this Ordinance are declared to be severable.

16. Effective Date

This Ordinance shall be in effect from and after its passage by the governing body and publication and posting as required by law.

Adopted on this _____ day of _____, 20__.

Exhibit A-Airport Land Use & Height Overlay Zoning Map

The exhibit provides the Official Airport Land Use & Height Overlay Zoning Maps to be kept on file with the appropriate governmental entities. The maps must be amended when changes occur within the jurisdictional boundaries of the map

Advisory Circular Feedback

If you find an error in this AC, have recommendations for improving it, or have suggestions for new items/subjects to be added, you may let us know by—

- Mailing this form to the FAA Office of Airports, Airport Planning and Environmental Division (APP-400) at FAA, APP-400, Room 615, 800 Independence Ave SW, Washington DC 20591; or
- Calling (202) 267-3263 to request an email address to which you can send it; or
- Faxing it to (202) 267-5383.

Subject: AC 150/5190-4B ***Date:*** _____

Please check all appropriate line items:

☐ An error (procedural or typographical) has been noted in paragraph _____ on page _____.

☐ Recommend paragraph _____ on page _____ be changed as follows:

_____
_____
_____

☐ In a future change to this AC, please cover the following subject:
(Briefly describe what you want added.)

_____
_____
_____

☐ Other comments:

_____
_____
_____

☐ I would like to discuss the above. Please contact me at (phone number, email address).

Submitted by: _____ Date: _____

SCSC Roundtable All Correspondence

May 22, 2021 – July 25, 2021

May 19, 2021

From

Phoebe Weiman

To

SCSC Roundtable

Message

SCSC Roundtable Meeting - May 26th

Dear SCSC Roundtable Members and Interested Parties,

SCSC Roundtable will meet for a Special Meeting on May 26th at 1:00 pm. The agenda packet will be posted on the website on Friday, May 21st. Further updates will be provided when regular activities will resume.

Regards,

SCSC Roundtable consultant staff,

Phoebe Weiman

Airport Planner

May 22, 2021

From

Carol Surrell

To

SCSC Roundtable

Message

Jet Noise

Please hold the FAA accountable for the excessive jet noise we have experienced for the last 6 years since they re-routed flights into SFO. The flights are too low and the flight path is directly over heavily populated neighborhoods, like mine in Los Altos. Please fix this problem which negatively impacts so many of us.
Thank you,

Carol Surrell
Los Altos, CA

May 22, 2021

From

Elizabeth Lopez

To

Bert Ganoung

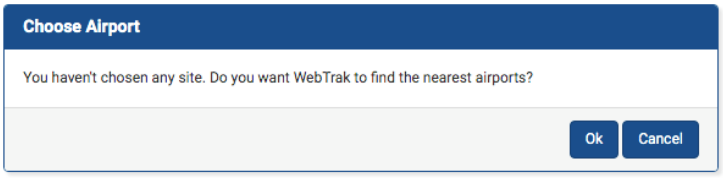
Message

Noise App Workshop

Hi Bert,

I'm curious why the community is testing this app out. Is there supposed to be an improvement to what was already available? It doesn't seem to offer any additional benefits to the community versus what the original noise complaint system SFO provided. It does not provide data on what plane is contributing to the noise, it does not provide the altitude of the flight, the distance from my residence, it does not provide the number of reports made, it does not provide data on other complaints made that day, nor does it not provide any information that I can see other than my own personal information that I entered.

I may have misunderstood the rationale for this app. I thought it was supposed to be at least equivalent in usefulness to the stop jet noise app. It seems lacking in every way, except that it appears as if I am able to submit a report; though there is no real confirmation of such, except for a pop up that says ""report received,"" but I have no idea if the complaint really was received or what the system actually received, as it is not made visible. Perhaps everything I am submitting is not even associated with a plane and the ""report received"" is essentially a notification that I submitted a noise complaint on a non-existent flight. What's the point in reporting if we don't know what we are reporting. Ethically, I don't feel like I should be submitting an official report associated with my name, that I can't even see. It's like we're flying blind here.



I'm assuming we are now able to report on low frequency and back blast noise. Is that why there is a "choose a flight" option? I can't imagine that users would have to go into the system and wait for another interface to load and then figure out themselves what flight it was that contributed to the noise issue.

Could you please tell me who is being paid to design this app and how much they are being paid?

Thank you,

Elizabeth Lopez

San Francisco

May 24, 2021

From

Sky Posse Post

To

Karen Chapman

Message

Reply to Representative Eshoo's recent letter on Airplane Noise

Dear Karen,

Good morning and thank you for Representative Eshoo's recent update on airplane noise.

Please find attached a reply with items for consideration for the FAA's upcoming virtual forum, the FMCS announcement, and our question about what step is needed for the FAA to facilitate supplemental metrics to communicate about potential impacts because as all are aware, DNL alone can't address the concerns in the MidPeninsula.

Best,

Jennifer

May 24, 2021

From

Bert Ganoung

To

SCSC Roundtable

Message

SFO GBAS webpages

Good afternoon,

We have completed our initial expansion of the Webpages for GBAS that has a brief description of the GBAS, presentations and community packets.

The Links for these are in our Noise Portal and are as follows:

https://noise.flysfo.com/

https://noise.flysfo.com/2021/05/14/what-is-ground-based-augmentation-system/

https://noise.flysfo.com/2021/05/14/gbas-innovative-approach-procedures/

https://noise.flysfo.com/2021/05/17/presentations-and-answers-to-public-questions-regarding-gbas/

The current GBAS tab in the flySFO.com/noise website will be removed.

Thank you,

Bert

May 24, 2021

From

Sky Posse Post

To

SCSC Roundtable

Message

Thank you for your email. Re: Reply to Representative Eshoo's recent letter on Airplane Noise

Hi SCSC,

Is correspondence addressed to the SCSC reaching SCSC officials?

Thanks,

Jennifer

Attachment Name

20210525_Sky_Posse_Post_Reply to Representative Eshoo's recent letter on Airplane Noise

Sky Posse Palo Alto
2225 East Bayshore Avenue, Suite 200, Palo Alto, CA 94303

May 24, 2021

The Honorable Anna Eshoo
United States House of Representatives
District Office
698 Emerson Street
Palo Alto, California 94301

Dear Representative Eshoo,

Several of our members received your recent letter that includes,

> "The FAA has begun coordination to plan for a virtual community informational briefing this summer. The briefing will include an overview of airspace operations in Northern California and an update to the recommendations that the Select Committee provided to the FAA. During the briefing, community members will be able to ask questions about the items that the FAA discusses."

"Airspace operations" refers to what the FAA does *in the air* and other information about Air Traffic Control's needs; for the public to be informed about potential *ground* noise and air quality pollutant effects the FAA would also need to represent impacts with historical assessments and prospective noise maps and data--such as number of flights at respective altitudes. Without this information there is no way for the public to ask informed questions about the effects on their communities of FAA actions. In particular, we would like to understand the FAA's "noise screening" because this remains a mystery.

We would also like to ask for the FAA to explain why they and SFO are pursuing a new method to "collect" complaints with their Noise Portal that discourages third party applications, interferes with local choices, and creates unnecessary bureaucracy. Third party applications are how people have been able to easily make noise complaints, and the collected data is valuable public information. Without the apps, people are much less likely to make complaints because the process is so difficult. Furthermore, SFO and FAA have yet to dedicate resources to studying complaints in combination with other data to inform potential solutions. We commend the Stanford MONA team for doing this relevant analysis which can lead to informed decisions in efforts to identify mitigation options. Please see citizen complaints evolution during Covid illustrated on page 3 of the MONA team's input to FAA's recent Federal Register notice about research to inform national aircraft noise policy. We would like to see investments in these efforts expanded.

At the May 6, 2016 inaugural meeting of the Select Committee, FAA's then Western Regional Director Glen Martin committed to providing analysis of the Select Committee outcomes using the FAA's environmental analysis tool which can map historical

assessments as well as projections with a choice of metrics to communicate ground noise and emissions information. The FAA was asked to confirm that these tools were available, Mr. Martin said yes. “Could we be assured this would happen?”, and Mr. Martin assured it was possible. The FAA also provided an Update in November of 2017, that explained on page 8, regulatory steps which include environmental assessments (which are required to use mapping tools), and that they would follow these rules.

The FAA however has not provided noise maps or environmental assessments. At the same time, the FAA is being called to account in a report by the Inspector General at the Department of Transportation for not having published metrics to measure Nextgen performance. The lack of objective and quantitative analysis of airspace procedures allows the FAA to continue to ask Congress for money for industry priorities while minimizing the public’s need for relevant ground impact information that impacts health, productivity and well being.

Since we last wrote to you, there has also been an announcement about the next steps with the FAA’s Federal Register Notice and Neighborhood Environmental Study, - that the FAA is bringing a Federal Mediation and Conciliation Service (FMCS), “to assist with designing an inclusive and participatory policy review framework and process that prioritizes input from substantially affected stakeholders, including local communities.”

Because national policy review will likely entail an unpredictable timeline, we believe the FMCS should consider an immediate interim approach: to stop using the 65 threshold as the standard of significance which **denies noise in our communities.** The May 21st publication Airport Noise Report, reported Sky Posse member Jennifer Landesmann’s response to the FMCS announcement under the title, **FAA URGED TO IMPOSE A MORATORIUM ON USE OF THE 65 DNL THRESHOLD,**

> “An alternative way to move forward in light of FAA’s updated annoyance data should be considered, which is to have a moratorium on using the 65 DNL threshold as the standard for significant noise impact, thus suspending environmental declarations until there is some interim correction to avert the misrepresentations of impacts to communities, especially those outside the 65 contours. These corrections don't require new laws or new policies because adding more ways to consider noise is provided for in current rules - communities have made several proposals for best practices.
>
> Missing is the FAA's cooperation to offer what is otherwise the cornerstone of good government: to quantify, map and communicate realistic analysis of pollutants to citizens *before* taking actions. Certainly, there is no rush to accelerate air traffic procedures this year because the level of operations to justify many of these is nowhere near what would necessitate them, and publishing noise maps can easily fit in any timeline.”

While traffic is down for this year and next, this is the most opportune moment to prioritize people over projects that are not fully vetted and have yet to factor in the cost of noise.

Finally, amidst what is an untenable level of dysfunction in how the FAA represents ground noise effects disclosures to the public, we still are looking for follow up on the problems we raised in our March 31 letter and items submitted to the SCSC Roundtable.

We would very much appreciate an answer from the FAA about what specific step is needed to employ supplemental metrics to communicate ground effects in the MidPeninsula. Supplemental metrics do not require new legislation, they are used in other locations on a case by case basis. The MidPeninsula is a prime case that needs more metrics to understand aviation pollution effects on individuals and communities.

Thank you,

Sky Posse Palo Alto

Copy:

SCSC Roundtable
City of Palo Alto
FAA Ombudsman
SFO Airport

May 26, 2021

From

SCSC Roundtable

To

Sky Posse Post

Message

Thank you for your email. Re: Reply to Representative Eshoo's recent letter on Airplane Noise

Hello Jennifer,

Correspondence addressed to the SCSC is compiled and included at the end of the agenda packet for each regular meeting. The correspondence received since the last SCSC Roundtable meeting (and received by 3:00pm on Friday 3/21/21) has been included in the agenda packet posted to the website at the following link, and is what SCSC Roundtable members review prior to the meeting. For all other correspondence received between 3/21/21 and 3/25/21 (by 3:00pm), the correspondence was forwarded to the SCSC Roundtable Chairperson and members prior to the meeting via the posting of the correspondence on the website for reference.

Thank you,

SCSC Roundtable

May 25, 2021

From

Evan Wasserman

To

SCSC Roundtable

Message

SCSC Roundtable - materials for reference from SFO Roundtable

Dear SCSC Roundtable Members and Interested Parties,

The following information was forwarded to us by the SFO Roundtable for their 6/2/21 meeting, and is being provided for general reference prior to the SCSC Roundtable special meeting scheduled for tomorrow (5/26/21) at 1:00pm PDT.

Specifically of interest is page 31 of the agenda packet/staff report (link provided below) that includes a request for Membership to the SFO Roundtable: background, history, options, and discussion with the MTC Planning Director on the possible role of the Regional Airport Planning Commission.

https://sforoundtable.org/06-02-2021-regular-meeting/

Thank you,

Evan Wasserman

May 25, 2021

From

Cynthia Greenblatt

To

SCSC Roundtable

Message

BRIXX Three, three major concerns

I have three concerns with the BRIXX Three procedure. I am concerned that

1. The FAA has not complied with the National Historic Preservation Act.

2. The FAA has either not complied with item 1.2 in the Air Traffic Initial Environmental Review (IER) for BRIXX or has not made this information available to the public on the FAA IFP Gateway.

3. The FAA is creating a new BRIXX Three procedure that will be over the Summit area without clearly conveying to the public that this is their intention.

The FAA has not complied with the National Historic Preservation Act. The FAA excluded the BRIXX dispersion in the area two miles east of the proposed SERFR FIVE STAR to the Santa Cruz County border from the Area Of Potential Effect (APE). This excluded area clearly meets the FAA's own criteria for being included in the APE. Here is the FAA's stated criteria for determining the APE in the letter to Santa Cruz County (page 3, bottom paragraph). The second criterion clearly applies to the area that was excluded from the APE.

"For purposes of the undertaking, the FAA proposes to delineate an APE based on two factors. First, the APE includes the geographical area that would contain the proposed amendments to the SERFR FOUR STAR and BRIXX TWO STAR flight procedures. Secondly, the boundary of the APE would be based on the dispersion of current flight track data of aircraft on the SERFR FOUR STAR and the BRIXX TWO STAR flight procedures."

My neighborhood was excluded from the APE and is known to have Native American Historical Sites of significance. There is a Native American Burial Site in this area as well as at least one other significant site that I am aware of. The Native American Burial Site in my area is known to PG&E, if Santa Cruz County is unable to identify its location.

Unfortunately, Santa Cruz County staff failed to recognize the omission of the BRIXX dispersion in my area from the APE. This must be addressed.

The FAA has either not complied with item 1.2 in the Air Traffic Initial Environmental Review (IER) for BRIXX or has not made this information available to the public on the FAA IFP Gateway. Specifically, no fleet mix has been provided. Nor have the number and types of aircraft on the route been provided to the public on the FAA IFP Gateway.

"1.2 Describe the existing procedure(s) (the no action alternative) in full detail. Provide the necessary chart(s) depiciting the current procedure(s). Describe the typical fleet mix, including (if possible) the number and types of aircraft on the route (both annually and average day) and depict their altitude(s) along the route."

The FAA is most certainly capable of providing this information.

The FAA is creating a new BRIXX Three procedure that will be over the Summit area without clearly conveying to the public that this is their intention. The BRIXX RNP depicted in the presentation recently given by the FAA to the SCSC Roundtable and SJC, will not be flown according to the meeting minutes from the Performance Based Navigation Full Work Group Design Meeting, June 4-5, 2019.
The meeting minutes from the Performance Based Navigation Full Work Group Design Meeting, June 4-5, 2019 indicate the BRIXX arrivals will not be assigned the RNP arrival, in general, as the BRIXX arrivals will be too high for the RNP. This can be found on page 10 of 16 in items 4(a), 5(c), and 5(d). If the BRIXX arrivals cannot be assigned to the RNP, as they will be too high to use the RNP as designed, where will these BRIXX arrivals be flying?

The FAA has historically vectored BRIXX flights at waypoint YADUT at an angle of 132 degrees towards the Summit. However, the changes in the BRIXX Three procedure, that is the shifting of waypoint JILNA to the southwest, the removal of waypoint YADUT from the BRIXX Three procedure, and the intention of the FAA to elevate BRIXX Three arrivals above SERFR, indicate that BRIXX Three arrivals will likely fly the route JILNA, BOLDR, CREDO, and then be merged into the SJC arrivals on the SILCN and RAZRR routes near waypoint KLIDE. The FAA will have created a new BRIXX procedure that flies over the Summit without the appropriate due process.

Thank you for taking the time to read this email and consider my concerns.

Respectfully,

Cynthia

Attachments:
1. Letter from the FAA to Santa Cruz County identifying the APE
2. Screenshot of the FAA Meeting Minutes indicating the RNP will not be flown as BRIXX arrivals will be too high
3. The FAA document from the FAA IFP Gateway containing the IER without satisfying item 1.2 and the new BRIXX Three procedure with no MEA's between waypoints BRIXX and JILNA and no altitude for the ending waypoint JILNA.

Attachment Name
20210525_Cynthia_Greenplatt_BRIXX_Three_1
20210525_Cynthia_Greenplatt_BRIXX_Three_2
20210525_Cynthia_Greenplatt_BRIXX_Three_3

MEETING MINUTES

(2) Q: What is distance between old and new JILNAs?
  (a) A: 1.27 nm.
(3) SERFR
  (a) Moved the track to the west over WWAYS
(4) Industry asked whether we could fully link the RNP if BRIXX was the endpoint.
  (a) A: ATC advised that aircraft arriving from the NW via BRIXX would not be assigned the RNP arrival, in general.
  (b) We could link the procedures, but ATC generally would not assign due to operational considerations
  (c) Extended discussion of pilot and ATC local factors.
  (d) Southwest and United offered to run simulations the RNP proposal with the new JILNA location. Co-leads agreed to follow up with Industry to coordinate / share details.
(5) If there is going to be a route change, goal is pilots and controllers on the same page.
  (a) JH suggested that sort of system works well in some places, especially where procedures do not use LNAV. In this case, it would not work as well.
  (b) NCT said we still have to seek improvement, as changes become possible.
  (c) It would be nice to link, but if in reality you will not be assigned the RNP, it would be misleading to have the procedure promise (or suggest) an altitude or route that would essentially never be assigned.
  (d) In most cases they would be too high for the RNP
(6) What is the likelihood that the community rejects everything?
  (a) A DH: Unknown. But this FWG is a result of community input.
  (b) Comment: We are following the recommendations of the vote of the committee.
  (c) The select committee did quite a bit of outreach and met with communities for six months.
  (d) FAA will conduct the normal environmental review [OSG].

FWG consensus to adopt the RNP as developed, which will link to the BRIXX STAR and result in significant operational advantage.

9. Meeting adjourned.

U.S. Department
of Transportation
Federal Aviation Administration

Office of the Air Traffic Organization
Western Service Area

2200 South 216th Street
Des Moines, Washington 98198-6547

May 13, 2020

Annie Murphy
Planner
County of Santa Cruz
Historic Resources Commission
Post Office Box 1812
Santa Cruz, CA 95061-1812

RE: Section 106 Consultation for Identification of Historic Properties in the Area of Potential Effect for the Proposed SERFR FIVE Area Navigation (RNAV) Standard Terminal Arrival (STAR) Flight Procedure at San Francisco International Airport, and the BRIXX THREE RNAV STAR Flight Procedure at Norman Y. Mineta San Jose International Airport

Dear Ms. Murphy:

The Federal Aviation Administration (FAA) proposes to amend two air traffic flight procedures for two airports in the San Francisco Bay Area. The first, the proposed SERFR FIVE RNAV STAR (SERFR FIVE STAR) arrival flight procedure serves San Francisco International Airport (KSFO). The second, the proposed BRIXX THREE RNAV STAR (BRIXX THREE STAR) arrival flight procedure serves Norman Y. Mineta San Jose International Airport (KSJC). The FAA has determined the proposed SERFR FIVE STAR and BRIXX THREE STAR flight procedures project is considered the undertaking subject to review under Section 106 of the National Historic Preservation Act of 1966 (NHPA)(16 U.S.C. § 470 *et seq.*) and its implementing regulations at 36 C.F.R. Part 800.

As part of the Section 106 review of the undertaking, the FAA has determined an appropriate Area of Potential Effect (APE), the efforts for identification of historic properties within the proposed APE, and the methodology for assessing potential effects of the undertaking to historic properties. The purpose of this letter is to initiate consultation under Section 106 of the NHPA and solicit any initial comments you may have on the undertaking and the identification of historic properties within the APE.

The Undertaking

The proposed amendments are part of the recommendations submitted by the *Select Committee on South Bay Arrivals* and would continue to provide safe and efficient operations at KSFO and KSJC.[1] The proposed amendments would move the current SERFR FOUR RNAV STAR (SERFR FOUR STAR) to closely align with the existing BIG SUR THREE STAR conventional flight procedure, for the section from the north shore of Monterrey Bay to the end of the proposed SERFR FIVE STAR. Additionally, when developing the proposed amendments to the SERFR FOUR STAR, Air Traffic Control (ATC) identified an air traffic operational need to amend the BRIXX TWO RNAV STAR (BRIXX TWO STAR), as well as an opportunity to provide additional separation of aircraft between the two arrival flight procedures.[2]

In addition, the approach procedures associated with the proposed SERFR FIVE STAR, and those associated with the proposed BRIXX THREE STAR, would be amended to connect with these arrival flight procedures. With the shift of the location for the waypoints EDDYY and JILNA, the approach procedures into KSFO runway (RWY) 28 Left (L)/Right (R) and KSJC RWY 30 L/R would be amended to account for the change. The proposed changes are needed so that ATC can efficiently transition aircraft on approach to an assigned runway for landing at the airport.

Table-1 below lists the approach procedures requiring amendment to efficiently transition aircraft from the corresponding proposed STAR flight procedure.

[1] The *Select Committee on South Bay Arrivals* (*Select Committee)*, which is comprised of county and city officials from the San Francisco Peninsula, is tasked with addressing the airplane noise issue and reviewing the FAA's *Northern California Initiative to Address Noise Concerns of Santa Cruz/Santa Clara/San Mateo/San Francisco Counties*. The *Select Committee* voted to recommend that the FAA design a flight procedure utilizing optimized profile descent that overlays as closely as possible the conventional Big Sur arrival flight procedure into KSFO. Three U.S. Congressional Representatives for California approved the *Select Committee's* recommendations and requested that the FAA implement those recommendations as soon as possible. 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. (References: SC 1.2 R1 (Pg. 11), SC 1.2 R2 (Pg. 11), and SC 1.2 R4 (Pg. 12).

[2] FAA JO 7110.65Y, *Air Traffic Control*, Chapter 3 Airport Traffic Control − Terminal

Table-1: Proposed Instrument Approach Procedures Amendments at KSFO and KSJC		
Proposed Procedure(s)	**Airport**	**Instrument Approach Flight Procedure Type(s)**
SERFR FIVE STAR Proposed Approach Procedures to Runway 28L and Runway 28R	KSFO	• ILS OR LOC RWY 28L • ILS OR LOC RWY 28R • ILS RWY 28L (SA CAT II) • ILS RWY 28R (CAT II AND III) • ILS RWY 28R (SA CAT I) • QUIET BRIDGE VISUAL RWY 28L/R • TIPP TOE VISUAL RWY 28L/R • RNAV (GPS) RWY 28L • RNAV (GPS) Z RWY 28R • RNAV (RNP) Y RWY 28R • Visual approach
BRIXX THREE STAR Proposed Approach Procedures to Runway 30L and Runway 30R	KSJC	• RNAV (RNP) Z RWY 30L • RNAV (RNP) Z RWY 30R • FAIRGROUNDs Visual RWY 30L/R

Definition of Area of Potential Effects

Section 106 regulations define the APE as the geographic area or areas within which an undertaking may directly or indirectly cause alteration in the character or use of historic properties, if any such properties are present. "Effects" are further defined by the regulations as alterations to the characteristics of a historic property qualifying it for inclusion in, or eligibility for the National Register of Historic Places (National Register). The APE is influenced by the scale and nature of the undertaking and may vary for different kinds of effects caused by the undertaking. See 36 C.F.R. § 800.16(d).

For purposes of the undertaking, the FAA proposes to delineate an APE based on two factors. First, the APE includes the geographical area that would contain the proposed amendments to the SERFR FOUR STAR and BRIXX TWO STAR flight procedures. Secondly, the boundary of the APE would be based on the dispersion of current flight track data of aircraft on the SERFR FOUR STAR and the BRIXX TWO STAR flight procedures. Current flight track dispersion is based on ATC vectoring a large number of aircraft off of the SERFR FOUR STAR and the BRIXX TWO STAR prior to reaching the end of these flight procedures.[3] This vectoring is required in order for ATC to properly sequence and space arrival air traffic on the SERFR FOUR STAR and on the BRIXX TWO STAR with other aircraft on other arrival routes. ATC would continue to vector aircraft, as needed, with the implementation of the proposed SERFR FIVE STAR and BRIXX THREE STAR flight procedures. The proposed APE has been designed to account for the area outside of the standard expectation of dispersion of two nautical miles for an RNAV

[3] Vectors are directional headings issued to aircraft to provide navigational guidance and to maintain separation between aircraft and/or obstacles.

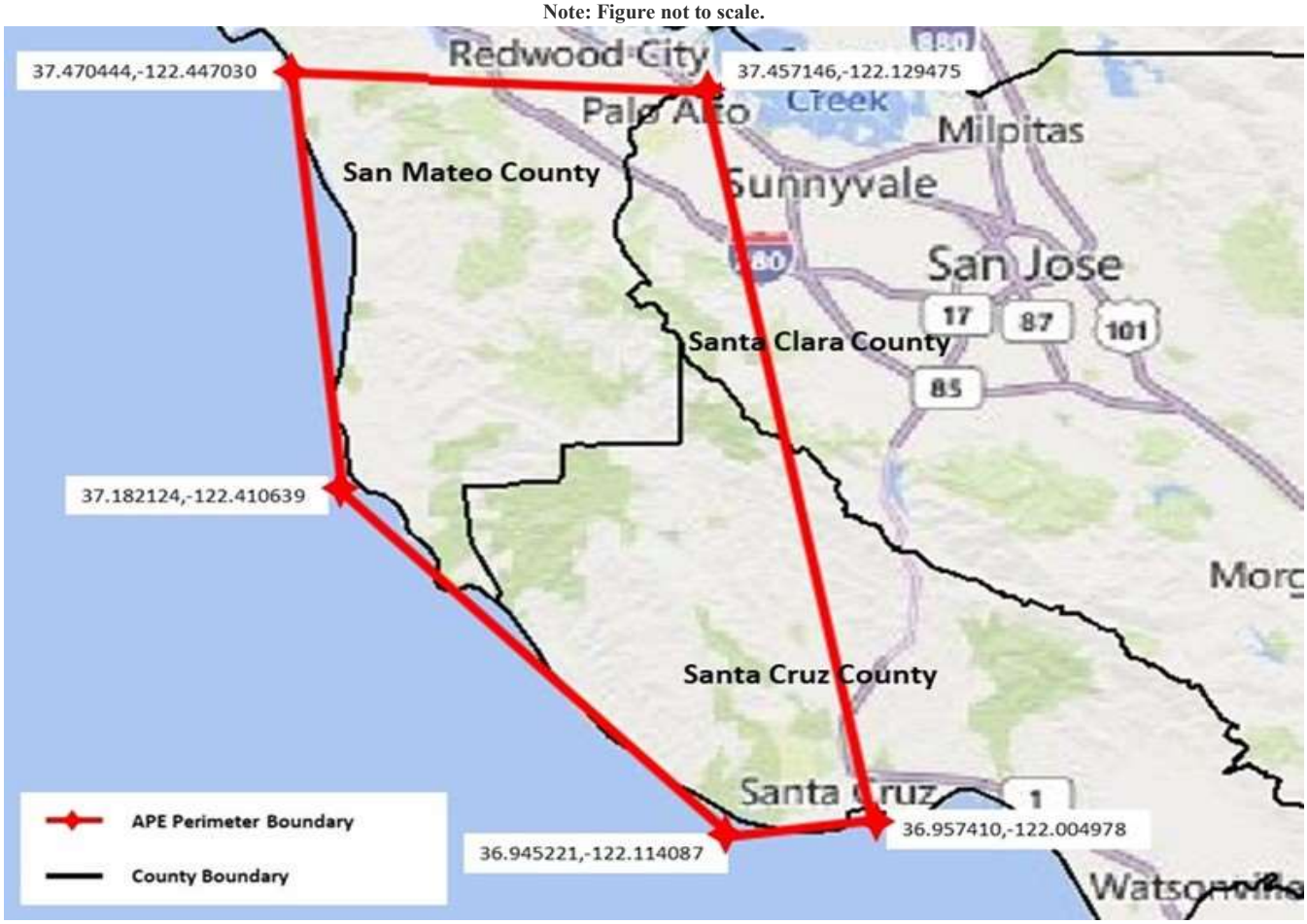
arrival route.[4] Table-2 lists the latitude and longitude coordinates of the geographical boundary of the APE.

Table-2: Proposed APE Perimeter Boundary Coordinates		
APE Perimeter Coordinates	**Latitude**	**Longitude**
northwest corner	37.470444	-122.447030
northeast corner	37.457146	-122.129475
southeast corner	36.957410	-122.004978
southwest corner	36.945221	-122.114087
west corner	37.182124	-122.410639

Figure-1 below depicts the geographical boundary of the proposed APE, with the latitude and longitude coordinates included for each corner point. Figure-1 also depicts the boundary lines for the local counties that are associated with the APE.

Figure-1: Proposed APE Geographical Boundary

Note: Figure not to scale.



[4] FAA JO 7110.65Y, "Air Traffic Control," Chapter 4 – Route Separation, Chapter 5 – Radar Separation

Figure-2 below depicts the location of the portion of the SERFR FOUR STAR and the BRIXX TWO STAR flight procedures that would be amended contained within the proposed APE.

Figure-2: Portion of SERFR FOUR STAR and BRIXX TWO STAR to Amend Within the Proposed APE

Note: Figure not to scale.

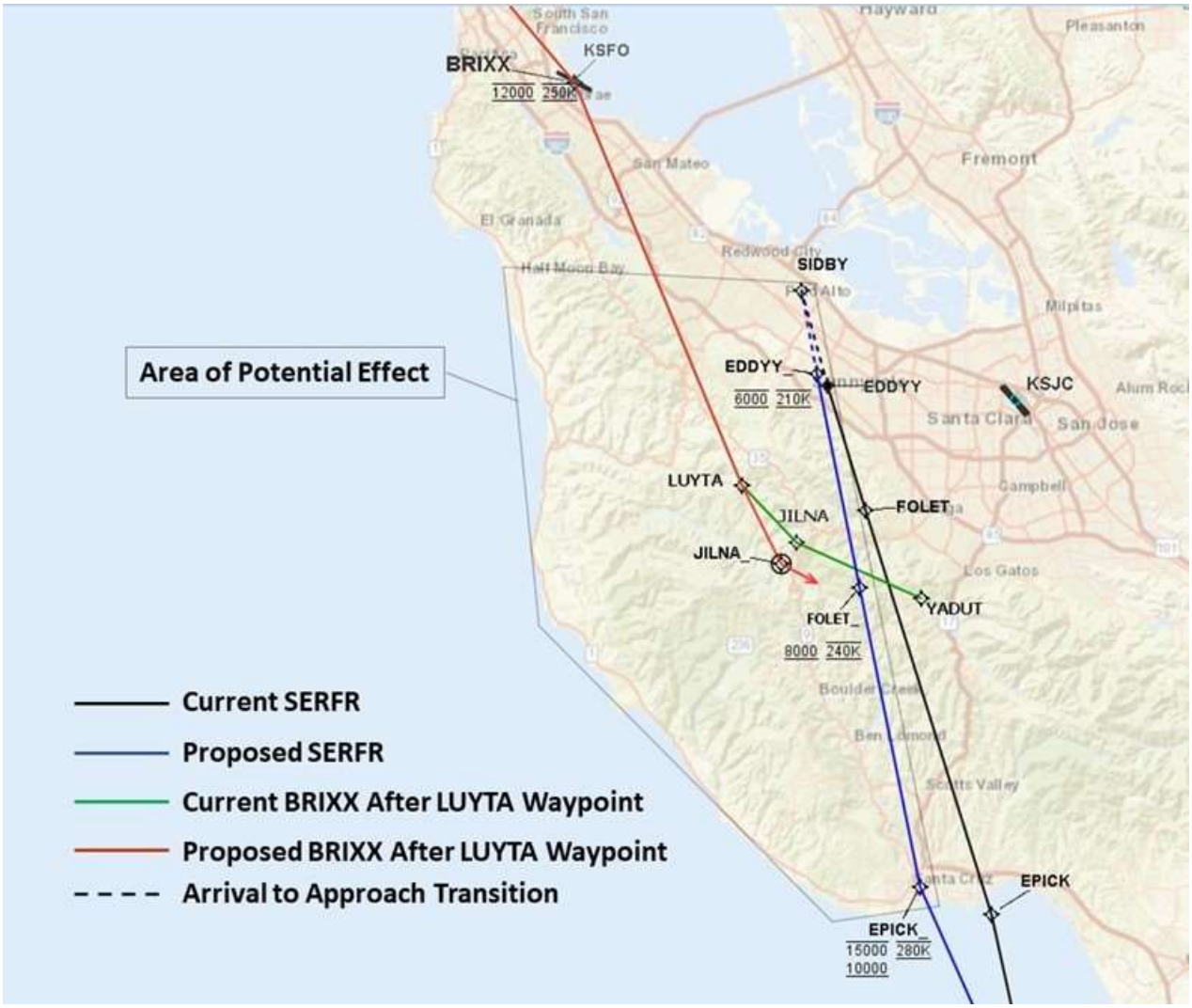
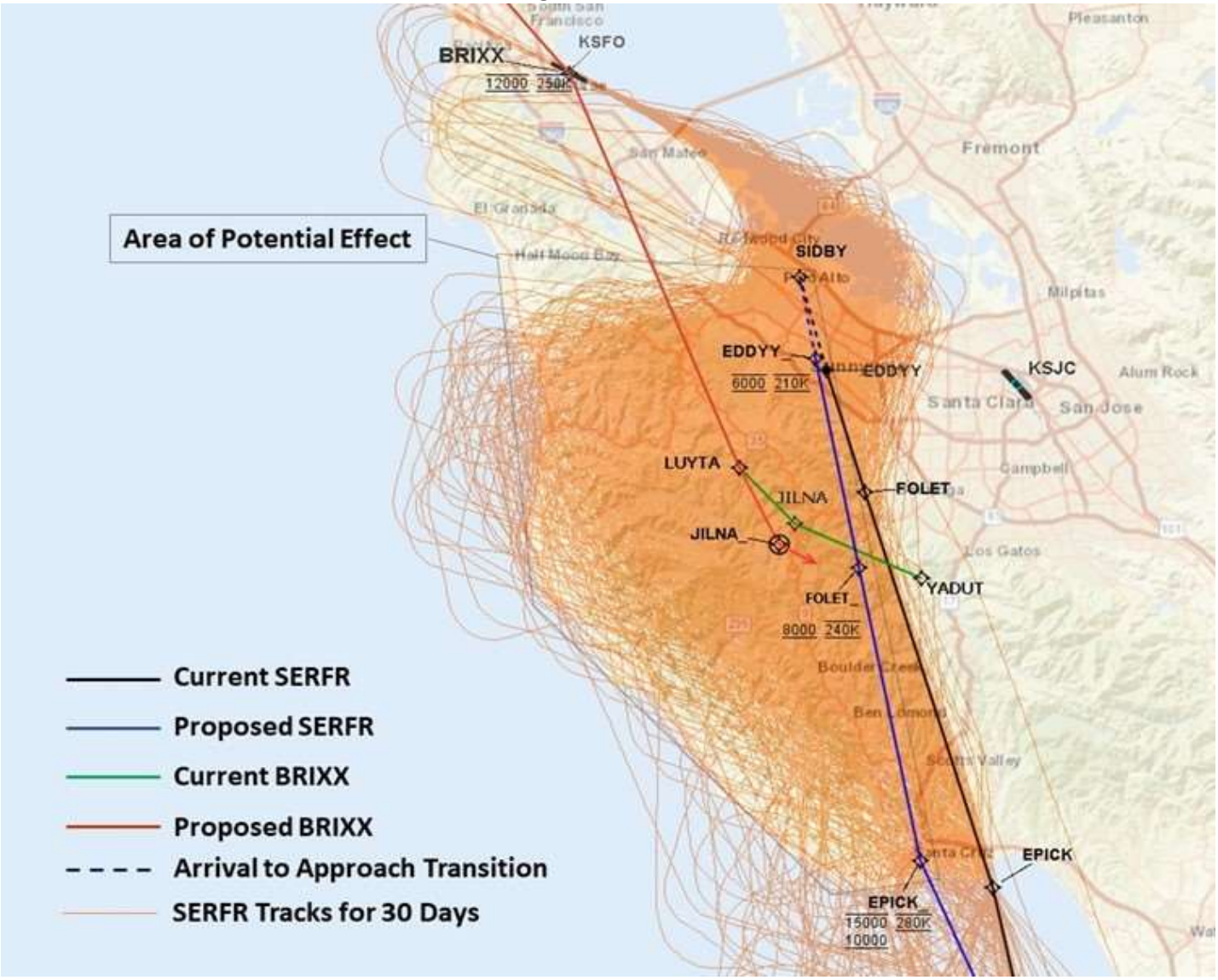


Figure-3 and Figure-4 depict the 30 days of current flight tracks of aircraft on the SERFR FOUR STAR and the BRIXX TWO STAR, which are used to define the boundaries of the proposed APE. Figure-5 depicts the 30 days flight tracks of the SERFR FOUR STAR, overlaid with the 30 days flight tracks of the BRIXX TWO STAR.[5]

Figure 3: Thirty Days of Flight Track Data for Aircraft on the SERFR FOUR STAR Vectored for Arrival to KSFO

Note: Figure not to scale.



[5] The flight track data is comprised of 30 random days from the calendar year 2019. The radar track data sampled randomly throughout the year provides a conservative representation of an average annual day of air traffic operations at an airport served by specific flight procedures. (*MITRE Guidance for Noise Screening of Air Traffic Actions, 2012*)

Figure-4: Thirty Days of Flight Track Data for Aircraft on the BRIXX TWO STAR Vectored for Arrival to KSJC

Note: Figure not to scale.

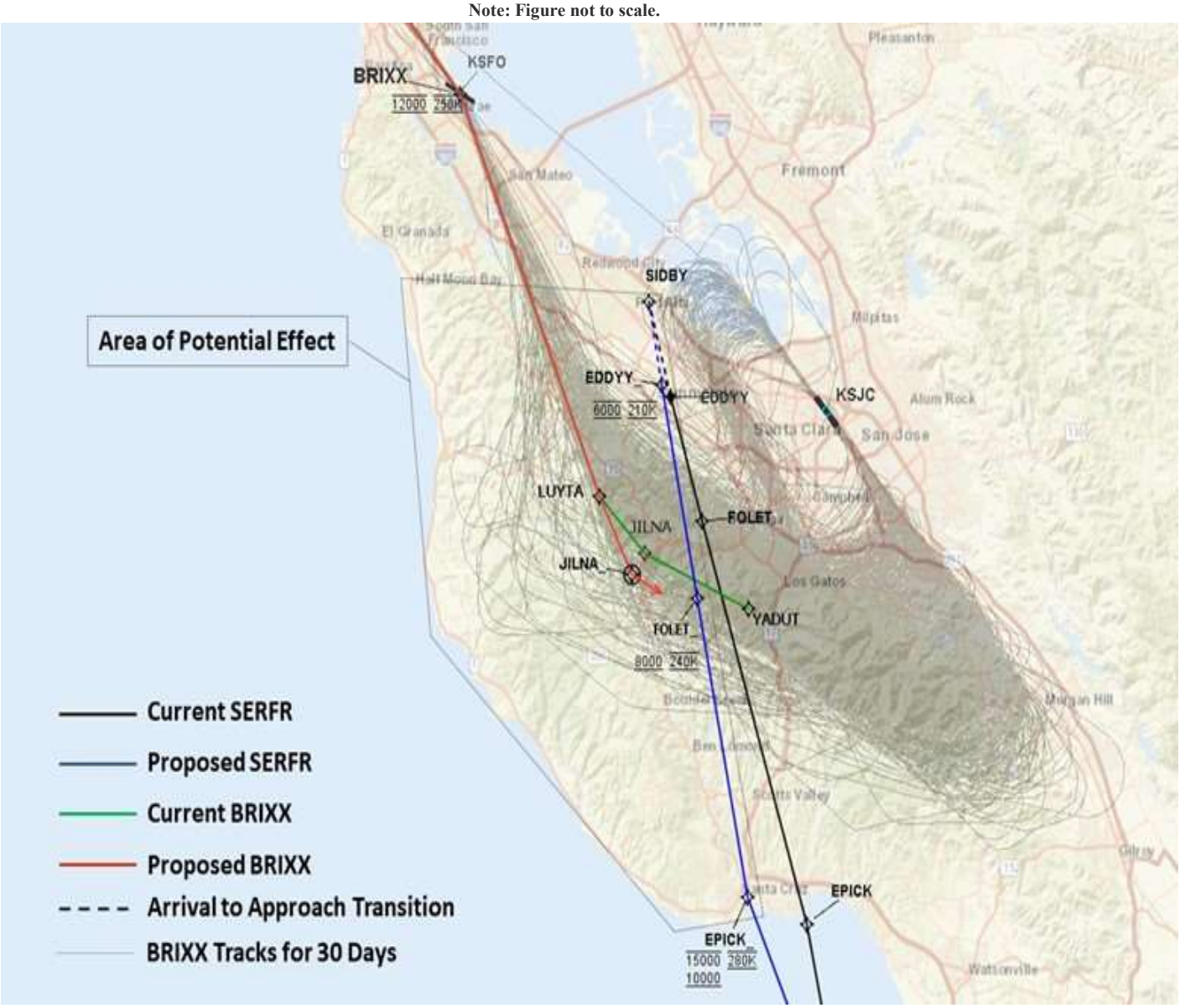
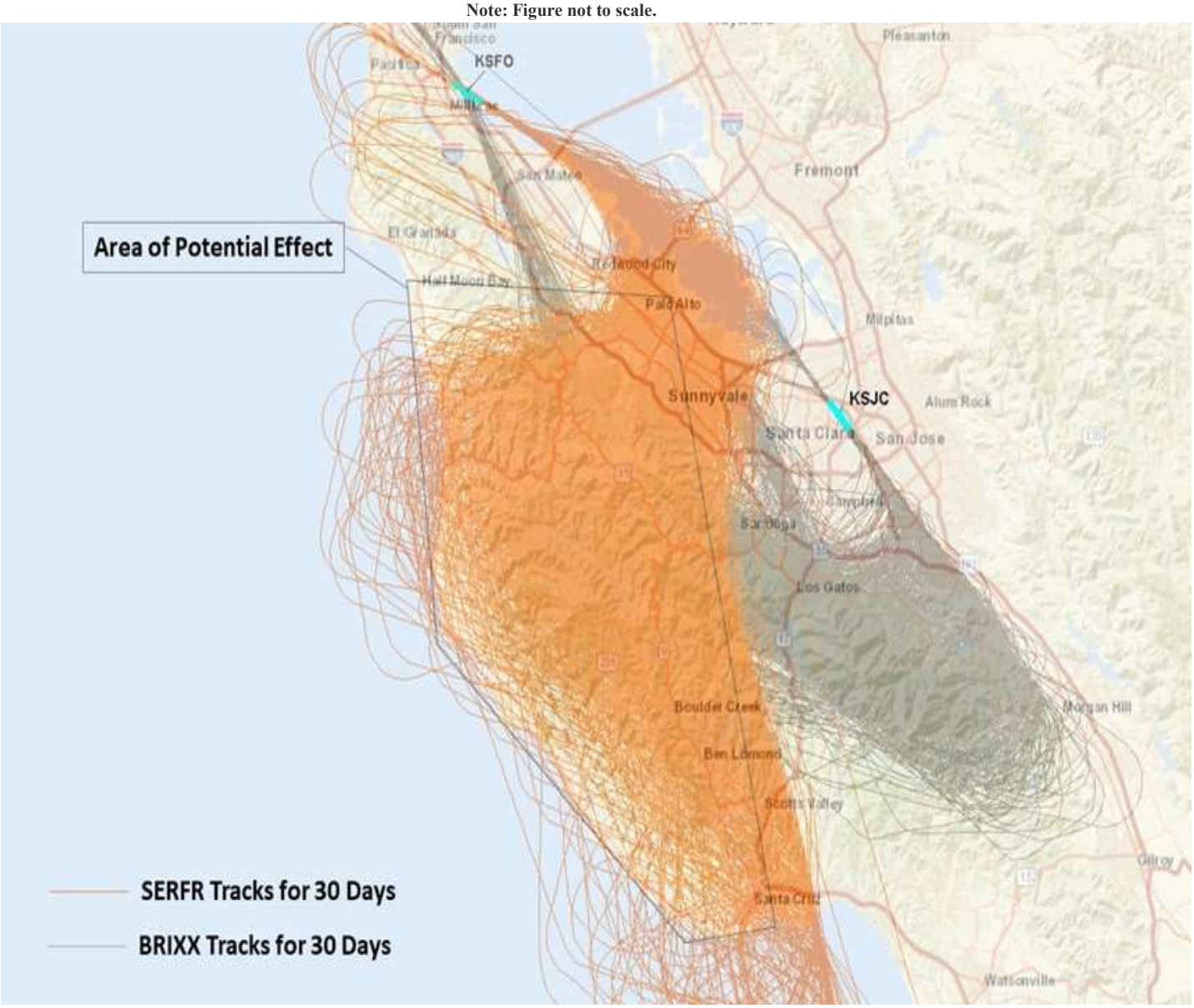


Figure-5: Thirty Days of Flight Track Data for Vectored Aircraft on the SERFR FOUR STAR Overlaid with the BRIXX TWO STAR Vectored Flight Track Data

Note: Figure not to scale.



Identification of Historic Properties

Section 106 regulations direct Federal agencies to make reasonable and good faith efforts to identify historic properties that are either on, or eligible for listing on, the National Register (36 C.F.R. § 800.4(b)(1)). For this undertaking, the FAA will focus its efforts on identifying historic properties within the APE to which an adverse effect would change the character of the property's use, or of physical features within the property's setting that contribute to its historic significance; or introduce an atmospheric, audible, or visual feature to the area that would diminish the integrity of the property's significant historic features (including its setting, provided that the setting has been identified as a contributing factor to the property's historical significance). For this undertaking, there would be no direct physical effects on historic resources. Therefore, potential effects are limited to noise, vibration, and visual intrusions from aircraft overflights.

The FAA is inviting local governments with jurisdiction over land within the proposed APE to participate in consultation. The FAA is inviting the California Native American Heritage Commission (NAHC) to participate in government-to-government consultation regarding any concerns that uniquely or significantly affect local Tribes related to the proposed project. Additionally, three local governments were identified to be associated with the proposed APE. We are affording Santa Cruz County the same status in this consultation as the SHPO with respect to potential effects of this undertaking. Figure-1 above depicts the boundaries of the local governments where their boundaries are located within, or partially located within the proposed APE.

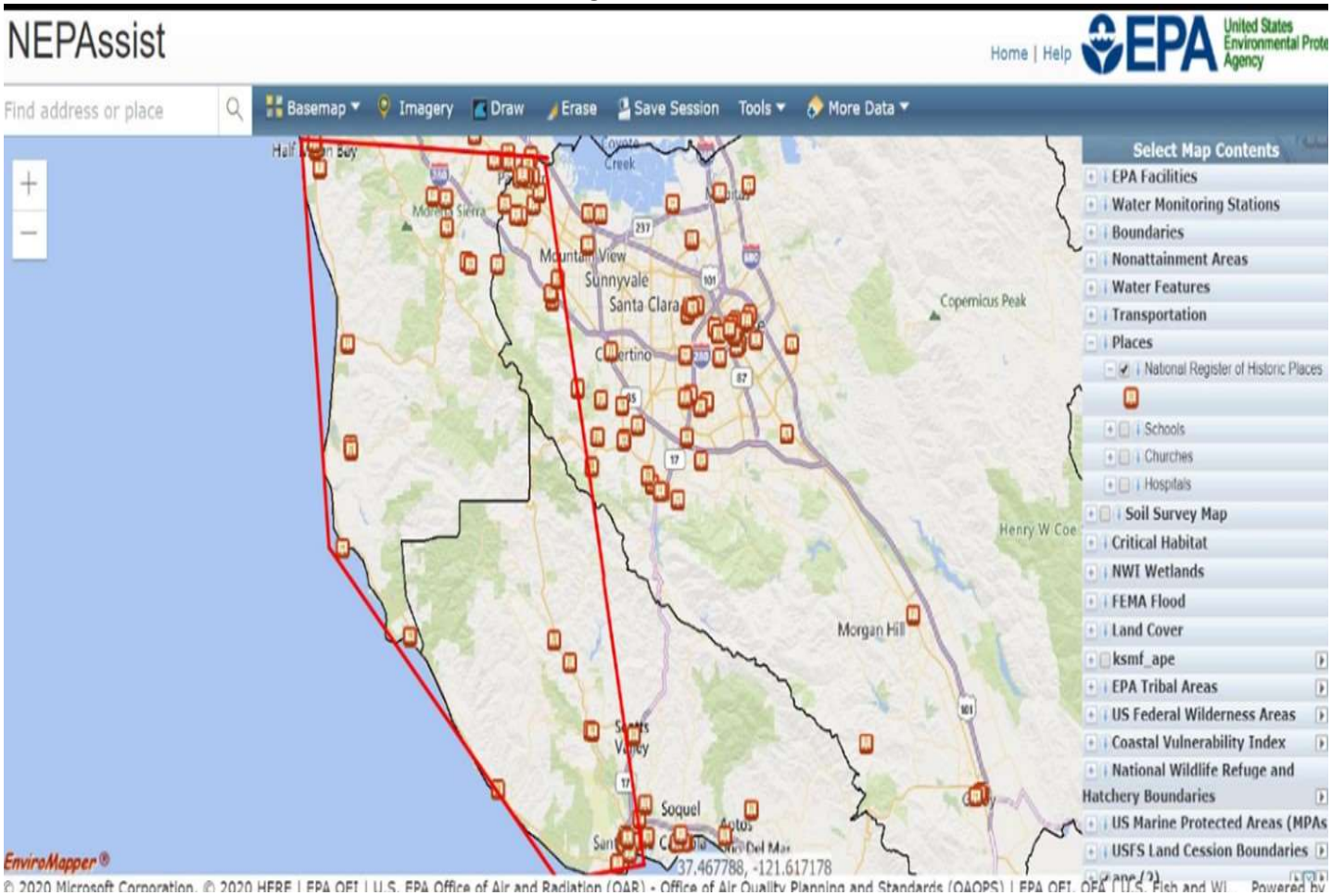
The FAA's initial efforts to identify historic properties within the APE include review of publicly available databases of properties listed on the National Register. A search of the National Register, accessed through NEPAssist, was completed to identify those properties listed on the National Register within the proposed APE.[6]

Figure-6 below depicts the approximate location of historic properties listed in the National Register accessed through NEPAssist, which are within the proposed APE. Attachment A contains Table-3, which lists the names of the historic properties depicted in Figure-6, and includes the URL link to the National Archives Catalog entry for each historic property. The name of a historic property listed in Table-3 would be formatted in **bold font**, where a quiet setting is noted as a qualifying characteristic for listing in the National Register.

[6] NEPAssist is a web-based application that draws environmental data dynamically from the Environmental Protection Agency Geographic Information System databases and web services and provides immediate screening of environmental assessment indicators for a user-defined area of interest. Located: https://www.epa.gov/nepa/nepassist

Figure-6 Location of Historic Properties within the Proposed APE

Note: Figure not to scale.



The FAA requests your assistance in identifying other listed properties, as well as those properties eligible for listing, where a quiet setting is a contributing factor to the property's historic significance. Your office's expertise is invaluable in ensuring that appropriate consideration is given to these properties in assessing the effects of the undertaking.

Proposed Methodology for Determination of Effects

Under the NHPA, effects to historic properties and other cultural resources are evaluated. Federal agencies take into account the likely nature and location of historic properties within areas that may be affected, and the nature and extent of potential effects on historic properties. An undertaking would have an effect on a historic property if it altered the characteristics qualifying that property for the National Register. Such effects are considered "*adverse*" if they would diminish the integrity of a property's significant historic features (including its setting, provided the setting is a contributing factor to the property's historic significance).

The FAA proposes to assess the effects to historic resources within the proposed APE that change the character of a property's use, or physical features within the property's setting that contribute to its historic significance; or introduce atmospheric, audible, or visual features to an area that would diminish the integrity of the property's significant historic features (including its setting, provided that the setting has been identified as a contributing factor to the property's historical significance). For this undertaking, no land acquisition, construction, or other ground disturbance would occur. Implementation of the proposed SERFR FIVE STAR and BRIXX THREE STAR flight procedures would involve changes to aircraft flight procedures, and would not include any project components that would touch or otherwise directly affect the ground surface. Therefore, potential effects are limited to effects from aircraft overflights, primarily noise and visual effects.

The analysis for potential adverse effects considers the change in aircraft noise exposure level measured in decibels (dB). Consistent with FAA Order 1050.1F, *Environmental Impacts: Policies and Procedures*, the FAA's noise screening analysis for this undertaking would include identifying any "significant" or "reportable" noise increases. The FAA's noise guidelines for compliance with NEPA define a significant impact as an increase of a day-night average sound level (DNL)[7] 1.5 dB in a noise sensitive area that is exposed to aircraft noise of DNL 65 dB and higher when compared to the No Action Alternative for the same timeframe. A reportable noise increase is an increase of:

- DNL 3.0 dB or more in areas exposed to aircraft noise of between DNL 60 and DNL 65 dB; or
- DNL 5.0 dB or more in areas exposed to aircraft noise of between DNL 45 and DNL 60 dB.

Recognizing that some types of historic properties may be affected by aircraft overflights even at a noise level below these criteria, the FAA proposes to consider the potential for the introduction of visual elements that could diminish the integrity of the property's historic features.

Pursuant to 36 CFR § 800.4(a)(1), the FAA is seeking your comments on the APE and the identification efforts for this undertaking. Based on the information gathered, and in consultation with the SHPO and any Indian tribe organization that might attach religious and cultural significance to properties within the APE, the FAA shall take the steps necessary to assess the effects to historic properties listed in the National Register, and those properties eligible for listing.

As the FAA was in the process of initiating consultation, the COVID-19 pandemic occurred. The FAA recognizes that this situation affects the consultation timetable and ultimately those of other Federal, state and local agencies. The FAA will continue to evaluate the situation in the coming weeks and will continue to reach out to other consulting and interested parties. We look forward to your response. In the meantime,

[7] DNL takes into account the noise level of each individual aircraft event, the number of times those events occur, and the time of day in which they occur. DNL includes a 10-decibel (dB) noise penalty added to noise events occurring from 10:00 p.m. to 7:00 a.m., to reflect the increased sensitivity to noise and lower ambient sound levels at night.

if you have any initial comments or questions about this undertaking, please contact Marina Landis at (206) 231-2238, or marina.landis@faa.gov.

Sincerely,

Shawn M. Kozica
Manager
Operations Support Group
Western Service Center

Attachment

Attachment A

Table-3 – Part 1: Historic Properties within the APE Listed in the National Register of Historic Places
Listed Historic Property Name with corresponding National Archives Catalog URL entry.
1. Allen Theophilus House, 601 Melville Ave., Palo Alto - https://catalog.archives.gov/id/123861639
2. Norris House, 1247 Cowper St., Palo Alto - https://catalog.archives.gov/id/123861750
3. de Lemos, Pedro, House, 100-110 Waverley Oaks, Palo Alto - https://catalog.archives.gov/id/123861661
4. Kee House, 2310 Yale St., Palo Alto - https://catalog.archives.gov/id/123861715
5. Griffin, Willard, House and Carriage House, 12345 S. El Monte Ave., Los Altos - https://catalog.archives.gov/id/123861689
6. Lantarnam Hall, 12355 Stonebrook Dr., Los Altos Hills - https://catalog.archives.gov/id/123857310
7. Picchetti Brothers Winery, SW of Cupertino at 13100 Montebello Rd., Cupertino - https://catalog.archives.gov/id/123861763
8. Welch-Hurst, 15800 Sanborn Rd., Saratoga - https://catalog.archives.gov/id/123861820
9. Scott, Hiram D., House, 4603 Scotts Valley Dr., Scotts Valley - https://catalog.archives.gov/id/123861898
10. Branciforte Adobe, 1351 N. Branciforte Ave., Santa Cruz - https://catalog.archives.gov/id/123861840
11. Neary-Rodriguez Adobe, 130-134 School St., Santa Cruz - https://catalog.archives.gov/id/123861881
12. Mission Hill Area Historic District, Mission St., Santa Cruz - https://catalog.archives.gov/id/123861879
13. US Post Office--Santa Cruz Main, 850 Front St., Santa Cruz - https://catalog.archives.gov/id/123857802
14. Veterans Memorial Building, 842--846 Front St., Santa Cruz - https://catalog.archives.gov/id/123861908
15. Bank of Santa Cruz County, 1502 Pacific Ave., Santa Cruz - https://catalog.archives.gov/id/123861834
16. Octagon Building, Corner of Front and Cooper Sts., Santa Cruz - https://catalog.archives.gov/id/123861883
17. Hotel Metropole, 1111 Pacific Ave., Santa Cruz - https://catalog.archives.gov/id/123861867
18. Robinson, Elias H., House, 363 Ocean St., Santa Cruz - https://catalog.archives.gov/id/123861867
19. Golden Gate Villa, 924 3rd St., Santa Cruz - https://catalog.archives.gov/id/123861859
20. Carmelita Court, 315--321 Main St., Santa Cruz - https://catalog.archives.gov/id/123861843
21. Looff Carousel and Roller Coaster on the Santa Cruz Beach Boardwalk, Along Beach St., Santa Cruz – 22. https://catalog.archives.gov/id/123858107
23. Live Oak Ranch, 105 Mentel Ave., Santa Cruz - https://catalog.archives.gov/id/123861873
24. Cope Row Houses, 412--420 Lincoln St., Santa Cruz - https://catalog.archives.gov/id/123861847
25. Hinds, A. J., House, 529 Chestnut St., Santa Cruz - https://www.nps.gov/subjects/nationalregister/database-research.htm#table
26. Santa Cruz Downtown Historic District, Santa Cruz - https://catalog.archives.gov/id/123861896
27. Garfield Park Branch Library, 705 Woodrow Ave., Santa Cruz - https://catalog.archives.gov/id/123857800
28. Davenport Jail - 1 Center St. Davenport - https://npgallery.nps.gov/pdfhost/docs/NRHP/Text/92000422.pdf
29. Felton Presbyterian Church - 6299 Gushee St., Felton - https://npgallery.nps.gov/pdfhost/docs/NRHP/Text/78000774.pdf
30. Felton Covered Bridge - Covered Bridge Rd., Felton - https://npgallery.nps.gov/pdfhost/docs/NRHP/Text/73000451.pdf

Table-3 Part 2: Historic Properties within the APE Listed in the National Register of Historic Places
31. Phillipshurst-Riverwood - CA 9, Ben Lomond - https://npgallery.nps.gov/pdfhost/docs/NRHP/Text/83004369.pdf
32. Grace Episcopal Church - 12547 CA 9, Boulder Creek - https://npgallery.nps.gov/pdfhost/docs/NRHP/Text/06001158.pdf
33. Dickerman Barn - Cabrillo Hwy., Pescadero - https://npgallery.nps.gov/pdfhost/docs/NRHP/Text/82002259.pdf
34. Pigeon Point Lighthouse - S of Pescadero at Pigeon Point off CA 1, Pescadero - https://npgallery.nps.gov/pdfhost/docs/NRHP/Text/77000337.pdf
35. First Congregational Church of Pescadero - San Gregorio St, Pescadero - https://npgallery.nps.gov/pdfhost/docs/NRHP/Text/80000856.pdf
36. Methodist Episcopal Church of Pescadero - 108 San Gregorio St. Pescadero - https://npgallery.nps.gov/pdfhost/docs/NRHP/Text/82002260.pdf
37. San Gregorio House - Old Stage Rd., San Gregorio - https://npgallery.nps.gov/pdfhost/docs/NRHP/Text/77000341.pdf
38. Johnston, James, House - Higgins-Purisima Rd., Half Moon Bay - https://npgallery.nps.gov/pdfhost/docs/NRHP/Text/73000446.pdf
39. Woodside Store - 471 Kings Mountain Rd., Woodside - https://npgallery.nps.gov/pdfhost/docs/NRHP/Text/85001563.pdf
40. Independence Hall - 129 Albion Ave. Woodside - https://npgallery.nps.gov/pdfhost/docs/NRHP/Text/78000772.pdf
41. Folger Estate Stable Historic District - 4040 Woodside Rd. Woodside - https://npgallery.nps.gov/pdfhost/docs/NRHP/Text/04000328.pdf
42. Our Lady of the Wayside - 930 Portola Rd. Portola Valley - https://npgallery.nps.gov/pdfhost/docs/NRHP/Text/77000338.pdf
43. Portola Valley School - 775 Portola Rd. Portola Valley - https://npgallery.nps.gov/pdfhost/docs/NRHP/Text/74000557.pdf
44. Casa de Tableta - 3915 Alpine Rd. Portola Valley - https://npgallery.nps.gov/pdfhost/docs/NRHP/Text/73000447.pdf
45. Palo Alto Stock Farm Horse Barn - Fremont Rd. Stanford - https://npgallery.nps.gov/pdfhost/docs/NRHP/Text/85003325.pdf
46. Hanna-Honeycomb House - 737 Frenchman's Rd. Palo Alt - https://npgallery.nps.gov/pdfhost/docs/NRHP/Text/78000780.pdf
47. Hoover, Lou Henry, House - 623 Mirada Rd. Stanford - https://npgallery.nps.gov/pdfhost/docs/NRHP/Text/78000786.pdf
48. MacFarland House - 775 Santa Ynez St. Stanford - https://npgallery.nps.gov/pdfhost/docs/NRHP/Text/06000659.pdf
49. Hewlett--Packard House and Garage - 367 Addison Ave. Palo Alto - https://npgallery.nps.gov/pdfhost/docs/NRHP/Text/07000307.pdf
50. Palo Alto Medical Clinic - 300 Homer Ave, Palo Alto - https://npgallery.nps.gov/pdfhost/docs/NRHP/Text/10000357.pdf
51. Downing, T. B., House - 706 Cowper St. Palo Alto - https://npgallery.nps.gov/pdfhost/docs/NRHP/Text/73000452.pdf
52. U.S. Post Office - 380 Hamilton Ave. Palo Alto - https://npgallery.nps.gov/pdfhost/docs/NRHP/Text/81000175.pdf
53. Ramona Street Architectural District - 518--581 Ramona St. and 255--267 Hamilton Ave. Palo Alto - https://npgallery.nps.gov/pdfhost/docs/NRHP/Text/86000592.pdf

Table-3 Part 3: Historic Properties within the APE Listed in the National Register of Historic Places
54. Fraternal Hall Building - 140 University Ave. and 514 High St. Palo Alto - https://npgallery.nps.gov/pdfhost/docs/NRHP/Text/90000119.pdf
55. Palo Alto Southern Pacific Railroad Depot - 95 University Ave. Palo Alto - https://npgallery.nps.gov/pdfhost/docs/NRHP/Text/96000425.pdf
56. Hostess House - W of University Ave. underpass of El Camino Real, Palo Alto - https://npgallery.nps.gov/pdfhost/docs/NRHP/Text/76000528.pdf
57. Squire, John Adam, House - 900 University Ave. Palo Alto - https://npgallery.nps.gov/pdfhost/docs/NRHP/Text/72000255.pdf
58. Wilson House - 860 University St. Palo Alto - https://npgallery.nps.gov/pdfhost/docs/NRHP/Text/80000862.pdf

Flight Procedures Cover Page	Task Action: FLIGHT CHECK	Task Type: STAR	Estimated Chart Date: 06/17/2021	APWS Task ID: 41D49B1903FF4AC3B978E10B8B9DB39D	APWS Project ID: 333278DE7D3E45CFB3F7F737BC3988B3
Procedure: STAR BRIXX (RNAV) THREE SAN JOSE CA KSJC		Enroute: YES	Specialist: Blanco, Joseph		Agreement Number:
Airport ID: KSJC			Airport City: SAN JOSE		State: CA
Facility ID:	Facility Type:	Flight Inspection Remark Type: New FC Slot			

Procedure Comments:
AMEND - STAR BRIXX THREE (RNAV) TO MOVE JILNA, ADD VM LEG TO JILNA, REMOVE YADUT, REMOVE MEAS.

CONTACT ALLAN WILL 405.954.6103

1 EA APPROVAL LETTER

QUALITY 41 CHECKED

01/27/2021

QUALITY 14 CHECKED

Data as of: 01/06/2021 10:51:45 CST

Federal Aviation Administration

Memorandum

Date: October 26, 2020

To: Manager, Flight Procedures & Airspace Group (AFS-420)

THRU: Manager, Flight Procedures Team, FAA, ATO

Western Service Center, Operations Support Group, AJV-W24

From: Derek Wofe & Chris Thomas, WSC-OSG PBN Co-Leads

Subject: Approval Request: Norman Y Mineta, San Jose, CA (KSJC), BRIXX Standard Terminal Arrival (STAR)

Requesting approval to omit an altitude restriction on the BRIXX STAR termination fix at JILNA Waypoint.

The requirement in Order 8260.3D, paragraph 2-2-7. F. (2) states:

> "If the STAR authorizes radar vectors after the termination fix, an altitude is required at the termination fix. . ."

The STAR authorizes radar vectors after the termination fix and includes a final altitude restriction of "At" 12000 (above the minimum vectoring altitude (MVA)) at BRIXX Waypoint —which precedes the STAR termination fix JILNA Waypoint.

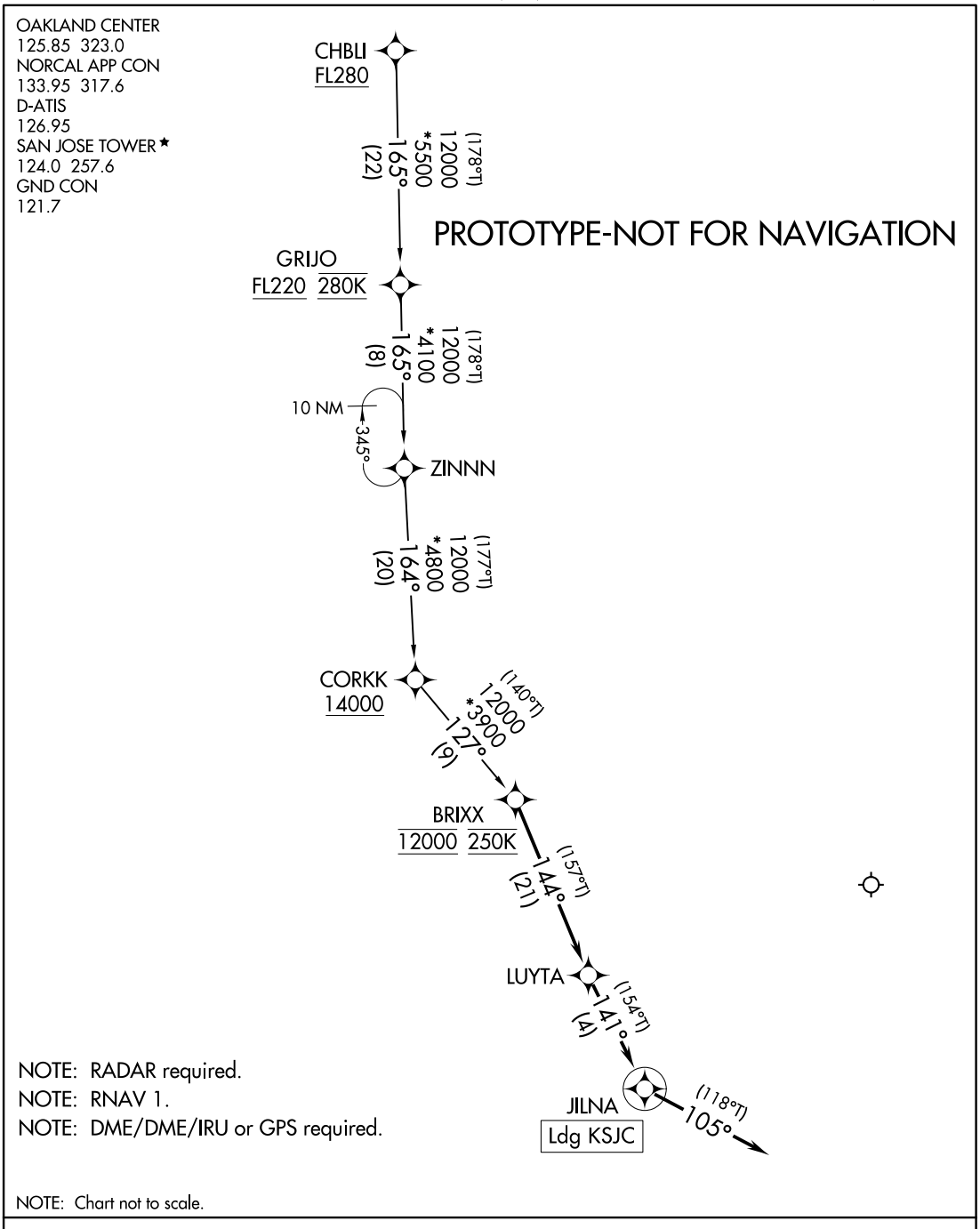
There is an operational need to have the BRIXX STAR terminate at JILNA Waypoint due to ATC airspace boundaries and traffic density.

(BRIXX.BRIXX3) FIG

BRIXX THREE ARRIVAL (RNAV)

AL-693 (FAA)

NORMAN Y MINETA SAN JOSE INTL (SJC)
SAN JOSE, CALIFORNIA



ARRIVAL ROUTE DESCRIPTION

CHBLI TRANSITION (CHBLI.BRIXX3)

From BRIXX on track 144° to LUYTA, then on track 141° to JILNA, then on heading 105° or as assigned by ATC. Expect RADAR vectors to final approach course.

BRIXX THREE ARRIVAL (RNAV)
(BRIXX.BRIXX3) FIG Amdt 1

SAN JOSE, CALIFORNIA
NORMAN Y MINETA SAN JOSE INTL (SJC)

AUTOMATED AL-693 BRIXX ARRIVAL

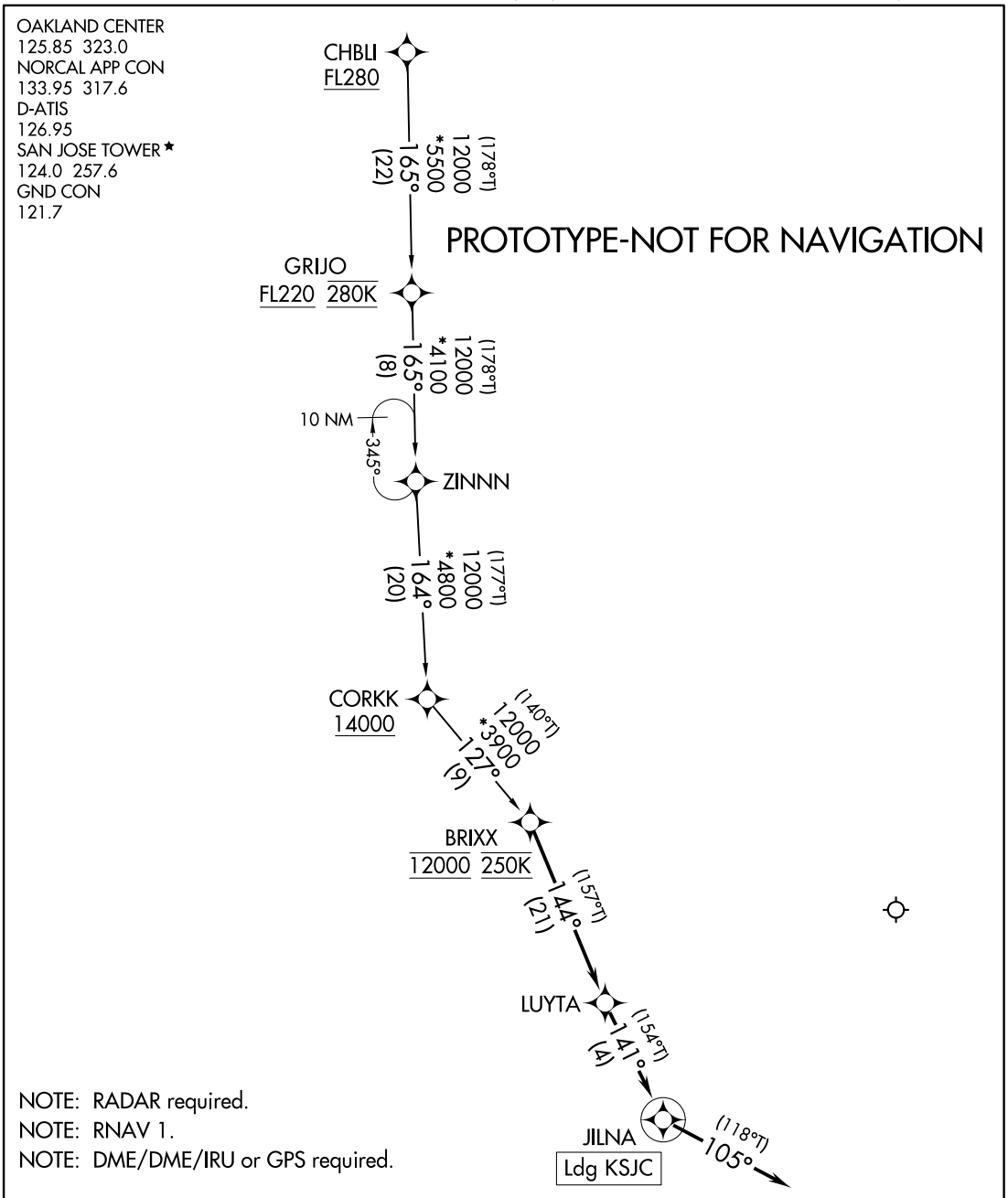
SW-2
1-26-21
COMPILER: HD
REVIEWER:
DBL CHKR:
EFF: FIG

(BRIXX.BRIXX3) FIG

BRIXX THREE ARRIVAL (RNAV)

AL-693 (FAA)

NORMAN Y MINETA SAN JOSE INTL (SJC)
SAN JOSE, CALIFORNIA



ARRIVAL ROUTE DESCRIPTION

CHBLI TRANSITION (CHBLI.BRIXX3)

From BRIXX on track 144° to LUYTA, then on track 141° to JILNA, then on heading 105° or as assigned by ATC. Expect RADAR vectors to final approach course.

BRIXX THREE ARRIVAL (RNAV)
(BRIXX.BRIXX3) FIG Amdt 1

SAN JOSE, CALIFORNIA
NORMAN Y MINETA SAN JOSE INTL (SJC)

AUTOMATED AL-693 BRIXX ARRIVAL

SW-2
1-26-21
COMPILER: HD
REVIEWER:
DBL CHKR:
EFF: FIG

DME ESV KSJC [IFPA] BRIXX3 RNAV STAR_20201026_1403 MDT.

DME ESVs

#	Name	Lat/Lon	MAGVAR	Range	Elevation [ft]	Frequency	Replaces	Status
None								

OLD

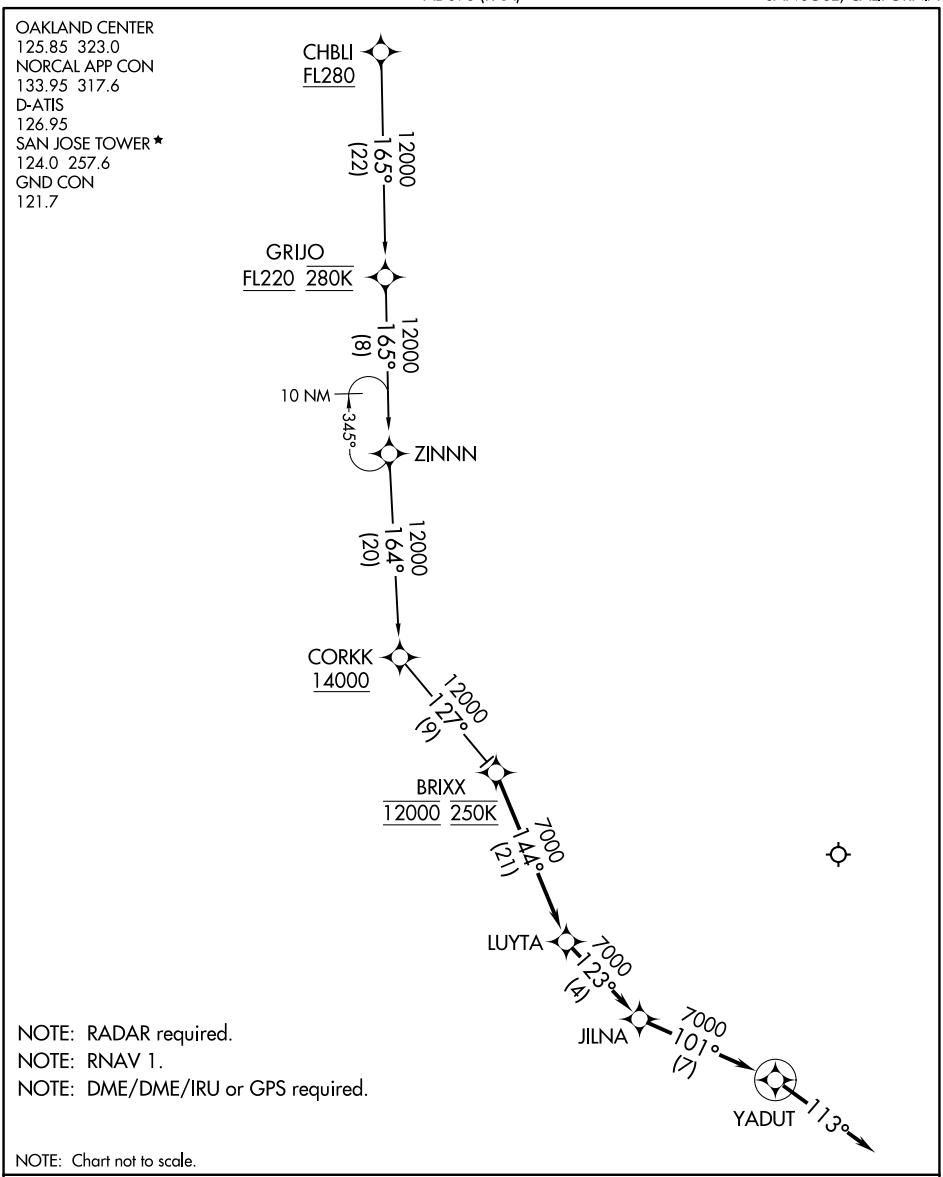
(BRIXX.BRIXX2) 17173

BRIXX TWO ARRIVAL (RNAV)

AL-693 (FAA)

NORMAN Y MINETA SAN JOSE INTL (SJC)

SAN JOSE, CALIFORNIA



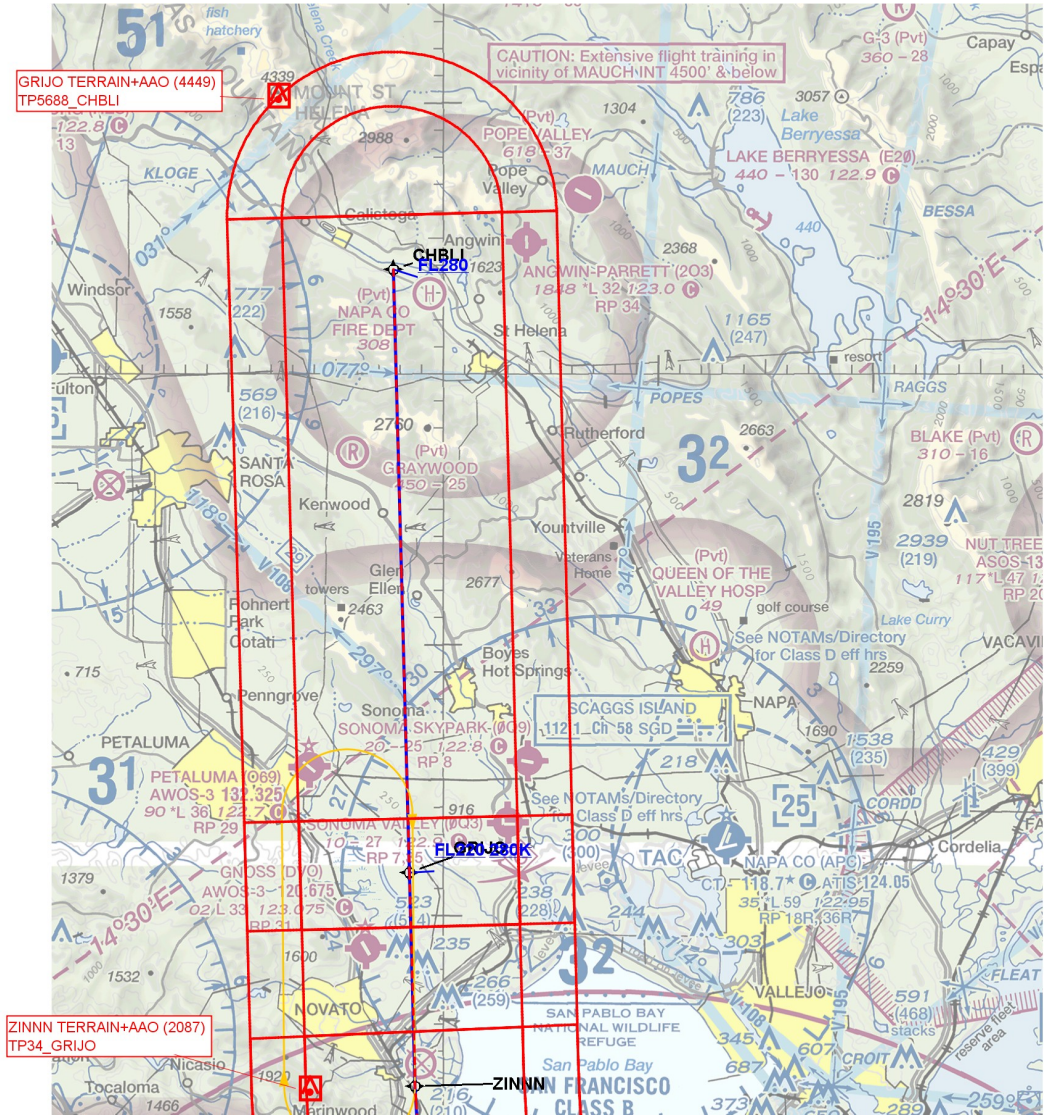
SW-2, 31 DEC 2020 to 28 JAN 2021

SW-2, 31 DEC 2020 to 28 JAN 2021

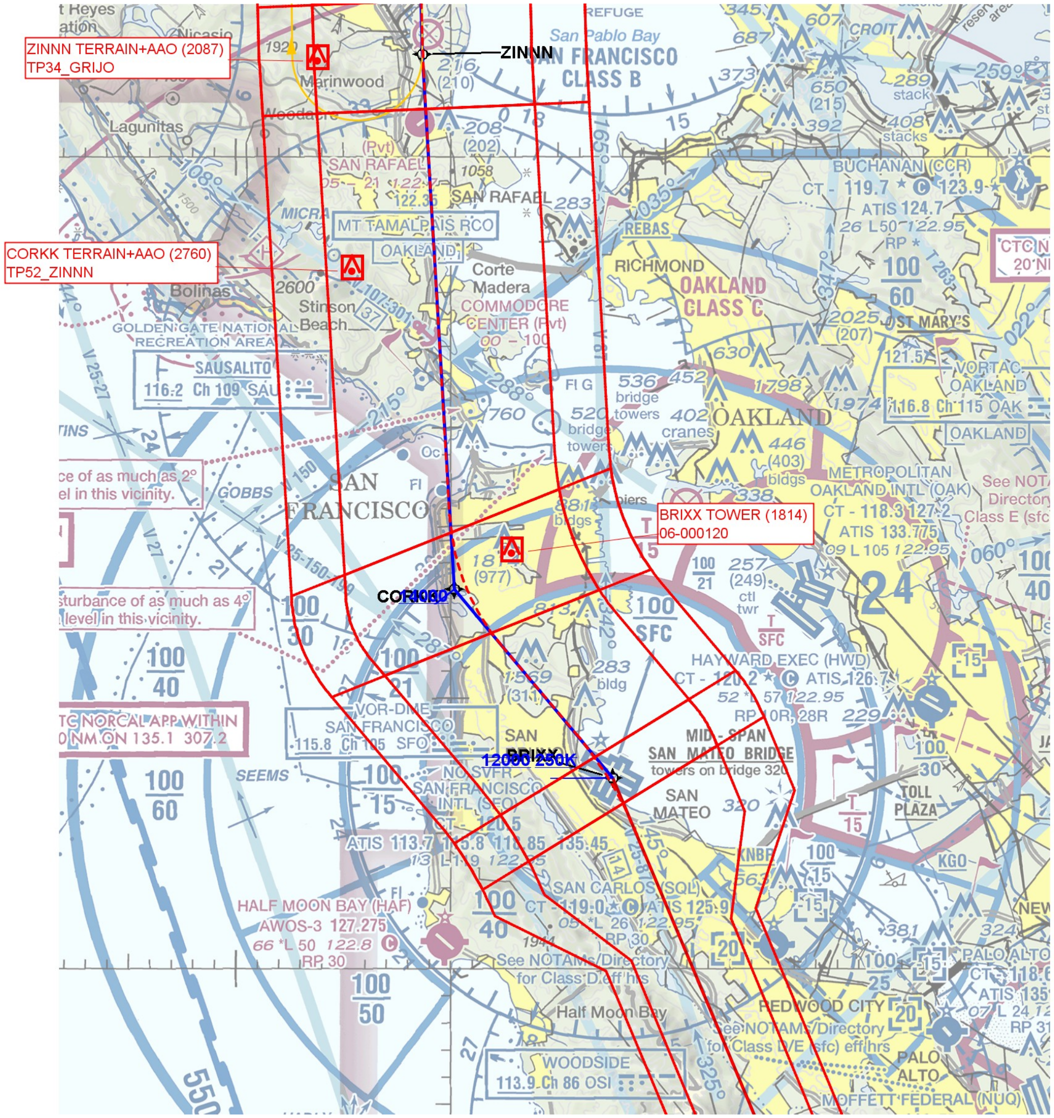
ARRIVAL ROUTE DESCRIPTION

CHBLI TRANSITION (CHBLI.BRIXX2)

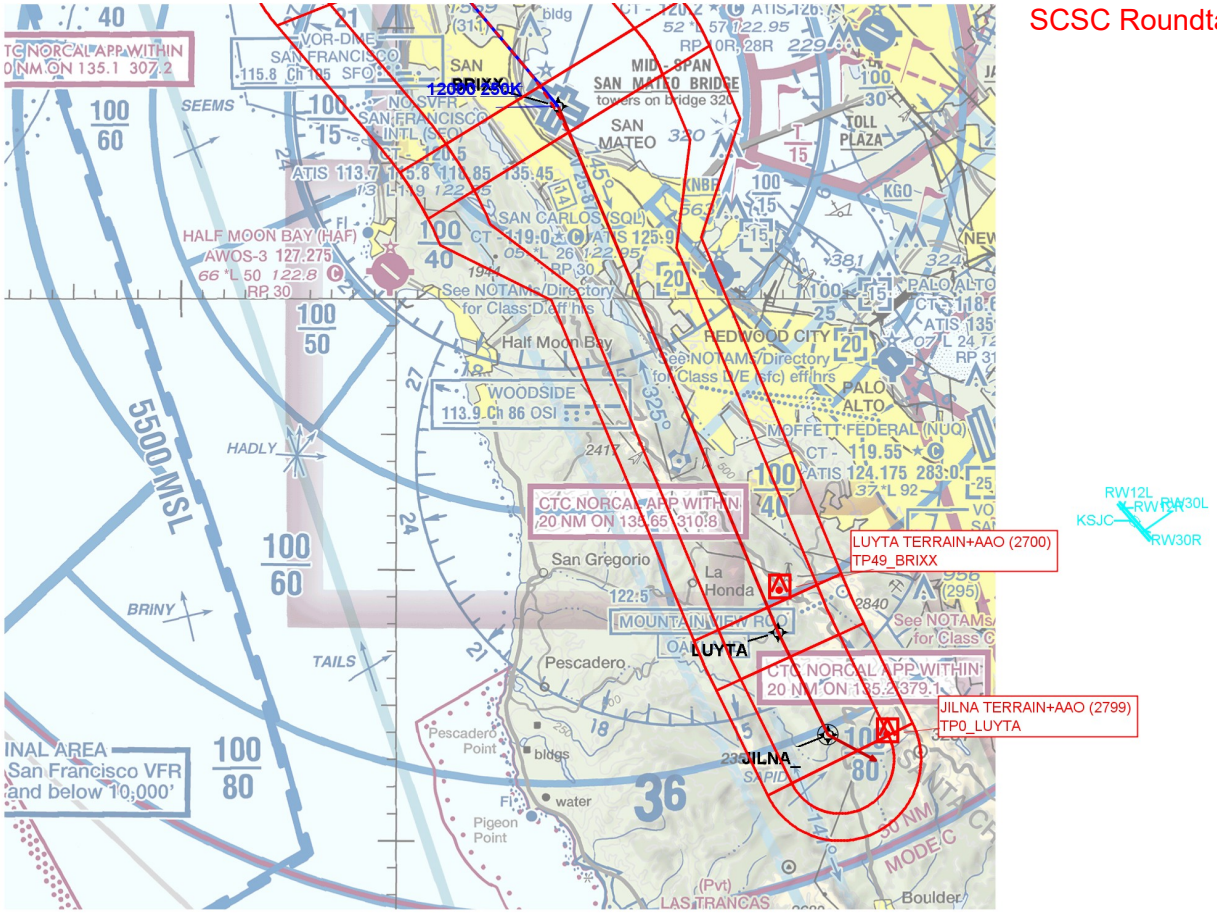
From BRIXX on track 144° to LUYTA, then on track 123° to JILNA, then on track 101° to YADUT, then on track 113°. Expect RADAR vectors to final approach course.


GRIJO TERRAIN+AAO (4449)
TP5688_CHBLI
CAUTION: Extensive flight training in vicinity of MAUCH INT 4500' & below
CHBLI
FL280
GRIJO
FL220-230K
ZINNN
ZINNN TERRAIN+AAO (2087)
TP34_GRIJO
SAN FRANCISCO CLASS B
Lake Berryessa
NAPA
VALLEJO
Rutherford
St Helena
Yountville
Sonoma
Boyes Hot Springs
Penngrove
PETALUMA
SANTA ROSA
Kenwood
Glen Ellen
Fohnert Park
Cotati
Windsor
Calistoga
Angwin
Pope Valley
NOVATO
San Pablo Bay
Cordelia
Capay
Tocaloma
Nicasio
Marinwood

BRIXX (RNAV)


ZINNN TERRAIN+AAO (2087)
TP34_GRIJO
ZINNN
CORKK TERRAIN+AAO (2760)
TP52_ZINNN
BRIXX TOWER (1814)
06-000120
CORKK
BRIXX
12000 250K

BRIXX (RNAV)


LUYTA TERRAIN+AAO (2700)
TP49_BRIXX
JILNA TERRAIN+AAO (2799)
TP0_LUYTA
BRIXX
LUYTA
JILNA
SAN MATEO
SAN MATEO BRIDGE
HALF MOON BAY (HAF)
WOODSIDE
REDWOOD CITY
PALO ALTO
MOFFETT FEDERAL (NUQ)
San Gregorio
La Honda
Pescadero
Pescadero Point
Pigeon Point
HADLY
BRINY
TAILS
SEEMS
5500 MSL
INAL AREA
San Francisco VFR
and below 10,000'
MODE C
KSJC
RW12L
RW30L
RW30R

BRIXX (RNAV)

Appendix 5. Air Traffic Initial Environmental Review (IER)

Facility: Northern California TRACON Date: December 1, 2020

Prepared by: Vikas Uberoi Phone: (206) 231-2481

==========

NOTE: *This IER provides basic information about the proposed action to better assist in preparing for the environmental analysis phase of a proposed action. Although it requests information in several categories, not all the data may be available initially; however, it does represent information, in accordance with FAA Order 1050.1, Environmental Impacts: Policies and Procedures, which ultimately will be needed for preparation of the appropriate environmental document. If the Instrument Flight Procedure (IFP) Environmental Pre–Screening Filter is used for initiating the environmental review process, and it passes the initial screening, then the IER is unnecessary. Additional guidance on the identification of potential environmental impacts by environmental category is available in the 1050.1 Desk Reference.*

Section 1. Proposed Project Description

Describe the proposed project. Include general information identifying procedure(s) and/or airspace action(s) to be implemented and/or amended. Identify the associated airports and/or facilities.

1.1. Describe the operational and/or environmental benefits that may result if the proposed action is implemented.

The Federal Aviation Administration (FAA) is proposing to amend multiple air traffic procedures that serve Norman Y. Mineta San Jose International Airport (KSJC). The procedures that are proposed to be amended are:

- BRIXX TWO Area Navigation (RNAV) Standard Terminal Arrival Route (STAR)
- RNAV (Required Navigation Performance [RNP]) Z Runway (RWY) 30L
- RNAV (RNP) Z RWY 30R
- Fairgrounds Visual RWYs 30L/R

The proposed amendments would address air traffic control (ATC) safety issues by providing additional separation of aircraft between arrival flight procedures into KSJC, as well as other area airports, while continuing to provide safe and efficient operations. Additionally, the proposed amendments intended to fulfill a subset of the recommendations submitted by the Select Committee on South Bay Arrivals.[1]

[1] The Select Committee on South Bay Arrivals (Select Committee), which was comprised of county and city officials from the San Francisco Peninsula, was tasked with addressing aircraft noise concerns and reviewing the FAA Initiative to Address Noise Concerns of Santa Cruz/Santa Clara/San Mateo/San Francisco Counties. Three U.S. Congressional Representatives for California approved the Select Committee's recommendations and requested that the FAA implement those recommendations as soon as possible. The FAA first determined if a new requested procedure was initially feasible, flyable, and operationally acceptable from a safety point of view, and then conducted its formal environmental and safety reviews for this new federal action. (References: SC 1.2 R1 (Pg. 11), SC 1.2 R2 (Pg. 11), and SC 1.2 R4 (Pg. 12).

1.1.1. Is a reduction of fuel cost and/or energy consumption anticipated as a result of the proposed action?
☐ Yes ☐ No ☒ N/A
Fuel consumption is not applicable to the purpose and need of the project.

1.1.1.a. If so, can it be quantified, and how?
☐ Yes ☐ No ☒ N/A
Not applicable to the purpose and need of the project.

1.1.1.b. If not quantifiable, describe the approximate anticipated benefits in lay terms.
Not applicable to the purpose and need of the project.

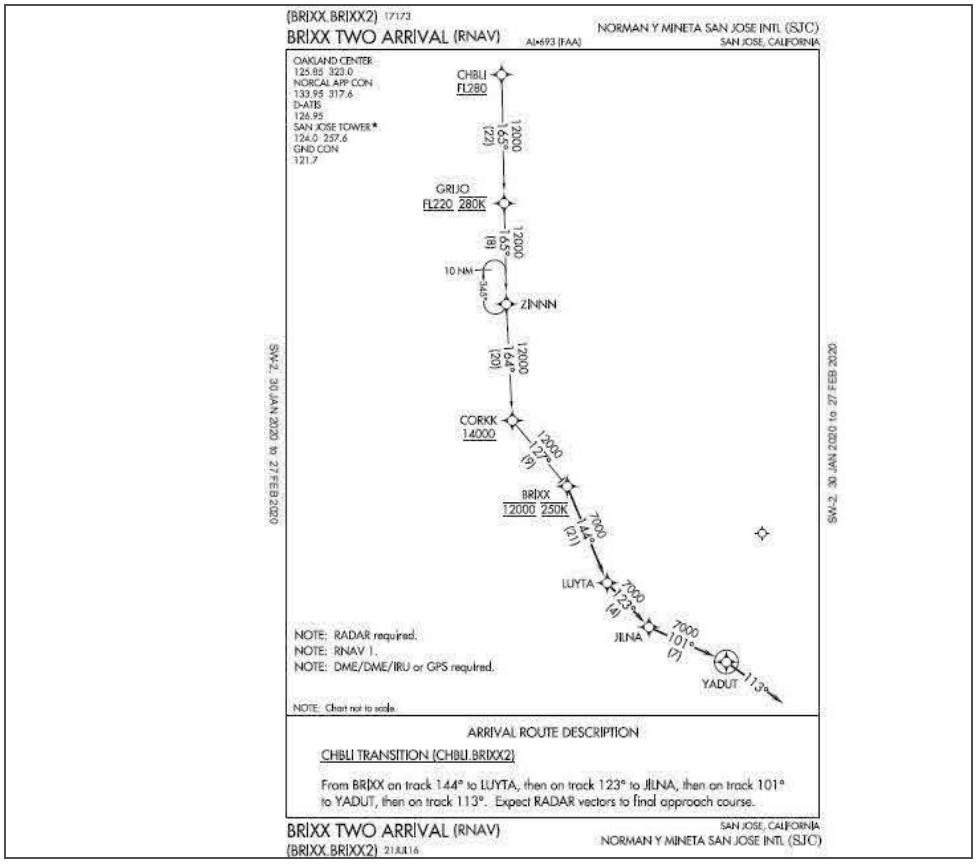
1.1.2. Describe any additional operational and/or environmental benefits that may result from the proposed action.
No additional benefits are applicable to the purpose and need of the project.

1.2. Describe the existing procedure(s) (the no action alternative) in full detail. Provide the necessary chart(s) depicting the current procedure(s). Describe the typical fleet mix, including (if possible) the number and types of aircraft on the route (both annually and average day) and depict their altitude(s) along the route.

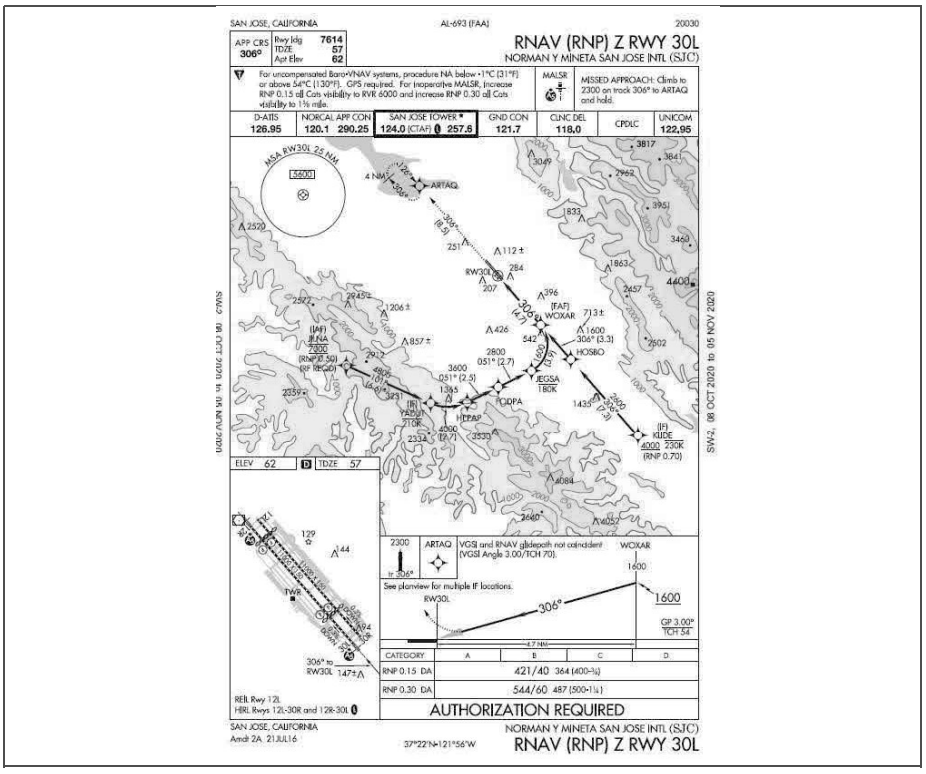
Currently, pertinent to this project, the following procedures are in use at KSJC:

- BRIXX TWO RNAV STAR (BRIXX TWO)
- RNAV (RNP) Z RWY 30L
- RNAV (RNP) Z RWY 30R
- Fairgrounds Visual RWYs 30L/R

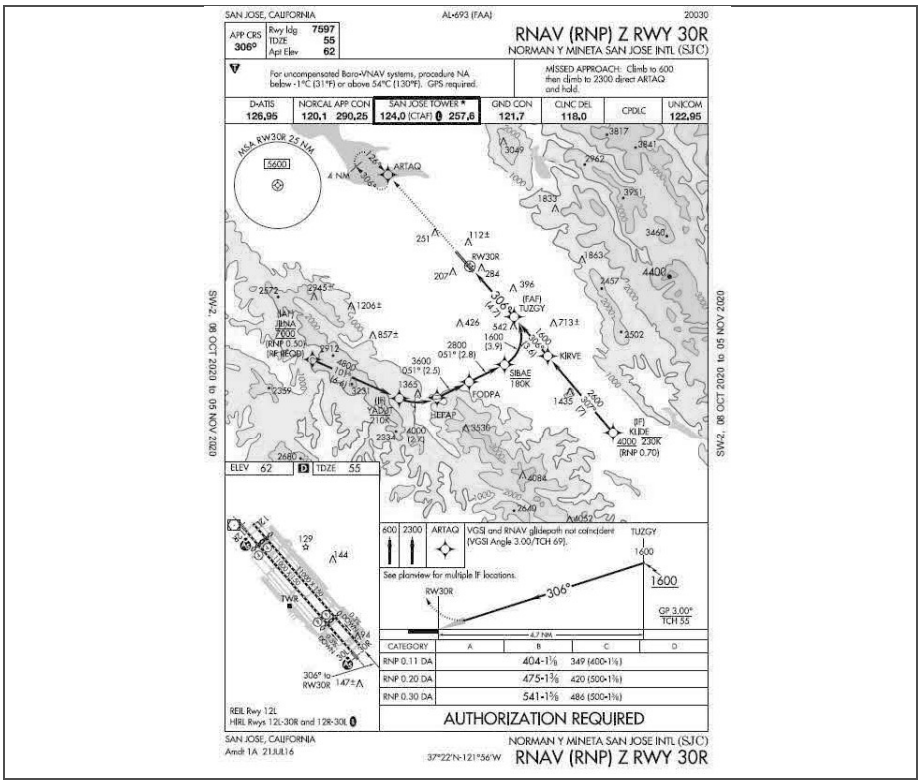
BRIXX TWO is depicted in the following figure:



The current RNAV (RNP) Z RWY 30L approach is depicted in the following figure:



The current RNAV (RNP) Z RWY 30R approach is depicted in the following figure:



May 25, 2021

From

Jane Manning

To

SCSC Roundtable

Message

two comments

Dear Roundtable members,
1-We urge the Roundtable to continue pressure on the FAA to mitigate the massive noise in the Southern Santa Cruz Mountains from SERFR and BRIXX, especially in the higher ridge areas like along Skyline Boulevard. It has become even worse because SJC has an increased number of inbound flights from Hawaii. These cross the ridgetop at about 1500' above ground in the same area where BRIXX and SERFR already intersect, meaning now the intersection of three very heavily-used tracks in the same location!
2-We saw the upcoming change with BRIXX and have no idea what impact it will have. It is outrageous that we did not have the benefit of the Roundtable to help us understand what is going to happen. We sincerely hope it can re-form in some manner as soon as possible.
Thank you so much for your continued work on airplane noise in the southern counties!
Jane Manning
16625 Skyline Boulevard
Los Gatos

May 25, 2021

From

Mike McClintock

To

SCSC Roundtable

Message

Fwd: Reminder - May 25 and 26: Public Scoping Meetings for the OAK Terminal Modernization and Development Project

FYI.

Subject: Reminder - May 25 and 26: Public Scoping Meetings for the OAK Terminal Modernization and Development Project

REMINDER -- Public Scoping Meetings for the Oakland International Airport Terminal Modernization and Development Project

Virtual Public Scoping Meetings

Tuesday, May 25, 2021, 3:00 - 4:00 p.m. PDT
Tuesday, May 25, 2021, 6:00 - 7:00 p.m. PDT
Wednesday, May 26, 2021, 3:00 - 4:00 p.m. PDT
Wednesday, May 26, 2021, 6:00 - 7:00 p.m. PDT

The Port of Oakland is holding four virtual public scoping meetings to receive comments and to share information on the Oakland International Airport Terminal Modernization and Development Project as well as

the environmental review process. Each meeting will begin with a presentation followed by an opportunity to provide comments on the scope and content of the information to be included in the Draft Environmental Impact Report (EIR).

Information on accessing the virtual public scoping meetings is available at www.oaklandairport.com/terminaldevelopment.

In accordance with the California Environmental Quality Act (CEQA), the Port of Oakland is preparing an Environmental Impact Report (EIR) to evaluate the potential environmental impacts associated with the Oakland International Airport Terminal Modernization and Development Project. The Port is proposing to modernize existing Terminals 1 and 2 and construct a new terminal to address facility safety, efficiency, and modernization needs. The Proposed Project will require federal approval and thus will also require review under the National Environmental Policy Act (NEPA).

The Port issued a Notice of Preparation (NOP) and initiated a 30-day public comment period on May 7, 2021 to invite comments on the scope and content of the information to be included in the Draft EIR. All comments must be received by June 7, 2021 at 3:00 p.m. Pacific Daylight Time (PDT).

Submitting Comments

Comments may be submitted by June 7, 2021 at 3:00 p.m. PDT as follows:

Online: Submit comments via an online form at:
www.oaklandairport.com/terminaldevelopment

By mail: Mail comments to:
Port of Oakland
Environmental Programs and Planning Division
Colleen Liang
530 Water Street
Oakland, CA 94607

By email: Email comments to cliang@portoakland.com

Scoping meeting: Provide comments orally or in writing during any of the four virtual public scoping meetings

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For more information on the Proposed Project and to view the NOP, please visit www.oaklandairport.com/terminaldevelopment.

Para información en español llame al (510) 627-1198
中文聯絡電話 (510) 627-1198

May 26, 2021

From

Robert Holbrook

To

SCSC Roundtable

Message

Input for Today's Meeting - Agenda Item 4

Please find attached my comments regarding Agenda Item 4 on today’s agenda.

Attachment Name

20210526_Robert_Holbrook_Input for Today's Meeting - Agenda Item 4

Robert Holbrook
5/26/21

SCSC Legislative Subcommittee – Input for Agenda Item 4

The Roundtable might wish to consider the following suggestions for inclusion in a letter to our Congress Members in the wake of the Neighborhood Environmental Survey. I have shared these suggestions with the Legislative Committee of the SFO Roundtable. Might a joint letter be appropriate?

Directionally

Call on the FAA to shift its balance of Interests from efficiency toward noise mitigation.

Call on the FAA to exercise their discretion to adjudicate ANCA disputes in favor of communities.

Timely Response with Independent Review

> *The FAA will not make any determinations based on the findings of these research programs for the FAA's noise policies, including any potential revised use of the Day-Night Average Sound Level (DNL) noise metric, until it has carefully considered public and other stakeholder input along with* ***any additional research needed to improve the understanding of the effects of aircraft noise exposure on communities****. [2722 FR 86, 1/13/21]*

Suggest that the FAA response to the *RFI on Research Activities to Inform Aircraft Noise Policy* be reported to Congress. Suggest that Congress consider asking the National Academies to review the FAA response.

Suggest that the National Academies be asked to help the FAA refine its ability to predict annoyance.

FAA to Share More Data While It Prepares Its Response

Suggest that noise assessments be required out to 47dB DNL, the (predicted) DNL noise contour with the percent of highly annoyed residents formerly thought to exist within the 65 DNL contour.

Suggest that the FAA report the number of people highly annoyed in all noise corridors matching or exceeding the percentage of high annoyance previously thought to exist in the 65 DNL corridor.

Suggest that the FAA publish anonymized Neighborhood Environmental Survey data for mining by the researchers and the public.

Urgently Needed

Suggest that Congress consider asking the FAA to reconsider its direction to allow newly manufactured commercial supersonic aircraft to fall short of stage 5 standards.

Suggest that stage criteria be urgently redesigned to consider noise at measurement points further from airports. Noise is being shifted as manufacturers engineer to the test spec. (The Boeing 737 MAX 8 affects roughly twice as many acres on arrival as its predecessor, the 737-800, up to 75 dB SEL, per the SJC Expansion EIR).

Suggest that the FAA quantify potential flight safety hazards after breaking them down into categories. (Safety concerns are often raised as an objection to noise mitigation proposals, but noise and pollution also impact health. The relative risks should be weighed.)

May 26, 2021

From

Barbara Gooding

To

SCSC Roundtable

Message

New Submission from Contact us

Name

Barbara Gooding

Email

Phone

Message

Please add my email address to your distribution list to receive advanced notice of all SCSC meetings. Thank you.

May 26, 2021

From

Susan Lawless

To

SCSC Roundtable

Message

SCSC Roundtable - Virtual Meeting - January 27, 2021 - Zoom Webinar Link and Agenda Packet Posted

Hi
Sorry I wasn't able to attend the meeting today. I'd be interested in viewing the recording if available.

Thanks for your service!

Susan Lawless

May 27, 2021

From

SCSC Roundtable

To

Susan Lawless

Message

SCSC Roundtable - Virtual Meeting - January 27, 2021 - Zoom Webinar Link and Agenda Packet Posted

Hello Susan,

Thank you for following up regarding the SCSC Roundtable meeting. The recording of the 5/26/21 meeting is provided on the SCSC Roundtable website at the following link as of yesterday.

https://scscroundtable.org/meetings/

We hope you find this information helpful. Thank you.

SCSC Roundtable consultant staff

May 27, 2021

From

Marie-Jo Fremont

To

SCSC Roundtable

Message

Public comments at the May 26. 2021 SCSC RT meeting - Marie-Jo Fremont

Good afternoon,

SCSC RT members,

Thank you for holding a meeting yesterday and giving the public opportunities to provide input.

I have enclosed below the public comments I made yesterday as it is probably quite difficult to capture all public comments made during the meeting.

Note that the written comments below are not an exact transcript of what I said at the meeting but are very close.

By the way, I want to clarify why I commented on the IFP Gateway under Item 8 - Chair's Report. I did not think I was off topic because the Chair mentioned the IFP Gateway departure changes and Chris responded. I tried very hard to be on topic to respect everyone's time, yours, the FAA, the Congressional Representatives, the SFO Noise Office, and the public.

Thank you again for your efforts in working with the FAA and Congressional Representatives to get noise relief for our communities, which we have been asking for and waiting for since 2015.

Best regards,

Marie-Jo Fremont

==========

Comments made by Marie-Jo Fremont at the May 26, 2021 SCSC RT meeting (May 26, 2021 SCSC RT Meeting Packet)

DNL and Significant Impact [this was related to the discussion on an NES response]

We will never have Significant Impact in our communities if we use DNL alone, even if you lower it a lot.

DNL is an average: people do not hear average noise. They hear each plane.

Here is a reality check.

Before COVID, Palo Alto residents experienced about 300 noisy planes/day. These planes don't annoy Palo Alto residents. They hurt us and make our lives unbearable.

The DNL of these 300 planes came to 52 dB [this number was calculated by SFO from actual noise monitoring], which is way below the 65 dB DNL standard.

We need other non-DNL metrics for deciding on impacts, and it must be tied to ambient noise levels.

Finally, Steve mentioned non-acoustic factors being responsible for ⅔ of the annoyance levels. I have heard this several times before but I have never seen the data. Could you please provide the reference study or studies, hopefully peer-reviewed, behind the statement?

Noise Metrics draft (Leg committee) [pages 108-111 of the meeting packet]

There's still a major issue with using a "per person" calculation because it would make it OK to concentrate flights over cities: a rail over a city would be viewed as better than a rail over a sparsely populated area because the flight density/person would be lower. It's the same NextGen argument: concentration is good because fewer people are overflown.

You cannot evaluate changes on a "per person" basis: people do not share the noise of 300 planes per day; each person hears each plane; they don't hear the noise of 300 planes divided by the number of people. If you want to calculate noise impact on a population, then you need to multiply the noise by the number of people, not divide it.

Please remove all references to a "per person" calculation or basis.

In addition, please define what non-noise metrics are to prevent any misunderstandings. For instance, it's unclear what flight track density is. It could be N-Above but it's not because N-Above is a noise metric. If flight track density represents horizontal concentration of planes within altitude bands, then say it. Indeed, it would be a good idea for the FAA to report that.

GBAS (TWG Committee)

SFO still has not responded to the TWG GBAS questions that the Roundtable submitted in January.

Having no Roundtable meetings is no excuse for SFO to avoid responding and engaging with our communities.

SFO dedicates a lot of resources to the SFO Roundtable:

Between Oct 5th last year and June 2nd this year, SFO will have presented GBAS 5 times to the SFO RT or its TWG.

Elected Officials, who are not members of the SFO Roundtable, can of course attend but they are limited to one 2-min public comment. That's not direct community engagement or participation even though GBAS could affect some cities in this Roundtable.

Please ask SFO to provide written answers to the questions submitted in January. It's long overdue.

Agenda Item #7 - public comments for items not on the agenda

This is about the upcoming FAA BSR Overlay presentation.

We know through FOIA that the FAA proposal is not Select Committee recommendation 1.2 R1. A new ground track, not the old BSR ground track, will start in the Los Altos/Los Altos Hills area. In 2016, the FAA advised the Select Committee that moving flight paths could result in new noise exposure.

The Roundtable and Congressional Reps must ensure that the FAA engage meaningfully and consistently with our communities and honor recommendation 1.2 R1. Do not let the FAA change ground tracks, once again, unilaterally without community consultation. 1.2 R1 was clear: no new ground track.

The FAA has known for 3 years that 1.2 R1 is not feasible but did not disclose this fact. Therefore the FAA must work with communities on a solution as described in recommendation 1.2 R4.

We are eager to have the FAA do a comprehensive presentation of their BSR Overlay proposal as requested by the Roundtable in their August 11, 2020 letter to Regional Administrator Girvin, which asked for:

A detailed schedule through project completion

Opportunities to provide input into the environmental review process,

Procedure details

And a comparison of the Overlay and old BSR procedures before Next Gen.

This request still stands. I would only add that detailed noise impacts must also be compared. It can be done as shown by the ATAC paper in today's packet, which lists all the noise metrics that can be reported [see table 1 on page 162 of meeting packet] and shows examples of noise exposure maps [exhibit 6 on page 168 of meeting packet is an example].

The NES results showed that noise impacts are much higher than previously thought. Therefore, the Roundtable or Congressional Reps must reiterate to the FAA the content expectations on the BSR Overlay presentation, including a detailed noise impact analysis over different residential areas between the Monterey Bay and SFO.

Agenda Item #8 - Chair's report

Chris [from ESA] mentioned some changes in the IFP GATEWAY: several departures from SFO [SAHEY, SSTIK, and WESLA] and from OAK [CNDEL, KATFH] will be modified. Per FAA Dec 7, 2020 memo [p 67 of meeting packet], the FAA wants to "shorten en route transitions" for all these departures to remove ATC coordination work and reduce pilots confusion.

I have no idea what this means:

Which cities in the Peninsula and South Bay communities will be affected by these modified SFO and OAK departures? We need ground tracks and altitudes.

When will these modified procedures be used? Day or night, or both? Regular flow of reverse flow at SFO and OAK?

Bottom line: We need to know which communities will be affected. What is ESA's assessment on these departure changes?

Overall we need more understandable information extracted from the IFP Gateway: we want to understand which communities will be affected by the FAA modifications and how the changes will increase or reduce noise for our communities.

June 3, 2021

From

Evan Wasserman

To

SCSC Roundtable

Message

FW: San Francisco International Airport Ground Based Augmentation System (GBAS) Community Meeting

Dear SCSC Roundtable Members and Interested Parties,

Please see the forwarded notification below for the virtual community meeting to be held on June 9, from 5:00 to 6:30 p.m PDT regarding SFO's Ground Based Augmentation System (GBAS). Notification of this meeting has also been placed on the SCSC Roundtable website here for reference.

Regards,

SCSC Roundtable Staff

scscroundtable.org

From: City Manager's Office <citymgr@cityofpaloalto.org>
Sent: Thursday, June 3, 2021 11:57 AM
To: Andi Jordan
Subject: San Francisco International Airport Ground Based Augmentation System (GBAS) Community Meeting

Email not displaying correctly? View it in your browser.

San Francisco International Airport
Ground Based Augmentation System (GBAS)
Community Meeting Invitation

The City of Palo Alto is hosting a virtual community meeting on June 9, 5-6:30 p.m. (see calendar link below for meeting details), at which San Francisco International Airport (SFO) will provide an update to the community on SFO's Ground Based Augmentation System (GBAS) and answer questions about GBAS.

SFO is seeking public feedback on proposed GBAS innovative approaches it expects will reduce noise. This community meeting is an opportunity for residents to discuss their concerns over GBAS impacts with SFO staff and their consultant.

Note: The City encourages attendees, who are not familiar with GBAS, to review previous SFO GBAS presentations and innovative approach procedures on the SFO GBAS webpage before the meeting. *(If the link takes you to SFO's Noise Information Portal page, click "Default Location – for general information" and "Continue" to access the GBAS information.)*

For community meeting details, including the Zoom link, go here.

June 3, 2021

From

Evan Wasserman

To

SCSC Roundtable

Message

SCSC Roundtable - notification from SFO Roundtable regarding vote on Palo Alto membership
Good Afternoon,

Dear SCSC Roundtable Members, Alternates, and Staff,

Please see the following summary, provided by the SFO Roundtable for your reference.

The San Francisco International Airport Community Roundtable Membership voted affirmatively last night to create an ad-hoc committee to explore membership expansion to add Palo Alto or other cities. The ad-hoc committee will return at a future Membership meeting with more detail such as criteria to add other cities, impacts to costs, and resources and the work plan priorities etc. Once that detail and a recommendation is brought to the Membership meeting another vote will occur, and according to MOU Article V: Amending the MOU, Step 1: any voting member may propose an amendment to the MOU, and if seconded, two-thirds votes for approval (15-members). If this motion passes, the proposed MOU amendment must be approved by at least two-thirds of the member agencies (15-member City Councils/Board of Supervisors) or the proposal fails.

Regards,

SCSC Roundtable Staff

scscroundtable.org

June 3, 2021

From

Mike McClintock

To

SCSC Roundtable

Message

Fwd: [EXTERNAL] Reminder - June 7: Close of Public Scoping Comment Period for the OAK Terminal Modernization and Development Project

FYI.

MM

Oakland International Airport Terminal Modernization and Development Project

REMINDER

The public scoping comment period for the Oakland International Airport Terminal Modernization and Development Project Environmental Impact Report (EIR) closes at 3:00 p.m. Pacific Daylight Time (PDT) on Monday, June 7, 2021.

The Port of Oakland welcomes input on the scope and content of the information to be included in the Draft EIR.

Submitting Written Comments

Comments may be submitted by June 7, 2021 at 3:00 p.m. PDT as follows:

Online: Submit comments via an online form at:
www.oaklandairport.com/terminaldevelopment

By mail: Mail comments to:
Port of Oakland
Environmental Programs and Planning Division
Colleen Liang
530 Water Street
Oakland, CA 94607

By email: Email comments to cliang@portoakland.com

Additional opportunities for public comment in the Port of Oakland's California Environmental Quality Act (CEQA) process will occur after the Draft EIR is released for public review, anticipated to occur in 2022.

On May 7, 2021, the Port of Oakland issued a Notice of Preparation (NOP) of a Draft EIR and virtual public scoping meetings for the Oakland International Airport Terminal Modernization and Development Project. In accordance with CEQA, the Port is preparing an EIR to evaluate the potential environmental impacts associated with modernizing existing Terminals 1 and 2 and constructing a new terminal to address facility safety, efficiency, and

modernization needs. The Proposed Project will require federal approval and thus will also require review under the National Environmental Policy Act (NEPA).

The Port held four virtual public scoping meetings over the course of two days, May 25 and 26, 2021, to receive comments and to share information on the Proposed Project and the environmental review process. Recordings of the virtual public scoping meetings will soon be available on www.oaklandairport.com/terminaldevelopment.

The 30-day public comment period ends on June 7, 2021 at 3:00 p.m. PDT. Details on how to submit written comments are provided above.

For more information on the Proposed Project and to view the NOP, please visit www.oaklandairport.com/terminaldevelopment.

Para información en español llame al (510) 627-1198
中文聯絡電話 (510) 627-1198

www.oaklandairport.com

June 4, 2021

From

Yan Zhang

To

SCSC Roundtable

Message

New submission from Contact us

Name

Yan Zhang

Email

Message

The helicopter is always cycling around argonaut elementary school area. It's very noisy. Please ask whoever is practicing the helicopter to mive away from saratoga area.

June 4, 2021

From

Grace Ma

To

SCSC Roundtable

Message

New submission from Contact us

Name

Grace Ma

Email

Phone

Message

Hello,

There was a helicopter flying on top of the neighborhood for quite a while tonight. It's very loud and annoying. Some neighbor said, it's for training and practicing.

Is that possible to change the training location? Please help us to maintain a quiet neighborhood.

Best regards,
Grace
A resident of Saratoga

June 4, 2021

From

Amy Miyakusu

To

SCSC Roundtable

Message

FW: Join mailing list for SCSC RT meeting updates

Good afternoon Evan,

Your contact information was forwarded to me to reach out to request to be added to you mailing list for the updates regarding the flight paths. I would greatly appreciate being added to your distribution for future updates.

Thank you,

Amy Miyakusu
County Supervisor's Analyst

Supervisor Manu Koenig, First District

County of Santa Cruz

June 8, 2021

From

Jeffrey S Starin

To

SCSC Roundtable

Message

Upcoming FAA GBAS Community Meeting Wednesday, June 09, 2021 for SFO area

Dear constituents of SCSC Rountable and others,

Jeffrey S. Starin here from NextGenNoise.Org. I see that the FAA and/or SFO are scheduling a zoom conference for the dissemination of information about their newfangled GBAS or in plain language Ground Based Augmentation System. Reading the blurb it would sound like the FAA and/or SFO will be trying to couch this new technology as a sound-mitigating effort.

Please don't be deceived.

This addition to NextGen via GPS is a method to allow more - not less - aircraft to land in inclement weather. You can read all about it here and once you plow through the technical word-salad, it is, in essence, an upgrade to NextGen which will implement "lower minimums" for arriving aircraft.

So, how does this translate into less noise? Quiet simply, it doesn't. Rather, it will allow more aircraft to descend to lower altitudes on the runway threshold than previously - to use "lower minimums" - with greater accuracy.

From the above referenced link:
FAA Statement: "The FAA-approved GAST C GBAS can provide up to 48 approaches."
Does that mean more approaches as "overlays" of existing approaches or new approaches that "spread" the arrivals over a larger geographic area? This is an important question.

Also from the above referenced link:
FAA statement: "The GBAS service volume is designed to support aircraft throughout the transition from en-route airspace to precision approach and landing. ICAO SARPS updates were made in 2018 to allow service providers to enable extended service volumes; this option has not yet been exercised in the U.S. "
It would seem that the code-phrase "extended service volumes" just means more planes.

You should ask the FAA directly "Will the introduction of the GBAS allow more aircraft to descend to lower minima than previously and if so, wouldn't that mean more aircraft arriving in weather conditions in which they could not previously arrive safely? And if the answer is yes, how can you associate GBAS as a sound-mitigating technology?"

Thank you.
Jeffrey S. Starin
President and Principal
NextGenNoise.Org
ProspectParkQuietSkies.Org

June 8, 2021

From

Darlene Donahue

To

SCSC Roundtable

Message

FAA Response to letter dated November 24, 2020 PIRAT

Good morning,

We received the following email response from the SCSC Roundtable
and wanted to provide you with a copy of the attached FAA response
to the November 24, 2020 PIRAT letter.

From: SCSC Roundtable <scscroundtable@gmail.com>
Sent: Tuesday, June 08, 2021 11:12 AM
To: Donahue, Darlene (FAA) <Darlene.Donahue@faa.gov>
Subject: Thank you for your email. Re: FAA Response to letter dated November 24, 2020 PIRAT.

Thank you for contacting the SC|SC Roundtable. All activity of the SCSC Roundtable is currently paused, with the exception that the SCSC Roundtable will meet for a Special Meeting on May 26. Further updates will be provided when regular activities will resume.

All questions may be directed to:
Cities Association of Santa Clara County President Marico Sayoc & 1st Vice President Chappie Jones at:

SCSCRoundtable@gmail.com

msayoc@losgatosca.gov

chappie.jones@sanjoseca.gov

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SC | SC Roundtable

https://scscroundtable.org

Thank you,

Darlene Donahue

Administrative Specialist

Western-Pacific Region – AWP-1b

Attachment Name
20210608_Darlene_Donahue_FAA Response to letter dated November 24, 2020 PIRAT

U.S. Department
of Transportation
Federal Aviation Administration

Western-Pacific Region
Office of the Regional Administrator

777 S. Aviation Blvd., Suite 150
El Segundo, CA 90245

June 04, 2021

Ms. Mary-Lynne Bernald
Chairperson
Santa Clara/Santa Cruz Counties Airport/Community Roundtable
PO Box 3144
Los Altos, CA 94024

Dear Ms. Bernald:

Subject: PIRAT STAR/FAA Response to the Roundtable's Letter Dated November 24, 2020

Thank you for your letter dated November 24, 2020, in which you asked questions related to our previous presentations and responses regarding the PIRAT Standard Terminal Arrival Route (STAR). Below, please find our responses to the seven questions contained in the attachment to your letter.

Question 1a: As requested previously in our letter of March 6, 2020, can the FAA provide documentation that shows that the airport proprietor supported PIRAT?

FAA Response: We are unable to provide the requested documentation. As we stated in a letter dated May 27, 2020, while specific approval from airport proprietors is not required, as part of our enhanced commitment to working with communities, we have increased efforts to ensure we have their support as part of the Full Work Group (FWG) process. Support may include being part of a joint community engagement or education plan. While the airport was not an official member of the FWG, there were discussions held with the airport regarding the PIRAT STAR.

Question 1b: Was the issue of shifting noise considered in the PIRAT IER for the ground track prior to ARGGG as well as after ARGGG?

FAA Response: As shared in our letters dated August 27, 2019, and February 21, 2020, the FAA's noise screening for this action showed that potential for significant impacts and/or extraordinary circumstances due to aircraft noise is negligible. Therefore, neither the National Environmental Policy Act (NEPA); NEPA's implementing regulations (40 CFR Parts 1500–1508); nor FAA Order 1050.1F, *Environmental Impacts: Policies and Procedures,* required the FAA to conduct further noise analysis because the noise screening did not find potential for significant noise changes.

Question 1c: Can the FAA clarify the legitimacy of the July 17, 2018 PIRAT CATEX/ROD given that the description of the vectoring after ARGGG in the CATEX document is

substantially different from the charted heading of 060 that is specified in the published PIRAT procedure chart?

FAA Response: If by "legitimacy" you mean to ask whether the FAA's decision to implement the PIRAT STAR based on the Agency's environmental review of the change is still valid, the answer is yes. Prior to the implementation of the PIRAT arrival route, oceanic aircraft arriving at Woodside Very High Frequency Omni-directional Range (VOR) (OSI) (and not on the Tailored Arrival) departed OSI on a heading of 060 degrees and at 8,000 feet mean sea level (MSL). Air traffic control (ATC) would then vector aircraft to the assigned instrument approach. Other than OSI being replaced by the ARGGG waypoint, this has not changed with the PIRAT arrival route, and altitudes and flight paths between ARGGG and the assigned instrument approach remain unchanged. In accordance with FAA Order 8260.58B, *United States Standard for Performance Based Navigation (PBN) Instrument Procedure Design,* Paragraph 2-2-1, a heading must be part of the STAR when it does not connect to an approach procedure.

Question 1d: Can the FAA clarify what process exists, if any, to audit the content of an environmental review (CATEX or otherwise) when there is material evidence that assumptions or statements were either subjective, incorrect, or inconsistent, that methods used were invalid, or that the FAA did not seek answers to critical questions?

FAA Response: An environmental review conducted pursuant to the NEPA reviews proposed major federal actions and their respective future impacts compared to the no action alternative. Furthermore, the FAA disagrees with your statement that "material evidence that assumptions or statements were either subjective, incorrect, or inconsistent, that methods used were invalid, or that the FAA did not seek answers to critical questions." Your statement ultimately questions legal remedies in circumstances in which you disagree with the FAA's environmental review. The FAA cannot provide you with legal advice.

Question 2a: Why did the FAA disregard community concerns that were raised by residents and several cities in the fall of 2018, after the IER was concluded, but months before PIRAT ONE went live on Feb 28, 2019?

FAA Response: The FAA did not disregard community concerns. During the spring of 2016, 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 on South Bay Arrivals (SC). The SC's role was to gather public input, within their represented areas, about measures to address noise concerns and to make recommendations that reflected public input; through this process, the FAA received and considered public input. The SC worked to identify which initially-feasible recommendations, including amendments and/or new procedures, could be included within the second phase of the Northern California (NorCal) Initiative. The San Francisco International Airport (SFO)/Community Roundtable provided guidance and assistance to the SC's efforts.

The SC held a total of ten public meetings, and the SFO/Community Roundtable concurrently discussed the NorCal 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 those recommendations. The FAA subsequently issued a November 2017 update that detailed a total of 203 items, which consisted of the original 104 recommendations and each of their sub-recommendations.

Question 2b: Why did the FAA continue to disregard the lack of community support for the new procedure when it modified PIRAT ONE to create PIRAT TWO, which went live in April 2019? By then, the FAA was fully aware that the community was very concerned about PIRAT and was not supportive of the procedure as implemented.

FAA Response: As mentioned earlier, the FAA did not disregard community concerns. In our previous letters and during SCSC Roundtable briefings on May 22, 2019, August 28, 2019, and February 26, 2020, we shared that the last change implemented to the PIRAT STAR only added a crossing altitude that was left off PIRAT ONE. The PIRAT TWO procedure simply added a crossing restriction of "at or below 15,000 feet MSL" at the PIRAT waypoint, which is located above the Pacific Ocean, approximately 22 nautical miles from land.

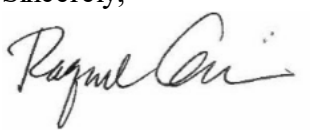
Question 3a: Can the FAA substantiate with a data analysis its statement that the 35.5% increase in the PIRAT procedure operations is solely due to an increase in market demand and has nothing to do with converting a private Tailored Arrival to SFO and other Oceanic Arrivals to SFO and OAK into a public RNAV/OPD that can now be used in the optimization algorithms used by airlines in requesting a flight plan and programmed in the Flight Management Systems?

FAA Response: The FAA did not make the statement you referenced. We would refer you to the information provided on SFO's website[1] that showed international oceanic (Asia, Middle East, Australia, Oceania) deplanements increased by 17.6 percent from 2018 to 2019. Also, as stated by SFO airport staff during the February 26, 2020, SCSC Roundtable meeting, flights from Hawaii have had "quite an increase." Please contact SFO for specific data.

The PIRAT STAR remains in use and there are currently no planned changes for this procedure in the foreseeable future. Our mission is to provide the safest, most efficient aerospace system in the world.

If we can be of further assistance, please contact my office at (424) 405-7000. We are committed to continue our work together and look forward to working with you on other areas of interest. If we can be of further assistance, please contact my office at (424) 405-7000.

Sincerely,



Raquel Girvin
Regional Administrator

[1] https://www.flysfo.com/media/facts-statistics/air-traffic-statistics

June 17, 2021

From

Marina Landis

To

SCSC Roundtable

Message

INFO: Notification for the FAA Northern California Airspace Virtual Public Meetings - July 20 and July 21, 2021

Good day,

This email message is sent on behalf of Raquel Girvin, Regional Administrator, Federal Aviation Administration (FAA), Western-Pacific Region.

As you may know, the FAA and the Western Pacific Regional Community Engagement team have been working with the Airports and the community to address a series of requests that relate to issues around aviation and noise in Northern California.

The FAA has made significant changes to how we engage on large airspace projects – including in-person and virtual workshops that allow the community to view graphics that help depict the changes and provide an opportunity for the community to have a dialogue with air traffic subject matter experts. The work in Northern California was completed before that change to our engagement strategy was made. The FAA will be hosting a virtual meeting to provide insight into the factors that impact the operation in and around the three major airports and the Northern California airspace. We will also cover several high-profile items, such as NIITE/HUSSH, BRIXX, and SERFR flight procedures that were part of the Select Committee Report and Roundtable recommendations.

The virtual workshops will be on Tuesday, July 20 from 6-8 pm PT and Wednesday, July 21 from 1-3 pm PT. The FAA will create a registration website, and we will share the link with your office and promote it broadly, including the FAA's social media platform. Please feel free to share these dates. Please note we will share the registration link as we get closer to the workshop dates.

Sincerely,

Marina

June 17, 2021

From

Evan Wasserman

To

SCSC Roundtable

Message

SCSC Roundtable - INFO: Notification for the FAA Northern California Airspace Virtual Public Meetings - July 20 and July 21, 2021

Dear SCSC Roundtable Members and Interested Parties,

The following notification is being provided for your reference.

· A virtual public meeting will be hosted by the FAA on Tuesday, July 20 from 6:00-8:00 pm PT and Wednesday, July 21 from 1:00-3:00 pm PT. The FAA will create a registration website, and promote it broadly, including on the FAA's social media platform. The registration link will be shared closer to the workshop dates.

· The topics to be covered at the meeting include addressing the factors that impact the operation in and around three major airports and the Northern California airspace. The FAA also plans to cover several high-profile items, such as NIITE/HUSSH, BRIXX, and SERFR flight procedures that were part of the Select Committee Report and Roundtable recommendations.

Notification of this meeting has also been placed on the SCSC Roundtable website here for reference.

Regards,

SCSC Roundtable Staff

scscroundtable.org

July 1, 2021

From

Phoebe Weiman

To

SCSC Roundtable

Message

SCSC Regular Roundtable Meeting July 28th, 2021

Dear SCSC Roundtable Members and Interested Parties,

SCSC Roundtable will meet for a Regular Meeting on July 28th at 1:00 -4:00 pm. The agenda packet will be posted on the website at this location https://scscroundtable.org/meetings/ on Friday, July 23rd.

Regards,

SCSC Roundtable consultant staff,

July 7, 2021

From

Marina Landis

To

SCSC Roundtable

Message

The FAA Needs to Come Clean on BRIXX and SERFR

Hello Ms. Bernald,

I'm emailing regarding BRIXX. June 17th came and went and I noticed absolutely no change in the planes on the BRIXX flightpath over my neighborhood
in the Santa Cruz Mountains. The BRIXX flights are not adhering to the 12,000' altitude minimum at JILNA. Will SERFR being restored to the legacy ground track be necessary for the BRIXX Three procedure to be realized?

Too many years, too much deception, manipulation, dishonesty coming from the FAA to our long suffering community. We need answers. We need to know when this situation will end or at least need to know that it won't, in which I case I will sell the property I have lived on for 30 years and be done with it. It is time to take off the kid gloves and let these people know their time is up. Please utilize the full authority of the SCSC Roundtable to get definitive answers from the FAA at the upcoming public meetings.

Thank you.

John Miller
Los Gatos, CA 95033

July 8, 2021

From

Mike McClintock

To

SCSC Roundtable

Message

Fwd: Update Notification For the OAK Noise Forum: FAA Community Involvement - Northern California Airspace Public Workshop

From: Landis, Marina (FAA) <Marina.Landis@faa.gov>
To: Mike McClintock <glomike65@aol.com>;
Sent: Wed, Jul 7, 2021 4:17 pm

Subject: Update Notification For the OAK Noise Forum: FAA Community Involvement - Northern California Airspace Public Workshop

Good day,
It has come to my attention that some folks are being directed to an FAA website that is asking for them to set up an FAA My Access account, rather than to the Workshop registration site. This is an error.

In the meantime, please use one of the three urls listed below to share with the OAK Noise Forum membership, and community members to complete their registration for one or both of the Workshops:

https://www.faa.gov/air_traffic/community_involvement/norcal_ew/ - this url takes folks to the main page for the workshop where they can register

or

For the July 20htn event, please access: https://zoom.us/webinar/register/WN_DNdik2ibQjaq-Fp9YSKQwA – this url can be copy/pasted for the July 20th registration

or

For the July 21st event, please access: https://zoom.us/webinar/register/WN_VBwXcFZdR-eE2qOt3v0Lgw – this url can be copy/pasted for the July 21st registration.

Please let me know if you have further connectivity issues, while the FAA IT folks work on the situation.
Thanks,
Marina

Marina Landis
Environmental Protection Specialist
Mission Support Services | Air Traffic Organization
Western Service Center | Operations Support Group
Federal Aviation Administration
Office: 206-231-2238
Email: marina.landis@faa.gov
Web: www.faa.gov/go/missionsupport

From: Landis, Marina (FAA)
Sent: Wednesday, July 7, 2021 12:41 PM
To: tspencer@alamedaca.gov; walt.judy@jacobs148.com; Mike McClintock <glomike65@aol.com>; Peter Marcuzzo <peter.marcuzzo@gmail.com>
Subject: Notification For the OAK Noise Forum: FAA Community Involvement - Northern California Airspace Public Workshop
Importance: High

Good day,

Please help us to continue getting the word out and encourage your communities to visit and monitor the FAA Community Involvement website for information about, and register for, the Northern California Airspace Public Workshop. The website can be accessed at: https://www.faa.gov/air_traffic/community_involvement/norcal_ew/

The website is currently updated with the following information, which may also be found by accessing the link above:

Community Involvement — Northern California Airspace Public Workshop Dates and Times

The Federal Aviation Administration (FAA) is hosting the "Northern California Airspace Virtual Public Information Workshop," conducted via Zoom, on Tuesday, July 20, 2021, from 6:00-8:00 p.m. Pacific Time, and again on Wednesday, July 21, 2021, from 1:00-3:00 p.m. Pacific Time.

Sign Up to Attend

To attend the virtual meeting, you must register in advance. Please click the link below for the date of the meeting you would like to attend to complete the registration form.

- Register here for Tuesday, July 20, 2021, from 6:00-8:00 p.m. Pacific Time
- Register here for Wednesday, July 21, 2021, from 1:00-3:00 p.m. Pacific Time

Topics and Panelists

The FAA is taking this opportunity to discuss the operations, challenges, and constraints in and around the airspace in the region. Given the complexity of the airspace, it is essential to discuss these issues holistically.
Our panelists will include representatives from the FAA, San Francisco International Airport, Oakland International Airport, and Mineta San Jose International Airport, airline and cargo carriers, and representatives from the Airline Pilots Association, (ALPA).

We will cover several high-profile items at this workshop, such as the NIITE/HUSSH, BRIXX, and SERFR flight procedures that were part of the Select Committee Report.

Questions and Answers

The live Question & Answer session will be conducted using the Zoom Q&A feature. In addition, the FAA will respond to questions relevant to the workshop topics.
This Virtual Public Information Workshop is not part of any environmental review process conducted pursuant to the National Environmental Policy Act; it is informational only.
Thank you,
Marina

Marina Landis
Environmental Protection Specialist
Mission Support Services | Air Traffic Organization
Western Service Center | Operations Support Group
Federal Aviation Administration
Office: 206-231-2238
Email: marina.landis@faa.gov
Web: www.faa.gov/go/missionsupport

July 11, 2021

From

Mike McClintock

To

SCSC Roundtable

Message

OAK Forum Agenda Materials

All:

Attached are the agenda materials for the Oakland Airport-Community Noise Management Forum's virtual meeting on July 21, 2021.

Mike McClintock
Forum Facilitator
415-203-9097

Attachment Name

20210711_Mike_McClintock_OAK Forum_Agenda_Materials_1
20210711_Mike_McClintock_OAK Forum_Agenda_Materials_2
20210711_Mike_McClintock_OAK Forum_Agenda_Materials_3
20210711_Mike_McClintock_OAK Forum_Agenda_Materials_4
20210711_Mike_McClintock_OAK Forum_Agenda_Materials_5
20210711_Mike_McClintock_OAK Forum_Agenda_Materials_6
(Attachments can be found on the SCSC website at the following link
https://scscroundtable.org/documents/oak-noise-forum-agenda-materials/)

July 11, 2021

From
Sky Posse Post
To
SCSC Roundtable
Message
Copy of Letter to FAA Ombudsman Attached please find a letter regarding citizen concerns about FAA's CATEX practices. July 2021 Letter to FAA Ombudsman-6.pdf Thank you, Sky Posse Palo Alto
Attachment Name

20210711_Sky_Posse_Post_Copy of Letter to FAA Ombudsman

Sky Posse Palo Alto
2225 East Bayshore Avenue, Suite 200, Palo Alto, CA 94303

July 9, 2021

Federal Aviation Administration,
Aviation Noise Ombudsman, AEE-2
800 Independence Ave. S.W.
Washington, DC 20591
email: 9-AWA-NoiseOmbudsman@faa.gov
9-awp-noise@faa.gov
Sent by email

Dear Ms Landis,

We received the FAA's reply to our May 24th letter regarding our objections to the Federal Aviation Administration (FAA) use of Categorical Exclusions (CATEX), and our inquiry about supplemental noise metrics. Below are some of our comments to the FAA's email and new questions. We are writing to you still in your capacity as the interim Ombudsman for our region. If this has changed, we will appreciate clarification.

We have also seen your recent announcement for the July 20, and July 21 "Community Involvement - Northern CA Airspace Public Workshop." We appreciate public forums that bring stakeholders together to connect, but we are very disappointed that the event is limited to "operations" while citizens' requests for environmental concerns are still unanswered.

For residents in the region affected by the FAA's changing procedures as well as the expansion of the Bay Areas international airports, environmental concerns are a priority. We urge the FAA to give adequate consideration of citizen's concerns.

We ask that, in your capacity as the Ombudsman, you please organize a separate workshop to discuss the following issues:

FAA's Noise Screening:

> *"The process for complying with the National Environmental Protection Act (NEPA) is outlined in the implementing regulations issued by the Council on Environmental Quality (CEQ) and FAA Order 1050.1F. FAA Order 1050.1F defines the FAA's policy when considering environmental impacts and provides direction for conducting project-level environmental review. CEQ reviewed FAA Order 1050.1F for consistency with NEPA and the implementing regulations under 40 CFR parts 1501-1508. "*

The issues we raise are not with FAA's adherence to the Council on Environmental Quality's implementing regulations, but with FAA's practices to quantify noise for airspace actions as federal statutes provide for. FAA's practices are inconsistent with NEPA. FAA's rules are supposed to establish certainty that airspace actions will not have significant or reportable impact. Reportable impact is defined in FAA Order 1050.1F as a +5 dB increase in areas with 45-60 DNL, and the baseline calculation involves consideration of all **air traffic** operations for 365 days to assess potential increases in dB for the population that stands to be affected. Instead, the FAA claims to do "noise screening" (unpublished & never explained to the public) which, as best we can determine, compares one flight following a published airspace procedure (of one type of airplane), with another similar airplane following a new or replacement airspace procedure. This "screening" effectively divorces the evaluation of "change" from what, how, and who will be affected and doesn't establish what is significant or reportable to communities.

CATEX as a "type" of environmental review:

> *CATEXs are not exemptions from NEPA. Rather, they are one type of environmental review. FAA grants CATEXs, consistent with 40 CFR § 1508.4 and FAA Order 1050.1F, paragraphs 5-6.1 through 5- 6.6, for actions that do not individually or cumulatively involve significant social, economic, or environmental impacts. FAA will continue to apply CATEXs for actions, where appropriate.*

While the FAA's use of CATEX is not an exemption from environmental review, FAA's CATEX relies on flawed assumptions and calculations of impacts that fail to quantify ground noise; the use of airplane-to-airplane comparison for FAA's CATEX is flawed and essentially denies an adequate or higher level of environmental review to the public.

Health Effects, flawed and outdated EA's:

The FAA's reply to our May 24th letter offers no response to our objection that the FAA uses outdated and inadequate metrics and standards; it is our urgent concern that the FAA resolve to quantify, mitigate, and manage what our communities believe are significant health effects.

Health effects from aircraft noise are not being considered by the FAA's current NEPA policies or the "significance" thresholds in FAA Order 1050.1F which exclude health concerns of all citizens and communities outside the FAA's permissive 65 DNL threshold. Also, the last environmental assessment the FAA did for our area is over three years old (thus no longer valid), and most everything about the project was misrepresented or not fully disclosed, from inaccuracies about where and how planes would fly to the economic and social assumptions about FAA's Nextgen program and Metroplex plan. Six years later, the Inspector General cannot fully evaluate the Nextgen program for lack of metrics. Our communities, which include densely populated cities and rural areas, were previously quiet and with nowhere near hazardous levels of aircraft noise before the implementation of Nextgen. Nextgen procedure designs have increased noise to deleterious levels.

When an impact is not clearly established:

> *The FAA may also determine that a higher class of action is appropriate and that environmental documentation such as an Environmental Assessment (EA) should be prepared if the significance of the environmental impact is not clearly established.*

We believe the FAA cannot clearly establish that there will be no significant or reportable noise impact changes by using a “screening” that relies on a single airplane’s navigation profile. **Navigation charts are not ground noise baselines**. Furthermore, navigation charts that are published on the IFP Gateway serve aviation airspace users. As you are aware, the FAA posted the following disclosure to discourage citizen inputs.

> *The Instrument Flight Procedure (IFP) Information Gateway is a communication tool the FAA uses to disseminate information about proposed changes to flight procedures to solicit comments from civil aviation organizations, affected military and civil air traffic control facilities, and airport owners and sponsors. The website is intended only for an aeronautical audience who can provide technical aeronautical comments. The website is not intended to fulfill obligations under the National Environmental Policy Act and/or other applicable environmental regulations, or to solicit comments about environmental impacts of proposed changes to flight procedures. By clicking "Continue", you acknowledge that comments submitted to the IFP Information Gateway related to potential environmental impacts will not be considered.*

As mentioned above, the FAA’s outdated and inadequate standards to assess significance to affected citizens and communities are a problem, but this very first step in the FAA's NEPA process - “noise screening” also needs immediate clarifications.

Supplemental Metrics:

> *FAA encourages consideration of supplemental metrics where warranted, however the use and selection of a metric to supplement DNL depends on the circumstances of each analysis.*

We have asked for your assistance to have the FAA use supplemental noise metrics to evaluate impending changes, and we believe the circumstances require them. In spite of stating that such supplemental metrics are "encouraged" by the FAA, no such metrics have been provided, nor have our requests to use them been answered or explained by the FAA.

The role of FAA’s “Line of Businesses” in NEPA processes:

Lastly, in an earlier note to our May 24th letter you commented that in order to provide us with the most relevant information, our message about CATEX was “*being reviewed by the appropriate FAA Line of Business or Staff Office*.” Can you please share what FAA Lines of Businesses and Staff Offices are involved with NEPA decisions?

We will appreciate as much of the above to be addressed, and if at all possible for a workshop to be scheduled on these issues soon. Thank you,

Sincerely,

Sky Posse Palo Alto

Copy:
Congresswoman Anna Eshoo
Chairman Brenda Mallory, Council on Environmental Quality
Palo Alto City Council
SCSC Roundtable
SFO Roundtable

Sky Posse Palo Alto is a grassroots group of citizens deeply concerned about increased aircraft noise and pollutants from Nextgen. Many have invested substantial effort in studying the issues, attending public hearings and meetings, and engaging in outreach.For more info see: http://www.quietskiesmidpeninsula.org and www.skypossepaloalto.org.

July 11, 2021

From

Amy Wright

To

SCSC Roundtable

Message

Airplane Noise

Hello Mary-Lynne, Are you the person that can help with reducing airplane noise over my home? It has been so pleasant this past year and a half with the reduction in air travel, but I expect it to come roaring (literally) back in a few months. Some very astute activists have informed me the increased airplane noise is due to a change in flight approach patterns. I do not live near an airport, but it feels like it with this new pattern (low BRIXX flights). I want a return to the previous flight pattern (SERFR Five) so that I can have my (somewhat) peace back. Whatever I must do to ensure this, I will do.
Thanks in advance,
Amy Wright
Los Altos, CA

July 13, 2021

From

Phoebe Weiman

To

SCSC Roundtable

Message

Updated Notification For the SCSC Roundtable FAA Community Involvement - Northern California Airspace Public Workshop

Dear SCSC Roundtable Members and Interested Parties,

Below are the updated links to sign up for the Public workshops.

Please help us to continue getting the word out and encourage your communities to visit and monitor the FAA Community Involvement website for information about, and register for, the Northern California Airspace Public Workshop. The website can be accessed at: https://www.faa.gov/air_traffic/community_involvement/norcal_ew/

The website is currently updated with the following information, which may also be found by accessing the link above:

Community Involvement — Northern California Airspace Public Workshop

Dates and Times

The Federal Aviation Administration (FAA) is hosting the “Northern California Airspace Virtual Public Information Workshop,” conducted via Zoom, on Tuesday, July 20, 2021, from 6:00-8:00 p.m. Pacific Time, and again on Wednesday, July 21, 2021, from 1:00-3:00 p.m. Pacific Time.

Sign Up to Attend

To attend the virtual meeting, you must register in advance. Please click the link below for the date of the meeting you would like to attend to complete the registration form.

Register here for Tuesday, July 20, 2021, from 6:00-8:00 p.m. Pacific Time :
https://zoom.us/webinar/register/WN_DNdik2ibQjaq-Fp9YSKQwA
Register here for Wednesday, July 21, 2021, from 1:00-3:00 p.m. Pacific Time :
https://zoom.us/webinar/register/WN_VBwXcFZdR-eE2qOt3v0Lgw
Topics and Panelists

The FAA is taking this opportunity to discuss the operations, challenges, and constraints in and around the airspace in the region. Given the complexity of the airspace, it is essential to discuss these issues holistically.

Our panelists will include representatives from the FAA, San Francisco International Airport, Oakland International Airport, and Mineta San Jose International Airport, airline and cargo carriers, and representatives from the Airline Pilots Association, (ALPA).

We will cover several high-profile items at this workshop, such as the NIITE/HUSSH, BRIXX, and SERFR flight procedures that were part of the Select Committee Report.

Questions and Answers

The live Question & Answer session will be conducted using the Zoom Q&A feature. In addition, the FAA will respond to questions relevant to the workshop topics.

This Virtual Public Information Workshop is not part of any environmental review process conducted pursuant to the National Environmental Policy Act; it is informational only.

Thank you,

Marina

Marina Landis

July 17, 2021

From

Darlene Yaplee

To

SCSC Roundtable

Message

Post GBAS questions - January 2021

I could not find the GBAS questions that the SCSC RT sent to SFO in January 2021. Could you post these in the Correspondence or the Document Library of the SCSC RT website?

Thank you.

Darlene Yaplee

July 20, 2021

From

Kate Murphy

To

SCSC Roundtable

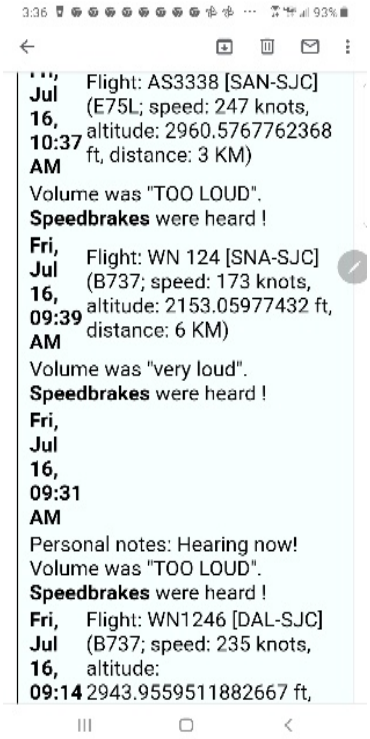
Message

Mountain View- Ultra-noisy, low altitude flights especially SJC
Hi Ms.Bernard and all -
I moved back to my Mountain View townhouse 2017 & am currently still very concerned with the ultra-noisy, low altitude flights, especially SJC's.
See attached screenshot of flights caught on stopjetnoise.

Please help do something about these flights that changed flight paths just a few years ago!
Catherine Hung

Attachment Name

20210720_Kate_Murphy_MontainView-Ultra-Noisy



July 21, 2021

From

Debbie Hakim

To

SCSC Roundtable

Message

Name

Debbie Hakim

Email

Phone

Message

Dear members of the Roundtable,
I attended the FAA webinar today and I was really disappointed that moving SERFR to overlay Big Sur did not meet safety criteria. I understand from the meeting that SJSU has a curfew between 11:30 pm to 6:30 am. Why can't we get the same curfew at night? I am so tired of being woken 3-4 times per night from cargo planes and I have boarded up windows and sleep with a sound machine on. Now that we are stuck with SERFR, could you request this curfew? It would be nice to have some quiet at night at least. Thank you.

July 22, 2021

From

Greg Hyver

To

SCSC Roundtable

Message

Fw: SERFR 2nd Update

Here you go assholes on the Roundtable!!!

---- Forwarded Message -----
From: Greg Hyver <greghyver@yahoo.com>
To: Manu Koenig <rskoenig@gmail.com>; Supervisor Manu Koenig <first.district@santacruzcounty.us>
Cc: boardofsupervisors@santacruzcounty.us <boardofsupervisors@santacruzcounty.us>
Sent: Thursday, July 22, 2021, 2:31:15 PM PDT
Subject: SERFR 2nd Update

Manu:

Here is the reply from a neighbor regarding a recent, second call she sat in on with the FAA regarding SERFR. Here name is Patti.

======
Yep we heard the same exact thing on our afternoon call. Said it was a safety issue to move it.
They waited so long so they could layer on a system of other flight paths that would back up serfr so they could say to change it they would have to change other things.
That's my idea why it took so long. We're all in for all the above. We're ready for a lawsuit.
It's bullshit.
=======

Manu:

You should probably get ahead of this issue, find out what's truly happening, and let District 1 residents know where exactly we stand with SERFR. This is a gigantic failure. It's up to you whether you wish to take a leadership role in voicing your district's anger at the complete charade (no public review period for SERFR, logging flights for months, attending SCSC Roundtable meetings until I turned blue, writing congress(wo)men, supervisors, etc), including lying to us that SERFR was now under transition to SERFR2 and there was nothing for us to worry about (another year wasted). I guarantee there was a political decision that determined this--and a lot of bribery.

I had to move out of my own home last September to a downtown, Santa Cruz studio because of the high level of stress I went through any time I came home from work, tried to go to sleep or worked outside on the weekends. I know that Patti is a mess too. Six years of this has worn down the pitiful homeowners and renters lying beneath the excessively noisy,dirty flight path. In my opinion, my house has become uninhabitable. It has certainly lost a massive amount of value. This is an absolute injustice and clearly big corps and big government could give a rats ass about concentrating flights over our homes--homes that we specifically bought or built to get away from the congestion and noise of the bay area.

The only consolation that kept those of us living under the path from going insane were the constant promises (lies) by the SCSC Roundtable that everything was being taken care of and that SERFR was moving back to BSR (renamed SERFR2). Nothing, but lies and misinformation. Where were you, Manu? Where was Panetta? Why weren't you pushing for us? You and Panetta failed badly.

The few people who I have spoken to are too indignant and besides themselves to properly come to grips with the decision that seems to have been made. Certainly, they are unable to properly harness their anger. But, our problem becomes your problem, and your stint as supervisor may not last very long unless you learn to start making a lot of noise as our district representative.

The FAA claimed that safety was the reason it was required to move BSR to SERFR in the first place. Yet, congressional reports showed that safety hadn't been improved in the least. This has been bullshit after bullshit after bullshit and citizens have now reached a boiling point with their politicians. We simply refuse to take it anymore.

I know some supervisors are happy. You know who you are. And, to you, I say "go fuck yourselves!" Six years of ruining our lives will not end well for any of us, and this will keep going on, and on, and on.

Greg Hyver

July 23, 2021

From

Greg Hyver

To

SCSC Roundtable

Message

My NextDoor Post This Morning - SERFR Flight Path

https://nextdoor.com/news_feed/?post=194584293&comment=623794746&init_source=search

Greg Hyver

• N Rodeo Gulch
I wanted to tie into this thread as I've recently heard that SERFR is now here to stay based on the recent FAA "workshop." If this isn't a slap in the face to everyone living under the nerve-grinding flight path, then what is? Has the FAA issued any formal statements, yet, that they have decided to ignore Select Committee recommendations in this sham of a process? We were being mislead the entire time by the SCSC Roundtable that the process of moving SERFR was already underway and reaching some of its final steps. The insanity of the jet noise over my house is so intolerable that I literally had to rent a studio in downtown Santa Cruz just to break away from it. The community, especially in District 1, demands answers from Manu Koeing and Jimmy Panetta as to why we have been lied to continually, which certainly made Save Our Skies grow complacent, taking the heat off of our politicians and the Roundtable. The theater of the Roundtable was absurd (I attended at least 8-10 meetings in the bay area) and it was all for show in the end. If you are not steaming mad like I am and you live under the flight path, then you should be. The big tech corporations and the airports continue to drive their agendas through our government, and the little guy gets $%&#*@* again!!!