



## 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/UCtPEgHsvTSnRcJUCQxX2Ofw?view\\_as=subscriber](https://www.youtube.com/channel/UCtPEgHsvTSnRcJUCQxX2Ofw?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](mailto: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. <b>Welcome/Review of the Meeting Format</b> – <i>Evan Wasserman, Roundtable Facilitator</i>   | Information            |
| 2. <b>Call to Order and Identification of Members Present</b> – <i>Chairperson Bernald</i>   | Information            |
| 3. <b>Consent Agenda</b>   | Information/<br>Action |
| <ul style="list-style-type: none"> <li>a) <b>Neighborhood Environmental Survey letter to Congressional Offices</b> - <i>Chairperson Bernald</i></li> </ul> <p style="margin-left: 40px;">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.</p>  |                        |
| 4. <b>Draft FAA Advisory Circular on Airport Compatible Land Use</b> – <i>Chris Jones, Roundtable Facilitator</i>  | Information/<br>Action |
| <ul style="list-style-type: none"> <li>- 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.</li> </ul>   |                        |
| 5. <b>Ad Hoc Committee Report</b> – <i>Chairperson Bernald</i>   | Information            |
| <ul style="list-style-type: none"> <li>- Update regarding the Ad Hoc Committee’s ongoing discussions with the Cities Association.</li> </ul>   |                        |
| 6. <b>Budget Summary</b> – <i>Chairperson Bernald</i>  | Information/<br>Action |
| <ul style="list-style-type: none"> <li>- Provide direction on the Fiscal Year 2021-2022 budget after presentation of the budget considerations to the full SCSC Roundtable.</li> <li>- 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.</li> </ul> |                        |
| 7. <b>Chair’s Report</b> – <i>Chairperson Bernald</i>  | Information            |
| 8. <b>SCSC Roundtable Elections</b> – <i>Evan Wasserman, Roundtable Facilitator</i>  | Information/<br>Action |
| <ul style="list-style-type: none"> <li>- 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.</li> </ul>  |                        |
| 9. <b>Oral Communications/Public Comment</b> on Items not on the Agenda- <i>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.</i>  | Information            |
| 10. <b>Potential Topics for Future SCSC Roundtable Consideration</b> – <i>Roundtable Members</i>   | Information            |
| 11. <b>Adjournment</b> – <i>SCSC Roundtable Chairperson</i>  |                        |

**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.<sup>1</sup> 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.

<sup>1</sup> [https://www.faa.gov/air\\_traffic/flight\\_info/aeronav/procedures/](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.

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

<b>ATC</b>	Air Traffic Control
<b>AMDT</b>	Amendment
<b>CAT</b>	Category
<b>DME</b>	Distance Measuring Equipment
<b>DP</b>	Departure Procedure
<b>FPT</b>	Flight Procedures Team
<b>GPS</b>	Global Positioning System
<b>GLS</b>	Ground-Based Augmentation System (GBAS) Landing System
<b>IAP</b>	Instrument Approach Procedure
<b>ILS</b>	Instrument Landing System
<b>LOC</b>	Localizer
<b>LDA</b>	Localizer Type Directional Aid
<b>RNAV</b>	Area Navigation
<b>RNP</b>	Required Navigation Performance
<b>RWY</b>	Runway
<b>SA</b>	Special Authorization
<b>SID</b>	Standard Instrument Departure
<b>STAR</b>	Standard Terminal Arrival Route
<b>TBD</b>	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<sup>2</sup> 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.

<sup>2</sup> 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	<p>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.</p> <p>Changes to the procedure include the following:</p> <ul style="list-style-type: none"> <li>Remove current YADUT waypoint (WP) (the prior terminal WP) from the procedure.</li> <li>Move the JILNA WP 1.3 nautical mile (NM) southwest. Make JILNA WP the terminal WP.</li> <li>Add 105° heading after JILNA WP.</li> <li>Remove Minimum En Route Altitudes (MEAs) from Common Route to conform to air traffic control criteria.</li> <li>Rename procedure the BRIXX THREE RNAV STAR (BRIXX THREE).</li> </ul> <p>Procedure changes were Categorically Excluded (CatExed) with FAIRGROUNDS 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.</p>
FAIRGROUNDS VISUAL RWY 30 L/R, AMDT 8	IAP	Published	6/17/2021	<p>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.</p> <p>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.</p>

## 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 STAR 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.
RNAV (RNP) Z RWY 30R, AMDT 2	IAP	Published	6/17/2021	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.
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	<p>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.</p> <p>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.</p>
SSTIK FIVE (RNAV)	RNAV SID	Awaiting Publication	8/12/21	<p>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.</p> <p>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.</p>
WESLA FIVE (RNAV)	RNAV SID	Awaiting Publication	8/12/21	<p>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.</p> <p>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.</p>

## 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, SSTITK 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	<p>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)”;</p> <p>Changed chart “Top Altitude 3000” to “Top Altitude: Assigned by ATC–FPT/ATC request”; Added “Maintain ATC assigned altitude” to DP route description.</p> <p>Procedure changes were CatExed with changes made to CANDL FIVE RNAV SID and SFO procedures SAHEY SID, SSTITK SID, and WESLA SID on 12/07/20.</p>

## 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

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**Subject:** Airport Land Use Compatibility  
Planning

**Date:** DRAFT

**AC No:** 150/5190-4B

**Initiated By:** APP-400

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1   **1 Purpose.**

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



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

- 33 • Nothing in this AC creates or modifies existing airport planning or design standards, or  
34 creates new requirements for airports, communities or FAA personnel. Rather, it  
35 consolidates and updates previous guidance on these matters, including information on  
36 tools and resources that the FAA has created since the preceding AC was published in  
37 1987.

## 38 **2 Application.**

- 39 • This document is intended for a diverse audience. This includes airport sponsors, airport  
40 management, developers, local and regional land use planners that are focused on  
41 transportation, economic development, natural resource conservation, and related topics;  
42 local elected and appointed officials; FAA officials and other governmental agencies  
43 (federal, state and local); and others who play a role in achieving and maintaining airport  
44 land use compatibility.

- 45 • This AC provides resources to assist airport and state and local community planning  
46 efforts with the development of effective airport land use compatibility plans. Sample  
47 airport land use compatibility plan content, and airport overlay and compatibility zoning  
48 ordinances, are included in the AC appendices.

- 49 • The information contained in this AC is not all-inclusive. Applicability will vary on a  
50 case-by-case basis due to state and local land use planning regulations.

- 51 • This AC does not constitute a regulation, and is not legally binding in its own right. It  
52 will not be relied upon as a separate basis by the FAA for affirmative enforcement action  
53 or penalty. Conformity with this AC is voluntary, and nonconformity will not affect  
54 rights and obligations under existing statutes and regulations, except for the projects  
55 described in subparagraphs 2 and 3 below:

- 56 1. The standards and processes contained in this AC are specifications the FAA  
57 considers essential for the fidelity of Residential Sound Insulation Programs.
- 58 2. Use of these standards and guidelines is mandatory for projects funded under Federal  
59 grant assistance programs, including the Airport Improvement Program (AIP). See  
60 Grant Assurances #34 and #21.
- 61 3. This AC is mandatory, as required by regulation, for projects funded by the Passenger  
62 Facility Charge program. See PFC Assurance #9.

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

## 65 **3 Cancellation.**

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

69 **4 Feedback on this AC.**

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

72 Bob Craven

73 Director, Office of Airport Planning and Programming

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**CHAPTER 1. INTRODUCTION**124 1.1 **Need for Guidance.**

125 1.1.1 FAA encourages and assists local airport sponsors and their community land use  
 126 planning authorities with undertaking their best efforts to secure compatible land use  
 127 development and planning within the airport environs. Airports that accept federal  
 128 money through the Airport Improvement Program (AIP) must comply with all FAA  
 129 Grant Assurances. These include but are not limited to Assurances 19, Maintenance  
 130 and Operation; 20, Hazard Removal and Mitigation; and 21, Compatible Land Use.  
 131 These assurances are based on statutory requirements. Because these assurances  
 132 require airports to take appropriate and reasonable actions to promote and maintain  
 133 airport land use compatibility, the FAA is publishing this Advisory Circular (AC) to  
 134 provide guidance to airports and other stakeholders on how to accomplish these actions.

135 1.1.2 Although there are various federal resources on the topic of land use compatibility,  
 136 historically there is no single, comprehensive land use guidance tool for airports and  
 137 local communities. This AC is intended to serve as a resource to help airports comply  
 138 with their grant assurances concerning all the compatible land use issues, including  
 139 obstructions and hazard to airport navigation, airport noise, wildlife attractants and  
 140 protection of persons and property on the ground. It references FAA regulations and  
 141 guidance concerning compatible land use and development within the airport environs,  
 142 such as Part 77 and Part 150 of Title 14 of the Code of Federal Regulations (CFR) and  
 143 FAA Advisory Circulars (AC) 150/5300-13, *Airport Design*, and 150/5020-1, *Airport  
 144 Noise Control and Compatibility Planning for Airports*.

145 1.1.3 This AC should be used as a starting point in addressing land use compatibility issues.  
 146 Because land use planning and regulation is a power reserved to the states and political  
 147 subdivisions of states, readers should refer to appropriate state legislation and guidance  
 148 before formulating land use compatibility plans and programs. Additionally, local  
 149 municipalities should review relevant ordinances, and other national and local guidance  
 150 for a comprehensive understanding of each airport scenario.

151 1.2 **Organization of the AC.**

152 This AC is organized into the following chapters:

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

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

172 1.3 **History of Land Use Compatibility.**

173 1.3.1 Airport land use compatibility has been a topic of discussion ever since flight began. It  
174 was formally recognized as an issue in 1952 when President Harry S. Truman  
175 commissioned the development of a report entitled “The Airport and its Neighbors”  
176 (commonly known as the Doolittle Report). The Doolittle Report documented the need  
177 to protect and preserve airports from incompatible land uses and protect people on the  
178 ground within the vicinity of airports from nuisances caused by airport and aircraft  
179 operations. Since that publication, guidance documents and programs have been  
180 created with the goal of supporting compatible land use near airports. As time has  
181 passed and development pressures have increased, the need for planning that addresses  
182 noise impacts to homes near airports and airport land use compatibility has grown  
183 between the 1960’s and the present day.

184 1.3.2 National guidance on land use has been historically through three primary ACs:

- 185 • AC 150/5050-6, *Airport Land Use Compatibility Planning*, published in December  
186 1977 (cancelled);
- 187 • AC 150/5020-1, *Noise Control and Compatibility Planning for Airports*, published  
188 originally in August 1983 at the initiation of FAA Airport noise compatibility  
189 planning programs, see Section 5.4 for description of FAA noise programs under 14  
190 CFR 150; and
- 191 • AC 150/5190-4, *A Model Zoning Ordinance to Limit Height of Objects around*  
192 *Airports*, published in December 1987.

193 1.3.3 This AC supersedes AC 150/5190-4A, which focused primarily on height limitations.  
194 This revised AC accounts for both height and broader land use compatibility  
195 considerations. Appendix C includes a brief summary of federal land use regulation  
196 and guidance.

197 1.3.4 Other topics (such as wildlife attractants, noise, and airport and airspace design-related  
 198 issues) are addressed in other FAA documents. This results in airport sponsors and  
 199 local land use planners cross-referencing a number of resources to obtain a  
 200 comprehensive picture of the issues related to compatible land use planning.

201 1.3.5 FAA guidance can help state, county, and local governments improve compatible land  
 202 use planning. Increasing demand for land use development near airports will continue  
 203 to impact airport operations and planned development. Consequently, it is important  
 204 that airport sponsors act proactively with their local communities to promote  
 205 compatible land use planning. Application of the tools and techniques described in this  
 206 AC and the referenced FAA directives will help airport sponsors develop the  
 207 coordinated compatible land use planning methods with their communities.

208 1.4 **Value of Aviation.**

209 1.4.1 The value of the U.S. air transportation  
 210 network is evident on and off-airport, and  
 211 at the local, regional, and national levels.  
 212 Several national studies have been  
 213 conducted to quantify this value, both  
 214 directly and indirectly, across the aviation  
 215 industry. According to the 2016 FAA  
 216 report, *Economic Impact of Civil Aviation*  
 217 *on the U.S. Economy*, civil aviation is  
 218 responsible for nearly 11 million jobs, with  
 219 over \$446 billion in earnings and \$1.6  
 220 trillion in total economic activity.

221 1.4.2 The economic impact of airports in the  
 222 U.S. was evaluated in Airport Cooperative  
 223 Research Program (ACRP) Report 138,  
 224 *The Role of U.S. Airports in the National*  
 225 *Economy*. According to the report, airports  
 226 directly support over two million jobs that total nearly \$148 billion in labor income.  
 227 When multiplier effects are considered, U.S. airports support \$768 billion in total value  
 228 added to the national economy.

229 1.4.3 In 2013, the General Aviation Manufacturers Association (GAMA) commissioned an  
 230 economic study on the value of general aviation (GA) in the U.S. entitled *Contributions*  
 231 *of General Aviation to the U.S. Economy*. This study found that GA supports 1.1  
 232 million jobs, with \$69 billion in labor income and \$219 billion in national economic  
 233 output.

234 1.4.4 In addition to the economic value, airports provide qualitative benefits to a local  
 235 community. This includes efficient trade, tourism accessibility, transportation safety,  
 236 and expanded national and global health and research resources.

**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

237 1.4.5 While the value of aviation can be evaluated in a number of ways (quantitatively and  
238 qualitatively), it is clear that the aviation system within the U.S. is significant to  
239 economies and communities at the local, regional, and national levels.

240 1.5 **Benefits of Compatible Land Use Planning.**

241 1.5.1 Compatible land use planning can benefit both the airport and the local community.  
242 While the benefits of compatible land uses are the same whether development exists or  
243 not, the cost of eliminating incompatible uses is much greater than the cost of effective,  
244 coordinated planning to prevent incompatible uses in the first place. Many stakeholders  
245 outside of airport property benefit from these planning efforts. The FAA encourages  
246 local communities/municipalities to consider these benefits when assessing the value of  
247 compatible land use planning.

248 1.5.2 Benefits range from continued value of the transportation infrastructure and  
249 transportation system, to continued support for business, leisure travel, and tourism, to  
250 reduction in noise-sensitive uses near airports, among many others. These benefits are  
251 recognized at all levels (local, regional, statewide, and national) and by many interest  
252 groups. Discussion of compatibility planning benefits is divided into the following  
253 sections:

- 254 • Benefits to the aviation system
- 255 • Benefits to people near airports
- 256 • Benefits to local and regional jurisdictions

257 1.5.3 Benefits to the Aviation System.

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

262 1.5.3.1 **Opportunities for Airport Development.**

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



- 274           1.5.3.2       **Preservation of Airport and Aircraft Operations.**
- 275           1.5.3.2.1     Incompatible land use has the potential to impact airports and aircraft  
276                                   operations in several negative ways. Not only does it raise concerns  
277                                   regarding potential aircraft accidents, incompatible land uses can limit the  
278                                   functionality and utility of an airport. For example, incompatible land uses,  
279                                   such as structures, that encroach into protected airspace may eventually  
280                                   cause displacement of a runway’s threshold in order to maintain safety  
281                                   margins. A displaced threshold shortens the usable length of the runway  
282                                   and therefore limits the types of aircraft that can operate on a runway.
- 283           1.5.3.2.2     In addition to preserving airport facilities, encouraging the development of  
284                                   compatible uses at and around an airport can eliminate or reduce the need  
285                                   for pilots to follow modified flight paths or other costly noise abatement  
286                                   procedures if nearby development is in noise-sensitive areas.
- 287           1.5.3.3       **Protection of Airport Approaches and Departures.**
- 288                                   The most critical areas surrounding an airport are the approach and  
289                                   departure zones for airport runways. Because aircraft landing or departing  
290                                   from an airport frequently occupy this airspace, it is important to assess land  
291                                   uses directly underneath these zones for compatibility with aircraft  
292                                   operations. Continually monitoring and evaluating land uses in these areas  
293                                   can ensure the airport continues to operate safely and efficiently.
- 294           1.5.3.4       **Reduced Potential for Litigation.**
- 295           1.5.3.4.1     Another benefit of compatibility planning is a reduced potential for  
296                                   litigation. Litigation that stems from land use compatibility issues can be  
297                                   costly for all parties involved, including an airport’s sponsor (which is often  
298                                   the local municipality). If airport administration/management makes  
299                                   diligent efforts to encourage a compatible environment (existing and  
300                                   future), the risk of entering litigation to resist or prevent land use  
301                                   incompatibility can be significantly reduced. Coordinated airport and land  
302                                   use compatibility planning works to prevent potential site development  
303                                   conflicts that could otherwise result in costly and wasteful litigation to  
304                                   prevent incompatible development.
- 305           1.5.3.4.2     In general, airport sponsors may expect litigation costs to include attorney’s  
306                                   fees, staff time, and the amount of settlement (if any). The magnitude of  
307                                   costs depends upon the type of litigation, duration and outcome, and can  
308                                   vary drastically from one scenario to the next. Case studies in ACRP  
309                                   Report 27 indicate there have been cases that have cost thousands of dollars  
310                                   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.

348

349

350

351 1.5.4.1 **Community Awareness of Airport Compatible Land Use Planning.**

352 1.5.4.1.1 To fully realize the benefits of compatible land use planning, the local  
353 community needs to understand the concept of compatibility. Raising  
354 awareness in the local community about the effects of incompatibility and  
355 the benefits of compatibility can foster a collaborative relationship between  
356 the community and the airport in which thoughts and concerns from both  
357 perspectives are shared.

358 1.5.4.1.2 This can be accomplished in many ways, such as hosting an open house at  
359 the airport or airing a short educational segment on airport/local community  
360 social media outlets. Communities that understand the reasons for  
361 compatibility planning are more likely to be supportive of compatible land  
362 use planning efforts in the future.

363 1.5.4.1.3 Federally obligated airports should work with the FAA to ensure any  
364 outreach they conduct is within their grant obligations (e.g. acceptable  
365 airport revenue use practices).

366 1.5.4.2 **Reduced Noise Exposure.**

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

376 1.5.4.3 **Opportunities for Compatible Community Development.**

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

383 1.5.5 **Benefits to Local and Regional Jurisdictions.**

384 1.5.5.1 Local and regional jurisdictions are often the owners and sponsors of public  
385 airports. Therefore, they have a responsibility to maintain compatibility  
386 between the airport and the local community. Coordinated land use  
387 compatibility planning greatly benefits local and regional jurisdictions over  
388 the long-term. Developing the needed coordination structures and  
389 relationships can be challenging, and may require several years of continued

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

392 1.5.5.2 An example of compatibility planning benefits at the local and regional  
393 level is in Panama City, Florida, with the construction of the Northwest  
394 Florida Beaches International Airport (ECP). This airport replaced the  
395 former Bay County International Airport.

396 1.5.5.2.1 The new airport and redevelopment of the closed airport was planned  
397 jointly by the State of Florida Department of Community Affairs (DCA),  
398 Bay County, and the Panama City – Bay County Airport Authority and  
399 Industrial District (Airport Authority). The new airport location was largely  
400 undeveloped. These entities developed a new land use sector plan to  
401 identify the location of planned airport infrastructure and defined an  
402 Airfield Compatibility Use Special Treatment Zone (ACUSTZ) around the  
403 airport. Under the land use sector plan, incompatible uses (according to  
404 FAA criteria) are located outside of the defined ACUSTZ.

405 1.5.5.2.2 Stakeholder efforts (especially the Airport Authority, in cooperation with  
406 the state and local jurisdictions) resulted in a coordinated land use plan and  
407 framework for development that meets the community’s vision and protects  
408 the new airport for planned operations to serve the community.

409 1.5.5.3 Compatible land use planning at existing airport locations also greatly  
410 benefits the local community and their airport facilities. Zoning and  
411 development permitting and planning that precludes introduction of  
412 incompatible development provides long-term benefits and cost savings to a  
413 community (versus the cost of incompatible development). To secure these  
414 benefits, airports that are owned by the local land use jurisdiction should  
415 ensure effective land use controls are enforced within the airport environs  
416 under their jurisdiction. The FAA encourages airports without land use  
417 authority within the airport environs to remain vigilant and advocate for  
418 compatible development and land use controls whenever opportunities  
419 arise.

420 1.5.5.3.1 Reduced Potential for Complaints.  
421 Compatibility planning to minimize noise-sensitive uses near airports is the  
422 most effective way to reduce complaints from the local community.  
423 Planning for mitigation or prevention of noise sensitive uses is the key  
424 consideration for effective coordinated land use planning. This applies to  
425 both airport development and off-airport land uses in areas affected by  
426 aircraft noise.

427 1.5.5.3.2 Development Revenues and Taxes.  
428 In many instances, compatible land uses provide higher property tax  
429 payments and demand fewer services. For example, industrial uses often  
430 have a higher tax rate than residential uses. Open space and agricultural

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

438 1.5.5.3.3 Reduced Mitigation Cost for Incompatible Development.

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

464 1.6 **Consequences of Incompatible Development.**

465 1.6.1 Incompatible land uses such as those that pose physical obstructions, create visual  
 466 distractions, and attract wildlife can threaten the safety of aircraft operations. They can  
 467 also affect the safety of persons located near the airport environs. In addition,  
 468 encroachment of incompatible land uses around airports may create physical constraints  
 469 to safe and efficient aircraft operations, and challenges for airport capacity expansion.

470 1.6.2 The effects of airport operations on incompatible land uses—especially noise impacts  
 471 on residential areas—can create a negative perception of the airport in the local  
 472 community. Airport operations can be perceived as generating negative effects on the  
 473 local community, especially noise disturbances on incompatible land uses. Community  
 474 opposition generated by off-site airport effects can:

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

482 1.6.3 From a broader perspective, according to the U.S. Government Accountability Office  
 483 (GAO), “constraints on efforts to expand airports or aviation operations could affect the  
 484 future of aviation because the national airspace system cannot expand as planned  
 485 without a significant increase in airport capacity.” The national aviation system cannot  
 486 accommodate the projected doubling or tripling of air traffic in the coming decades  
 487 without additional airports and runways (GAO, 2008). This broader perspective,  
 488 combined with the local community effects, demonstrates the wide range of potential  
 489 impacts of incompatible development on the national, regional, and local economy, as  
 490 well as neighbors to individual airports across the country.

491 1.6.4 On-Airport Economic Considerations.

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

498 1.6.5 Off-Airport Economic Considerations.

499 1.6.5.1 Airports are local economic engines. They stimulate local economic  
 500 activity, create employment, and generate income for local residents. When  
 501 incompatible land uses around airports constrain airport use and efficient air  
 502 service, local and regional jurisdictions cannot realize the full potential of  
 503 airports to generate positive regional economic impacts. In addition,  
 504 incompatible land use development can increase the risk of exposure to  
 505 aviation accidents and expose neighboring residents to adverse

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

508 1.6.5.2 Coordinated compatible land use planning on the airport and in the airport  
509 environs seeks to balance development demands to optimize the benefit of  
510 the airport location to the community, and preclude hazards and adverse  
511 impacts of incompatible development on local airport and aviation facilities.

512

**CHAPTER 2. LAND USE COMPATIBILITY CONCERNS**513 2.1 **Definition of Compatible Land Use.**

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

522 2.2 **Evaluation of Airport Land Use Compatibility.**

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

531 2.2.1 Aircraft Noise.

532 2.2.1.1 Aircraft noise is a primary concern when addressing airport land use  
 533 compatibility. Aircraft operations can create sound levels that produce  
 534 noise-induced annoyance in communities near airports, as well as specific  
 535 effects such as speech interference and sleep disturbance. A tremendous  
 536 amount of research has been done on this topic within FAA and in the  
 537 aviation industry.<sup>1</sup> For example, there are numerous ACRP reports such as  
 538 the following that can provide additional information on aircraft noise:

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

<sup>1</sup> 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.



545 2.2.1.2 Several factors influence the perceived noise impact of aircraft operations  
546 near an airport. Common factors include:

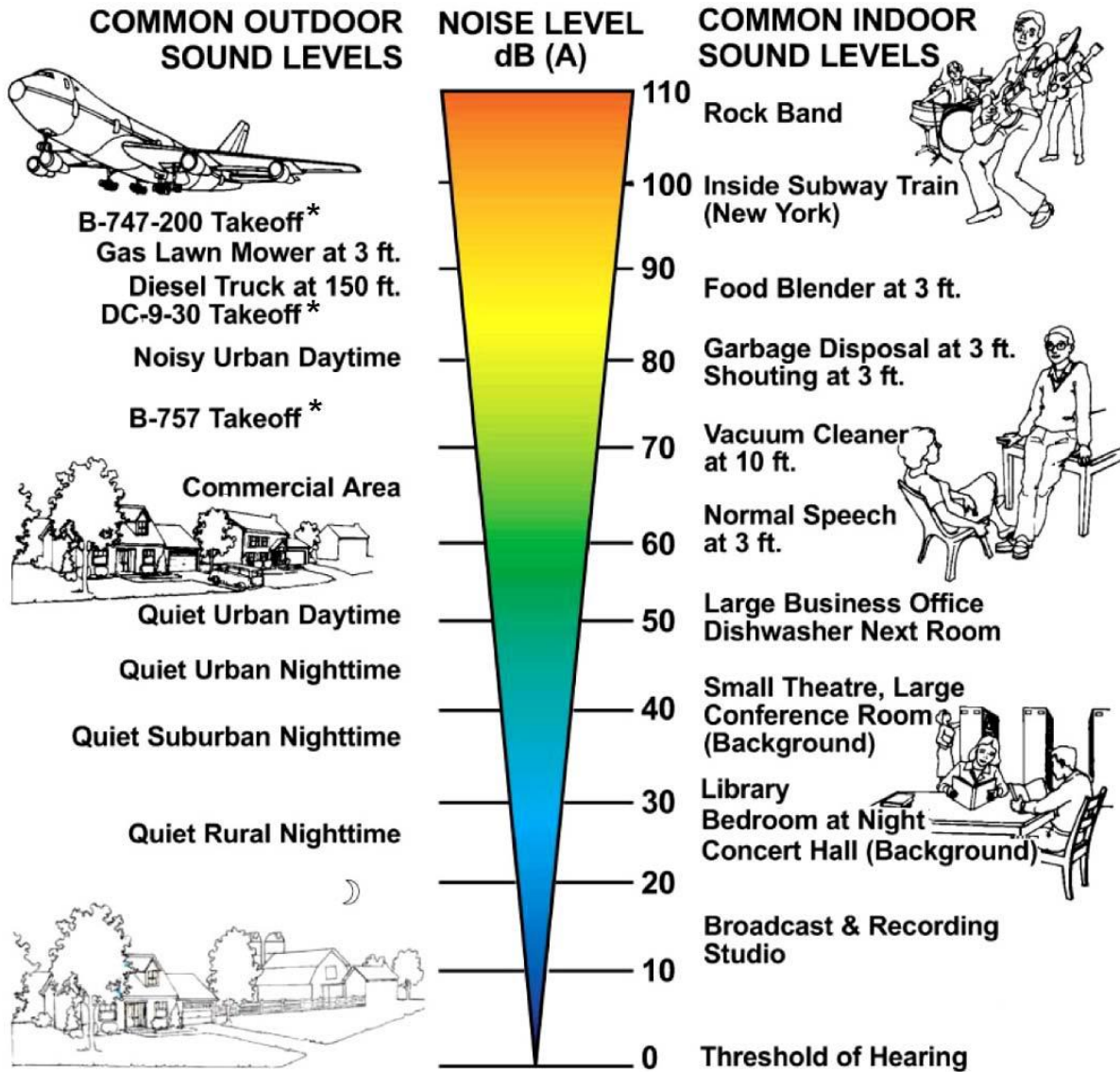
- 547
- Proximity of a land use to an airport's flight patterns;
  - 548 • Residents/occupants noise sensitivity: noise annoyance and  
549 interference to daytime and nighttime activities;
  - 550 • Building materials used to reduce interior noise levels;
  - 551 • The surrounding environment ambient noise level;
  - 552 • Perception and acceptance of the necessity of existing aircraft noise;
  - 553 • The typical day/night hours of aircraft operations;
  - 554 • The number and frequency of aircraft operations; and
  - 555 • The type of aircraft using an airport.

556 2.2.1.3 Aircraft noise effects are of concern as they can affect the quality of life for  
557 residents in their homes, and affect those using or residing in noise-sensitive  
558 facilities near airports. These include schools, places of worship, hospitals,  
559 parks, and recreational facilities.

560 2.2.1.4 **Figure 2-1** illustrates the noise level (dB(A)) of some common indoor noise  
561 sources, and how they compare to common outdoor sound levels.

562

Figure 2-1. Noise Level of Common Sounds



563

\* 2 Miles from Brake Release

564

Source: FAA

565

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.

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574 **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
<b>Residential</b>						
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
<b>Public Use</b>						
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
<b>Commercial Use</b>						
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
<b>Manufacturing &amp; Production</b>						
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
<b>Recreational</b>						
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

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

580 **Key:** Y (yes) = Land use and related structures compatible without restrictions.

581 N (no) = Land use and related structures are not compatible and should be prohibited.

582 25, 30, 35 = Land use and related structures generally compatible; measures to achieve Noise Level Reduction of 25, 30, 35 dB must be  
 583 incorporated into design and construction of structure.

584 **Notes:**

585 (1) = Where the community determines that residential or school uses must be allowed, measures to achieve outdoor to indoor Noise Level  
 586 Reduction (NLR) of at least 25 dB and 30 dB should be incorporated into building codes and be considered in individual approvals. Normal  
 587 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  
 588 standard construction and assume mechanical ventilation and closed windows year-round. However, the use of NLR criteria will not eliminate  
 589 outdoor noise problem.

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

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

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

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

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

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

599 (8) = Residential building not permitted.  
 600

601 **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.

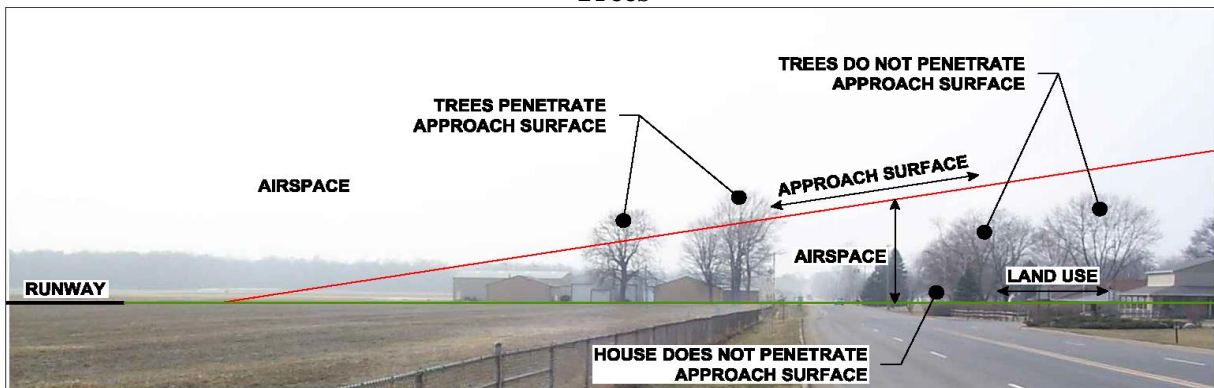


653 2.2.2.3.2 When objects (existing or proposed) such as structures or vegetation  
 654 penetrate the imaginary surfaces, they are considered “obstructions” to air  
 655 navigation. The FAA has the authority to evaluate obstructions to  
 656 determine whether they are or could be a “hazard” to air navigation.  
 657 Federal airport grant assurances require the airport owner/sponsor to take all  
 658 reasonable actions to remove, mitigate and prevent the introduction of  
 659 obstructions to airport navigation approaches.

660 2.2.2.3.3 The presence of tall structures near an airport may be a hazard to air  
 661 navigation. Tall structures include man-made objects (such as buildings,  
 662 cell/radio/TV/MET towers, and wind farms), natural objects (such as tall  
 663 trees), and terrain (high ground in airport approaches). Tall structures can  
 664 reduce the utility of an airport and increase the chances of an aircraft  
 665 collision with the structures. Aircraft approaching an airport under  
 666 instrument flight conditions (periods of low visibility, such as nighttime or  
 667 low cloud ceilings) follow a defined set of flight procedures. The height of  
 668 objects along a runway approach course and in the missed approach  
 669 segment has a direct effect on these procedures. **Figure 2-3** illustrates tall  
 670 trees that are penetrating a runway approach surface (specific surface as  
 671 defined by FAA AC 150-5300-13). A tall structure obstruction to airspace  
 672 may prompt an increase in the minimum visibility and cloud ceiling criteria  
 673 that a pilot must follow. These changes may increase the likelihood that  
 674 aircraft will not be able to land at an airport during inclement weather.

675 2.2.2.3.4 In **Figure 2-3**, the tall trees must be trimmed or removed to maintain a clear  
 676 runway approach. Unmitigated hazards may raise the runway approach  
 677 minimums, resulting in the reduced utility and use of the affected runway.

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



680  
 681 2.2.2.3.5 Pursuant to 14 CFR Part 77, proponents of various construction and site  
 682 alteration projects, on or off airport, must file notice with FAA to determine  
 683 if the proposed construction or alteration creates a hazard to air navigation.

684 2.2.2.3.6 During Airport Layout Plan (ALP) review processes, FAA reviews and  
685 approves proposed development and construction on federally obligated  
686 airports that the FAA finds would materially impact the safe and efficient  
687 operation of aircraft at, to, or from the airport or that would adversely affect  
688 the safety of people or property on the ground adjacent to the airport as a  
689 result of aircraft operations, or that would adversely affect the value of prior  
690 federal investments to a significant extent.

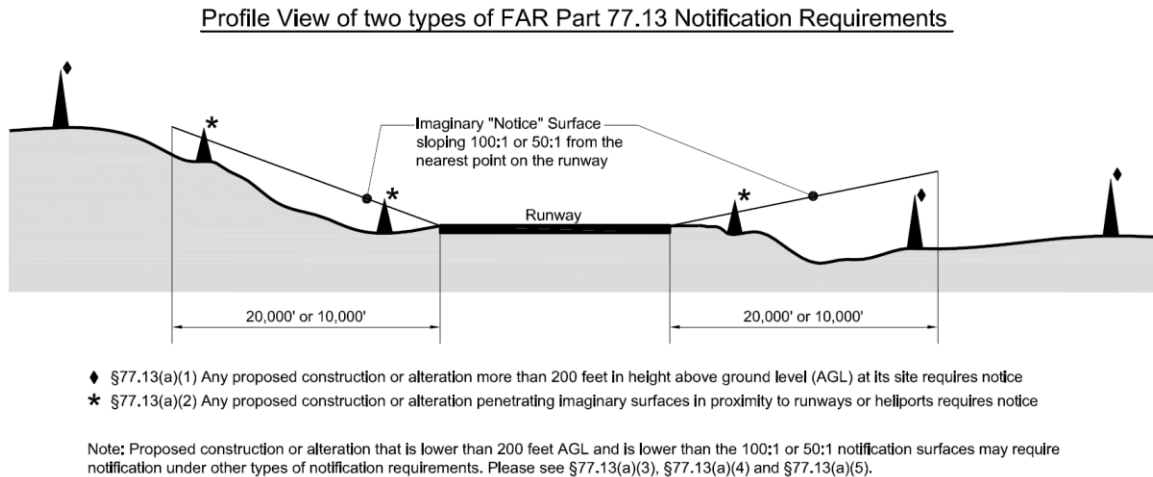
691 2.2.2.3.7 For proposed development off airport property, and for proposed  
692 development on airport property that does not fall within the FAA's ALP  
693 approval or other regulatory authority, FAA does not approve or disapprove  
694 the construction of a structure. Rather, FAA comments on the possible  
695 impact to the national airspace system. As required by 14 CFR Part 77.9,  
696 "Construction or alteration requiring notice," any person or organization  
697 who intends to sponsor construction or alterations listed below must notify  
698 the FAA for an FAA obstruction evaluation.

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

- 723 ○ For a waterway or any other traverse way not previously mentioned,
- 724 an amount equal to the height of the highest mobile object that
- 725 would normally traverse it; and
- 726 ○ Would exceed the standard of the first two bullets, above.
- 727 ● Any construction or alteration on any of the following airports and
- 728 heliports:
- 729 ○ A public use airport listed in the Airport/Facility Directory, Alaska
- 730 Supplement, or Pacific Chart Supplement of the U.S. Government
- 731 Flight Information Publications;
- 732 ○ A military airport under construction, or an airport under
- 733 construction that will be available for public use;
- 734 ○ An airport operated by a federal agency or the DOD; and
- 735 ○ An airport or heliport with at least one FAA-approved instrument
- 736 approach procedure.

737 2.2.2.3.8 **Figure 2-4** illustrates two instances where 14 CFR Part 77 notification is  
 738 required to allow the FAA to make a determination as to whether the  
 739 proposed construction or alteration would create a hazard to air navigation.

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



741

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

743

744 2.2.2.3.9 The FAA launched a notice criteria tool (<https://oeaaa.faa.gov/oeaaa/external/gisTools/gisAction.jsp?action=showNoNoticeRequiredToolForm>)

745 that allows the user (airport sponsor, developer, and local municipality) to

746 input locational and dimensional information about a proposed development

747 to determine if they are required to file notice with FAA. If a notice is

748



749 required, the proponent will submit FAA Form 7460, “Notice of  
750 Construction or Alteration,” to FAA for review.

751 2.2.2.3.10 In addition to evaluation of the imaginary surfaces in 14 CFR Part 77,  
752 airport and aircraft operators also consider whether obstructions exist to the  
753 airspace surfaces created by Terminal Instrument Procedures (TERPS) and  
754 one-engine inoperative (OEI) obstacle identification surface (OIS). More  
755 detail on TERPS and OIS is in Section 2.2.2.4 and Section 2.2.2.5,  
756 respectively.

757 2.2.2.3.11 The FAA evaluation usually results in one of three determinations on  
758 proposed construction:

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

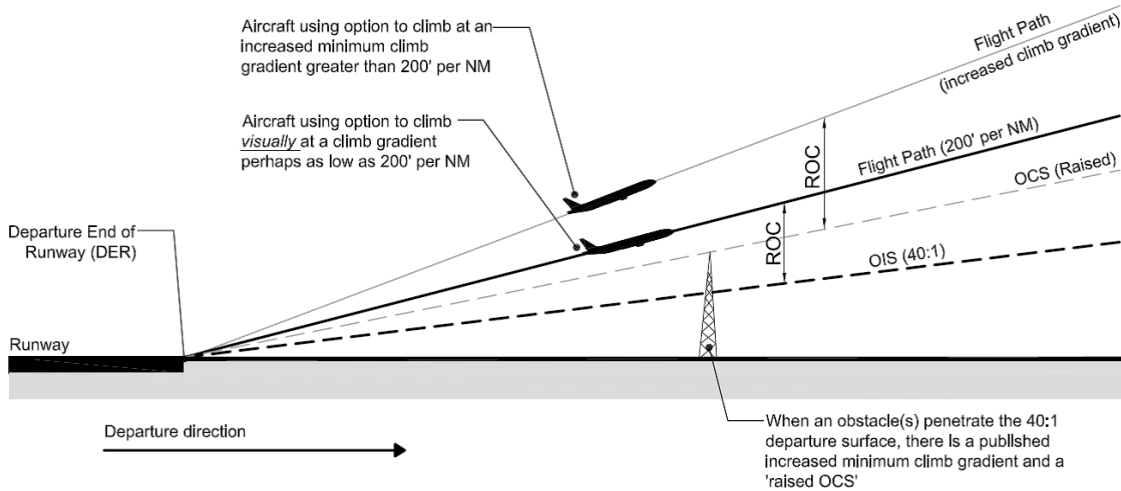
763 2.2.2.3.12 As stated, though developers must submit FAA Form 7460, FAA does not  
764 have the authority to stop off-airport construction. Therefore, it is critical  
765 for local communities to create the height restrictions that prevent and/or  
766 mitigate structures that could be obstructions or hazards to air navigation.

767 2.2.2.4 Structure Height – Terminal Instrument Procedures (TERPS).  
768 FAA Order 8260.3, “United States Standard for Terminal Instrument  
769 Procedures (TERPS),” contains standards for designing and evaluating  
770 terminal instrument procedures at any location over which the U.S. has  
771 jurisdiction. TERPS criteria are used primarily by FAA when developing  
772 instrument flight procedures. Similar to 14 CFR Part 77, TERPS places  
773 constraints on the airspace in the vicinity of an airport. This may impact  
774 which land uses are compatible beneath those surfaces. TERPS surfaces are  
775 generally lower than 14 CFR Part 77 surfaces along the runway approaches,  
776 but may extend farther from the airport (e.g. 10 nautical miles compared to  
777 10,000 feet). Operational TERPS surfaces will be modified due to  
778 alterations in the design of a flight procedure or because of the construction  
779 of new obstacles. TERPS criteria are designed to provide a margin of  
780 safety – a required obstacle clearance (ROC) – between aircraft in flight and  
781 permanent objects such as vegetation, terrain, and man-made objects.  
782 TERPS operational surfaces always must be clear of and above  
783 obstructions. **Figure 2-5** illustrates flight path modifications as applied to  
784 TERPS.

785

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

Illustration of Flight Paths, Obstacle Identification Surface (OIS),  
Obstacle Clearance Surface (OCS) and Required Obstacle Clearance (ROC) Concepts,  
As applied to TERPS Obstacle Departure Procedures



786

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

788 2.2.2.5 Structure Height – One-Engine Inoperative Obstacle Identification Surface  
789 (OIS).

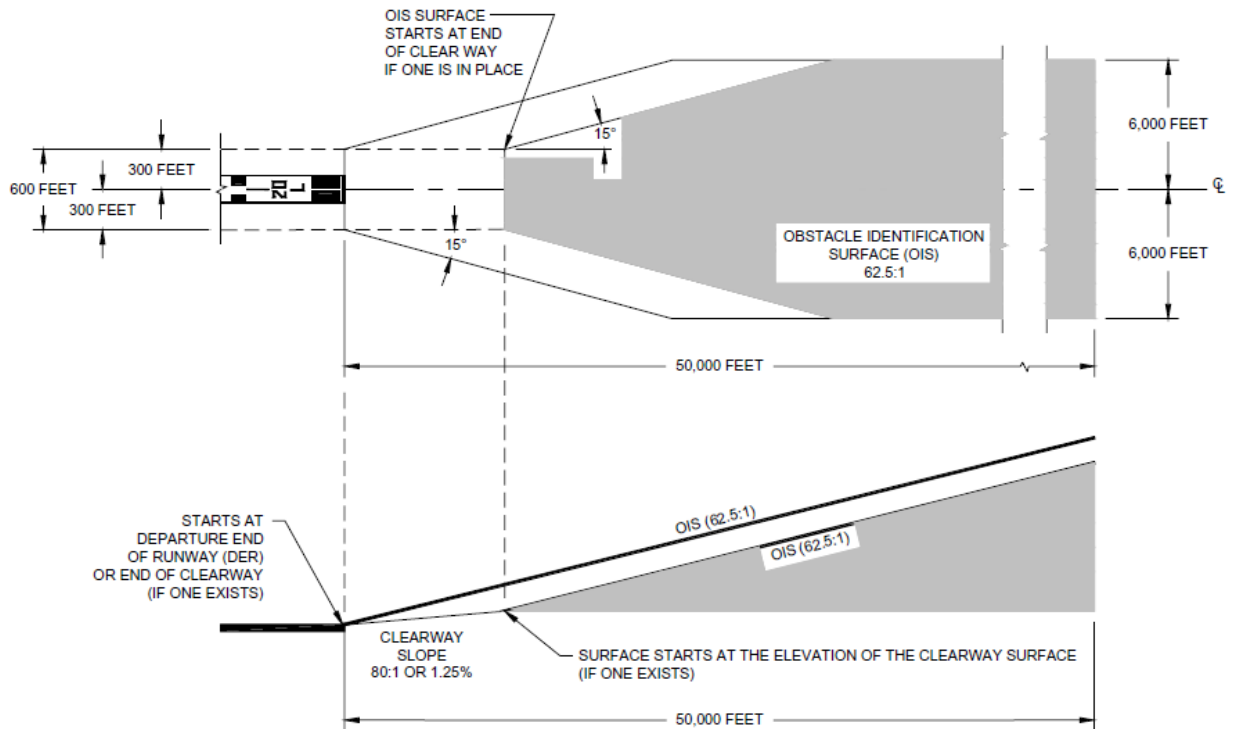
790 2.2.2.5.1 A two-engine Transport Category Aircraft must be able to climb at a slope  
791 of 62.5 feet horizontally to 1 foot vertically (62.5:1) with one engine  
792 inoperative in order to receive its FAA operating certificate (see 14 CFR  
793 §§25.111 and 25.115). This requirement is the basis for the one-engine  
794 inoperative (OEI) obstacle identification surface (OIS).

795 2.2.2.5.2 The OIS is a departure surface that is used by airlines when planning  
796 takeoff weights to avoid obstacles. Pursuant to 14 CFR §§121.189 and  
797 §135.379, each airline must calculate the appropriate OIS for individual  
798 aircraft operating at specific airports. Airports with runways that support  
799 air carrier operations must identify the OIS departure surfaces. These begin  
800 at the runway/clearway end at a width of 600 feet, and extend at a slope of  
801 62.5:1 for a horizontal distance of 50,000 feet, with an outer width of  
802 12,000 feet. The OIS is much larger than the surfaces established in 14  
803 CFR Part 77 and TERPS, as illustrated in **Figure 2-6**. Airlines are notified  
804 of any object that penetrates the OIS for flight planning purposes.

805 2.2.2.5.3 Because the OIS is much larger than 14 CFR Part 77 and TERPS imaginary  
806 surfaces, it is difficult to coordinate the potential effects to airspace and  
807 airport operations if an obstruction exists. Although FAA does not have a

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

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



813  
 814 **Source:** ACRP Report 38, *Understanding Airspace, Objects, and Their Effects on Airports*.

815 2.2.2.6 New Airports/Landing Fields.

816 2.2.2.6.1 The airport owner/sponsor needs to consider and evaluate potential local  
 817 land use impacts when planning and developing a new airport.

818 2.2.2.6.2 Form 7480-1, “Notice of Landing Area Proposal<sup>2</sup>,” works in conjunction  
 819 with 14 CFR Part 157, *Notice of Construction, Alteration, Activation and*  
 820 *Deactivation* to identify potential incompatibility. The regulation requires  
 821 notification to the FAA 90-days prior to constructing or establishing a new  
 822 airport (along with construction, alteration, deactivation, or change to the  
 823 use of an existing airport). As stated in the regulation (14 CFR Part 157.1,

<sup>2</sup> See <https://www.faa.gov/forms/index.cfm/go/document.current/documentNumber/7480-1>.

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

826 2.2.2.6.3 When completing a Form 7480-1, the form asks the project proponent to  
827 identify any obstructions (buildings, power line wires, roads, railroads,  
828 towers, etc.) within the vicinity of the runway(s). Existing or planned  
829 incompatible development such as schools, churches and residential  
830 communities that may be impacted by noise, and waste disposal sites within  
831 a five-mile radius (see “Wildlife and Bird Attractants,” Section 2.2.3), may  
832 affect development. FAA will consider and comment on potential hazards  
833 to air navigation due to land use compatibility conflicts. However, the local  
834 municipality is ultimately responsible for permitting development through  
835 local zoning, and other state or local land use and development ordinances  
836 and processes.

837 2.2.2.7 Military Airspace Areas.

838 2.2.2.7.1 In addition to the areas defined for civil airports, communities should  
839 consider military operational areas, ranges, and bases when planning for  
840 land use compatibility. The Department of Defense (DOD) Office of  
841 Economic Adjustment (OEA) established two programs, one in the 1970s  
842 and one in the 1980s, to promote land use compatibility near military  
843 installations.

844 2.2.2.7.2 The first is the Air Installation Compatibility Use Zones (AICUZ) Program.  
845 This program establishes policies and guidelines to protect military  
846 operational compatibility by avoiding incompatible development that would  
847 prevent military installations from changing or expanding to meet new  
848 mission requirements.

849 2.2.2.7.3 The second program, the Joint Land Use Study (JLUS) Program,  
850 complements the AICUZ program. Through this program, the OEA  
851 provides technical and financial assistance to state and local governments to  
852 plan and implement strategic plans that support civilian growth and  
853 development that is compatible with military operations.

854 2.2.2.8 Visual, Atmospheric and Electronic Interference.

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

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

873 2.2.2.8.1 Visual Obstructions.

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

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

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

917 2.2.2.8.2 Atmospheric Interference.

- 918 • Land use planning around an airport should account for impacts to  
919 aviation from facilities that produce atmospheric interference, such as  
920 thermal exhaust plumes. FAA has determined thermal exhaust plumes  
921 can disrupt flight in the vicinity of an airport. The effect can vary  
922 greatly depending on several factors: local winds, ambient  
923 temperatures, stratification of the atmosphere, size, height, and number  
924 of the stack(s) emitting the plume(s), proximity to airport and flight  
925 paths, temperature and vertical speed of the effluent, and the size and  
926 speed of aircraft. When evaluating the potential impact of the exhaust  
927 plume(s), airport owners/operators should consider the traffic pattern,  
928 approach and departure corridors, and any existing or planned flight  
929 procedures.
- 930 • To aid review of the potential location of thermal exhaust plume  
931 facilities, the FAA contracted with MITRE Corporation to develop a  
932 thermal exhaust plume model. The model predicts the size and severity  
933 of the plume(s) in order to better understand potential atmospheric  
934 interference. The “Exhaust-Plume-Analyzer” is available at  
935 [http://www.mitre.org/research/technology-transfer/technology-](http://www.mitre.org/research/technology-transfer/technology-licensing/exhaust-plume-analyzer)  
936 [licensing/exhaust-plume-analyzer.](http://www.mitre.org/research/technology-transfer/technology-licensing/exhaust-plume-analyzer)

937 2.2.2.8.3 Electronic Interference.

- 938 • Land uses that can produce electronic interference should be carefully  
939 considered when located near an airport. Electronic interference can  
940 affect navigational aids used by pilots during takeoff and landing.  
941 Interference can be direct interference with the navigation signal (i.e.  
942 transmitting locally on a frequency that is close to the NAVAID  
943 frequency or a harmonic of that frequency) or indirect interference  
944 (through adverse reflections, blocking of the signal by structures, or  
945 some interfering activity at a location).
- 946 • For example, alternative energy sources are being used near or on  
947 airport property. Wind energy generated by turbines is a concern due to  
948 adverse effects to radio aids to navigation and radar (as well as the  
949 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:

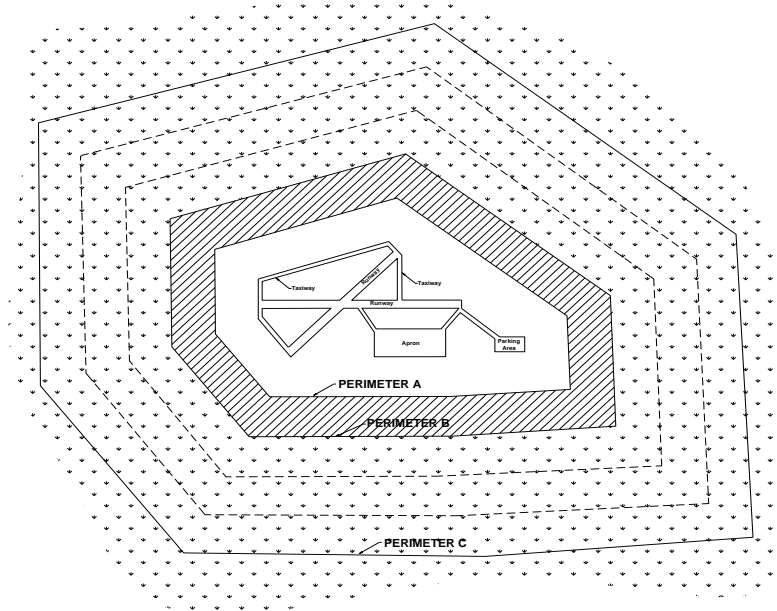
- 982 • Deer
- 983 • Gulls/Terns
- 984 • Geese
- 985 • Ducks
- 986 • Raptors
- 987 • Vultures

- 988           2.2.3.5       Minimizing land uses near airports that attract wildlife reduces the  
989                           likelihood of wildlife strikes. With the majority of strikes occurring at or  
990                           below 500 feet AGL, it is critical for airport owners/operators and local land  
991                           use authorities to plan for compatible uses near airports and avoid uses that  
992                           attract wildlife. There are typically three categories of attractants: food,  
993                           shelter/cover, and water. Common attractants include certain agricultural or  
994                           aquaculture activities, architectural features, landscaping, surface mining,  
995                           waste disposal sites, wastewater treatment facilities, and wetlands. ACRP  
996                           Report 32 includes a more detailed discussion of the uses considered  
997                           attractive to wildlife.
- 998           2.2.3.6       FAA AC 150/5200-33, *Hazardous Wildlife Attractants on or Near Airports*,  
999                           defines wildlife attractants as “any human-made structure, land use practice,  
1000                           or human-made or natural geographic feature that can attract or sustain  
1001                           hazardous wildlife within the landing or departure airspace, or Airport  
1002                           Operations Area (AOA).” **Figure 2-7** shows the areas around an airport to  
1003                           prevent wildlife attractants.
- 1004           2.2.3.7       See Section 5.5.1, *Wildlife Hazard Management Plans*, for a description of  
1005                           needed plans and assessments developed under FAA AC 150/5200-33. See  
1006                           Appendix D for a U.S. Department of Agriculture (USDA) listing of plants  
1007                           that are attractive to wildlife and should be avoided on or near airports.  
1008



1009

**Figure 2-7. Wildlife Hazard Separation Distances**



1010 PERIMETER A: For airports serving piston-powered aircraft, hazardous wildlife attractants must be 5,000 feet from  
 1011 the nearest air operations area.

1012 PERIMETER B: For airports serving turbine-powered aircraft, hazardous wildlife attractants must be 10,000 feet  
 1013 from the nearest air operations area.

1014 PERIMETER C: 5-mile range to protect approach, departure and circling airspace.

1015 **Source:** Graphic Developed by FAA Central Region Airports Division based upon guidance in FAA AC 150/5200-  
 1016 33, *Hazardous Wildlife Attractants on or Near Airports*.

1017 2.2.4 Runway Protection Zones (RPZs).

1018 2.2.4.1 The purpose of the Runway Protection Zone (RPZ) is to enhance the  
 1019 protection of people and property on the ground. This is best achieved  
 1020 through airport owner control over RPZs. Airport owner control over RPZs  
 1021 may be achieved through:

- 1022 • Ownership of the RPZ property in fee simple;
- 1023 • Possessing sufficient interest in the RPZ property through easements,  
 1024 deed restrictions, etc.;
- 1025 • Possessing sufficient land use control authority to regulate land use in  
 1026 the jurisdiction containing the RPZ;
- 1027 • Possessing and exercising the power of eminent domain over the  
 1028 property; or



1061

**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)	<p>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.</p> <p>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.</p>

1062 2.2.4.4.3 The FAA will consider requests from eligible airport sponsors for AIP  
 1063 funding, in accordance with the AIP handbook, to help secure ownership or  
 1064 land use control if it helps eliminate existing incompatible land uses, and  
 1065 prevent future ones. FAA also expects airport sponsors to consider RPZ  
 1066 protection an “airside need,” a high priority for financial planning purposes.

1067 2.2.4.5 Proposed Incompatible Land Uses.  
 1068 The FAA expects the airport sponsor to take active steps to prevent or  
 1069 mitigate proposed incompatible land uses. The FAA will not always  
 1070 require an airport sponsor to acquire land in order to meet the RPZ standard.  
 1071 However, the FAA does expect the airport sponsor to actively seek  
 1072 opportunities to prevent or mitigate risks associated with proposed  
 1073 incompatible land uses within the RPZ. Sponsors should actively monitor  
 1074 conditions and object publicly to proposed incompatible land uses, and to  
 1075 make it a high priority (financially or otherwise) to acquire land or  
 1076 otherwise establish land use controls that prevent incompatible uses. The  
 1077 FAA expects airport sponsors to document their efforts so that they can  
 1078 demonstrate that the airport is complying with its grant assurances. **Table 2-**  
 1079 **3** summarizes expectations of airport sponsors for new/proposed  
 1080 incompatible land uses within RPZs.

1081

**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)	<p>FAA expects the sponsor to take all appropriate steps available to establish and exercise zoning controls necessary to prevent any new incompatible land uses.</p> <p>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.</p>
If the sponsor has no land use control (i.e., RPZ land falls in another jurisdiction)	<p>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.</p> <p>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.</p> <p>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.</p> <p>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.</p>

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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).



1119 2.2.4.7 **Items Typically Included in the Airport Sponsor’s Alternatives**  
 1120 **Evaluation.**

1121 2.2.4.7.1 Airport sponsors should submit an alternatives evaluation to FAA early in  
 1122 the planning process for any on-airport development within the RPZ. When  
 1123 the proposed land use development is not on airport property, the sponsor  
 1124 should engage and coordinate with the Airports District Office (ADO) as  
 1125 soon as they are aware of proposed development. The sponsor should begin  
 1126 the process of evaluating alternatives within 30 days of becoming aware of  
 1127 the development within the RPZ.

1128 2.2.4.7.2 The following items are typically necessary for the FAA to fully assess a  
 1129 sponsor’s alternatives evaluation. The FAA acknowledges, however, that  
 1130 the scope of the analysis will likely vary depending on the size of the  
 1131 airport, the type/number of operations, and any other unique considerations.  
 1132 The airport sponsor is encouraged to meet with the FAA before conducting  
 1133 the evaluation to discuss the appropriate level of evaluation needed.

- 1134 • Sponsor’s statement of the purpose and need of the proposed action  
 1135 (airport project, land use change or development).
- 1136 • Identification of any other interested parties and proponents.
- 1137 • Identification of any federal, state and local transportation agencies  
 1138 involved.
- 1139 • Analysis of sponsor control of the land within the RPZ.
- 1140 • Summary of all alternatives considered including:
  - 1141 ○ Alternatives that preclude introducing the incompatible land use  
 1142 within the RPZ (e.g., zoning action, purchase, and design  
 1143 alternatives such as the implementation of declared distances,  
 1144 displaced thresholds, shifting the runway, shortening the runway,  
 1145 raising minimums)
  - 1146 ○ Alternatives that minimize the impact of the land use in the RPZ  
 1147 (e.g. routing a new roadway through less of the RPZ, etc.)
  - 1148 ○ Alternatives that mitigate risk to people and property on the ground  
 1149 (e.g., tunneling, depressing and/or protecting a roadway through the  
 1150 RPZ, implementing operational measures to mitigate any risks, etc.)
- 1151 • Narrative discussion and exhibits or figures depicting the alternative.
- 1152 • Rough order of magnitude cost estimates associated with each  
 1153 alternative, regardless of potential funding sources.
- 1154 • A practicability assessment based on the feasibility of the alternative in  
 1155 terms of cost, constructability, operational impacts, and other factors.

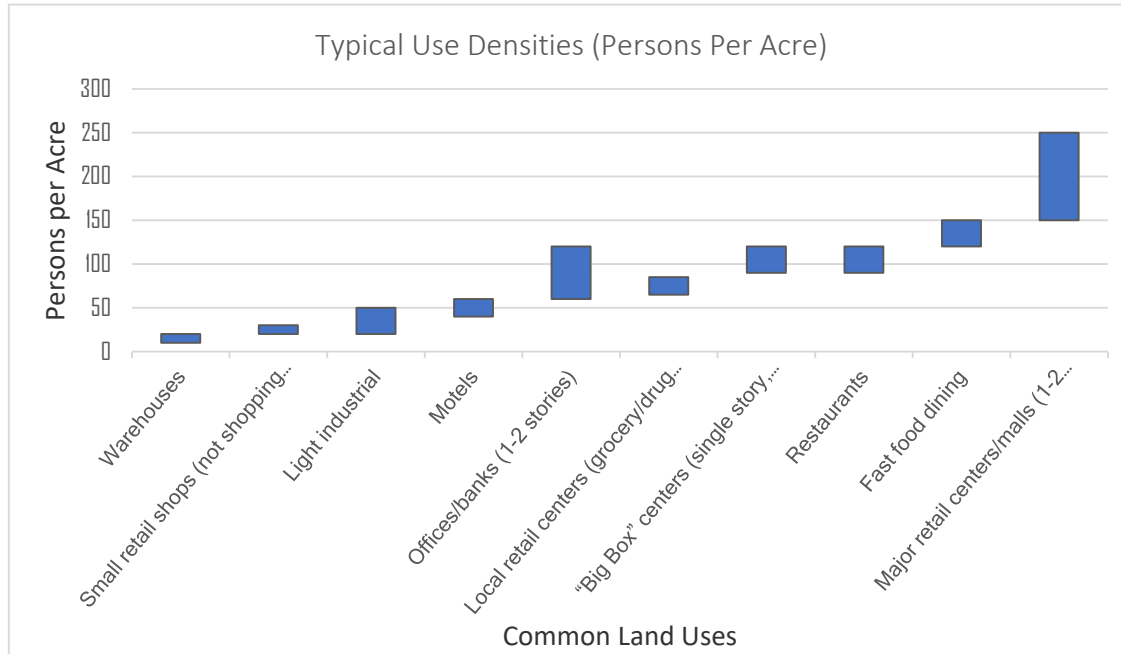


- 1194 2.2.5 Local Regulation of Concentrations of People (Development Density).
- 1195 2.2.5.1 The number of people concentrated in an area near an airport is the land use  
1196 characteristic tied most closely to the consequences of aircraft accidents.  
1197 The most direct method of reducing the potential severity of an aircraft  
1198 accident to the people and property in proximity to an airport is to limit the  
1199 maximum number of structures and/or people in areas close to an airport.  
1200 Limiting the number of structures around airports may also reduce the  
1201 severity of an aircraft accident to passengers on board the aircraft.
- 1202 2.2.5.2 There are two types of accidents that have the potential to impact land uses  
1203 near the airport. One is an accident where the aircraft is descending, but is  
1204 flying largely under directional control of the pilot. The other is one  
1205 involving a loss of control. Limits on usage density—the number of  
1206 structures/people per acre—are most effective when they account for both  
1207 types of potential aircraft accidents.
- 1208 2.2.5.3 Concentrated populations present a greater risk for severe consequences in  
1209 the event of an uncontrolled accident at that location. The risk is even  
1210 greater when the land use includes occupants with limited mobility or who  
1211 need supervision or assistance in evacuating, such as hospital patients or  
1212 schoolchildren.
- 1213 2.2.5.4 Limiting the average usage density over a site, coupled with designated  
1214 areas of open space, reduces the risks associated with either type of  
1215 accident. Land use compatibility policies need to address both of these  
1216 circumstances. In some instances, states have published airport land use  
1217 compatibility measures, including allowable density levels. **Figure 2-8**  
1218 illustrates the densities within the 2011 California Airport Land Use  
1219 Planning Handbook, which is often the most widely referenced document  
1220 for land use compatibility densities. For military airports, safety  
1221 recommendations are included as part of the AICUZ (Air Installation  
1222 Compatibility Use Zones) program (see Section 2.2.2.7.2).



1223

**Figure 2-8. Typical Use Densities**



1224

1225

1226 **Source:** Based on California Airport Land Use Planning Handbook, 2011.

1227

1228

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.

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**Figure 2-9. Residential Samples of Densities**



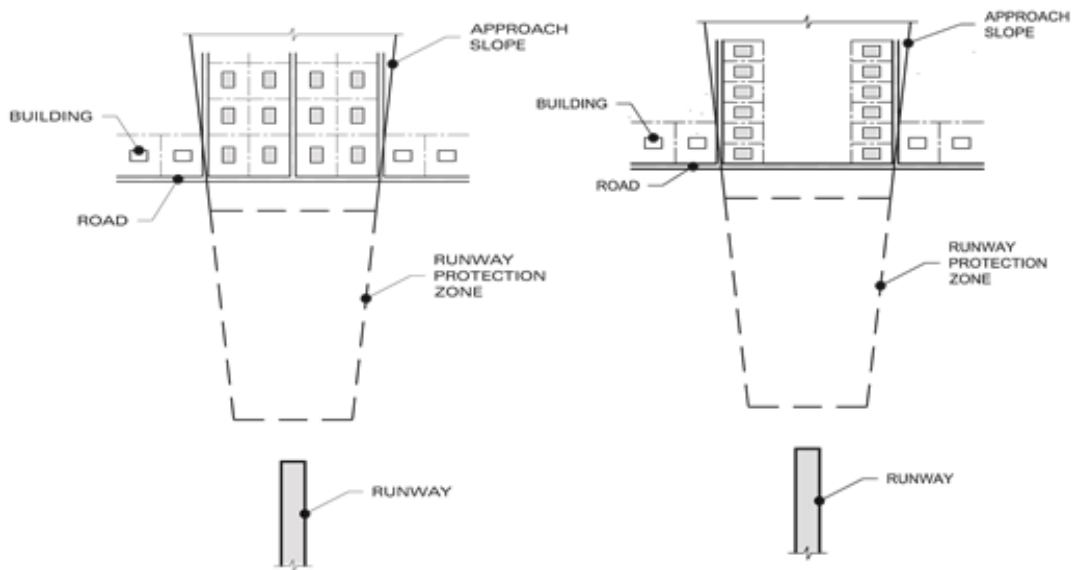
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2.2.5.5.1 In instances where structures and development can be relocated on a parcel to allow for optimal open space within the approach and departure areas of an airport, the more compatible a use will be with aircraft operations. Maintaining or creating 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.

1255

**Figure 2-10. Modified Parcel Layout**



1256

1257 2.3 **Compatibility of Land Use Types near the Airport.**

1258 In community planning documents, land uses are generally classified into one of seven  
 1259 major categories (see **Table 2-4**). These include residential, commercial, industrial and  
 1260 mining, institutional, infrastructure/utilities/energy production, agricultural and open  
 1261 space, and parks and recreational land use. A general discussion of each land use type is  
 1262 provided in the following sections. Because individual communities can categorize these  
 1263 in different ways, it will be important for specific communities to tailor their use of this  
 1264 information to their specific needs.

1265 **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

1266 **Key:**  
 1267 *I = Impact*  
 1268 *P = Possible Impact*  
 1269 *N = No Impact*  
 1270

1271 2.3.1 Residential Uses.

1272 2.3.1.1 A residential use includes dwellings used to house people as their  
 1273 residence/domicile. Typically, residential use includes single-family homes  
 1274 (detached, attached, condominium) and multifamily developments such  
 1275 duplexes through four-plex, apartment complexes, dormitories, transient  
 1276 housing, and mobile home parks. As the nation’s population continues to  
 1277 increase, residential development often encroaches upon what was once

1278 open space surrounding airport property. Some airports are now completely  
1279 surrounded by residential development. In planning for new residential  
1280 development in proximity to an airport, local interagency coordination is  
1281 vital, especially within an airport's approaches, departure areas, and areas of  
1282 greater noise exposure.

1283 2.3.1.2 Developments for temporary or short-term occupancy (not permanent  
1284 residence or domicile) such as hotels, motels, and campgrounds are  
1285 considered commercial land use. Although these uses may differ from  
1286 conventional residential use and housing in their sensitivity to noise, they  
1287 pose similar concerns relative to concentrations of people (also see  
1288 commercial uses in Section 2.3.2, below).

1289 2.3.1.3 In instances where residential uses cannot be prevented near an airport,  
1290 there are techniques that can be used to minimize or mitigate the effects of  
1291 such incompatible development. A few of these include:

- 1292 • Placement of residential structures on the outer edge of a parcel  
1293 rather than directly underneath a runway's approach or departure  
1294 path outside of RPZs (see Section 2.2 for further information).
- 1295 • Disclosing noise impact and discouraging residential development  
1296 within 65 dB DNL noise contour.
- 1297 • Decreasing the allowable density in residential uses near an airport.
- 1298 • Minimizing the development of multi-family residential units  
1299 (apartments, etc.).
- 1300 • Requiring developers to use sound-insulating building materials to  
1301 minimize aircraft noise effects.

1302 2.3.2 Commercial Uses.

1303 2.3.2.1 Land uses classified as commercial involve the sale of products or services  
1304 for profit. The most common land use compatibility issues with  
1305 commercial uses are safety impacts to the commercial use, visual  
1306 interference, and wildlife attractant impacts to aircraft and the airport.  
1307 Commercial uses are specifically discouraged from RPZs due to the density  
1308 issues that they can pose. Using the tools in this AC and other referenced  
1309 resources, the compatibility of a specific commercial use may be evaluated  
1310 on an individual airport basis. Because there are a wide variety of  
1311 commercial uses, the actual activities onsite often require special review  
1312 and evaluation by local planners to determine compatibility with airport  
1313 influence areas. Because diverse compatibility issues can arise between an  
1314 airport and nearby commercial land uses, it is difficult to summarize the  
1315 benefits or detriments created by commercial development.

1316 2.3.2.2 Sample factors to consider when determining compatibility of a commercial  
1317 use include, but are not limited to:

- 1318 • The time of operation and occupancy (e.g., all day, evenings only, 24  
1319 hours, etc.).
- 1320 • The size of the commercial buildings and their lighting, height and  
1321 facility characteristics (e.g., boutique shop, big-box stores, mega-mall,  
1322 etc.).
- 1323 • Anticipated occupancy (e.g., a few employees, waves of customers,  
1324 sustained large crowds, etc.).
- 1325 • Method of trash containment for large commercial uses (e.g., evaluate  
1326 if wildlife attractant, holds hazardous materials, or benign).
- 1327 • Parking lot lighting patterns for large commercial uses (e.g., use of  
1328 LED, shielding, zoning allowances, etc.).
- 1329 • Outdoor uses (e.g., assembly of people, patios where aircraft noise may  
1330 be an issue).
- 1331 • Amount of open space around the structures (e.g., approach clearances,  
1332 parking lots, green space, etc.).

1333 2.3.3 Industrial and Mining Uses.

1334 2.3.3.1 Industrial development can include materials processing, materials  
1335 assembly, product manufacturing, and storage of finished products. The  
1336 most common land use compatibility issues with industrial uses are height  
1337 of structures, visual interferences, and wildlife attractant impacts to aircraft  
1338 and the airport. Industrial/manufacturing uses are specifically discouraged  
1339 from RPZs due to the assembly of persons/occupancy density issues that  
1340 they can pose. Using the tools in this AC and other referenced resources,  
1341 the compatibility context and specific use may be evaluated on an  
1342 individual airport basis. A range of uses are classified in this land use type  
1343 from heavy manufacturing plants with tall smoke stacks to a small product  
1344 distribution center. Historically, industrial parks were composed solely of  
1345 industrial uses, however now they often include a mix of industrial  
1346 businesses, manufacturing facilities, office parks, and research and  
1347 development complexes within the same geographic area. Occasionally,  
1348 hotels, restaurants, and retail activities develop along the fringes of  
1349 industrial parks to provide necessary support facilities and stimulate  
1350 economic development within these areas. Light manufacturing or research  
1351 and development facilities are often less of a concern with reduced staff  
1352 levels and partial, traditional hours of operation.

1353 2.3.3.2 Mining and natural resource extraction (minerals, petroleum, natural gas,  
1354 etc.) can cause visual obstructions with the generation of dust at the  
1355 extraction sites, as well as intense lighting used to illuminate areas for night  
1356 work. Tall structures can also be a concern, depending on the type of  
1357 equipment used. FAA AC 150/5100-20, *Guidance for Oil and Gas*

1358 *Development at Obligated Airports*, describes existing FAA requirements  
1359 concerning oil and gas development on or nearby airports.

1360 2.3.3.3 Some of the main concerns typically associated with industrial and/or  
1361 mining uses include:

- 1362 • Number of employees on site;
- 1363 • Hours of operation (manufacturing plants that run 24 hours a day with  
1364 three shifts);
- 1365 • Tall towers or stacks that can obstruct flight;
- 1366 • The presence of smoke or steam from processing facilities;
- 1367 • Thermal plumes that can cause turbulence;
- 1368 • Intense lighting around facilities;
- 1369 • Dust generation;
- 1370 • Storage of flammable materials; and
- 1371 • Water retention/detention areas.

1372 2.3.4 Institutional Uses.

1373 2.3.4.1 Institutional uses include educational facilities (preschool through college),  
1374 health care facilities (hospitals, clinics, nursing homes, assisted living  
1375 facilities), and religious assemblies (churches, tabernacles, mosques).  
1376 Because the majority of these facilities are used by individuals who may not  
1377 be able to respond to an emergency situation without assistance, they are  
1378 generally considered to have a lower level of compatibility and are  
1379 discouraged in proximity to an airport.

1380 2.3.4.2 The most common land use compatibility issues with institutional uses are  
1381 safety and noise impacts to institutional uses. Institutional uses are  
1382 specifically discouraged from RPZs due to the density issues that they can  
1383 pose. The largest difference between institutional uses and all other land  
1384 use types is based on the assumption that many of the people who utilize an  
1385 institutional use may need additional assistance to respond to an aircraft  
1386 emergency, including the evacuation of a facility. An example of this issue  
1387 is evacuating patients from a hospital. These users are most often present in  
1388 concentrations, which makes it even more difficult to respond to an  
1389 emergency situation.

1390 2.3.4.3 In addition to concerns regarding evacuation and other emergency response  
1391 procedures, institutional uses are typically more sensitive to aircraft noise.  
1392 Disruption in a classroom, hospital, or worship environment may be  
1393 considered an impact to students, patients, and congregations.

1394 2.3.5 Infrastructure/Utilities/Energy Production Uses.

1395 2.3.5.1 Infrastructure activities include a variety of land uses such as above ground  
 1396 utilities, cellular communication towers, water towers, water treatment  
 1397 plants, wastewater treatment plants, streets and highways, sanitary landfills,  
 1398 and energy production uses such as wind turbines and solar panels. One of  
 1399 the most common land use compatibility issues with infrastructure uses is  
 1400 the height impacts to aircraft, such as cellular towers, wind turbines, and  
 1401 large-scale power transmission structures that can be hundreds of feet tall  
 1402 and can create an obstruction to flight in their vicinity. Depending on their  
 1403 location and height, proponents may need to submit an aeronautical study to  
 1404 the FAA through the 7460 Form –Notice of Proposed Construction or  
 1405 Alteration, which can be accessed at  
 1406 <https://oeaaa.faa.gov/oeaaa/external/portal.jsp> (see Section 2.2.2.3 for  
 1407 additional information on the 7460 Form). As stated earlier, through this  
 1408 process, the FAA has the opportunity to find the proposed use either a  
 1409 hazard or not a hazard to air navigation, recommend appropriate marking  
 1410 and lighting to make objects visible, identify obstacles on aeronautical  
 1411 charts, and revise published data and issue a Notice to Airmen (NOTAM) if  
 1412 necessary.

1413 2.3.5.2 In addition to height concerns, some of these uses can be attractive to  
 1414 wildlife (such as landfills and water treatment plants). This could increase  
 1415 the risk of wildlife strikes if placed within the approach or departure  
 1416 corridors or traffic pattern around an airport. Electronic interference can be  
 1417 generated by uses such as wind turbines that can impact radio aids to  
 1418 navigation and RADAR signals when clustered together in large  
 1419 concentrations. Industrial uses emitting thermal plumes above their  
 1420 smoke/exhaust stack heights may impact safe flight near airports. The  
 1421 aeronautical impacts in addition to the height of structures are still being  
 1422 discovered that may warrant compatible land use evaluation.

1423 2.3.5.3 Limiting concentrations of people associated with transportation  
 1424 infrastructure in proximity to an airport is ideal. When possible, limiting  
 1425 transportation modes within the approach or departure zones can minimize  
 1426 the potential for catastrophic effects should an aircraft incident occur.  
 1427 Because many airports are already located in developed areas, citing a  
 1428 specific distance between an airport and these other modes becomes  
 1429 unrealistic, as they may already exist in proximity to the airfield. Although  
 1430 some of these uses may not be able to be relocated, techniques such as  
 1431 down shielding lighting along highways and railroads can help to mitigate  
 1432 some of their impact (visual obstructions). Additional techniques such as  
 1433 adding roadway signage alerting vehicles to the RPZ, or prohibiting  
 1434 stopping and standing in the RPZ is recommended. Airports should also  
 1435 work with their local transportation department to avoid locating stoplights  
 1436 near the edge of the RPZ to prevent queues from building into the RPZ.  
 1437 The goal is to minimize the overall impact based upon the various issues

1438 discussed in this chapter (visual obstructions, concentrations of people,  
1439 etc.).

1440 2.3.5.4 State and local planning and design of infrastructure development away  
1441 from airport operating environs is encouraged. Due to the wide variety of  
1442 land uses that fall within the infrastructure/utilities/energy production  
1443 category, there are a number of concerns related to infrastructure land uses  
1444 that vary depending on the individual use at a location near an airport.  
1445 Therefore, FAA recommends that each proposed development or  
1446 improvement of infrastructure within the vicinity of an airport be assessed  
1447 for compatibility issues prior to construction.

1448 2.3.6 Agriculture and Open Spaces.

1449 2.3.6.1 Agriculture and open space activities are most commonly defined as any  
1450 use related to farming, including both man-made and naturally occurring  
1451 water resources. The most common land use compatibility issues with  
1452 agriculture and open space uses are wildlife attractant impacts to aircraft  
1453 and the airport. These uses are often perceived as the most compatible of  
1454 land use types near an airport due to the limited populations associated with  
1455 them and reduced noise sensitivity. However, they can have significant  
1456 wildlife management concerns.

1457 2.3.6.2 Certain crops can be very attractive to wildlife for both food sources as well  
1458 as roosting habitats (see Appendix D for a listing of crops from the USDA).  
1459 Agricultural activities are not uncommon near airports, especially in the  
1460 Midwestern and plains states. Open water such as rivers, lakes, and  
1461 detention/retention ponds can be attractive to wildlife and are cause for  
1462 concern.

1463 2.3.7 Parks and Recreation/Entertainment Uses, including Sports Arenas.

1464 2.3.7.1 A wide variety of public and commercial recreational land uses can be  
1465 classified here, including (as but a few illustrative examples) public parks,  
1466 public use and access national monuments, wildlife refuges, wilderness  
1467 areas, community tennis centers, drive-in theaters, and professional race  
1468 tracks. These uses typically take place outdoors, although some take place  
1469 indoors such as skating rinks, health clubs, and sports arenas. The most  
1470 common land use compatibility issues with parks and recreation uses are  
1471 safety impacts to recreational uses. Due to the wide variety of uses,  
1472 development sizes can play an important role in the level of compatibility.  
1473 For example, a neighborhood park that has open space would typically be  
1474 considered more compatible than an aquatic center that has large areas for  
1475 parking and limited open space. Uses such as golf courses that include  
1476 water or wildlife habitat features need to be prevented or mitigated for any  
1477 potential wildlife attractants that may pose a hazard to a nearby airport.



1478 Public areas that are used for educational or performance purposes may also  
1479 be noise sensitive uses.

1480 2.3.7.2 In addition to the size and use of the development, lighting can be a concern  
1481 for recreational uses because associated parking lots are often lit with high-  
1482 density lights. Moreover, facilities that are used at night such as baseball  
1483 fields and tennis courts are also illuminated with bright lights that can create  
1484 visual challenges for pilots.

1485 2.3.7.3 Another factor to consider is the density of the use. For example, a casino  
1486 will often have a greater density because customers and staff occupy the  
1487 facility 24 hours a day, compared to a golf course which has a larger  
1488 footprint but is operational only during daylight hours and at a lower  
1489 density.

1490

1491 **CHAPTER 3. ROLES AND RESPONSIBILITIES OF COMPATIBLE LAND USE STAKEHOLDERS**

1492 3.1 **Overview of Stakeholders.**

1493 3.1.1 This Chapter discusses the roles and responsibilities for land use compatibility as they  
 1494 relate to the multiple levels of government and interested community groups involved  
 1495 in planning for land development around airports. Airport land use compatibility  
 1496 planning requires coordination among diverse groups, including public agencies, airport  
 1497 leaders, and citizens. Stakeholders with the airport in developing compatible land use  
 1498 planning include:

- 1499 • Airlines and other aeronautical users
- 1500 • Airport-based businesses
- 1501 • Traveling public
- 1502 • Business community
- 1503 • Educational institutions
- 1504 • Healthcare institutions
- 1505 • Real estate developers
- 1506 • Metropolitan planning organization
- 1507 • Transportation agencies
- 1508 • Recreational facilities

1509 3.1.2 This is because the responsibility for airport land use compatibility planning does not  
 1510 normally rest with one agency or a single group. The tasks, authority, and  
 1511 responsibilities are divided between federal, state, regional, and local groups and  
 1512 organizations. In addition, the airport’s geographic area of influence will often  
 1513 encompass several jurisdictions that may or may not have a sponsor or ownership  
 1514 interest in the airport. Airport and community planners have unique stakeholder  
 1515 relationships locally that can be used to develop effective coordination agreements for  
 1516 their compatible land use planning efforts (also see Chapter 4).

1517 3.1.3 Federal and state agencies develop guidelines and recommendations to protect airports  
 1518 and the associated airspace, while local government officials, planners, airport  
 1519 sponsors, and community members implement and enforce the land use programs.  
 1520 Other groups, including regional transportation agencies, local economic development  
 1521 corporations and transit services, all make plans and financial investments that drive  
 1522 land development and land use patterns. **Table 3-1** is a more complete listing of the  
 1523 various stakeholders.

**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

1525 3.2 **Local Government Stakeholders.**

1526 3.2.1 Whether it is passing a local airport zoning ordinance or coordinating with nearby  
 1527 municipalities that may be affected by airport operations within their jurisdiction,  
 1528 numerous planning and permitting entities and individuals in local government are in a  
 1529 position to regulate land use. They can also be stakeholders in land use compatibility  
 1530 planning at an airport. In fact, the responsibility for implementing land use  
 1531 compatibility plans rests with local officials and authorities to enact and enforce land  
 1532 use development and zoning regulations. Airport stakeholders can work with these  
 1533 individuals and bodies, as well as with planning and zoning staff, to provide input on  
 1534 land use compatibility through the comprehensive planning process that will help with  
 1535 decisions about zoning districts, densities, and airport overlay zones.

1536 3.2.2 Local land use decisions that promote airport land use compatibility have a bearing on  
 1537 continuing federal support of needed airport improvements. This is because federal  
 1538 grant dollars come with a number of conditions through their grant assurances, all of  
 1539 which an airport agrees to in order to protect the public investment. One of these,  
 1540 Grant Assurance 21, Compatible Land Use, stipulates in part that the airport sponsor  
 1541 “will take appropriate action, to the extent reasonable, including the adoption of zoning  
 1542 laws, to restrict the use of land adjacent to or in the immediate vicinity of the airport to  
 1543 activities and purposes compatible with normal airport operations, including landing  
 1544 and takeoff of aircraft.” Under the grant assurance, an airport sponsor or airport owner  
 1545 that also holds local land use authority is expected to develop appropriate policy and  
 1546 procedures to secure land use compatibility within its jurisdiction. Airport sponsors  
 1547 that do not have the land use authority to regulate the land use within an adjoining  
 1548 jurisdiction should still work cooperatively with that local land use authority to  
 1549 implement appropriate land use policy.

1550 3.2.3 An airport sponsor should solicit and employ the cooperation of all of its neighboring  
 1551 local jurisdictions to promote the benefits of compatible land use for their community.  
 1552 Primary local government stakeholders include elected/appointed officials, planning  
 1553 and zoning officials, and regional agencies and authorities.

1554 3.2.4 Elected/Appointed Bodies.

1555 Coordination and communication between elected and appointed officials and airport  
 1556 sponsors is vital to effectively implement and enforce land use compatibility initiatives  
 1557 because most land use decisions are vested with local governments. Local government  
 1558 stakeholders represent a diverse group that includes cities, villages, townships, counties,  
 1559 as well as regional planning organizations, transportation agencies and local economic

1560 development agencies. To be most effective in their land use decision making, these  
1561 stakeholders need to understand both the adverse effect that incompatible land use can  
1562 have on a local airport and the negative effects airport operations can have on  
1563 surrounding land uses. Conversely, these groups need to be well informed regarding the  
1564 positive economic impact that an airport brings to the community and the ways that  
1565 compatible land use can occur near an airport when state and local regulations call for  
1566 land use categories, densities, and site development requirements that protect the  
1567 operation of the airport. An airport has a positive economic impact on the region in terms  
1568 of jobs and income as well, and the airport can be crucial in attracting new businesses and  
1569 skilled employees to an area. Leaders of regional and local economic development  
1570 agencies that recognize the high value of airports to the community can play a leading  
1571 role in advocacy.

1572 3.2.5 Planning & Zoning Officials.

1573 3.2.5.1 Local planning and zoning agencies derive land use powers from a variety  
1574 of sources, including state legislation and state constitutions. Officials in  
1575 these agencies are the “front-line” in the land use decision-making process.  
1576 They are responsible for the two primary tools available for local guidance  
1577 and control (respectively) of land uses around airports: the Comprehensive  
1578 Plan and the Zoning Ordinance.

1579 3.2.5.2 The Comprehensive Plan is a guidance document that explains the  
1580 community’s goals and objectives regarding future development. This  
1581 document often has a 30- or 40-year planning horizon. This is a longer-  
1582 term than the typical 20-year focus of an Airport Master Plan. In addition  
1583 to guiding local land use regulation, the Comprehensive Plan also guides  
1584 investment decisions laid out in the Capital Improvement Program. These  
1585 community investments often provide the public infrastructure to support  
1586 economic development in prescribed locations.

1587 3.2.5.3 The Zoning Ordinance is the regulatory document that defines and controls  
1588 land use zones, and provides development standards and requirements  
1589 within each zone. The base zoning district designations define general land  
1590 use types that are permitted within the geographic limits of the zone.  
1591 Categories typically include titles such as agriculture, residential,  
1592 commercial, industrial, and institutional (which are explained in Section  
1593 2.3). Districts may be divided into sub-categories, which may add further  
1594 definition to a zoning district. The zoning ordinance defines which uses are  
1595 permitted, the type of development approval needed, and the lot  
1596 development requirements in each district. For instance, an R-1 residential  
1597 zoning district may allow single-family development on one-acre lots with  
1598 administrative approval. An R-2 residential zoning district may allow  
1599 duplex dwellings on quarter acre lots. The local land use authority should  
1600 understand that land use types, densities, and design characteristics are all  
1601 important to providing compatible land uses near an airport. The local

1602 planning official is well positioned to provide information and advocate for  
1603 compatible land uses within the local land use framework.

1604 3.2.6 Regional Agencies.

1605 3.2.6.1 Regional agencies such as Metropolitan Planning Organizations (MPOs) are  
1606 in a position to provide regional guidance related to airport compatible land  
1607 use planning. Regional agencies may be able to serve as a neutral facilitator  
1608 when coordination among multiple local governments is needed to provide  
1609 for comprehensive airport compatibility throughout an airport influence  
1610 area. An MPO is a group comprised primarily of local elected officials that  
1611 serve as a forum for local decision making on transportation system and  
1612 regional planning matters.

1613 3.2.6.2 MPOs can serve as an important link in the compatible land use process  
1614 because they are looking at the transportation system in a broader  
1615 geographic area. This regional perspective often corresponds more directly  
1616 to the area where land use effects are found because airport protection zones  
1617 often cross multiple jurisdictional lines. An MPO ensures that state and  
1618 federal laws pertaining to regional transportation planning are implemented  
1619 in each metropolitan planning area. An MPO can bring the airport director  
1620 into the conversation as a committee member, and open lines of  
1621 communication between the airport and the land use professionals in the  
1622 region. MPOs plan for future transportation investments using federal and  
1623 local funds, which are then factored into local land use plans.  
1624 Transportation investments and enhancements are known to be drivers of  
1625 private economic development.

1626 3.2.6.3 MPOs have the ability to look beyond individual municipal boundaries to  
1627 assess land use effects and mitigation measures for the benefit of the larger  
1628 area of influence. For instance, a new highway exit can be expected to  
1629 generate a cluster of highway commercial development near the exit ramp,  
1630 as well as residential and industrial development in the area. If this  
1631 highway exit is located near an airport approach area, this stimulated  
1632 growth may be detrimental to the compatibility goals of the airport.  
1633 Consequently, coordination on the type of investment becomes important.

1634 3.3 **Airport Related Stakeholders.**

1635 Airport related stakeholders include those responsible for airport administration and  
1636 management as well as airlines, airport businesses/Fixed Base Operators (FBOs) and  
1637 local pilots. The specific stakeholders will vary depending on the size and type of airport.  
1638 At smaller airports, administration and management may be carried out by a single  
1639 airport manager, and local pilots are responsible for aircraft operations. Larger airports  
1640 may operate with a multiple-person airport administration, and commercial airline service  
1641 with administrative staff employed at the airport. At airports of all sizes, the local airport  
1642 stakeholders are responsible for working with local government stakeholders to maintain

1643 and even increase land use compatibility between the airport and the surrounding  
1644 community. The specific roles and responsibilities of each airport representative are  
1645 discussed in more detail in the following sections. In general, airport representatives  
1646 need to take actions that raise the visibility and public awareness of the airport as a part of  
1647 the land use planning conversation.

1648 3.3.1 Governing Body/Airport Sponsor.

1649 3.3.1.1 Airport influence areas usually span more than one municipal boundary.  
1650 Therefore, it is typical to need the support of multiple local agencies to  
1651 address local land use for a single airport. The airport sponsor should seek  
1652 to establish a working relationship and open lines of communication with  
1653 the local government officials and planning and zoning staff within the  
1654 airport area of influence. An airport sponsor with land use authority  
1655 (provided by state law or owning city or county) should ensure compatible  
1656 land use is maintained and protected in the airport environs, typically by  
1657 enforcement of adequate zoning code within the airport area of influence  
1658 (see Appendix F for sample airport overlay zoning ordinance). If the airport  
1659 sponsor or owner is not the local land use authority (adjoins other  
1660 independent jurisdictions, etc.), the sponsor should still pursue cooperation  
1661 with their neighboring land use authorities to advocate the airport interest  
1662 for compatible land use and development.

1663 3.3.1.2 Whether the local land use authority or not, the airport sponsor is expected  
1664 to promote and facilitate compatible land use decisions locally in a variety  
1665 of ways. This includes attendance at public meetings and participation on  
1666 local land use and development committees, either as a member or as a  
1667 guest speaker to promote airport compatibility. The sponsor can take the  
1668 time and provide needed information and resources about airport land use  
1669 compatibility, development initiatives at the airport, and the economic  
1670 impact of the airport. The sponsor should advocate for the airport in the  
1671 larger community and build a reputation as a valuable resource to the  
1672 community. Through active involvement in the local government activities,  
1673 the airport sponsor will be in a position to be informed and involved in the  
1674 early stages of planning, and will be able to work cooperatively with the  
1675 local government.

1676 3.3.2 Airport Manager.

1677 3.3.2.1 The airport manager is the airport stakeholder in the best position to keep  
1678 watch for local land use issues in the adjacent communities and the  
1679 surrounding areas. The airport manager can strengthen relationships with  
1680 local planning agencies by providing them with informative airport and  
1681 aviation documents (e.g., Airport Master Plan, relevant FAA guidance and  
1682 grant assurance obligations, economic impact studies, ACRP reports, etc.)  
1683 and by participating in community planning activities and encouraging  
1684 community participation in airport planning activities. In this role, the

1685 airport manager can be a resource to local planning agencies for information  
1686 related to land use compatibility. The airport manager should be aware of  
1687 regular meeting schedules for planning commissions and elected boards,  
1688 review the agenda prior to the meeting and be prepared to comment on land  
1689 use related issues that may affect the airport. The airport manager may also  
1690 be able to participate in the site plan review process associated with the  
1691 review and permitting of new land use developments. The airport manager  
1692 should also use available FAA tools such as the Obstruction  
1693 Evaluation/Airport Airspace Analysis (OE/AAA) website to search for new  
1694 cases around their airport (<https://oeaaa.faa.gov/oeaaa/external/portal.jsp>).

1695 3.3.2.2 As part of the community planning review process, the airport manager can  
1696 support new development that does not create incompatible land uses,  
1697 endanger the safe operations of the airport or expose the public to excessive  
1698 noise or risks. This review process for planned development near the  
1699 airport can often be established by the airport manager working to secure  
1700 planning coordination with their local planning officials. See Chapter 4 for  
1701 discussion of the coordination opportunities available to airport sponsors  
1702 and their local planning agencies.

1703 3.3.3 Airport Users: Airlines, Fixed Base Operators (FBOs) and Local Pilots.

1704 3.3.3.1 Airport users, including airlines, FBOs, and local pilots are another group of  
1705 airport stakeholders representing a diverse network of people within a  
1706 community. Airport users may also attend local public meetings concerning  
1707 proposed zoning and land use changes, and development proposals.  
1708 Airlines and FBOs, as well as some local aircraft owner/operators,  
1709 including local pilots, have an economic interest in the airport. They can  
1710 raise community awareness of the airport as an economic resource and  
1711 discuss the impacts of incompatibility. Through participation in community  
1712 conversations, airline staff, FBO staff, and pilots can raise the visibility of  
1713 the airport as a place of employment and as a valuable service to local  
1714 businesses travelers, cargo operator needs, and emergency service  
1715 providers. This can help garner support for land use decisions that prevent  
1716 incompatible development and preserve the continued safe operation of the  
1717 airport.

1718 3.3.3.2 In addition to actively promoting land use compatibility, airport  
1719 stakeholders need to be good neighbors. Pilots, FBOs, and commercial  
1720 airlines may be in a position to help mitigate or avoid some of the negative  
1721 effects that aircraft operations can have on adjacent land uses -- especially  
1722 noise related effects. Airport users can show their support for land use  
1723 compatibility by participating in efforts to reduce noise, as well as by  
1724 becoming involved in efforts to prevent new incompatible uses.  
1725 Specifically, pilots should operate their aircraft in a prudent manner to  
1726 reduce noise effects on local land uses. This includes adhering to local  
1727 voluntary noise abatement procedures, and posted traffic patterns during



1728 approach and departure operations. Pilots can show their support for these  
1729 efforts to the community by attending local noise abatement council  
1730 meetings.

1731 3.4 **Non-Aviation Stakeholders.**

1732 3.4.1 In addition to specific aviation interests, there are other non-aviation related  
1733 stakeholders that should be involved in the planning process. These stakeholders may  
1734 include those that support aviation activities such as shipping companies, parking  
1735 services, rental car companies, utilities, taxi/car services, cargo handling services, and  
1736 local transit agencies. Additionally, there are business stakeholders that locate near an  
1737 airport due to economic gains as a result of their location, such as hotels, restaurants,  
1738 and industrial users. Often these stakeholders have significant interest in land use  
1739 surrounding the airport, and its potential impact to the airport and airport business.

1740 3.4.2 Organized Groups / Non-governmental Organizations (NGOs) in the Surrounding  
1741 Jurisdictions.

1742 Local community groups, including business, social and recreational organizations such  
1743 as civic and volunteer organizations, the Chamber of Commerce, sport clubs, homeowner  
1744 associations, and so on offer forums for public engagement regarding land use education  
1745 with a ready-made organizational structure. These groups usually have established  
1746 meeting times, email lists, newsletters, websites, and other means of getting information  
1747 out to their membership. The airport manager and airport sponsor can identify these  
1748 groups in the community and take the initiative to reach out and provide information and  
1749 education about airport land use compatibility. Airport managers and sponsors can  
1750 develop a presentation that can be given in a meeting setting and text that can be included  
1751 in newsletters and other written communication. When information about the value of  
1752 land use compatibility and the value of the airport to the community is shared with  
1753 interested citizens, they can then influence land use decision making, both individually  
1754 and collectively.

1755 3.4.3 Residents and Community Stakeholders.

1756 3.4.3.1 Local citizens – individually and organized in neighborhood associations -  
1757 living near the airport can also be a critical partner in the land use planning  
1758 process because they directly influence the decisions made by local  
1759 planners, elected officials, and other policymakers. Local citizens can also  
1760 bring an important perspective to the community conversation in their  
1761 personal role as neighbors, travelers and employees. Public education about  
1762 land use compatibility on or near airports will help establish open lines of  
1763 communication between all parties and set the stage for future dialogues.  
1764 When the local residents understand how the airport and surrounding areas  
1765 interact, they can participate more effectively in an airport compatible land  
1766 use and development conversation.

1767 3.4.3.2 The airport manager and the airport sponsor may provide the needed  
1768 education and outreach to the local residents, neighborhood organizations,  
1769 and community interests to support coordination on airport and community  
1770 compatible land use planning programs. Informed residents will challenge  
1771 land use development proposals that potentially conflict with airport safety,  
1772 expand noise exposure, or create adverse economic impact to their  
1773 community. Informed residents are more likely to accept proposals shown  
1774 to represent mutually compatible development.

1775 3.4.3.3 Community leaders, frequent travelers, and local business owners can each  
1776 bring a unique view of the relationship between the airport and its environs,  
1777 and may offer different perspectives on the economic value of the airport or  
1778 noise impacts. Members of the public can raise awareness of land use  
1779 compatibility issues at public meetings, through social media, or in the  
1780 press, and can challenge decision-makers to address potential safety, noise  
1781 or economic impacts.

1782 3.4.4 Real Estate and Development Interests.

1783 3.4.4.1 Real estate professionals in a community, both businesses and individuals,  
1784 should be included in the compatible land use discussion. As the agent and  
1785 professional market consultants for landowners and development interests,  
1786 realtors are in a position to be responsive stewards for compatible land use  
1787 and development at the airport, and the market area around it. In order to fill  
1788 this role, real estate professionals need to be educated about land use  
1789 compatibility and the effect a nearby airport can have on different types of  
1790 land use and development. They can be included in local land use planning  
1791 discussions as a member of the planning commission, a participant in a focus  
1792 group, or a speaker at a public meeting.

1793 3.4.4.2 Their participation may be especially valuable because they can often speak  
1794 from experience about the effect of noise over residential properties, and they  
1795 understand tools such as avigation easements and disclosure notices. These  
1796 tools are available to encourage land use compatibility as a part of property  
1797 sales near an airport or in the approach areas, and are used to alert developers  
1798 or a future tenant to potential compatibility concerns before development  
1799 takes place. In some cases, education alone may be enough to encourage real  
1800 estate developers to implement compatible land use strategies. A shift away  
1801 from the concept of “caveat emptor” (buyer beware) places more legal  
1802 responsibility on the realtor and selling owner to represent the property fairly  
1803 and accurately to buyers. In some states, laws require disclosure of airport  
1804 noise or location (as well as other environmental issues) in real estate  
1805 purchase contracts.

1806 3.5 **State Government Stakeholders.**

1807 Agencies at the state level can support airport compatible land use planning efforts in  
1808 many ways, such as providing funding for airport sponsors to develop land use  
1809 compatibility plans and supporting legislation that requires or encourages land use  
1810 planning efforts for communities with airports. Coordination with state agencies is  
1811 important to align compatibility efforts at all levels. The following sections discuss  
1812 common state agencies that can impact airport land use compatibility and should be  
1813 consulted with as appropriate.

1814 3.5.1 State Aeronautical Departments.

1815 Each state has its own unique combination of authorities and resources that can help  
1816 support local airport sponsors in the pursuit of compatible land use within the vicinity of  
1817 airport property. State level guidance and support from each state aeronautical  
1818 department can promote land use compatibility through initiatives ranging from  
1819 information and education, to voluntary land use guidance, to mandatory land use  
1820 requirements. State and local funding of compatible land use planning and zoning efforts  
1821 is available in some states.

1822 3.5.2 Other Agencies.

1823 3.5.2.1 Many state departments and agencies can affect land use compatibility  
1824 planning if their areas of interest and expertise overlap with the aviation  
1825 sector. Communication and coordination between the aeronautics  
1826 departments and other agencies can help to align land use compatibility  
1827 guidance and other program goals.

1828 3.5.2.2 Other state agencies should be included in the dialogue because of the  
1829 potential to align land use compatibility and other development goals. The  
1830 specific name and role of the departments will vary depending on the  
1831 specific structure of the individual state governments. In general, however,  
1832 the following agencies should be considered:

1833 • Departments of Agriculture: In many cases, agriculture is compatible  
1834 with airport operations. However, open water sources and crops that  
1835 provide food and shelter for wildlife may increase wildlife hazards  
1836 when they are located near airports. The state department of agriculture  
1837 can work with the agricultural community to discuss land use  
1838 compatibility and address issues, especially as it relates to minimizing  
1839 wildlife hazards.

1840 • Departments of Economic Development: Typically, a state department  
1841 of economic development has many tools to encourage new commercial  
1842 and industrial development including economic incentives (i.e. grants)  
1843 and marketing functions. Policymakers in this department can  
1844 encourage growth in places that will be compatible for both the business  
1845 and the airport operations. They can also help promote the economic  
1846 value of the airport as a business development tool.

- 1847 • Departments of Environmental Quality or Management: This  
1848 department is normally responsible for the implementation and  
1849 regulation of a host of environmental features, including some related to  
1850 water such as wetlands and floodplains. Because open water is also a  
1851 wildlife attractant, environmental regulations can work at cross-  
1852 purposes with the safety needs of the airport. The state environmental  
1853 department can help identify solutions that encourage land use  
1854 compatibility and environmental goals.
- 1855 • Departments of Historic Preservation: Typically, the state historic  
1856 preservation office is tasked with preserving structures that meet  
1857 established criteria. These criteria may impact actions that could  
1858 address compatible land uses. For instance, a structure may be a hazard  
1859 to airport operations. This office may also review National  
1860 Environmental Policy Act (NEPA) documents for certain airport  
1861 development projects.
- 1862 • Departments of Community Health and/or Human Resources: These  
1863 departments may be involved in siting new institutional and health care  
1864 facilities. There may be land use compatibility concerns with these  
1865 facilities when they are near an airport. Engaging these departments in  
1866 dialogue about land use compatibility in the early planning stages can  
1867 help alleviate those concerns.

1868 3.5.2.3 Likely, other state agencies will need to be consulted beyond the ones listed  
1869 above. Consultation is on a case-by-case basis.

1870 3.6 **Federal Government Stakeholders.**

1871 While the FAA is the primary agency responsible for airport-related land use issues, other  
1872 federal agencies are also involved in more limited ways because they have an impact or  
1873 decision-making authority over issues that directly or indirectly affect land use issues.  
1874 Much like the various state agencies discussed in Section 3.8, a number of federal  
1875 agencies may have a role or responsibility to regulate and review various aspects of  
1876 airport development and land use compatibility issues.

1877 3.6.1 DOT, Federal Aviation Administration (FAA).

1878 3.6.2 The U.S. Department of Transportation (DOT), the parent organization of the FAA, has  
1879 a mission that is focused on the transportation of people and goods by highway, rail, air  
1880 and other modes. In some instances, federal actions regarding other modes of  
1881 transportation can affect airport land use compatibility. The FAA can coordinate with  
1882 the other DOT modal administrations on these projects.

1883 3.6.3 The FAA is the primary agency responsible for federal guidance relevant to land use  
1884 compatibility as it relates to the national aviation system. In some instances, the  
1885 development of other types of transportation infrastructure can raise issues or conflicts  
1886 with aviation facilities, which needs to be considered carefully. Conversely, there may

- 1887 be mutual benefit in some instances where careful and coordinated multimodal  
1888 planning can provide synergistic benefits to both aviation and surface transportation,  
1889 which in turn can greatly benefit a community or region. Such issues should be  
1890 explored as early as possible in the planning process.
- 1891 3.6.4 Title 14 of the Code of Federal Regulations (CFR), FAA Orders, and FAA Advisory  
1892 Circulars (AC) are the primary tools FAA uses at the national level to preserve, protect,  
1893 manage, and grow the national air transportation system.
- 1894 3.6.4.1 The FAA guides land use compatibility through funding programs in  
1895 several ways. For airports that are part of the National Plan of Integrated  
1896 Airport Systems (NPIAS), the Airport Improvement Program (AIP) can  
1897 provide funding for master planning, land acquisition (including fee simple  
1898 and avigation easements), and noise related mitigation measures. FAA  
1899 Order 5100.38, *AIP Handbook*, provides guidance and sets forth policy and  
1900 procedures used in the administration of the AIP (and can be found on  
1901 FAA’s website at [https://www.faa.gov/airports/aip/aip\\_hand](https://www.faa.gov/airports/aip/aip_handbook/)  
1902 [book/](https://www.faa.gov/airports/aip/aip_handbook/)).
- 1903 3.6.4.2 Airport sponsors may accept AIP grant funding for eligible airport planning  
1904 and development. FAA funding provides a contractual aspect to land use  
1905 compatibility through the airport sponsor’s grant assurance obligations to  
1906 FAA. When accepting an AIP grant, the airport sponsor agrees to maintain  
1907 safe and compliant airport use and operations conforming to FAA grant  
1908 assurances—including agreeing to protect their airport from incompatible  
1909 land uses. As well as an obligation to be vigilant to prevent incompatible  
1910 development, FAA grant funding can be an important incentive to promote  
1911 airport land use compatibility with their local land use and development  
1912 community.
- 1913 3.6.4.3 The FAA provides guidance for establishing airport planning and design  
1914 standards that are important to the overall planning process. This includes  
1915 the creation of a master plan and the development of an Airport Layout Plan  
1916 (ALP). Additionally, system planning, airspace review, and general  
1917 education of stakeholders are also supported by FAA guidance documents,  
1918 as well as direct staff involvement when requested or required. A  
1919 discussion of these guidance documents and their associated use in the  
1920 planning process is included in Chapter 4.
- 1921 3.6.5 Department of Defense (DOD).  
1922 With branches including the Air Force, Army, Navy and others, the Department of  
1923 Defense (DOD) often has operational areas both on the ground and in the air that can  
1924 affect civilian airport operations with regards to approaches and flight routes.  
1925 Coordination with them is crucial to ensuring compatible land use and development.
- 1926 3.6.6 Army Corps of Engineers (Corps).

1927 The Corps often becomes involved in airport land use compatibility planning when an  
1928 airport is near significant bodies of water, has extensive wetland impacts or has  
1929 development near navigable waterways. Because the Corps has a fundamentally  
1930 different set of statutory authorities and obligations, early coordination is crucial to  
1931 finding mutually acceptable solutions.

1932 3.6.7 Department of the Interior (DOI).

1933 DOI has a wide range of responsibilities including wildlife (e.g., threatened and  
1934 endangered species, migratory birds), wilderness areas and wildlife refuges, and national  
1935 parks. Agencies within DOI (e.g., the U.S. Fish & Wildlife Service, National Park  
1936 Service, Bureau of Land Management, etc.) may have an interest in land use planning  
1937 that protects natural resources in the vicinity of airports and may have a formal role in  
1938 some situations (e.g. Section 7 consultations under the Endangered Species Act).

1939 3.6.8 Environmental Protection Agency (EPA).

1940 This agency provides national guidance and oversight for a number of environmental  
1941 topics that often have direct implications on airport facilities (e.g., deicing, wetlands,  
1942 storm water runoff, air quality, etc.). The EPA establishes standards and regulations  
1943 under many environmental statutes, such as the Clean Air Act, the Clean Water Act, and  
1944 the Comprehensive Environmental Response, Compensation and Liability Act  
1945 (CERCLA, more commonly known as Superfund). In many cases, EPA delegates  
1946 implementation of these programs to the states. EPA also has a mandate to review  
1947 environmental impact statements (EIS) prepared by all federal agencies under NEPA.

1948 3.6.9 Federal Communication Commission (FCC).

1949 The FCC can often be a partner with the FAA when addressing issues such as cellular  
1950 towers and radio navigation. Coordination with them regarding the location of cellular  
1951 towers or other communication-based towers that extend into the national airspace  
1952 system is critical.

1953 3.6.10 Other Federal Agency Stakeholders for Compatible Land Use Planning.

1954 Other federal agencies that have development programs can have specific interests in  
1955 airport compatible land use planning efforts and can participate in the process. These  
1956 agencies include the Department of Agriculture, Department of Energy, Department of  
1957 Health and Human Services, and the Department of Housing and Urban Development.

1958  
1959

**CHAPTER 4. AIRPORT AND LOCAL LAND USE PLANNING COORDINATION**

1960

**4.1 Airport and FAA Participation in Local and Regional Planning.**

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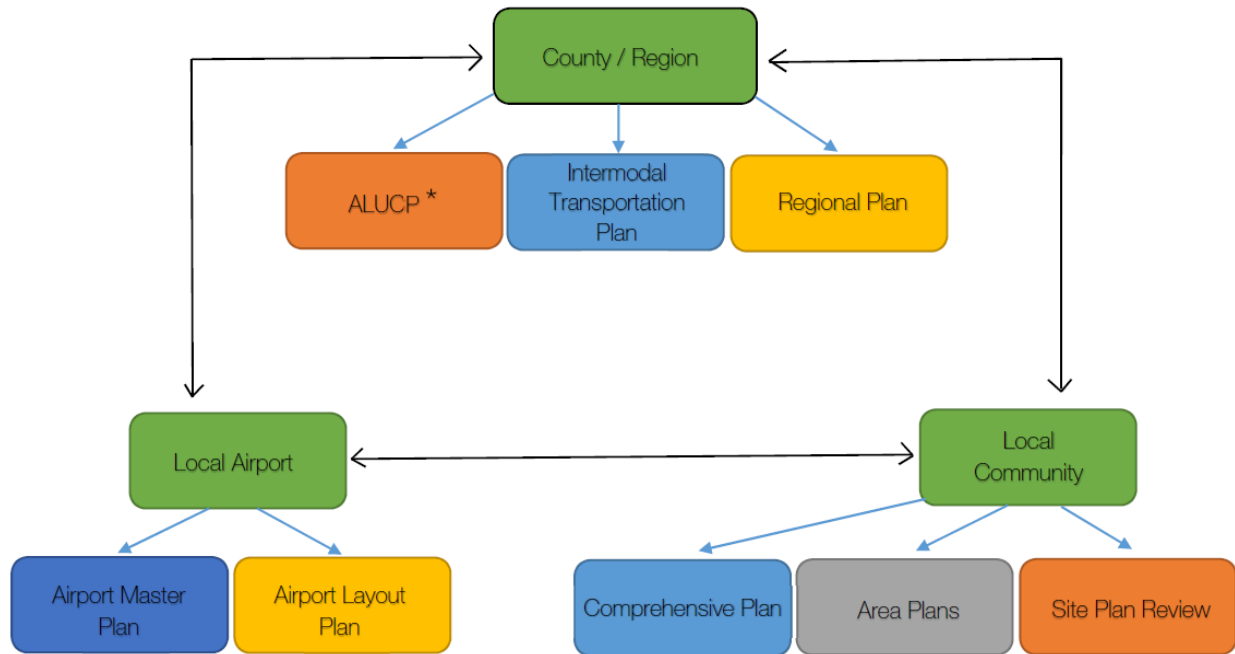
4.1.1 Airports, local governments, and regional planning agencies are all responsible for the preparation of long-range development plans. These plans establish the fundamental policies intended to guide development decisions through the future. **Table 4-1** on the following page lists the planning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

1966  
1967  
1968  
1969  
1970  
1971

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.

1972

**Figure 4-1. General Relationship of Planning Strategies**



1973  
1974  
1975

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

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

Sec.	Tool	Agency	Description/ Function
<b>Airport-Sponsored</b>			
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.
<b>Military-Sponsored</b>			
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.
<b>Regional Plans</b>			
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
<b>Local Government Plans and Activities</b>			
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.

- 1977 4.1.3 The authorities to develop, implement, and enforce land use programs and decisions  
1978 rest predominantly with local governments. The FAA advises airport operators to be  
1979 involved in the preparation of city and county comprehensive plans so that they can  
1980 advocate for airport interests and provide their specialized expertise to the planning  
1981 team. The FAA can also be a helpful partner in comprehensive planning to the extent  
1982 that airport and aviation interests are affected. By providing authoritative information  
1983 about the scope and limitation of the federal role in land use compatibility and airspace  
1984 protection, the FAA can provide information needed to encourage local governments to  
1985 exercise the degree of planning and regulatory control needed to protect the airport.
- 1986 4.1.4 The FAA encourages airport operators to be vigilant and coordinate with local  
1987 governments to ensure that they are routinely given information about proposed  
1988 development activity in the airport environs. An airport's area of influence, including  
1989 airspace, noise impact area, and areas of safety concern can cross multiple jurisdictions,  
1990 so it is important that the airport operator engage with all affected jurisdictions.
- 1991 4.1.5 Effective coordination allows airport operators the opportunity to review and comment  
1992 on those proposals. In areas subject to considerable development pressure, local  
1993 government planners and airport staff can create formal staff committees that meet  
1994 regularly to review and discuss development trends and specific projects. In addition to  
1995 building important relationships among the participants, this coordination can improve  
1996 the likelihood that airport compatibility considerations are addressed early in the  
1997 development process. It also gives the airport operator the opportunity to keep local  
1998 government officials informed of airport improvement and development projects in a  
1999 timely manner.

2000 4.2 **Airport-Sponsored Plans.**  
 2001 Two key plans create a blueprint for the future development of airport facilities. These  
 2002 include the Airport Master Plan (which evaluates current and future airport use, among  
 2003 other factors) and Airport Layout Plan (which graphically depicts airport facilities, as  
 2004 they exist today and are planned for the future). In addition to these two plans, the 14  
 2005 CFR Part 150 Noise Compatibility Program, can evaluate current and anticipated airport  
 2006 noise exposure levels around an airport in order to address measured noise impacts on  
 2007 noise sensitive land use. Following are descriptions of these plans.

2008 4.2.1 Airport Master Plans and Airport Layout Plans (ALPs).

2009 4.2.1.1 The guiding principle of the airport planning process is to develop a safe  
 2010 and efficient airport through the use of acceptable planning standards. The  
 2011 Airport Master Plan and Airport Layout Plan (ALP) are the two primary  
 2012 planning resources that discuss the existing conditions of an airport, as well  
 2013 as project future growth and development. The Airport Master Plan is a  
 2014 narrative report that describes the existing conditions at the airport,  
 2015 forecasts future use and facility needs, and provides a narrative justification  
 2016 for proposed development. The ALP documents the existing and future  
 2017 configuration and development of an airport in a graphic manner. ALPs are  
 2018 required for those airports that are part of the National Plan of Integrated  
 2019 Airport Systems (NPIAS). A master plan report is recommended for those  
 2020 airports that anticipate future growth. Every federally obligated airport is  
 2021 required to maintain a current ALP as a condition of its grant assurances.

2022 4.2.1.2 Airport Master Plans follow the guidelines set forth in FAA AC 150/5070-  
 2023 6, *Airport Master Plans*. Acceptable Airport Master Plans should aim to  
 2024 include, at a minimum, an inventory of existing conditions, aviation  
 2025 forecasts, alternatives development, a capital improvements plan and public  
 2026 involvement. Airports are encouraged to involve the FAA in the master  
 2027 planning process, to provide continuity prior to ALP development airspace  
 2028 reviews. FAA's role is to provide guidance and technical information on  
 2029 current standards and initiatives, as well as to approve the aviation forecast.  
 2030 FAA does not approve but instead accepts an Airport Master Plan report  
 2031 meeting applicable FAA requirements. The FAA does, however, review  
 2032 and approve the aviation forecast, and reviews and approves each airport's  
 2033 Airport Layout Plan in accordance with the FAA's authorizing statute.

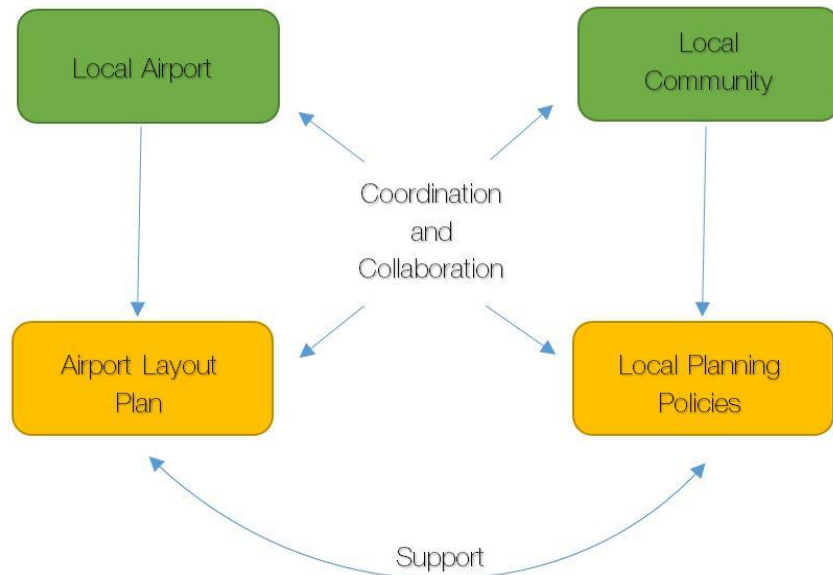
2034 4.2.1.2.1 The ALP illustrates the airport boundaries, including all existing and  
 2035 planned facilities as discussed in an Airport Master Plan or indicated in a  
 2036 planning process that may not be part of a master plan report. An ALP is  
 2037 the culmination of the planning process and details the planned growth and  
 2038 development for an airport typically over a 20-year planning horizon. One  
 2039 of the sheets in an ALP is the "Land Use Plan," which indicates the current  
 2040 land uses around an airport, outside of the airport property line. This  
 2041 information is helpful in understanding existing and potential future  
 2042 conditions, however it is not intended to govern or regulate land uses

2043 around an airport. While it is not a mechanism to achieve compatibility on  
 2044 its own, it can be shared with the local elected/appointed bodies to help  
 2045 them be better informed about the airport.

2046 4.2.1.2.2 The local community, including planning agencies and administrators (e.g.,  
 2047 the Mayor’s office, City Council), should be invited to participate in an  
 2048 airport’s planning process so the community is informed about the airport’s  
 2049 long-term development plan. An ALP should be available and shared with  
 2050 local communities to inform them about an airport’s plans for development.  
 2051 By having a chance to provide input on the long-term development plans of  
 2052 an airport, the community can inform the FAA of concerns or information  
 2053 before projects are initiated. This should be a two-way communication  
 2054 process: the community should have an opportunity to contribute to the  
 2055 process and be informed about how their input was considered.

2056 4.2.1.2.3 **Figure 4-2** illustrates the ideal relationship between an airport and its local  
 2057 community in developing coordinated plans and policies that promote  
 2058 compatibility. The community can also coordinate with an airport in  
 2059 planning for other systems that serve the airport such as public utilities,  
 2060 local streets, transit service, and public safety and emergency response  
 2061 teams. AC 150/5050-4, *Citizen Participation in Airport Planning*, provides  
 2062 guidance for airports to engage the local community in airport planning  
 2063 efforts (such as ALP development), and tools and techniques to encourage  
 2064 participation. Airports are encouraged to blend the recommendations  
 2065 provided in this updated AC into their master planning process.

2066 **Figure 4-2. Planning Relationships that Promote Compatibility**



2067

2068 4.2.2 14 CFR Part 150 Noise Compatibility Programs.  
2069 The Aviation Safety and Noise Abatement Act (ASNA) required the FAA to: 1) establish  
2070 a single system of measuring noise; 2) establish a single system for determining the  
2071 exposure of individuals to noise resulting from airport operations; 3) identify land uses  
2072 normally compatible with various exposures of individuals to noise; and 4) to address  
2073 noise impacts on existing incompatible uses. The resulting federal regulation, 14 CFR  
2074 Part 150, *Airport Noise Compatibility Planning*, prescribes the procedures, standards and  
2075 methodology governing the development, submission, and review of airport noise  
2076 exposure maps (NEMs) and airport noise compatibility programs (NCPs), including the  
2077 process for evaluating and approving or disapproving those programs. The Part 150  
2078 process is entirely voluntary on the part of the airport. However, many airports have  
2079 reaped significant benefits from the process, which provides a structured approach to  
2080 collaboration between the airport, airlines and other user groups, neighboring  
2081 communities and the FAA (including air traffic controllers and the specialists who design  
2082 the arrival and departure paths for aircraft in flight). Also see AC 150/5020-1, *Noise  
2083 Control and Compatibility Planning for Airports*, for FAA guidance for sponsor  
2084 development and implementation of noise compatibility programs developed for FAA  
2085 approval under 14 CFR Part 150.

2086 4.3 **Military-Sponsored Plans.**  
2087 Communities that are home to military air bases have two main planning studies that are  
2088 sponsored by the Department of Defense. The goal of these studies is to promote  
2089 compatible uses (military and civilian) near the military installations to maintain safe  
2090 military air operations. Section 4.3.1 and Section 4.3.2 provide additional information on  
2091 each of these studies.

2092 4.3.1 Department of Defense Air Installation Compatible Use Zones (AICUZ) Studies.  
2093 The Air Installation Compatible Use Zone (AICUZ) program promotes compatible land  
2094 development in areas surrounding military air bases subject to aircraft noise and accident  
2095 potential. The AICUZ studies describe three basic types of constraints that affect or  
2096 result from aircraft operations, including height restrictions, noise zones, and accident  
2097 potential zones. They also include a list of land use guidelines. The AICUZ zones are  
2098 similar to civilian airport overlay zoning districts, although the accident potential zone is  
2099 derived from military accident data and does not necessarily correlate with the  
2100 dimensions established for the Runway Protection Zone (RPZ) described in FAA design  
2101 standards.

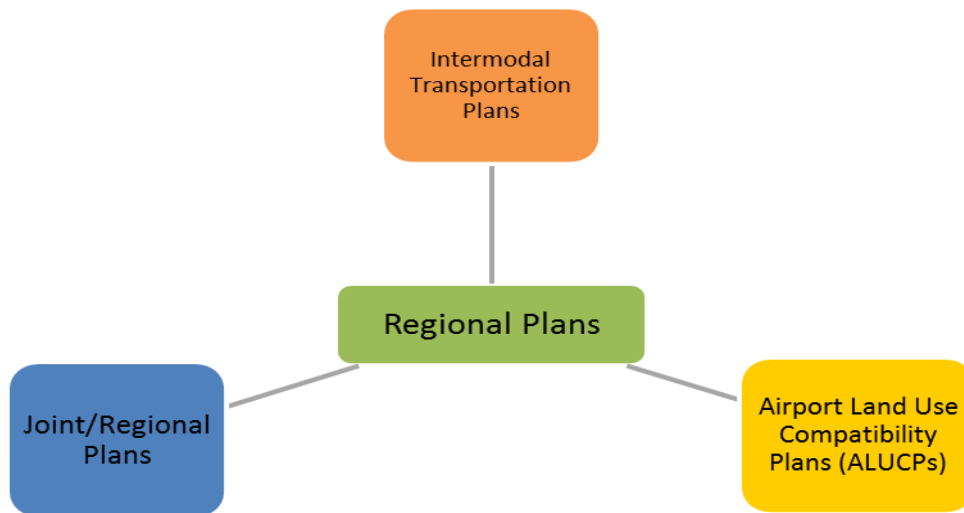
2102 4.3.2 Department of Defense Joint Land Use Studies (JLUS).  
2103 The Joint Land Use Study (JLUS) is a basic planning process designed to identify  
2104 encroachment issues confronting a military installation and civilian community, as well  
2105 as to recommend strategies to address the issues in the sponsoring community's  
2106 comprehensive plan and zoning regulations. A JLUS is produced by and for a local  
2107 jurisdiction (or multiple jurisdictions) where the military installation is located. It is  
2108 intended to benefit both the local community and the military installation by combining  
2109 the AICUZ program with the JLUS program. According to the 2006 Joint Land Use

2110 Study Program Guidance Manual, the JLUS is conducted in a collaborative manner  
 2111 involving a number of stakeholders, such as local elected officials, planning  
 2112 commissioners, local military base command staff, community business leaders,  
 2113 chambers of commerce, homebuilders, real estate interests, and affected residents.

2114 4.4 **Regional Plans.**

2115 Airports can affect areas much larger than the immediate surrounding area. As shown in  
 2116 **Figure 4-3**, communities may work together on a regional planning level.

2117 **Figure 4-3. Common Regional Plans**



2118  
 2119

2120 4.4.1 Intermodal Transportation Plans.

2121 4.4.1.1 The national airspace system is part of a larger transportation network that  
 2122 includes highways, local streets, rail, ports, transit and non-motorized  
 2123 transportation. As such, airport administrators should be part of multimodal  
 2124 transportation planning efforts. Metropolitan Planning Organizations  
 2125 (MPOs) are often the agencies responsible for developing long-range  
 2126 transportation plans with multimodal investment strategies. The airport  
 2127 planning process should be conducted in coordination with local MPOs (if  
 2128 applicable) in order to meet the mobility needs of people and businesses  
 2129 throughout a metropolitan area.

2130 4.4.1.2 Trips using air transportation also include other modes of transportation  
 2131 from origin to final destination. Options for local ground transportation  
 2132 access to an airport are important for business and leisure travelers as well  
 2133 as airport employees. Connections to the highway system, shipping ports  
 2134 and rail lines are important for the movement of cargo. For these reasons,  
 2135 the aviation mode should be included in the intermodal planning process.

2136 Multimodal planning efforts are encouraged to allow for greater  
2137 development of the transportation systems that take advantage of the  
2138 existing infrastructure, as well as the future needs of these systems.

2139 4.4.2 Joint / Regional Plans.

2140 Regional plans are completed jointly, or cooperatively, by more than one community.  
2141 Communities choose to join together to produce regional plans for a variety of reasons.  
2142 Often the reason or the driver is a resource that spans across several communities.  
2143 Examples of this include watersheds, non-motorized trail systems, and regional transit.  
2144 Airports also have impacts beyond one local community even if they are located within  
2145 in a single jurisdiction. As a result, regional or joint plans may be appropriate to address  
2146 airport land use concerns. Regional planning for airports can be an effective way to  
2147 address land use effects and compatible land use needs of an airport.

2148 4.4.3 Airport Land Use Compatibility Plans.

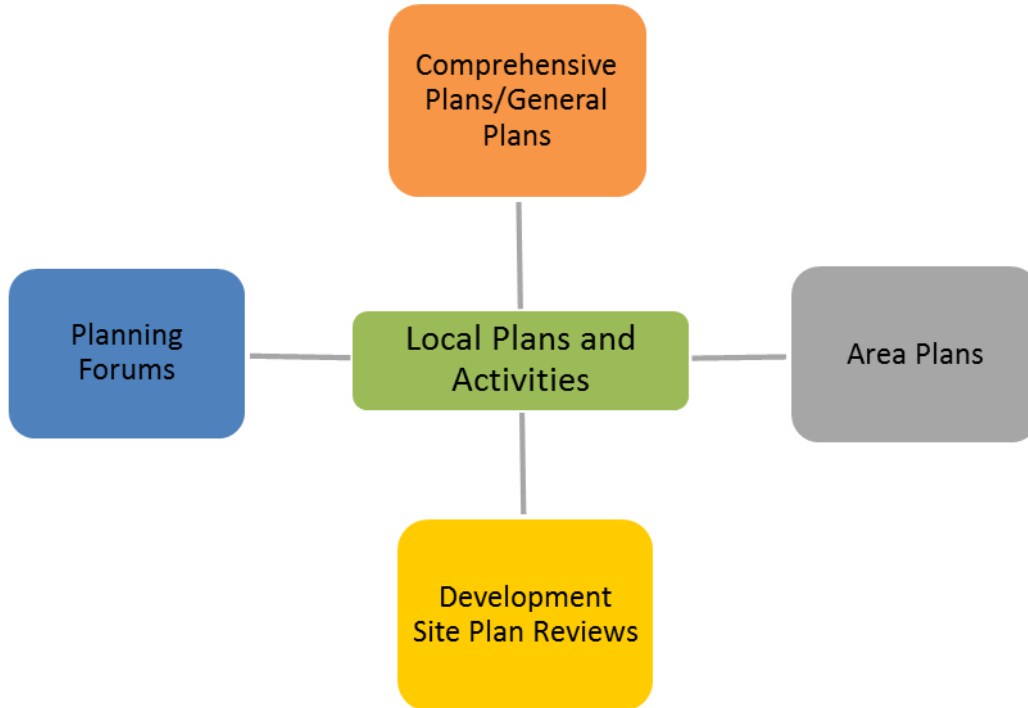
2149 An Airport Land Use Compatibility Plan (ALUCP) is a term given to a specific plan  
2150 developed to look at compatibility around an airport. The State of California requires  
2151 counties that have public use airports to develop ALUCPs. Airport Land Use  
2152 Commissions (ALUCs) are tasked with overseeing them. The basic function of an  
2153 ALUCP is to promote compatibility between airports and the land uses that surround  
2154 them, and therefore it is a tool that can be used at airports of all sizes and types across the  
2155 country – not just in California. The plan needs to define an airport influence area or  
2156 other planning boundary that is large enough to protect an airport and persons on the  
2157 ground around it. The FAA recommends that it also contain federal and state airport  
2158 design criteria, safety areas, noise areas, and overflight areas with land use controls  
2159 unique to the local community. Through due diligence in implementing the guidelines  
2160 included in an ALUCP, communities can accommodate compatible growth and  
2161 development of airports while still allowing for growth and development in the  
2162 community. These ALUCPs are not regulatory documents, rather they provide  
2163 background and framework to support or guide the implementation of an airport zoning  
2164 ordinance, which is the regulatory document. Appendix E provides a checklist of  
2165 ALUCP content and links to some existing commission plans.

2166 4.5 **Local Governments Plans and Activities.**

2167 The local government often has a variety of planning processes and documents that are in  
2168 place to help guide growth according to the values and vision of the community. These  
2169 plans can incorporate airport-sponsored planning efforts (see Section 4.2) and vice versa  
2170 to align airport compatible land use needs with community growth. Information on the  
2171 four common local plans and activities shown in **Figure 4-4** is provided in the following  
2172 sections.

2173

**Figure 4-4. Common Local Plans and Activities**



2174

2175 4.5.1 Comprehensive Planning / General Planning.

2176 A local comprehensive plan, also called a general plan in some states, is a strategic long-  
 2177 range document that sets forth policies for a community’s long-term growth and  
 2178 development. A comprehensive plan generally includes maps, charts, and text to explain  
 2179 a plan’s goals and objectives. The purpose of traditional comprehensive planning and  
 2180 general plans is to provide for organized community growth, development, and land use.  
 2181 These plans are well suited to incorporate airport elements. Local comprehensive plans  
 2182 should reference local Airport Master Plans and ALPs or even adopt the Airport Master  
 2183 Plan as an area plan (see Section 4.5.2). This will set the stage for local land use decision  
 2184 makers to make coordinated decisions regarding compatible land use around an airport’s  
 2185 jurisdictional boundary. The importance of an Airport Master Plan and associated ALP  
 2186 is highlighted when a local municipality recognizes the documents as part of the  
 2187 comprehensive plan.

2188 4.5.2 Area Plans.

2189 A community comprehensive/general plan may include area plans that address specific  
 2190 geographic areas such as individual neighborhoods or Central Business District (CBD)  
 2191 areas, or specific topics such as roads or recreation. Because area plans have a more  
 2192 narrow focus, they also provide a higher level of planning detail. An Airport Master Plan  
 2193 can be adopted by a community as an area plan for an airport and the surrounding  
 2194 affected areas, depending on local regulations. The additional detail provided by airspace  
 2195 protection zones and noise contours can set the stage for more detailed land use  
 2196 regulations for compatible land use around an airport.

2197 4.5.3 Development Site Plan Reviews.

2198 Approval by the local planning commission with a site plan approval is usually required  
2199 for new development in a community (other than low density, single-family housing).  
2200 Site plan approval is the review and approval of the physical site design, including  
2201 building location and height, parking layout, drainage, lighting, and landscaping. Uses  
2202 with off-site effects such as smoke, glare, or vibration usually require a conditional use  
2203 permit (or “special use permit”). A conditional use permit allows the local jurisdiction to  
2204 place operating restrictions on the proposed use as a condition of approval. The  
2205 permitting process can address airport land use compatibility through a general  
2206 performance statement (i.e. must be compatible with airport operations) or through  
2207 specific design standards. As part of site plan review, comments are often requested from  
2208 service providers and regulatory agencies. Through this same process, an airport  
2209 manager or an airport sponsor could also be asked to review and comment on the site  
2210 plan. Whether it is general performance standard, specific site development standards, or  
2211 direct engagement from the airport administration, there are several ways the site plan  
2212 review process can be used to review or even guide new development.

2213 4.5.4 Planning Forums.

2214 In areas subject to considerable development pressure, formalized staff committees of  
2215 local government planners and airport staff can be formed to meet regularly to review and  
2216 discuss development trends and specific projects. In addition to building important  
2217 relationships among the participants, this coordination can improve the likelihood that  
2218 airport compatibility considerations can be addressed early in the development process.  
2219 It also gives the airport operator the opportunity to keep local government officials  
2220 informed of airport improvement and development projects in a timely manner.



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**CHAPTER 5. TOOLS AND TECHNIQUES FOR LAND USE COMPATIBILITY**

2223 5.1 **Overview of Tools and Techniques.**

2224 5.1.1 Many tools and techniques have been developed over the years to promote airport land  
2225 use compatibility. Unfortunately, in many instances these tools and techniques go  
2226 unused by local communities and airports. Some tools have proven to be effective in  
2227 many different settings; others are highly specialized and are suitable only in special  
2228 cases. The key stakeholders in the land use compatibility planning process – airports  
2229 and local governments (and, to a lesser extent, regional planning agencies) – have  
2230 access to different sets of tools, which can be utilized. Effective airport land use  
2231 compatibility usually depends on the cooperation of these stakeholders in designing a  
2232 comprehensive system of land use compatibility plans and regulations.

2233 5.1.2 The selection of appropriate tools and techniques should follow comprehensive airport  
2234 and land use planning processes, as described in Chapter 4. The plans developed  
2235 through those processes provide the overall policy direction that is essential to  
2236 structuring appropriate land use compatibility initiatives and building the public support  
2237 needed to implement those initiatives. If land use regulations to promote airport land  
2238 use compatibility are envisioned, the FAA advises that the rationale and the basis for  
2239 those regulations be clearly documented in airport and land use compatibility plans for  
2240 the regulations to withstand legal scrutiny.

2241 5.1.3 **Table 5-1** lists the tools and techniques that are briefly discussed in this chapter. For  
2242 each tool or technique, the entity with primary implementation authority is noted, as are  
2243 the land use compatibility factors that can be most effectively addressed through the use  
2244 of the tool or technique. Application/implementation of any of these tools should be  
2245 assessed on a case-by-case basis to address specific airport and community needs. In  
2246 many instances, more than one tool or technique may be required.

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

Tool/ Technique	Entity with Primary Authority	Potential Compatibility Concerns Addressed				
		Noise	Safety			
			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				
		Noise	Safety			
			Concentrations of People	Wildlife Attractants	Airspace	
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

2249 \*Legal Research Digest 12 Fair Disclosure and Airport Impact Statements in Real Estate Transfers.

2250 5.2 **Land Use Regulations.**

2251 Local governments are empowered by state law to exercise land use regulatory power to  
 2252 promote the public health, safety, and welfare. Zoning can be one of the most effective  
 2253 ways to achieve land use compatibility near airports, because it regulates (by allowing or  
 2254 prohibiting) specific land uses in defined areas. Land use regulations are powerful tools  
 2255 for promoting airport land use compatibility, because they can regulate specific land uses  
 2256 and require development conditions to mitigate potential adverse effects on airports and  
 2257 aviation in defined areas. Most often, local land use regulations are enacted and  
 2258 administered by the municipality in which an airport is located (or by the county if the  
 2259 airport is in unincorporated territory). Zoning, the most powerful of the land use  
 2260 regulatory tools, can be used to both regulate land uses and land use characteristics, such  
 2261 as building height, bulk, site orientation, and design features. **Table 5-2** summarizes the  
 2262 types of land use regulations that can be used to foster compatible development near  
 2263 airports. Each is discussed in the following sections.

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**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 aviation 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.

2266 5.2.1 Overlay Zoning.

2267 5.2.1.1 A zoning overlay is a form of zoning that applies specific standards within  
 2268 an area without changing the basic, underlying zoning of the property.  
 2269 Airport compatibility overlay zoning can be used to impose special  
 2270 standards relating to noise, safety of those on the ground, flight safety,  
 2271 airspace protection, or even disclosure. Within airport compatibility  
 2272 overlay zones, noise-sensitive land uses might be prohibited or  
 2273 conditionally allowed if mitigated (e.g., sound insulated, disclosure, etc.) for  
 2274 compatible use with airport noise exposure. Land use characteristics posing  
 2275 risks to flight safety, such as smoke or water vapor, lighting mimicking  
 2276 airport approach lighting, or bird attractants, can also be prohibited. Height  
 2277 limitations designed to protect critical airspace can also be implemented  
 2278 through overlay zoning.

2279 5.2.1.2 To be legally defensible, overlay-zoning boundaries should be established  
 2280 to correspond to the geographic areas within which the specific impacts of  
 2281 concern occur. That is, noise-based regulation is defined by airport noise  
 2282 contours; height limitations to protect airspace are based on the boundaries  
 2283 of critical airspace, such as 14 CFR Part 77 airport vicinity obstruction

2284 surfaces or TERPS surfaces. See Appendix F for a sample airport land use  
2285 compatibility overlay-zoning ordinance.

2286 5.2.2 Extraterritorial Zoning.

2287 5.2.2.1 Airports are often located at the edges of their host municipalities. The  
2288 areas of airport influence, including noise exposure contours and critical  
2289 airspace, often extend over large areas beyond the boundaries of the host  
2290 municipalities. Where the areas of airport influence extend into  
2291 unincorporated areas, some cities, depending on state enabling legislation,  
2292 are able to exercise extraterritorial zoning control. That is, they are  
2293 empowered to use their zoning power outside their municipal limits.

2294 5.2.2.2 The exercise of extraterritorial zoning can be an effective way to extend  
2295 land use compatibility controls across a greater portion of the airport  
2296 influence area than would otherwise be possible. Coordination with the  
2297 local government(s) will likely be necessary to ensure that adoption of the  
2298 regulations is politically acceptable. After adoption, continued coordination  
2299 between the city and county governments is advisable to ensure that  
2300 development applications are correctly routed to the local planning and  
2301 building department(s) for processing.

2302 5.2.3 Compatible Use Zoning.

2303 5.2.3.1 The establishment of zoning allowing only compatible industrial or  
2304 commercial uses near airports can be effective in preventing some kinds of  
2305 incompatible development, but the technique has several potential  
2306 limitations. Perhaps the most serious limitation is that standard commercial  
2307 or industrial zoning lacks the flexibility to efficiently address all attributes  
2308 of land uses that may create airport compatibility problems. The  
2309 regulations applying in standard industrial and commercial zones limit land  
2310 uses to those that are compatible with industrial and commercial  
2311 development. Often, certain kinds of noise-sensitive institutions, such as  
2312 hospitals or schools, are allowed in such districts. Standard commercial and  
2313 industrial zoning also can allow design features that may be hazardous to  
2314 aircraft in flight, such as smoke, vapor, thermal plumes, or bird attractants.

2315 5.2.3.2 Another limitation of compatible use zoning is the need to balance the  
2316 supply of industrial and commercial-zoned land with demand. If the market  
2317 for commercial or industrial-zoned land is weak, and if property owners  
2318 perceive that they are effectively being prevented from developing their  
2319 land, they can exert political pressure or, in extreme cases, sue in court to  
2320 force rezoning of the land. This can occur if the total supply of commercial  
2321 and industrial land vastly exceeds overall demand or if the land, which has  
2322 been zoned for commercial and industrial use, is not yet ripe for such  
2323 development or is ill suited for those uses because of site problems, poor  
2324 access, or inadequate water and sewer service.



2325 5.2.4 Standalone Airport Zoning Ordinances.

2326 5.2.4.1 Many states authorize the establishment of specialized Airport Zoning  
2327 Ordinances. These statutes are usually separate from those authorizing  
2328 general-purpose land use planning and zoning. In many cases, the statutes  
2329 authorize the means through which multiple jurisdictions can coordinate in  
2330 creating a regional approach to airport land use compatibility regulation.  
2331 Some statutes, for example, authorize the creation of multi-jurisdiction  
2332 airport zoning commissions. In some states, however, the scope of  
2333 authority is limited to airspace protection or the avoidance of creating  
2334 hazards to flight, rather than granting broader land use regulatory authority.

2335 5.2.4.2 A particular challenge of stand-alone airport zoning ordinances is the need  
2336 incorporate them into the development permitting processes of local  
2337 governments. It is essential for one of the participating jurisdictions to take  
2338 a lead administrative role, and to maintain ongoing coordination with the  
2339 other jurisdictions and the airport to ensure the effective administration and  
2340 enforcement of these ordinances.

2341 5.2.5 Transfer of Development Rights.

2342 5.2.5.1 Transfer of Development Rights (TDR) programs are based on the principal  
2343 that land ownership actually involves the ownership of a bundle of rights to  
2344 the land. According to this theory, a property owner can sell or transfer  
2345 some of the rights to the use of his or her property without surrendering the  
2346 title to the entire property. TDR programs intended to guide the pattern of  
2347 development in a community are typically adopted through zoning  
2348 ordinances. The community is divided into sending and receiving zones,  
2349 and development rights, expressed as maximum permitted densities or floor  
2350 area ratios (FARs), are allocated to all properties in each zone. Properties in  
2351 the receiving zones may be developed to higher densities or FARs than  
2352 allowed under the zoning if the property owner is able to purchase  
2353 additional development rights from a property owner in a sending zone.  
2354 The idea is to create economic incentives to limit development in the  
2355 sending zones and to concentrate development in the receiving zones.

2356 5.2.5.2 TDR programs tend to be most effective in high-growth areas. Airport  
2357 operators and local governments interested in exploring the use of TDR  
2358 programs should consult with legal counsel to verify that the technique is  
2359 allowed under state law.

2360 5.2.6 Subdivision Regulations.

2361 5.2.6.1 Subdivision regulations control the platting of land by establishing site-  
2362 planning standards, including standards for lot layout, the placement of  
2363 utilities, and the dedication of public rights-of-way and easements. Some  
2364 jurisdictions have used subdivision regulations to promote compatible

2365 development in airport environs by requiring the consideration of aircraft  
2366 noise at the time public officials are reviewing the plat. This might take the  
2367 form of requiring further noise attenuation features in site design or  
2368 decreasing or shifting the density of portions of the development. Unless  
2369 subdivisions are extremely large, however, the altering of lot patterns and  
2370 shifts in residential density would be of little consequence in reducing noise  
2371 exposure for residences.

2372 5.2.6.2 Subdivision regulations can also be used to dedicate aviation easements.  
2373 Legal counsel should be consulted before adopting such provisions as this  
2374 area of land use law is undergoing change.

2375 5.2.6.3 Some jurisdictions have incorporated fair disclosure requirements into their  
2376 subdivision regulations to help ensure that people purchasing lots are made  
2377 aware that the property is within an airport influence area and may be  
2378 exposed to aircraft noise before they close on the purchase of the property.  
2379 Fair disclosure provisions may take any of several forms, as discussed in  
2380 Section 5.6.

2381 5.2.7 Building Codes.

2382 5.2.7.1 Building codes regulate the construction of buildings and set standards for  
2383 materials and construction techniques to protect the health, safety, and  
2384 welfare of occupants. Building codes address structural concerns,  
2385 ventilation, and thermal insulation and apply to new construction and major  
2386 alterations to existing structures. A good use of building codes for local  
2387 land use compatibility is to address noise. For example, building codes can  
2388 require sound insulation for residential and other noise sensitive facilities  
2389 constructed in areas subject to high levels of aircraft noise.

2390 5.2.7.2 Because of the complexity of building technology, most cities and counties  
2391 in the United States have long relied on model building codes prepared by  
2392 specialized standards organizations. Today in the United States, the  
2393 International Building Code is the model code that is in widespread use.<sup>4</sup> It  
2394 applies to all nonresidential construction, including multi-family  
2395 development over three stories. The International Residential Code applies  
2396 to dwellings and townhouses up to three stories.<sup>5</sup> These standard codes do  
2397 not include provisions for sound insulation to protect occupants from  
2398 especially high levels of exterior noise. Thus, local governments that wish

<sup>4</sup> <http://www.iccsafe.org>.

<sup>5</sup> <http://shop.iccsafe.org/codes/2018-international-codes-and-references/2018-international-residential-code-and-references.html>.

2399 to provide standards for the attenuation of significant aircraft noise levels  
2400 should adopt measures to supplement the standard building codes.

2401 5.2.7.3 A particularly effective way to administer building code provisions for  
2402 sound insulation is in tandem with airport compatibility overlay zoning.  
2403 The overlay-zoning ordinance would stipulate the types of land uses that  
2404 require sound insulation within the various noise exposure contours. The  
2405 building code would include provisions explaining how the sound insulation  
2406 requirements can be achieved.

2407 5.2.8 Project Review Standards.

2408 5.2.8.1 Planning staffs, planning commissions, zoning boards of appeals, and local  
2409 governing bodies are often required to use judgment in making  
2410 recommendations and decisions on community development actions such as  
2411 site plan approvals, rezoning and subdivision applications, and proposed  
2412 public improvement projects. Project review standards and guidelines can  
2413 provide a structured way for decision-makers to consider airport land use  
2414 compatibility as they review development proposals.

2415 5.2.8.2 Project review standards can be incorporated into zoning ordinances or  
2416 prepared as administrative guidelines for use by project planners as they  
2417 analyze development proposals and prepare recommendations for planning  
2418 commissions, boards of zoning appeals, and governing bodies. Project  
2419 review standards should include provisions ensuring that airport  
2420 representatives are informed of the proposed development projects so that  
2421 they have an opportunity to review and comment on the proposals.

2422 5.2.8.3 Project review standards are recommended to include guidance to ensure  
2423 that noise compatibility, the safety of people on the ground, flight safety,  
2424 and airspace protection are considered during review and approval of  
2425 development proposals.

2426 5.3 **Land Acquisition Techniques.**<sup>6</sup>

2427 Numerous acquisition techniques are available for airports that are trying to achieve or  
2428 maintain compatible land use around their facilities. **Table 5-3** provides a summary of  
2429 these techniques, and a detailed description of each is provided in the following sections.

<sup>6</sup> 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.

2431 5.3.1 Fee Simple Acquisition.

2432 Fee simple acquisition involves the purchase of an entire property, including structures  
 2433 and facilities, as well as the air and mineral rights. This is often the most effective  
 2434 mitigation strategy to protect an airport because the airport assumes sole ownership of the  
 2435 property, allowing the airport sponsor to maintain the property in a compatible manner.  
 2436 Airport sponsors should own, if possible, land within the Object Free Areas (OFAs) and  
 2437 Runway Protection Zones (RPZs) while taking into account the costs and physical  
 2438 limitations associated with individual parcels. Where development already exists in  
 2439 RPZs, other methods of control, such as easements and/or deferred possession via land  
 2440 contracts or purchase of development rights, may be more effective long-term solutions  
 2441 for clearance. To the extent practicable, land acquisition should include adequate areas  
 2442 surrounding the runways to protect approach and departure surfaces for both existing and  
 2443 planned runways and runway extensions.

2444 5.3.2 Purchase Options, Land Contracts, Life Estates.

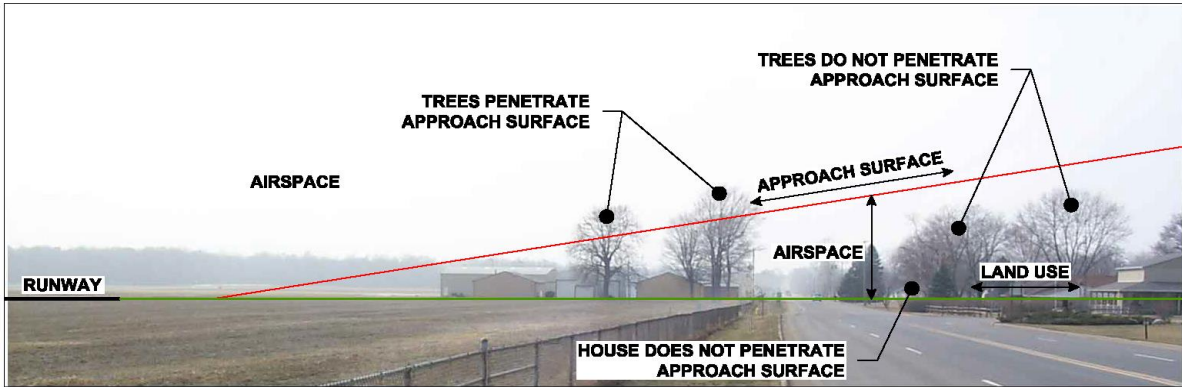
2445 5.3.2.1 If property acquisition is not immediately feasible or necessary, deferred  
 2446 acquisition techniques may be effective. One of these techniques is known  
 2447 as a “purchase option” where the airport sponsor pays a property owner an  
 2448 agreed upon sum of money to secure the right to purchase the property  
 2449 during a specified period of time. The FAA issued a guidance document in  
 2450 1997 entitled, *Report to Congress on Potential for Use of Land Options In*

- 2451                    *Federally Funded Airport Projects.*<sup>7</sup> This document details the  
2452 requirements and limitations of land option contracts for airport  
2453 development projects.
- 2454                    5.3.2.2        Another deferred purchase technique is known as a “land contract,” where  
2455 the airport sponsor pays a property owner a specified amount in multiple  
2456 installments (monthly, bi-annual, etc.), which go toward the purchase of the  
2457 property when it is no longer being used and occupied by the selling  
2458 property owner. These contracts have an agreed upon term, after which the  
2459 airport operator takes possession of the property
- 2460                    5.3.2.3        A third technique is the purchase of a life estate. The property owner  
2461 retains the right of occupancy until death, or until he or she no longer  
2462 desires to occupy the property as their permanent residence.
- 2463        5.3.3        Purchase of Avigation Easements.
- 2464                    5.3.3.1        An easement is a right or privilege that one party has to the limited use of  
2465 the property of another party. Avigation easements are often purchased by  
2466 airport sponsors to protect the surrounding airspace from encroachments  
2467 and land from incompatible development (such as incompatible  
2468 development in RPZs or future RPZs). Avigation easements, which are  
2469 attached to the deed and run with the land, can also include notices that the  
2470 property is subject to aircraft noise and other airport-related effects. They  
2471 can also include non-suit covenants protecting the airport operator from  
2472 lawsuits related to lawful use of the property as stipulated in the easement  
2473 document.
- 2474                    5.3.3.2        Avigation easements are effective in helping airport operators protect  
2475 critical airspace by enabling access to ensure that vegetation remains clear  
2476 of the airspace. **Figure 5-1** illustrates a penetration of trees to an approach  
2477 surface, which an airport may remedy with an avigation easement and  
2478 removal of the trees. The easement would include the right to remove the  
2479 penetrating tree, as well as the perpetual right to remove trees that may  
2480 become penetrations in the future. Such an easement would also typically  
2481 limit the construction of any new structure that would penetrate this surface  
2482 or creation of any land use that would be detrimental to aircraft operations  
2483 within the described easement area.

<sup>7</sup> 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.

2484

Figure 5-1. Tree Obstruction in a Runway Approach



2485

2486           5.3.3.3     Avigation easements often provide more positive control than zoning and  
 2487                     are applicable when fee simple purchase is unnecessary (e.g., where surface  
 2488                     use below overflight elevation is compatible). In addition, because the land  
 2489                     can remain in private ownership, it remains on the tax rolls. It is important  
 2490                     for airport operators to maintain a record of their avigation easements and  
 2491                     actively manage the properties in order to be effective. Avigation  
 2492                     easements providing for overflight to/from the airport run with the title of  
 2493                     the land encumbered, and bind succeeding owners to the height and land  
 2494                     use controls described in the easement. Easements protect the described  
 2495                     airspace and compatible land use controls needed for current and planned  
 2496                     development and operations at the airport. If subsequent future airspace  
 2497                     needs exceed the land use or development controls of an existing easement,  
 2498                     modified easement rights may need to be acquired by the airport to protect  
 2499                     for expanded airspace controls over an easement-encumbered property.

2500     5.3.4     Purchase of Development Rights.

2501           5.3.4.1     As previously noted in the discussion of Transfer of Development Rights  
 2502                     programs, land ownership involves a bundle of rights, including the right to  
 2503                     develop the property to the extent allowed by law. The right to develop  
 2504                     property has a value and it can be separated and sold apart from the entire  
 2505                     fee. The purchase of development rights has most often been used to  
 2506                     promote the preservation of environmentally sensitive areas and agricultural  
 2507                     properties. The entity that purchases the development rights holds them in  
 2508                     perpetuity, thereby restricting development on the subject property.

2509           5.3.4.2     Airport operators can purchase development rights to promote airport land  
 2510                     use compatibility (such as incompatible development in RPZs or future  
 2511                     RPZs). In rural areas, this can be a cost-effective way to guarantee long-  
 2512                     term land use compatibility while keeping the property on the tax rolls. In  
 2513                     suburban and developing areas, the technique can be less effective as the  
 2514                     value of the development rights can approach the value of the full fee  
 2515                     simple land value.



2516 5.3.5 Purchase of Conservation Easements.

2517 5.3.5.1 Conservation easements have historically been purchased by nonprofit  
 2518 environmental organizations, and state natural resources and environmental  
 2519 protection agencies, to protect sensitive lands from development. The  
 2520 property owner maintains ownership of the land but surrenders the right to  
 2521 develop the property, as described in the easement document. Conservation  
 2522 easements can be adapted to promote airport land use compatibility by  
 2523 limiting the right to develop the property for any incompatible land uses.

2524 5.3.5.2 Conservation easements are generally best used on agricultural, forest,  
 2525 wetland, scenic, or open space land to limit or prevent the development of  
 2526 incompatible land uses on or near airport environs.

2527 5.4 **Noise Mitigation.**

2528 Airport operators and local governments can use techniques to mitigate the adverse  
 2529 effects of noise on existing noise-sensitive land uses. A 14 CFR Part 150 Noise  
 2530 Compatibility Program (NCP) (see section 5.4.1 below) is a voluntary planning activity  
 2531 to assess the need for noise mitigation measures. An airport NCP may include aircraft  
 2532 noise abatement measures, such as preferential runway use programs, the use of noise-  
 2533 compatible flight routes, noise abatement departure procedures, and airfield  
 2534 modifications.<sup>8</sup> It may also include mitigation measures such as the acquisition of  
 2535 noise-sensitive property, the purchase of noise and aviation easements, sound  
 2536 insulation, and the construction of sound barriers. Sound insulation and airport sound  
 2537 barriers, summarized in **Table 5-4**, are discussed in the following sections.<sup>9</sup> Property  
 2538 acquisition and easements is discussed in above in Section 5.3.

2539 **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

<sup>8</sup> 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.

<sup>9</sup> 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.

- 2540 5.4.1 Noise Compatibility Program (NCP).  
2541 NCPs are intended to bring together various stakeholders to develop techniques to  
2542 establish and maintain aircraft noise-compatible uses around an airport, and to address  
2543 noise impacts on existing incompatible uses.
- 2544 5.4.1.1 Participation is voluntary, but airports must complete a Part 150 Study (see  
2545 Section 4.2.2 on 14 CFR Part 150 planning studies) in order to obtain FAA  
2546 funding for most noise-mitigation measures - such as sound attenuation of  
2547 existing residences or installation of noise monitors.<sup>10</sup> Eligibility for  
2548 funding is only possible when Noise Exposure Maps (NEMS) are in  
2549 compliance with the regulatory requirements and measures within the NCP,  
2550 and are approved by the FAA. For description of NEM's as a notification  
2551 tool under federal law, see Section 5.6.3.
- 2552 5.4.1.2 NCPs evaluate and implement various noise abatement and mitigation  
2553 measures, such as sound barriers and sound insulation. They may also  
2554 include modified procedures for aircraft, such as designating areas for  
2555 ground run-up usage. Certain noise-abatement measures do not require a  
2556 Part 150 study, such as sound attenuation for schools. Airports also have  
2557 the ability to use revenues from Passenger Facility Charges for noise  
2558 mitigation actions even without the approval of a Part 150 NCP.<sup>11</sup>
- 2559 5.4.1.3 Like a master plan process, Part 150 studies include a comprehensive public  
2560 involvement strategy and encourage communication between various  
2561 stakeholders. This provides a framework for productive working  
2562 relationships among stakeholders that contribute to improved compatible  
2563 land use decisions. FAA guidance to airport sponsors for Part 150 program  
2564 development is provided in FAA AC 150/5020-1, *Airport Noise Control  
2565 and Compatibility Planning*.
- 2566 5.4.2 Sound Barriers.  
2567 Many airport operators have built sound barriers to lessen the effects of noise in noise-  
2568 sensitive areas near airports. Sound barriers have limited applications and are typically  
2569 used on airport property to shield nearby noise-sensitive areas from noise produced by  
2570 aircraft on the ground. Earthen berms, walls or dense plantings of vegetation can be used  
2571 to shield noise sensitive areas. Maintenance costs, in addition to initial construction  
2572 costs, should be considered as part of the material selection process. Construction of  
2573 Ground Run-up Enclosures (GREs), structures that house aircraft during engine run-ups  
2574 for maintenance checks, may also be effective.

<sup>10</sup> 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*.

<sup>11</sup> FAA Order 5500.1, *Passenger Facility Charges*, Subsection 4-6.

2575 5.4.3 Sound Insulation.

2576 Sound insulation is a noise mitigation measure that can be incorporated into many  
2577 existing buildings to reduce the interior noise levels (new construction must conform to  
2578 modern construction codes and techniques that provide sound insulation standards and  
2579 requirements). Sound insulation is aimed at reducing aircraft noise within homes and  
2580 other noise-sensitive structures. It is usually accomplished through the baffling of vents  
2581 and the installation of acoustical windows, doors, additional insulation, and other  
2582 materials that attenuate the transmission of noise into the structure. There are several  
2583 guidance documents and handbooks that aid in the development and management of  
2584 sound insulation programs, and to provide advice on sound attenuation materials and  
2585 building techniques.<sup>12</sup> Naturally, sound insulation is only effective in attenuating noise  
2586 inside structures. The outdoor noise environment remains unaffected. Sound insulation  
2587 programs may be administered by airport operators or local governments.

2588 5.5 **Wildlife and Habitat Management.**

2589 Information included in this section is taken from *Wildlife Hazard Management at*  
2590 *Airports: A Manual for Airport Personnel*, published through joint efforts by the FAA  
2591 and the Department of Agriculture. Wildlife and habitat management tools, summarized  
2592 in **Table 5-5**, are intended for use by airport operators to reduce potential hazards to  
2593 aircraft operations caused by wildlife. Part 139 certificated airport operators are  
2594 specifically required by federal regulations to take actions to alleviate wildlife hazards at  
2595 their airports.<sup>13</sup> The following sections describe tools that airport operators can use to  
2596 meet that obligation.

<sup>12</sup> 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.

<sup>13</sup> See 14 CFR 139.337, Wildlife Hazard Management.

2597

**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.

2598

2599 5.5.1 Wildlife Hazard Management Plans (WHMP).

2600 The purpose of a Wildlife Hazard Management Plan (WHMP) is to minimize the risk to  
 2601 aviation safety, airport structures and equipment, and human health posed by populations  
 2602 of hazardous wildlife on and around an airport. Specific guidance about the content of a  
 2603 WHMP is provided in FAA Advisory Circular 150/5200-33<sup>14</sup> and in the *Wildlife Hazard*

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

2604 *Management at Airports* manual.<sup>15</sup> A WHMP must identify and provide information on  
2605 hazardous wildlife attractants on or near an airport (including an evaluation of land uses  
2606 around an airport), and identify appropriate wildlife management techniques to minimize  
2607 and mitigate those wildlife hazards (including land use changes). ACRP Report 32  
2608 provides guidance on identifying hazardous wildlife and establishing wildlife hazard  
2609 control programs at GA airports.

2610 5.5.2 Natural Features Inventory and Mitigation.

2611 5.5.2.1 In order to protect navigable airspace and the safe movement of aircraft,  
2612 airports should consider completing an inventory of existing vegetation  
2613 within runway approaches and Runway Protection Zones (RPZs). A  
2614 Natural Features Inventory identifies vegetation and habitat that supports  
2615 wildlife by providing food and cover. From this inventory, mitigation  
2616 measures can be developed that can reduce the likelihood of wildlife strikes  
2617 or hazards on or near an airport by reducing, eliminating, or excluding  
2618 natural features that support wildlife.

2619 5.5.2.2 When evaluating vegetation concerns near airports, best practices should be  
2620 utilized to minimize potential wildlife attractants. Most agricultural crops,  
2621 especially cereal grains and sunflower, can attract wildlife during some  
2622 phase of production. Trees and other landscaping plants that produce fruits  
2623 or seeds are especially attractive to birds. Large expanses of grass and forbs  
2624 can sometimes provide ideal habitats for rodent and insect populations that  
2625 attract both avian and mammalian predators. Furthermore, grasses allowed  
2626 to produce seed heads can provide a desirable food source for many  
2627 flocking species. In addition to food, wildlife requires cover for resting,  
2628 roosting, escape, and reproduction, and this cover can often be found among  
2629 tall grasses and trees. By minimizing or eliminating food sources and  
2630 vegetative cover, some wildlife hazards can be mitigated.

2631 5.6 **Notification Tools and Techniques.**

2632 5.6.1 Notification techniques are intended to provide information to prospective buyers of  
2633 property near airports about the potential effects caused by airport and aircraft  
2634 operations. The intent is to allow people to make fully informed decisions about the  
2635 purchase of property in the airport vicinity. Presumably, people who are highly  
2636 sensitive to noise or other airport-related effects would choose to avoid purchasing  
2637 property exposed to those effects.

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

2638 5.6.2 These techniques are best used in combination with land use compatibility regulations,  
 2639 such as residential sound insulation programs, or in areas more distant from the airport  
 2640 that are exposed to relatively low noise levels and higher altitude overflights. **Table 5-**  
 2641 **6** summarizes these notification techniques.

2642 **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.

2643 5.6.3 Noise Exposure Map (NEM).

2644 As stated earlier, an NEM is another tool that depicts the land uses and levels of noise  
 2645 exposure around the airport, both for existing conditions and for forecast operations.  
 2646 NEMs are typically prepared as the first stage in a Part 150 Noise Compatibility Program  
 2647 and are submitted to the FAA. The Vision 100-Century of Aviation Reauthorization Act  
 2648 (Public Law 108-176) required FAA to make noise exposure and land use information  
 2649 from NEMs available to the public via the internet on its website, and has done so by  
 2650 providing links to airport web sites and NEMs or similar documents that are posted there.  
 2651 Under 49 U.S.C. §47506, *Limitations on recovering damages for noise*, an airport may  
 2652 submit an NEM to the FAA and publish a conforming public notice of the NEM. A  
 2653 person purchasing property is considered to have constructive knowledge of the noise  
 2654 exposure on a property with the prior publication of the airport's NEM, or is given a  
 2655 copy of the NEM prior to purchase. Under the statute owners of property acquired after  
 2656 February 18, 1980 cannot recover damages for noise attributable to the airport unless the  
 2657 owner can show that after acquiring the property there was a significant change in the  
 2658 type or frequency of aircraft operations, airport layout, flight patterns or an increase in  
 2659 nighttime operations, and the damage result from the change or increase.



2660 5.6.4 State-Mandated Fair Disclosure.

2661 5.6.4.1 All states regulate the transfer of real estate through legislation and  
2662 administrative regulations. Many states require that sellers of property and  
2663 their agents disclose specific information about property when it is offered  
2664 for sale, including, in some states, proximity to any nearby airports. Many  
2665 states require the disclosure of land use regulations and zoning applying to  
2666 property offered for sale.

2667 5.6.4.2 Airport operators and local governments interested in promoting an  
2668 awareness of potential airport-related effects among buyers of property  
2669 should consult with legal counsel to ascertain the potential for state law to  
2670 help in fulfilling this objective. In states requiring the full disclosure of  
2671 zoning information, for example, the creation of an airport compatibility  
2672 overlay-zoning district may be an effective way to promote the disclosure of  
2673 potential airport-related effects among prospective buyers of property  
2674 within the overlay boundary.

2675 5.6.5 Covenants and Deed Restrictions.

2676 5.6.5.1 Covenants or deed restrictions are recorded legal documents that are linked  
2677 to the title of a property in perpetuity.<sup>16</sup> They are most commonly used by  
2678 developers in establishing design standards or other performance standards  
2679 to assure the maintenance of certain standards of quality in a new  
2680 subdivision or other development project.

2681 5.6.5.2 In some areas, covenants and deed restrictions have been used to promote  
2682 the disclosure of potential airport-related effects in airport-vicinity  
2683 development projects. The language of the deed restriction can include any  
2684 of a variety of terms, including:

- 2685 • Describing the nature of the airport-related effects to which the  
2686 property is exposed.
- 2687 • Noting the proximity of the airport and advising property owners to  
2688 consult the airport operator for specific information about airport-  
2689 related effects.
- 2690 • Obligating the owner to disclose the deed restriction to prospective  
2691 buyers whenever the property is offered for sale.
- 2692 • Waiving the right of the property owner to sue the airport operator for  
2693 lawful use of the airport and the airport-vicinity airspace.

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

2694 5.6.5.3 Depending on the specific provisions of state law, local governments can  
2695 also require the recordation of covenants and deed restrictions as a  
2696 condition of zoning or subdivision plat approval. An airport operator can  
2697 also purchase covenants or deed restrictions much like an avigation  
2698 easement. Because they become a permanent part of the property record,  
2699 covenants and deed restrictions can help to ensure that future buyers of  
2700 property are made aware of the potential for airport-related effects on the  
2701 property.

2702 5.6.6 Nonsuit Covenants and Hold Harmless Agreements.

2703 Nonsuit covenants and hold harmless agreements are legal contracts between a property  
2704 owner and an airport sponsor that acknowledge the potential airport-related effects on  
2705 incompatible land uses. A nonsuit covenant or hold harmless agreement is typically used  
2706 together with an avigation or a noise easement, and is recorded and attached to the  
2707 property title. These agreements legally record that a property owner acknowledges the  
2708 potential for noise and other airport-related effects, and has agreed not to sue or hold the  
2709 airport for any such effects. Because nonsuit covenants and hold harmless agreements  
2710 become part of the property record, they can help to ensure that future buyers of property  
2711 are made aware of the potential for airport-related effects on the property.

2712 5.6.7 Disclosure Notices.

2713 A disclosure notice is a way to make buyers aware of any land use compatibility issues  
2714 that may arise on a piece of property near an airport, as well as the various easements,  
2715 agreements, and rights that may already be in place on the property. Through the  
2716 development permitting process, local governments can require developers to take certain  
2717 actions to promote the disclosure of information about potential airport-related effects on  
2718 new development projects. Examples include:

- 2719 • The inclusion of statements on final subdivision plats disclosing the potential for  
2720 airport-related effects, or even plotting noise contours on the plats.
- 2721 • Requiring sales offices on the grounds of the development project to provide  
2722 information about the location of the airport and any airport-related effects on the  
2723 property.
- 2724 • Posting of signs on the property, during the development and initial sales process,  
2725 giving notice of the potential for aircraft overflights or other airport-related effects.

2726 5.7 **Education and Communication.**

2727 5.7.1 Successful public education and outreach programs are important in developing  
2728 awareness in the community about the importance of airport land use compatibility.  
2729 Over time, this can help build a constituency to support airport land use compatibility.  
2730 When airport operators take the lead in providing information and participating in two-  
2731 way communication with the public and other community leaders, enhancement of the  
2732 airport operators' credibility can be a valuable result. This greatly improves the ability

2733 of the airport operator to advocate persuasively for airport land use compatibility  
 2734 planning and can aid the success of those planning efforts.

2735 5.7.2 The FAA's Community Involvement Manual describes practices and effective  
 2736 techniques to facilitate meaningful community involvement, including effectively  
 2737 engaging communities, encouraging exchange of information, and having community  
 2738 viewpoints heard. Refer to AC 150/5050-4, *Citizen Participation in Airport Planning*<sup>17</sup>  
 2739 and ACRP Report 15, *Aircraft Noise: A Toolkit for Managing Community*  
 2740 *Expectations*, for more detailed information. **Table 5-7** summarizes these education  
 2741 and communication techniques.

2742 **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.

<sup>17</sup> 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 communication.	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 communication.	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 communication 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 communication 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.

2743

2744 5.7.3 Community Outreach.

2745 5.7.3.1 Many airport operators have established ongoing programs of public  
 2746 communication and outreach. The programs include distributing  
 2747 informational newsletters, providing informational programs and airport  
 2748 tours to local schools and interested citizens, and establishing dedicated  
 2749 noise complaint reporting systems. In addition to fostering communication,  
 2750 these programs help to demonstrate the airport operator’s commitment as a  
 2751 fully participating member of the greater community.

2752 5.7.3.2 During airport planning processes, including the preparation of master plans  
 2753 and 14 CFR Part 150 NCPs, public workshops and community meetings  
 2754 can encourage open dialogue among stakeholders, and to gain a better  
 2755 understanding of community interests and concerns. This gives the public  
 2756 an opportunity to be informed, become involved, and have their concerns

2757 and views considered in decisions about the future of the airport and land  
2758 use planning. Airport-area residents and community leaders can also be  
2759 invited to serve on project advisory committees. These are ideal  
2760 opportunities to inform the community about the connection between  
2761 airport land use compatibility planning and community planning efforts.  
2762 They also provide platforms for public education regarding the economic  
2763 value of airports and the airport impact on the regional economy.  
2764 Educational materials such as flyers and newsletters can be developed to  
2765 support the discussion.

2766 5.7.3.3 ACRP Report 15, *Aircraft Noise: A Toolkit on Managing Community*  
2767 *Expectations*, provides information related to the public communication on  
2768 the issue of airport noise issues.<sup>18</sup> It is a helpful resource for local  
2769 communities for all types of community outreach.

2770 5.7.4 Local Government Involvement.

2771 Local governments are directly affected by many aspects of airport development and  
2772 should be invited by airport operators to participate in airport planning processes. In  
2773 addition to implications for land use compatibility, airport development plans can also  
2774 affect road and transit systems and public utilities. City and county planners are  
2775 appropriate participants in most airport planning projects. In addition, airport operators  
2776 should maintain ongoing communications with city managers, county administrators, and  
2777 local elected officials. Depending on the scope of the particular planning effort, the  
2778 airport operator should also reach out to public works directors and city or county  
2779 engineers.

2780 5.7.5 Outreach to Airport Users.

2781 5.7.5.1 Airport users and pilot organizations have an important stake in promoting  
2782 airport land use compatibility. They can offer helpful technical advice and  
2783 insights to the public, local government officials, and elected officials in the  
2784 deliberations leading to the establishment of land use compatibility plans  
2785 and programs. Businesses based at the airport or dependent on the airport  
2786 for the transportation of personnel or the shipment of goods can also  
2787 convincingly explain the economic importance of the airport to community  
2788 leaders and elected officials.

2789 5.7.5.2 Airport operators are in a good position to solicit the involvement of airport  
2790 users in airport land use compatibility planning processes. Airport  
2791 operators can coordinate with aviation trade organizations, such as the  
2792 National Business Aviation Association (NBAA) and the Aircraft Owners

<sup>18</sup>*Aircraft Noise: A Toolkit on Managing Community Expectations*, ACRP Report 15, Transportation Research Board, Washington, D.C., 2009.

2793 and Pilots Association (AOPA), in holding programs to inform airport user  
2794 groups about land use compatibility needs and programs at the local airport.

2795 5.7.5.3 Airport users are encouraged to follow voluntary noise abatement  
2796 procedures that have been established at an airport. Consistent adherence to  
2797 noise abatement policies is important to maintaining and strengthening the  
2798 airport's partnership with local governments and residents, a critical factor  
2799 in sustaining the goodwill required the local government to continue  
2800 cooperating with the airport in land use compatibility planning. Airport  
2801 operators should maintain communication with local pilots and aircraft  
2802 operators to ensure that they understand local noise abatement procedures  
2803 and the reasons for those procedures. By providing clear and consistent  
2804 information to pilots, airport operators can enhance compliance with noise  
2805 abatement procedures. Actions taken by airport operators include the  
2806 publication of pilot guides, the publication of noise abatement procedures in  
2807 the *Airport/Facility Directory*, the posting of informational brochures in  
2808 pilot lounges, periodic meetings with leaseholders, the placement of signs  
2809 on the airfield, and the issuance of NOTAMS.

2810 5.7.6 Airport and FAA Participation in Local and Regional Planning.

2811 5.7.6.1 The authority to develop, implement, and enforce land use programs and  
2812 decisions rests predominantly with local governments. It is imperative that  
2813 airport operators must be involved in the preparation of city, county, and  
2814 regional comprehensive plans so that they can advocate for airport interests  
2815 and provide their specialized expertise to the planning team. The FAA can  
2816 also be a helpful partner in comprehensive planning to the extent that  
2817 airport and aviation interests are affected. By providing authoritative  
2818 information about the scope and limitation of the federal role in land use  
2819 compatibility and airspace protection, the FAA can provide information  
2820 needed to encourage local governments to exercise the degree of planning  
2821 and regulatory control needed to protect the airport.

2822 5.7.6.2 Airport operators should coordinate with local governments to ensure that  
2823 they are routinely provided information about proposed development  
2824 activity in the airport environs. This allows airport operators the  
2825 opportunity to review and comment on those proposals. In areas subject to  
2826 considerable development pressure, formalized staff committees of local  
2827 government planners and airport staff can be formed to meet regularly to  
2828 review and discuss development trends and specific projects. In addition to  
2829 building important relationships among the participants, this coordination  
2830 can improve the likelihood that airport compatibility considerations can be  
2831 addressed early in the development process. It also gives the airport  
2832 operator the opportunity to keep local government officials informed of  
2833 airport improvement and development projects in a timely manner.



2834 5.7.6.3 An airport's area of influence, including airspace, noise impact area, and  
2835 areas of safety concern, can cross multiple jurisdictions, so it is important  
2836 that the airport operator engage with all affected jurisdictions.

2837 5.7.7 Airport and FAA Participation in Professional Planning Organizations.

2838 Airport operators and FAA representatives can take the message of airport land use  
2839 compatibility to the planning community through participation in professional planning  
2840 organizations at the local, state, and national level, such as regional planning  
2841 organizations, state planning organizations, and the American Planning Association  
2842 (APA). This participation offers airport advocates the opportunity to network and extend  
2843 the conversation through direct dialogue with non-aviation planning professionals,  
2844 contribution of articles to publications, and presentations and training sessions at  
2845 professional planning conferences. These networking and outreach activities can raise  
2846 awareness of land use compatibility, open lines of communication, and provide a path for  
2847 education and training.

2848 5.7.8 Coordination with Real Estate Developers and Brokers.

2849 5.7.8.1 Airport sponsors should reach out to the real estate community to ensure  
2850 that sales agents and brokers understand the nature of airport-related effects  
2851 in the community and understand how to get specific information about the  
2852 airport in response to client questions and concerns. Airport sponsors  
2853 should encourage real estate professionals to be forthcoming in explaining  
2854 the nature of airport-related impacts to prospective buyers.

2855 5.7.8.2 Depending on the scope of state real estate disclosure laws, airport sponsors  
2856 may find some resistance among real estate professionals to the aggressive  
2857 disclosure of potential airport-related impacts. Airport sponsors need to  
2858 recognize that real estate professionals are often in the position of balancing  
2859 the interests of property sellers and buyers. Nevertheless, by consistently  
2860 providing accurate information about the airport and airport-related effects,  
2861 airport operators can become trusted advisors and resources to the real  
2862 estate industry.

2863 5.7.9 Use of Social Media.

2864 As social media comes into the communication mainstream, airports have a new set of  
2865 tools for sharing information and generating dialogue on land use compatibility. An  
2866 airport's website is often the central location for organizing and posting information. The  
2867 website hosts information that can be viewed only when people visit the page. Popular  
2868 social media tools push information out to subscribers and allow interactive  
2869 communication. Other social media tools are available for specific purposes including  
2870 posting video content, sharing photographs, and holding community conversations.  
2871 Multiple social media tools can be used effectively in a coordinated fashion described in  
2872 a social media plan and carried out by a social media coordinator. Airports also have the  
2873 opportunity to monitor social media for valuable information about community concerns.

2874 5.7.10 Use of Focus Groups.

2875 5.7.10.1 Focus groups are used in marketing to generate feedback on new products  
2876 and to gauge response to new marketing initiatives. Attendees receive an  
2877 invitation to participate, and the activity is usually conducted as an  
2878 interview, or a conversation led by a facilitator, and may include the use of  
2879 keypad polling or other electronic tools. Focus groups can generate  
2880 valuable information at a formative stage in product development when  
2881 there is still an opportunity to make adjustments.

2882 5.7.10.2 Focus groups can be used during formal airport planning processes, such as  
2883 master planning or noise compatibility planning, to gain a deeper  
2884 understanding of the nature of public concerns and interests than can be  
2885 achieved through conventional public meetings and comment forums. They  
2886 can also be effective ways to engage community leaders and local  
2887 government officials in a planning process on an on-going periodic basis to  
2888 maintain a communication link.

2889 5.7.11 Education of State Legislators, Legislative Staff, and Administrative Officials.

2890 5.7.11.1 State law establishes the framework within which airport land use  
2891 compatibility plans and regulations are prepared and implemented. State  
2892 legislatures are also responsible for funding any programs of airport  
2893 planning assistance that may have been established. Airport sponsors  
2894 should reach out and establish open lines of communication with their  
2895 legislative representatives to keep them informed about airport-related  
2896 needs and issues. Airport sponsors also have the opportunity participate in  
2897 professional airport associations for the purpose of ensuring that state  
2898 legislatures understand their perspectives when critical airport-related  
2899 legislation is introduced. By working together through airport associations,  
2900 airport sponsors can be effective advocates for critical legislation promoting  
2901 airport land use compatibility.

2902 5.7.11.2 Airport sponsors should also maintain communication with state and local  
2903 agency officials with responsibilities relating to airport land use  
2904 compatibility. This may include agencies responsible for overseeing or  
2905 advising on municipal and county land use planning.

2906

**APPENDIX A. GLOSSARY**

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

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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.

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2921

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

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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).

2931

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

2932  
2933

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.

2934

4. **Airport Influence Area.**

2935  
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The land use and people in the areas surrounding an airport which can be directly affected by the operation of the airport.

2937

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

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2940  
2941  
2942

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*

2943 *Program Handbook*, provides details on administering the AIP. Not all activities  
2944 identified in this AC may be eligible for AIP funding.

2945 6. **Airport Layout Plan (ALP).** (14 CFR Part 152, Airport Aid Program)

2946 The plan of an airport showing the layout of existing and proposed airport facilities  
2947 on airport property.

2948 7. **Airport Master Plan.** (FAA AC 150/5070-6)

2949 An Airport Master Plan is a presentation of the phased development of a specific  
2950 airport. It presents the research and logic from which the plan evolved and displays  
2951 the plan in a graphic and written report. Master plans are applied to the  
2952 modernization and expansion of existing airports and to site selection and planning  
2953 for new airports, regardless of their size or functional role. It is desirable that Airport  
2954 Master Plans be developed within the framework of metropolitan or regional plans or  
2955 state airport system plans.

2956 8. **Airport Overlay Zone.**

2957 A zone intended to place additional compatible land use conditions on land impacted  
2958 by the airport while retaining the existing underlying zone.

2959 9. **Airspace.**

2960 The space lying above the earth or above a certain area of land or water that is  
2961 necessary to conduct aviation operations.

2962 10. **Approach Minimum.**

2963 The height above ground at which a pilot must have the airfield in sight to continue  
2964 on approach to land. When obstructions exist to runway approaches, the approach  
2965 minimums are raised, which can limit the utility of the airport in times of reduced  
2966 visibility or low cloud cover.

2967 11. **Approach Slopes.** (14 CFR Part 77)

2968 The ratios of horizontal to vertical distance indicating the degree of inclination of the  
2969 Approach Surface. The various ratios include:

- 2970 • 20:1 – For all utility and visual runways extended from the primary surface a  
2971 distance of 5,000 feet.
- 2972 • 34:1 – For all non-precision instrument runways extended from the primary surface  
2973 for a distance of 10,000 feet.
- 2974 • 50:1/40:1 – For all precision instrument runways extending from the primary  
2975 surface for a distance of 10,000 feet at an approach slope of 50:1 and an additional  
2976 40,000 feet beyond this at a 40:1 Approach Slope.

- 2977           12. **Approach Surface.** (14 CFR Part 77)
- 2978                 A surface defined by 14 CFR Part 77, *Safe, Efficient Use, and Preservation of the*
- 2979                 *Navigable Airspace*, that is longitudinally centered on the runway centerline and
- 2980                 extends outward and upward from each end of the primary surface. An approach
- 2981                 surface is applied to each end of each runway based on the type of approach available
- 2982                 or planned for that runway end.
- 
- 2983           13. **Avigation Easement.** (FAA AC 150/5100-17, *Land Acquisition and Relocation*
- 2984                 *Assistance for Airport Improvement Program Assisted Projects*)
- 2985                 An avigation easement is a conveyance of airspace over another property for use by
- 2986                 the airport. The owner of an easement-encumbered property (servient property) has
- 2987                 restricted use of their property subject to the airport sponsor’s easement (dominant
- 2988                 property) for overflight and other applicable restrictions on the use and development
- 2989                 of the servient parcel. Easement rights acquired typically include the right-of-flight
- 2990                 of aircraft; the right to cause noise, dust, etc.; the right to remove all objects
- 2991                 protruding into the airspace together with the right to prohibit future obstructions or
- 2992                 interference in the airspace; and the right of ingress/egress on the land to exercise the
- 2993                 rights acquired. The avigation easement on the property shall “run with the land” and
- 2994                 any future owners’ use of the servient parcel is also restricted as described in the
- 2995                 avigation easement.
- 
- 2996           14. **Comprehensive Land Use Plan.**
- 2997                 A governmental entity's official statement of its plans and policies for long-term land
- 2998                 use and development. The plan includes maps, graphics and written proposals, which
- 2999                 indicate the general location for streets, parks, schools, public buildings, airports and
- 3000                 other physical development of the jurisdiction.
- 
- 3001           15. **Conditional Zoning.**
- 3002                 The imposition or exaction of conditions or promises upon the grant of zoning by the
- 3003                 zoning authority.
- 
- 3004           16. **Federally Obligated Airport.**
- 3005                 An airport sponsor is considered to be a Federally Obligated Airport by either
- 3006                         • Accepting a federal AIP grant for development, equipment, or land; OR
- 3007                         • Accepting property through surplus property (bound by instruments of
- 3008                         conveyance and statutory requirements found in 49 U.S.C. 47151, *et seq.*)
- 3009                 An airport sponsor accepting AIP funds must agree with certain obligations, called
- 3010                 grant assurances.

3011 17. **General Aviation (GA).**

3012  
3013 Refers to all civil aircraft and operations that are not classified as air carrier,  
3014 commuter or regional. The types of aircraft used in general aviation activities cover  
3015 a wide spectrum from corporate multi-engine jet aircraft piloted by professional  
3016 crews to amateur-built single-engine piston acrobatic planes, balloons and  
3017 dirigibles.

3018

3019 18. **Hazard.**

3020  
3021 An existing or proposed object that the FAA, as a result of an aeronautical study,  
3022 determines will have a substantial adverse effect upon the safe and efficient use of  
3023 navigable airspace by aircraft, operation of air navigation facilities, or existing or  
3024 potential airport capacity.

3025 **Imaginary Surfaces.** (14 CFR Part 77)

3026 Those areas established in relation to the airport and to each runway consistent with  
3027 14 CFR Part 77 in which any object extending above these imaginary surfaces, by  
3028 definition, is an obstruction.

3029 • Transitional surface – The transitional surface extends outward and upward at  
3030 right angles to the runway centerline and extend at a slope of seven feet  
3031 horizontally for each one-foot vertically (7:1) from the sides of the primary and  
3032 approach surfaces. The transitional surfaces extend to the point at which they  
3033 intercept the horizontal surface at a height of 150 feet above the established  
3034 airport elevation.

3035 • Horizontal surface – The horizontal surface is a horizontal plane located 150  
3036 feet above the established airport elevation and encompasses an area from the  
3037 transitional surface to the conical surface. The perimeter is constructed by  
3038 generating arcs from the center of each end of the primary surface and  
3039 connecting the adjacent arcs by lines tangent to those arcs.

3040 • Conical surface – The conical surface extends upward and outward from the  
3041 periphery of the horizontal surface at a slope of 20 feet horizontally for every  
3042 one-foot vertically (20:1) for a horizontal distance of 4,000 feet.

3043 • Approach surface – The approach surface is longitudinally centered on the  
3044 extended runway centerline and extends outward and upward from the end of  
3045 the runway primary surface. The approach slope of a runway is a ratio of 20:1,  
3046 34:1, or 50:1, depending on the approach type. The length of the approach  
3047 surface varies from 5,000 to 50,000 feet and depends upon the approach type.

3048 **19. Land Use Compatibility.**

3049 Airport-compatible land uses are defined as those uses that can coexist with a nearby  
3050 airport without constraining the safe and efficient operation of the airport or exposing  
3051 people living or working nearby to unacceptable levels of noise or hazards.

3052 **20. Land Use Controls.**

3053 Measures established by state or local government that are designed to carry out land  
3054 use planning. The controls include zoning, subdivision regulations, planned  
3055 acquisition, easements, covenants, or conditions in building codes and capital  
3056 improvement programs, such as the establishment of sewer, water, utilities, or their  
3057 service facilities.

3058 **21. Noise Compatibility Program (NCP). (FAA AC 150/5020-1)**

3059 The purpose of such a program is to seek optimal accommodation of both airport  
3060 operations and community activities within acceptable safety, economic and  
3061 environmental parameters. That may be accomplished by reducing existing  
3062 incompatible land uses in the vicinity of the airport and preventing the introduction of  
3063 new incompatible land uses in the future. To that end, the airport proprietor and other  
3064 responsible officials should consider a wide range of feasible alternatives of noise  
3065 control actions and land use patterns.

3066 **22. Noise Exposure Map (NEM). (FAA AC 150/5020-1)**

3067 The NEM is a scaled map of the airport, its noise contours and surrounding land uses.  
3068 The NEM depicts the levels of noise exposure around the airport, both for the  
3069 existing conditions and forecasts for the 5-year planning period. The area of noise  
3070 exposure is designated using the DNL (Day-Night Average Sound Level) noise  
3071 metric.

3072 **23. Obstacle.**

3073 An existing object at a fixed geographical location or which may be expected at a  
3074 fixed location within a prescribed area with reference to which vertical clearance is or  
3075 must be provided during flight operation.

3076 **24. Obstruction.**

3077 An object of greater height than any of the heights or surfaces presented in Subpart C  
3078 of 14 CFR Part 77, Standards for Determining Obstructions to Air Navigation or  
3079 Navigational Aids or Facilities.

3080           25. **Special Exceptions.**

3081           Land uses that are not specifically permitted as a matter of right, but can be permitted  
3082           in accordance with performance standards and other local criteria. Also known as  
3083           "conditional uses."

3084           26. **Variance.**

3085           An authorization for the construction or maintenance of a building or structure, or for  
3086           the establishment or maintenance of a use of land that is prohibited by a zoning  
3087           ordinance. A lawful exception from specific zoning ordinance standards and  
3088           regulations predicated on the practical difficulties and/or unnecessary hardships on  
3089           the petitioner being required to comply with those regulations and standards from  
3090           which an exemption or exception is sought.

3091           27. **Zoning.**

3092           An exercise of the police powers of the state, as delegated to local governments,  
3093           designating the uses permitted on each parcel of land within the zoning jurisdiction.

3094           28. **Zoning Ordinance.**

3095           Primarily a legal document that allows a local government effective and legal  
3096           regulation of uses of property while protecting and promoting the public interest.

3097



3098

**APPENDIX B. FAA OFFICE OF AIRPORTS**

3099 The FAA Airports organization provides leadership in planning and developing a safe and  
3100 efficient national airport system. The office has responsibility for all programs related to airport  
3101 safety and inspections and standards for airport design, construction, and operation (including  
3102 international harmonization of airport standards). The office also is responsible for national  
3103 airport planning and environmental and social requirements and establishes policies related to  
3104 airport rates and charges, compliance with grant assurances, and airport privatization. Within  
3105 this organization, several headquarters offices and divisions are responsible for different  
3106 programs. For FAA Airports contacts see  
3107 [http://www.faa.gov/airports/news\\_information/contact\\_info/](http://www.faa.gov/airports/news_information/contact_info/).

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**Figure B-1. FAA Regional Offices**



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**APPENDIX C. FAA LAND USE-RELATED REGULATIONS AND GUIDANCE**

3114 This appendix focuses on the primary FAA documents that guide land use related decisions or  
 3115 are related to land use concerns such as wildlife hazard management, noise effects, and safe and  
 3116 efficient use of airspace. Because state and local regulations vary depending on an airport’s  
 3117 location, only FAA guidance is summarized in this appendix. However, it must be noted that the  
 3118 items addressed in this appendix be considered in conjunction with applicable state and local  
 3119 laws and regulations. In instances where regulations and/or guidance is contradictory from one  
 3120 governmental unit to another, coordination and negotiation is required with responsible  
 3121 jurisdictions to promote land use compatibility and to protect the safety of the airport operations.  
 3122 In addition, there are additional federal agencies that may have regulations or guidance, which  
 3123 may be applicable on a case-by-case basis and must be considered. **Table C-1** summarizes the  
 3124 sources of FAA regulations and guidance, each of which are discussed in more detail in the  
 3125 following sections.

3126 **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.

3127 C.1 **Airport Improvement Program (AIP) Grant Assurances.**

3128 C.1.1 Federal money for aviation projects comes with a series of conditions called ‘Grant  
 3129 Assurances.’ Grant assurances obligate an airport sponsor to protect the federal  
 3130 investment through the maintenance of a safe and unrestricted operating environment.  
 3131 When federal grant funds through the Airport Improvement Program (AIP) are  
 3132 accepted, the grant assurances are incorporated into the grant agreement and become  
 3133 part of the sponsor’s legal obligation. Several grant assurances specifically address and  
 3134 enhance airport land use compatibility, including the following:

- 3135 • Grant Assurance 4 Good Title
- 3136 • Grant Assurance 5 Preserving Rights and Powers
- 3137 • Grant Assurance 6 Consistency with Local Plans
- 3138 • Grant Assurance 7 Consideration of Local Interest
- 3139 • Grant Assurance 19 Operation and Maintenance
- 3140 • Grant Assurance 20 Hazard Removal and Mitigation
- 3141 • Grant Assurance 21 Compatible Land Use

3142 C.2 **Code of Federal Regulations (CFRs).**

3143 C.2.1 Title 14 of the Code of Federal Regulations (CFR), entitled Aeronautics and Space,  
 3144 contains many regulations that have a bearing on airport land use compatibility issues.  
 3145 Title 14 is organized into six different Chapters, with each Chapter further divided into  
 3146 Subchapters, and each Subchapter further divided into Parts. Each “Part” within Title  
 3147 14 deals with a distinct topic and/or type of activity and contains a varying amount of  
 3148 regulations. 14 CFR Part 150 addresses the Noise Compatibility Program and  
 3149 establishes the airport noise compatibility planning measures authorized under the  
 3150 Aviation Safety and Noise Abatement Act (ASNA). The Part 150 program is voluntary  
 3151 and open to all publicly owned, public-use airports included in the NPIAS. Participation  
 3152 is mandatory in order to obtain FAA funding for most noise-abatement measures. Part  
 3153 150 focuses solely on noise compatibility issues. Safety and airspace protection  
 3154 concerns are not addressed except to the extent that they may affect or be affected by  
 3155 noise-related measures.

3156 C.2.2 14 CFR Part 77 addresses objects affecting navigable airspace and establishes standards  
 3157 for providing notice to the FAA regarding proposed objects that may be obstructions to

3158 air navigation. As previously discussed in Chapter 2, under Part 77, the FAA is  
 3159 authorized to undertake an airspace study to determine whether a structure (man-made  
 3160 or naturally occurring) is, or could be, a hazard to air navigation. The FAA is not  
 3161 authorized to regulate tall structures nor is there specific authorization in any federal  
 3162 statute that permits the FAA to limit structure heights or require structures to be lighted  
 3163 or marked. As a result, local land use controls are needed to support the findings of the  
 3164 FAA (hazards and non-hazards).

3165 C.2.3 14 CFR Part 139.337, *Wildlife Hazard Management*, prescribes the specific issues that  
 3166 an airport sponsor must address in a wildlife hazard management plan for FAA  
 3167 approval. The plan is based upon a wildlife hazard assessment that is conducted by a  
 3168 wildlife damage management biologist. Part of the plan can be prepared by the  
 3169 biologist who conducts the wildlife hazard assessment; however, some parts can only be  
 3170 prepared by airport management. Wildlife hazard management plans are critical tools  
 3171 to promote compatible uses near airports and to mitigate effects of incompatible uses  
 3172 that are attractive to wildlife.

3173 C.2.4 40 CFR Part 258, Subpart B, Criteria for Municipal Solid Waste Landfills, Location  
 3174 Restrictions establishes criteria for the expansion and/or development of new landfills  
 3175 with regard to airports. The regulation states that the owners or operators of new  
 3176 Municipal Solid Waste Landfills (MSWLF) units and lateral expansions within 10,000  
 3177 feet of any runway end used by turbojet aircraft, or within 5,000 feet of any runway end  
 3178 used by piston-type aircraft only, must demonstrate that the units are designed and  
 3179 operated in a way that the MSWLF unit does not pose a bird hazard to aircraft. It also  
 3180 requires owners or operators proposing to site new MSWLF units and lateral expansions  
 3181 within a five-mile radius of any airport runway end used by turbojet or piston-type  
 3182 aircraft to notify the affected airport and the FAA. This regulation is imperative to  
 3183 mitigate wildlife attractants in an airport's vicinity, as landfills are incompatible land  
 3184 uses.

### 3185 C.3 **FAA Orders.**

3186 The FAA, as an agency within the Department of Transportation, has promulgated  
 3187 agency-wide orders (known as Agency Orders [AOs]) that give direction and guidance  
 3188 for compliance with FAA directives. In addition to regulations and ACs, several AOs  
 3189 exist that have some impact or relation to compatibility. These are discussed in this  
 3190 section.

- 3191 • Order 5200.8, *Runway Safety Area Program*, was issued with the objective that all  
 3192 Runway Safety Areas (RSAs) at federally obligated airports and all RSAs at  
 3193 airports certificated under 14 CFR Part 139 conform to the standards contained in  
 3194 AC 150/5300-13A, *Airport Design*, to the extent practicable. Each FAA Regional  
 3195 Airports Division Manager is responsible for implementing the program and is  
 3196 responsible for making a determination as to whether the existing RSA of each  
 3197 runway within their region meets the current design standards and if not, for making  
 3198 a determination as to whether or not it is practicable to improve the RSA so that it  
 3199 will meet current standards. Whenever a project for a runway involves

- 3200 construction, reconstruction, or significant expansion, the project must also provide  
 3201 for improving the RSA in accordance with the determination made.
- 3202 • Order 1050.1, *Environmental Impacts: Policies and Procedures*, provides the FAA  
 3203 agency-wide policies and procedures for compliance with the National  
 3204 Environmental Policy Act of 1969 (NEPA) and for implementing regulations issued  
 3205 by the Council on Environmental Quality (40 CFR parts 1500-1508). This revision  
 3206 includes changes for clarification, consistency, addition of information, corrections,  
 3207 and editorial changes.
  - 3208 • Order 5050.4, *National Environmental Policy Act (NEPA) Implementing*  
 3209 *Instructions for Airport Actions*, supplements Order 1050.1, *Environmental*  
 3210 *Impacts: Policies and Procedures*. This order provides the Airports Division  
 3211 specific guidance on how to implement the requirements of NEPA, historical  
 3212 preservation, conservation, and other special purpose laws when performing actions  
 3213 specific to the Airports Division. FAA Order 1050.1 remains the overriding FAA  
 3214 order for implementing NEPA, and takes precedent in the event there is a conflict  
 3215 between the two orders.
  - 3216 • Order 5100.38, *Airport Improvement Program Handbook*, provides grant funding  
 3217 eligibility guidance to be used during the administration of the AIP.
  - 3218 • Order 5190.6, *FAA Airport Compliance Manual*, sets forth policies and procedures  
 3219 for the FAA Airport Compliance Program. The FAA Airport Compliance Program  
 3220 monitors the performance of airport owners to maintain a high degree of safety and  
 3221 efficiency in compliance to their airport design, construction, operation, and  
 3222 maintenance grant assurances and obligations.
  - 3223 • Order 7400.2, *Procedures for Handling Airspace Matters*, specifies procedures in  
 3224 the joint administration of the airspace program. It addresses actions associated  
 3225 with airspace allocation and utilization, obstruction evaluation, obstruction marking  
 3226 and lighting, airport airspace analysis, and the management of air navigation aids.

3227 C.4 **FAA Advisory Circulars (ACs).**

3228 The AC system provides a single, uniform, agency-wide system that the FAA uses to  
 3229 deliver advisory material to the industry as a whole. ACs provide guidance for  
 3230 complying with regulations and grant assurances but do not create or change a regulatory  
 3231 requirement. Several ACs exist that have some impact or relation to compatibility. They  
 3232 are discussed briefly here:

- 3233 • FAA AC 150/5300-13, *Airport Design*, provides the basic standards and  
 3234 recommendations for airport design including information regarding approach  
 3235 procedures for RPZs, threshold-siting criteria, and instrument approach categories.  
 3236 The criteria contained in this document are the primary spatial standards for on-  
 3237 airport development.
- 3238 • AC 70/7460-1, *Obstruction Marking and Lighting*, works within the requirements  
 3239 of 14 CFR Part 77 and requires that an entity proposing any type of construction or

- 3240 alteration of a structure that may affect the National Airspace System is required to  
3241 submit FAA Form 7460-1, Notice of Proposed Construction or Alteration.
- 3242 • AC 150/5070-7, *Airport System Planning Process*, outlines the development of  
3243 effective airport system planning documents, which provide guidance to establish a  
3244 balanced integrated system of public-use airports consistent with state or regional  
3245 goals. The goal of the airport system planning process is to identify, preserve, and  
3246 enhance the aviation system to meet both current and future demand. Land use  
3247 compatibility is discussed in many state and/or regional system plans; there is some  
3248 discussion of land use compatibility planning elements.
  - 3249 • AC 150/5100-17, *Land Acquisition and Relocation Assistance for Airport*  
3250 *Improvement Program Assisted Projects*, provides guidance to sponsors of an  
3251 airport to develop land acquisition and relocation assistance procedures in  
3252 conformance with the Uniform Relocation Assistance and Real Property  
3253 Acquisition Policies Act of 1970 (P.L. 91-646, as amended). This has relevance to  
3254 the land use compatibility discussion if acquisition or relocation activities are  
3255 undertaken as a method to mitigate incompatibility.
  - 3256 • AC 150/5020-1, *Noise Control and Compatibility Planning for Airports*, provides  
3257 guidance for the implementation of 14 CFR Part 150, which allows for the  
3258 development of an airport plan that establishes a compatible relationship between  
3259 land uses and noise-related issues. This is accomplished by the reduction of  
3260 incompatible land uses around airports and noise sensitive areas, and the prevention  
3261 of additional incompatible land uses.
  - 3262 • AC 150/5020-2, *Guidance on the Balanced Approach to Noise Management*,  
3263 provides guidance for noise control and compatibility planning for airports and the  
3264 guidance for preparing airport noise exposure maps and airport noise compatibility  
3265 programs implemented in 14 CFR Part 150, and the Aviation Safety and Noise  
3266 Abatement Act of 1979.
  - 3267 • AC 150/5200-34, *Construction or Establishment of Landfills near Public Airports*,  
3268 provides guidance regarding compliance with new federal statutory requirements  
3269 that limit construction or establishment of municipal solid waste landfill (MSWLF)  
3270 units near public airports, as they are major wildlife attractants.
  - 3271 • AC 150/5200-33, *Hazardous Wildlife Attractants On or Near Airports*, provides  
3272 guidance regarding the types of land uses considered incompatible near airports due  
3273 to their nature as wildlife attractants. These uses include, but are not limited to,  
3274 wastewater treatment facilities, wetlands, dredge spoil containment areas, and solid  
3275 waste landfills.
  - 3276 • AC 150/5050-4, *Citizen Participation in Airport Planning*, provides guidance for  
3277 citizen involvement in airport planning. Although not mandatory for airport grant  
3278 programs, it explains the need for early citizen participation.

3279 C.5 **Other FAA Guidance Documents.**

- 3280 • PPM 5190.6, *Guidance for Leases, Use Agreements and Land Releases*,  
3281 consolidates all of the guidance provided in various FAA publications, policy  
3282 letters, and other written documentation on the development of leases, use  
3283 agreements, and land releases that are in accordance with an airport sponsor's  
3284 federal obligations. The intent of this document is to reduce FAA and airport  
3285 sponsor research efforts, enhance lease arrangements, and ensure that FAA interests  
3286 are properly protected on leases and disposals of obligated airport land.
  
- 3287 • *FAA Guidance for Management of Acquired Noise Land Inventory, Reuse, and*  
3288 *Disposal*, provides guidance for airport sponsors and the FAA to meet the  
3289 requirements of Grant Assurance 31 when acquiring land under airport noise  
3290 compatibility programs. Grant Assurance 31 works to assure optimal use is made  
3291 of the federal share of the proceeds from the disposal of noise land.
  
- 3292 • *Wildlife Hazard Management at Airports, A Manual for Airport Personnel*, 2nd  
3293 Edition, U.S. Department of Transportation, Federal Aviation Administration and  
3294 U.S. Department of Agriculture, Animal and Plant Health Inspection Service, 2005.
  
- 3295 • *Report to Congress on Potential for Use of Land Options in Federally Funded*  
3296 *Airport Projects*. Report of the Secretary of Transportation to the United States  
3297 Congress, Washington, D.C., December 1997.
  
- 3298 • *Compliance Guidance Letter (CGL) 2018-3, Appraisal Standards for the Sale and*  
3299 *Disposal of Federally Obligated Airport Property*, this CGL assists and informs  
3300 FAA field offices, airport sponsors, and commercial appraisers on the appraisal  
3301 process for the sale and leasing of federally obligated airport real property.

3302  
3303

**APPENDIX D. LIST OF CROPS POSING PARTICULAR WILDLIFE ATTRACTANT PROBLEMS**

3304 D.1 The USDA bulletin, “Plants Attractive to Wildlife,” provides a list of cultivated plants  
3305 that can attract wildlife. Wildlife can be attracted to specific cultivated plants as a food  
3306 source and may be attracted to plants for shelter. According to the bulletin, crops and  
3307 vegetation that should be discouraged within the vicinity of the airport’s environs  
3308 include, but are not limited to:

- 3309 • Alfalfa
- 3310 • Barley
- 3311 • Corn
- 3312 • Oats
- 3313 • Sorghum
- 3314 • Wheat
- 3315 • Vineyards
- 3316 • Apple trees
- 3317 • Cherry trees

3318 D.2 The presence of these types of crops and vegetation can provide wildlife with not only a  
3319 food source but also shelter, which can serve as an attractant to various types of  
3320 wildlife. For example, small mammals can be attracted to planted fields of row crops  
3321 that provide cover. Large predatory birds are often attracted to these same areas  
3322 because of the presence of the small mammals, birds, and rodents that hide in the crops  
3323 and neighboring tall grasses. This can create a detrimental cycle of wildlife attractants  
3324 that may lead to wildlife and bird strikes with approaching and departing aircraft.  
3325 Coordination of land use concerns between airports, local communities, and local  
3326 neighbors, such as farmers and horticulturists, is crucial to reduce the potential of  
3327 wildlife strikes.



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**APPENDIX E. SAMPLE AIRPORT LAND USE COMPATIBILITY PLAN**

3330

**PURPOSE AND AUTHORITY OF AIRPORT LAND USE**

3331

**COMMISSION**

3332 To assist local agencies in ensuring compatible land uses in the vicinity of all new airports and in  
3333 the vicinity of existing airports to the extent that the land in the vicinity of those airports is not  
3334 already devoted to incompatible uses.

3335 To coordinate planning at the state, regional, and local levels to provide for the orderly  
3336 development of air transportation, while at the same time protecting the public health, safety, and  
3337 welfare.

3338 To prepare and adopt an Airport Land Use Compatibility Plan (ALUCP) pursuant to state and/or  
3339 local law.

3340 To review the plans, regulations, and other actions of local agencies and airport operators.

3341 The powers of the Airport Land Use Compatibility Commission shall in no way be construed to  
3342 give the commission jurisdiction over the operation of any airport.

3343 In order to carry out its responsibilities, the commission may adopt rules and regulations  
3344 consistent with its state or local authorization.

3345

3346

**GENERAL ALUCP CONTENT CHECKLIST**

3347 **Scope of the Plan.** In a preface or introductory chapter, provide a clear statement describing  
3348 the scope and function of the plan. Specifically:

3349 • Refer to state or local statute, ordinance or resolution that provides for the  
3350 formation of Airport Land Use Compatibility (ALUC) commission (as applicable)  
3351 and requires preparation of an Airport Land Use Compatibility Plan (ALUCP) for  
3352 the governing jurisdiction. Include the resolution that formed the ALUC and the  
3353 resolution that adopts this ALUCP. The plan's purpose should be defined as a  
3354 vehicle for conducting airport land use compatibility planning.

3355 • Airport Identification: List the airport(s) addressed by the plan and the city or  
3356 unincorporated county in which they are located.

3357 • Airport Influence Area: Provide a general description and map of the area that  
3358 comprises the jurisdiction of the ALUC. Also, include a map covering the  
3359 planning boundary of the ALUCP if it varies from the Airport Influence Area  
3360 boundary. (see AC at paragraph 4.4.3)

3361 • Jurisdictions Affected: Identify all local jurisdictions and any military facilities  
3362 that are affected by the ALUCP. Listing the general and specific plans of local  
3363 jurisdictions also may be valuable.

3364 • Limitations of the Plan: Note the limitations on ALUC jurisdiction over existing  
3365 land uses; state, federal and tribal land; and airport operations as stated in the law  
3366 and how they are applied by the individual ALUC.

3367 **Airport Information.** Include essential information about the airport(s) that shows the  
3368 ALUCP has been based upon an FAA-adopted Airport Master Plan (AMP) or Airport Layout  
3369 Plan (ALP).

3370 • Planning Status: Indicate the FAA approval date of the current ALP and activity  
3371 forecasts (see below). Indicate local government or airport adoption date for the  
3372 AMP.

3373 • ALP: Include a copy of the FAA-approved ALP.

3374 • Airport Activity: Document existing and projected airport operational levels.  
3375 Include data indicating the known or estimated distribution of operations by type  
3376 of aircraft, time of day, and runway used. As necessary, extend the 20-year  
3377 forecasts included in adopted AMPs to ensure that the ALUCP reflects the  
3378 anticipated growth of airport activity over a 20-year period.

3379 **Compatibility Policies and Criteria.** State all policies and criteria as clearly, precisely, and  
3380 completely as possible, in a separate chapter from background information. As appropriate,  
3381 use tables to present primary criteria. Address each of the following compatibility concerns:

3382 • Noise: Indicate maximum normally acceptable exterior noise levels for new  
3383 residential and other noise-sensitive land uses. Note interior noise level  
3384 standards.

3385 • Overflight: Indicate how aircraft overflight noise concerns are addressed.

3386 • Safety: Indicate maximum acceptable land use densities and intensities and the  
3387 manner in which they are to be measured. List any uses explicitly prohibited  
3388 from certain zones.

3389 • Airspace Protection: Note reliance upon 14 CFR Part 77 and Terminal Instrument  
3390 Procedures (TERPS) if relevant. If applicable, indicate policies addressing  
3391 objects where ground level exceeds 14 CFR Part 77 criteria. List criteria  
3392 regarding hazards to flight such as bird strikes, glare), wind turbines, visual  
3393 obstructions (smoke, haze, etc.), thermal plumes (smoke stacks, cooling towers,  
3394 etc.) and electronic interferences with flight operations at the airport.

3395 **Compatibility Zone Maps.** For each airport, provide either a composite compatibility zone  
3396 map or individual compatibility zone maps. On base map, identify roads, water courses,  
3397 section lines, and other major natural and man-made features. Showing the local government  
3398 zoning as a background layer is also helpful.

3399 • Noise Contours: Show CNEL contours to be used for planning purposes.

3400 • Compatibility Policies: If compatibility policies are based on separate assessment  
3401 of compatibility concerns, indicate boundaries and dimensions of safety zones.  
3402 When basing zones on guidelines, make adjustments as appropriate to reflect  
3403 traffic pattern locations and other factors particular to each individual airport.

3404 • FAA Airspace Protection Surfaces: Include map derived from FAR Part 77  
3405 standards indicating allowable heights of objects relative to the airport elevation.  
3406 Indicate locations where ground exceeds these limits. Base map should show  
3407 topography.

3408 • Composite Compatibility Zones: When using compatibility criteria representing a  
3409 composite of the above individual compatibility concerns (noise, overflight,  
3410 safety, and airspace protection) provide a map showing the boundaries of each  
3411 zone. Indicate distances of boundaries from the airport runways.

3412 • Airport Influence Area (AIA): Clearly identify the AIA boundary on a map and  
3413 with a written description.

3414 **Review Policies.** Describe the process and list the steps that the ALUC will use in reviewing  
3415 local government plans and projects.

3416 • Types of Actions for ALUC Review: List the types of local government plans or  
3417 projects that are to be submitted to the ALUC. Distinguish between mandatory  
3418 and voluntary submittals.

3419 • Project Information: List the types of information to be included when a project or  
3420 plan is submitted for an ALUC consistency decision.

3421 • Timing: Define when ALUC reviews are to be conducted and the time limits  
3422 within which the ALUC must respond.

3423 • ALUC Staff Responsibilities: Define staff duties in the ALUC compatibility  
3424 review process.

3425 **Preliminary Review of Plans and Projects for Consistency determinations.** Describe the  
3426 steps involved when an affected local jurisdiction requests the ALUC to provide a  
3427 preliminary assessment of the general plans, specific plans, and relevant land use ordinances  
3428 and regulations prior to their official submission for an ALUC determination or prior to local  
3429 approval. The ALUC should make a reasonable effort to identify any direct conflicts  
3430 needing to be resolved as well as criteria and procedures that need to be defined in order for  
3431 the local plans to be considered consistent with the ALUCP.

3432 **Land Use Information.** Include maps such as the following:

3433 • Existing Land Use Development: Show locations in the airport vicinity where  
3434 development exists by using current, high-altitude aerial photographs, GIS data  
3435 and available descriptive land parcel data.

3436 • Planned Land Uses: Show locations in the airport vicinity where development is  
3437 planned by including current general plan and zoning maps.

3438 **Discussion of Compatibility Issues.** Discuss the basic concepts and rationale behind the  
3439 compatibility policies and criteria.

3440 **Local Government Implementation.** Discuss the general plan and any specific ALUCP  
3441 consistency and documentation requirements. Refer local jurisdictions to the FAA AC 5190-  
3442 4, *Airport Compatible Land Use Planning*, for sample airport compatibility criteria and  
3443 implementation documents, such as:

3444 • Land use density and intensities criteria near airports, see AC at 2.2.5,

3445 • Real property disclosure methods, see AC at 5.6,

3446 • Airport Overlay Zone Ordinance, see AC Appendix F, and

3447 • State DOT and other State Agency guidance and programs.

3448 **Supporting Materials.** For quick reference, include:

3449 • State Aeronautics Act: Provide a copy of the current state laws pertaining to  
3450 airport land use commissions, airport planning collaboration and consistency.  
3451 Indicate the date of the most current legislative amendment.

3452 • Title 14 Code of Federal Regulations Part 77: Provide a copy of regulations  
3453 governing objects affecting navigable airspace.

3454 • Glossary: Prepare a glossary of common aviation terms, particularly those  
3455 associated with airport land use compatibility planning topics.

3456 • A website link to the state aeronautics office.

3457

3458 **EXAMPLE EXISTING ALUCPS**

3459 **San Diego County Regional Airport Authority** - <http://www.san.org/Airport-Projects/Land-Use-Compatibility#118076-alucps>

3461 **City of Ontario CA** - <http://www.ontarioplan.org/alucp-for-ontario-international-airport/>

3462 **City/County Association of Governments (C/CAG) of San Mateo County CA** -  
3463 <http://ccag.ca.gov/plansreportslibrary/airport-land-use/>

3464 **APPENDIX F. EXAMPLE AIRPORT LAND USE COMPATIBILITY OVERLAY ZONING**  
3465 **ORDINANCE**

3466 **Sample Airport Land Use & Height Overlay Zoning Ordinance**  
3467 **from Iowa Department of Transportation, Office of Aviation**

3468 **1. Title and Authority:**

3469 The \_\_\_\_\_ AIRPORT LAND USE & HEIGHT OVERLAY ZONING  
3470 ORDINANCE created by the \_\_\_\_\_ shall regulate and restrict the  
3471 height of structures, objects, and growth of natural vegetation, as well as land uses; otherwise  
3472 regulating the use of property, within the vicinity of the \_\_\_\_\_ Airport.  
3473 Creation of appropriate zones and establishing the boundaries thereof, as well as providing for  
3474 changes in the restrictions and boundaries of such zones is vested in this Ordinance.  
3475 \_\_\_\_\_ Airport Land Use & Height Zoning Map is incorporated into and  
3476 made part of this Ordinance. It is intended that such restrictions will be coordinated with the  
3477 restrictions existing under the \_\_\_\_\_ County zoning ordinance.

3478

3479 **2. Statement of Purpose and Findings**

- 3480 1. The \_\_\_\_\_ Airport is acknowledged as an essential public facility  
3481 to the local community.
- 3482 2. The creation or establishment of an airport hazard is a public nuisance and poses a potential  
3483 concern to the surrounding communities served by \_\_\_\_\_ Airport.
- 3484 3. There shall be no creation or establishment of a hazard that endangers public health, safety,  
3485 welfare, or impacts an individual's quality of life, nor prevents the safe movement of aircraft at the  
3486 \_\_\_\_\_ Airport.
- 3487 4. For the protection of the public health, safety, and general welfare, and for the promotion of the  
3488 most appropriate use of land, it is necessary to prevent the creation or establishment of airport  
3489 hazards.
- 3490 5. The prevention of airport hazards shall be accomplished, to the extent legally possible, by proper  
3491 exercise of the police power.
- 3492 6. The prevention of new airport hazards, and the elimination, removal, alteration, mitigation, or  
3493 marking and lighting of existing airport hazards, are considered to be a public purpose for which  
3494 \_\_\_\_\_ (City/County) may raise and expend public funds, as an  
3495 incident to the operation of airports, to acquire or property interest therein.

3496

3497 **3. Applicability**

3498 This ordinance encompasses the prescribed areas defined in this ordinance around the  
3499 \_\_\_\_\_ Airport. See Exhibit A.

3500

3501

3502 **4. Definitions**

3503 **Airport Overlay Zones**

3504 Zones intended to place height and land use conditions on land impacted by airport operations while  
3505 retaining the existing underlying zone. The Title 14 Code of Federal Regulations Part 77 (14 CFR  
3506 Part 77) Surfaces and runway protection zones have been combined to create five airport overlay  
3507 zones. The five specific zones create a comprehensive area focused on maintaining compatible land  
3508 use around airports.

3509

3510 **Approach and Runway Protection Zone Map.**

3511 The Approach and Runway Protection Zone Map is compiled from the criteria in 14 CFR Part 77,  
3512 "Objects Affecting Navigable Airspace." It shows the five-airport overlay zones affected by the Airport  
3513 Overlay Zoning Ordinance, and includes the layout of runways, airport boundaries, elevations, and  
3514 area topography. Applicable height limitation areas are shown in detail.

3515

3516 **Conical Surface (Zone E)** - The conical surface extends upward and outward from the periphery of  
3517 the horizontal surface at a slope of 20 feet horizontally for every one-foot vertically (20:1) for a  
3518 distance of 4,000 feet. It is the outermost zone of the overlay areas and has the least number of land  
3519 use restriction considerations.

3520

3521 **Horizontal Surface (Zone D)** - The horizontal surface is a horizontal plane located 150 feet above  
3522 the established airport elevation and begins at the edge of the transitional surfaces and primary  
3523 surface for a distance of 5,000 feet for visual approach runways.

3524

3525 **Primary Surface** - The primary surface is longitudinally centered on a runway. When the runway has  
3526 a specially prepared hard surface, the primary surface extends 200 feet beyond each end of that  
3527 runway. When the runway has no specially prepared hard surface, the primary surface ends at each  
3528 end of that runway. The width of the primary surface is 250 feet, or 50 feet beyond the marked edge  
3529 of a turf runway.

3530

3531 **Runway Protection Zone (RPZ) (Zone A)** - The area off the end of the runway end designed to  
3532 provide a clear area that is free of above ground obstructions and structures to enhance the  
3533 protection of people and property on the ground. Zone A is intended to provide a clear area that is  
3534 free of above-ground obstructions and structures.

3535

3536 **Runway Approach Surface (Zone B)** - A critical overlay surface that reflects the approach and  
3537 departure areas for each runway at an airport. The approach surface is longitudinally centered on the  
3538 extended runway centerline, extending outward and upward from the end of the runway. The  
3539 approach slope for visual runways is 20:1 for a distance of 5,000 feet.

3540

3541 **Transitional Surface (Zone C)** - The transitional surface extends outward and upward at right angles  
3542 to the runway centerline and extends at a slope of seven feet horizontally for each one-foot vertically  
3543 (7:1) from the sides of the primary and approach surfaces. The transitional surfaces extend to the  
3544 point at which they intercept the horizontal surface at a height of 150 feet above the established  
3545 airport elevation.

3546

3547 **Visual Approach.**

3548 An approach to an airport conducted with visual reference to the terrain.

3549

3550 **5. Airport Overlay Zones**

3551 Airport overlay zones established by this Ordinance include all of the land lying beneath the runway  
 3552 protection zone, the approach surface, transitional surface, horizontal surface and conical surface.  
 3553 These zones are identified as A, B, C, D and E and are defined under the definition section, Table 5.1  
 3554 and in Exhibit A.

3555 **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

3556

3557 **6. Airport Zone Height Limitations and Lighting Requirements**

3558 Unless otherwise provided for in this Ordinance, no structure, object, natural vegetation, or terrain  
 3559 shall be erected, altered, allowed to grow or be maintained within any airport zone established by this  
 3560 Ordinance to a height in excess of the applicable height limitations established by this Ordinance in  
 3561 Table 5.1 and shown on Exhibit A, the "\_\_\_\_\_ Airport Zone Overlay Map."

3562

3563 Lighting and marking requirements will be determined through an FAA 7460-1 airspace analysis. The  
 3564 owner of any structure, object, natural vegetation, or terrain is hereby required to install, operate, and  
 3565 maintain such markers, lights, and other aids to navigation necessary to indicate to the aircraft  
 3566 operators in the vicinity of an airport the presence of an airport hazard.

3567



3568  
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3573  
3574

**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.

<b>Airport</b>					
<b>Zone Chart</b>					
	<i>C = Compatible</i>	<i>AR = Additional Review Required</i>	<i>NC = Not Compatible</i>		
Land Uses	Zone A	Zone B	Zone C	Zone D	Zone E
<b>Single Family</b>	<b>NC</b>	<b>AR</b>	<b>NC</b>	<b>AR</b>	<b>C</b>
<b>Multi-Family, group living Uses</b>	<b>NC</b>	<b>NC</b>	<b>NC</b>	<b>AR</b>	<b>C</b>
<b>Permitted uses in “C” Commercial District</b>	<b>NC</b>	<b>AR</b>	<b>AR</b>	<b>C</b>	<b>C</b>
<b>Permitted uses in “M” Manufacturing District</b>	<b>NC</b>	<b>AR</b>	<b>AR</b>	<b>AR</b>	<b>C</b>
<b>Basic Utility Uses</b> (i.e., utility substation facilities, electrical substations, water and sewer lift stations, water towers)	<b>NC</b>	<b>NC</b>	<b>NC</b>	<b>AR</b>	<b>C</b>
<b>Sanitary landfills</b>	<b>NC</b>	<b>NC</b>	<b>NC</b>	<b>NC</b>	<b>AR</b>
<b>Solar power, generation equipment, wind generation, wind farms</b>	<b>NC</b>	<b>NC</b>	<b>NC</b>	<b>AR</b>	<b>AR</b>
<b>Communication transmission facilities</b>	<b>NC</b>	<b>NC</b>	<b>NC</b>	<b>AR</b>	<b>AR</b>
<b>Outdoor storage, signs and displays</b>	<b>NC</b>	<b>AR</b>	<b>AR</b>	<b>AR</b>	<b>C</b>
<b>General Community Service</b>	<b>NC</b>	<b>AR</b>	<b>AR</b>	<b>AR</b>	<b>C</b>
<b>Daycare Uses</b>	<b>NC</b>	<b>NC</b>	<b>NC</b>	<b>AR</b>	<b>C</b>
<b>Detention Facilities</b> (i.e., prisons, jails, probation centers, juvenile detention homes, halfway houses)	<b>NC</b>	<b>NC</b>	<b>NC</b>	<b>AR</b>	<b>C</b>
<b>Educational Facilities</b>	<b>NC</b>	<b>NC</b>	<b>NC</b>	<b>AR</b>	<b>C</b>
<b>Hospitals</b>	<b>NC</b>	<b>NC</b>	<b>NC</b>	<b>AR</b>	<b>C</b>
<b>Religious Assembly Uses</b>	<b>NC</b>	<b>NC</b>	<b>NC</b>	<b>AR</b>	<b>C</b>
<b>Communication Transmission Facility Uses</b> (i.e., broadcast, wireless, point to point, emergency towers and antennae)	<b>NC</b>	<b>NC</b>	<b>NC</b>	<b>AR</b>	<b>AR</b>
<b>Parking Uses</b> (i.e., ground lots, parking structures)	<b>AR</b>	<b>C</b>	<b>AR</b>	<b>C</b>	<b>C</b>
<b>Transportation Uses</b> (i.e., highways, interstates, local and county roads)	<b>AR</b>	<b>C</b>	<b>C</b>	<b>C</b>	<b>C</b>
<b>Utility Uses</b> (i.e., solar power	<b>NC</b>	<b>NC</b>	<b>NC</b>	<b>AR</b>	<b>AR</b>

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

3575  
3576

**8. Airport Zoning Map**

3577 The Airport Land Use & Height Overlay Zones established by this Ordinance are shown on the  
3578 Exhibit A to this Ordinance. The Official Airport Land Use & Height Overlay Zoning Map, may be  
3579 amended, and all notations, references, elevations, data, zone boundaries, and other information  
3580 thereon, is hereby adopted as part of this Ordinance.

3581

3582 **9. Ordinance Administration**

3583 It shall be the duty of the \_\_\_\_\_ referred to herein as the “Airport  
3584 Zoning Administrator” to administer the regulations prescribed herein. Applications for permits and  
3585 variances shall be made to the Airport Zoning Administrator upon forms furnished by the Airport  
3586 Zoning Administrator. Applications for action by the Board of Adjustment shall be forthwith  
3587 transmitted by the Airport Zoning Administrator should an applicant request review. Permit  
3588 applications shall be either granted or denied by the Airport Zoning Administrator according to the  
3589 regulations prescribed herein.

3590

3591 **10. Airport Zoning Permits**

3592 It shall be the duty of the applicant to provide the Airport Zoning Administrator with sufficient  
3593 information to evaluate the proposed action. This information shall include but not be limited to the  
3594 following:

3595

- 3596 • Contact information

- 3597 • Structure information
- 3598 • Site information
- 3599 • Drawing information
- 3600 • Certification
- 3601 • Identify current and potential compatibility concerns

3602

3603 The Airport Zoning Administrator shall evaluate the proposal based upon information provided by the  
3604 applicant. The Airport Zoning Administrator shall approve the permit if after evaluation, the proposed  
3605 project is found to be adequately compatible. Should the proposed project be found to be  
3606 incompatible after review, the Airport Zoning Administrator shall deny the permit. Should the permit  
3607 be denied, the applicant shall have the right to request a variance or an appeal as prescribed in this  
3608 Ordinance.

3609

### 3610 **11. Variances**

3611 Any person desiring to erect, alter, or increase the height of any structure, object, or to permit the  
3612 growth of any natural vegetation, or otherwise use his property in violation with any section of this  
3613 Ordinance, may apply to the Board of Adjustment for variance from such regulation. No application  
3614 for variance to the requirements of this Ordinance may be considered by the Board of Adjustment  
3615 unless a copy of the application has been submitted to the \_\_\_\_\_ Airport  
3616 Zoning Administrator and the airport manager for an opinion as to the aeronautical effects of the  
3617 variance.

3618

### 3619 **12. Appeals**

3620 Any person, property owner, or taxpayer impacted by any decision of this Ordinance, may appeal to  
3621 the Board of Adjustment. ***(Insert detail regarding procedures for the appeals process already in***  
3622 ***use by the adopting governing body.)***

3623

### 3624 **13. Penalties**

3625 Any violation of this Ordinance or of any regulation, order, or ruling promulgated hereunder shall  
3626 constitute a simple misdemeanor, and shall be punishable by a fine of not more than \$\_\_\_\_\_   
3627 dollars or imprisonment for not more than \_\_\_\_\_ (year or month) or both; each day a  
3628 violation continues to exist shall constitute a separate offense. ***(Insert detail regarding penalties***  
3629 ***already in use by the adopting governing body.)***

3630

### 3631 **14. Conflicting Regulations**

3632 Where there exists a conflict between any of the regulations or limitations prescribed in this  
3633 Ordinance and any other regulations applicable to the same area, whether the conflict be with respect  
3634 to height or structures, the use of land, or any other matter, the more stringent limitation or  
3635 requirement shall govern and prevail.

3636

### 3637 **15. Severability**

3638 If any provision of this Ordinance or the application thereof to any person or circumstances is held  
3639 invalid, such invalidity shall not affect other provisions or applications of the Ordinance, which can be

3640 given effect without the invalid provision or application, and to this end, the provisions of this  
3641 Ordinance are declared to be severable.

3642

3643 **16. Effective Date**

3644 This Ordinance shall be in effect from and after its passage by the governing body and publication  
3645 and posting as required by law.

3646

3647 Adopted on this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_.

3648

3649 **Exhibit A-Airport Land Use & Height Overlay Zoning Map**

3650

3651 The exhibit provides the Official Airport Land Use & Height Overlay Zoning Maps to be kept on file  
3652 with the appropriate governmental entities. The maps must be amended when changes occur within  
3653 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

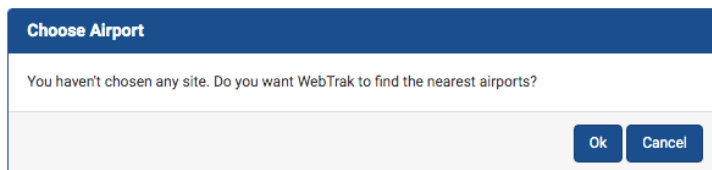
**Message**

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) 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."

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?

## SCSC Roundtable All Correspondence

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
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## 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 216<sup>th</sup> 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.<sup>1</sup> 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.<sup>2</sup>

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.

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<sup>1</sup> 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).

<sup>2</sup> FAA JO 7110.65Y, *Air Traffic Control*, Chapter 3 Airport Traffic Control – Terminal

<b>Table-1: Proposed Instrument Approach Procedures Amendments at KSFO and KSJC</b>		
<b>Proposed Procedure(s)</b>	<b>Airport</b>	<b>Instrument Approach Flight Procedure Type(s)</b>
SERFR FIVE STAR Proposed Approach Procedures to Runway 28L and Runway 28R	KSFO	<ul style="list-style-type: none"> <li>• ILS OR LOC RWY 28L</li> <li>• ILS OR LOC RWY 28R</li> <li>• ILS RWY 28L (SA CAT II)</li> <li>• ILS RWY 28R (CAT II AND III)</li> <li>• ILS RWY 28R (SA CAT I)</li> <li>• QUIET BRIDGE VISUAL RWY 28L/R</li> <li>• TIPP TOE VISUAL RWY 28L/R</li> <li>• RNAV (GPS) RWY 28L</li> <li>• RNAV (GPS) Z RWY 28R</li> <li>• RNAV (RNP) Y RWY 28R</li> <li>• Visual approach</li> </ul>
BRIX THREE STAR Proposed Approach Procedures to Runway 30L and Runway 30R	KSJC	<ul style="list-style-type: none"> <li>• RNAV (RNP) Z RWY 30L</li> <li>• RNAV (RNP) Z RWY 30R</li> <li>• FAIRGROUNDS Visual RWY 30L/R</li> </ul>

**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 BRIX 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 BRIX 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 BRIX TWO STAR prior to reaching the end of these flight procedures.<sup>3</sup> This vectoring is required in order for ATC to properly sequence and space arrival air traffic on the SERFR FOUR STAR and on the BRIX 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 BRIX 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

<sup>3</sup> Vectors are directional headings issued to aircraft to provide navigational guidance and to maintain separation between aircraft and/or obstacles.

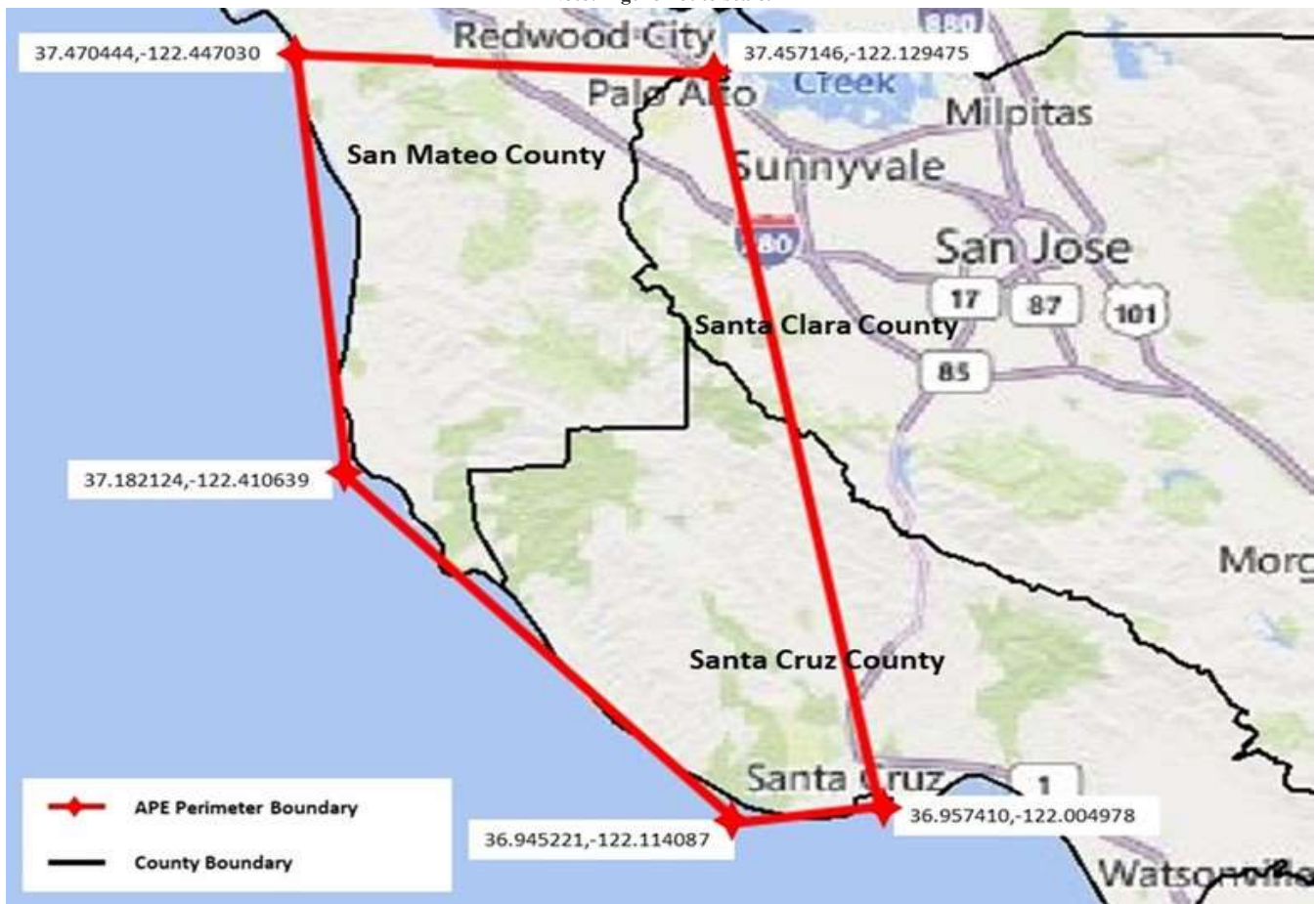
arrival route.<sup>4</sup> Table-2 lists the latitude and longitude coordinates of the geographical boundary of the APE.

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.



<sup>4</sup> 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.

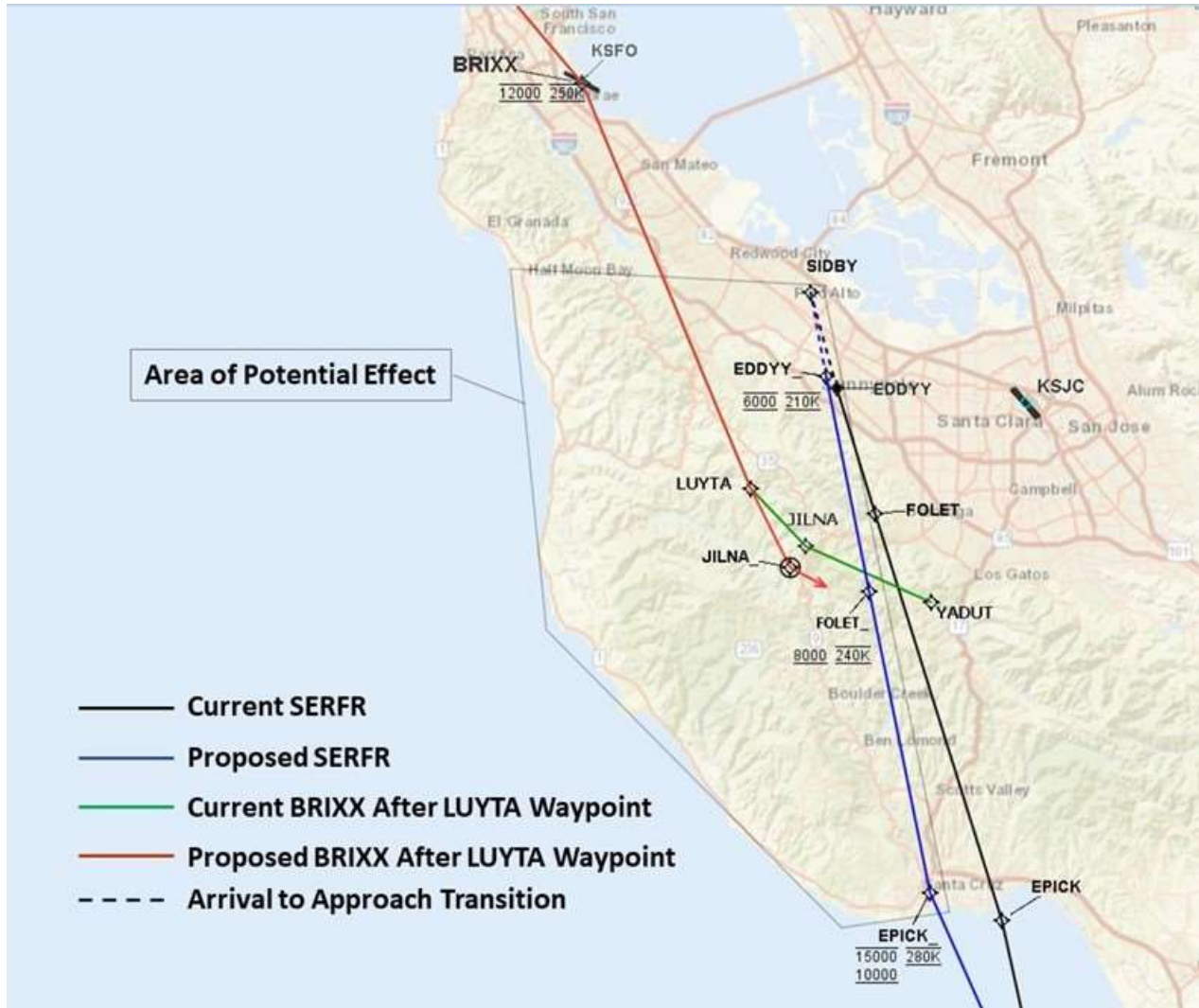
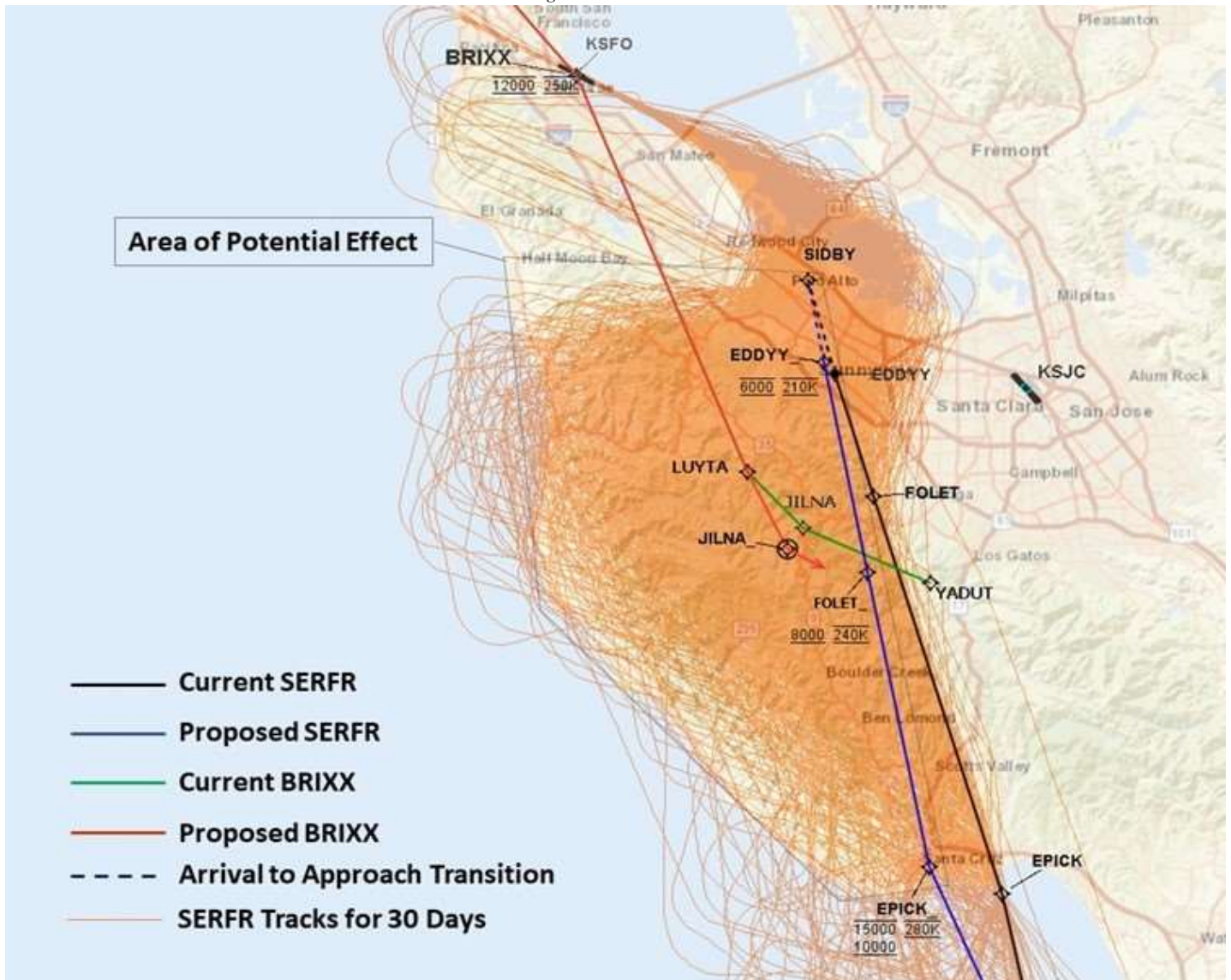


Figure-3 and Figure-4 depict the 30 days of current flight tracks of aircraft on the SERFR FOUR STAR and the BRIXX TWO STAR, which are used to define the boundaries of the proposed APE. Figure-5 depicts the 30 days flight tracks of the SERFR FOUR STAR, overlaid with the 30 days flight tracks of the BRIXX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

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

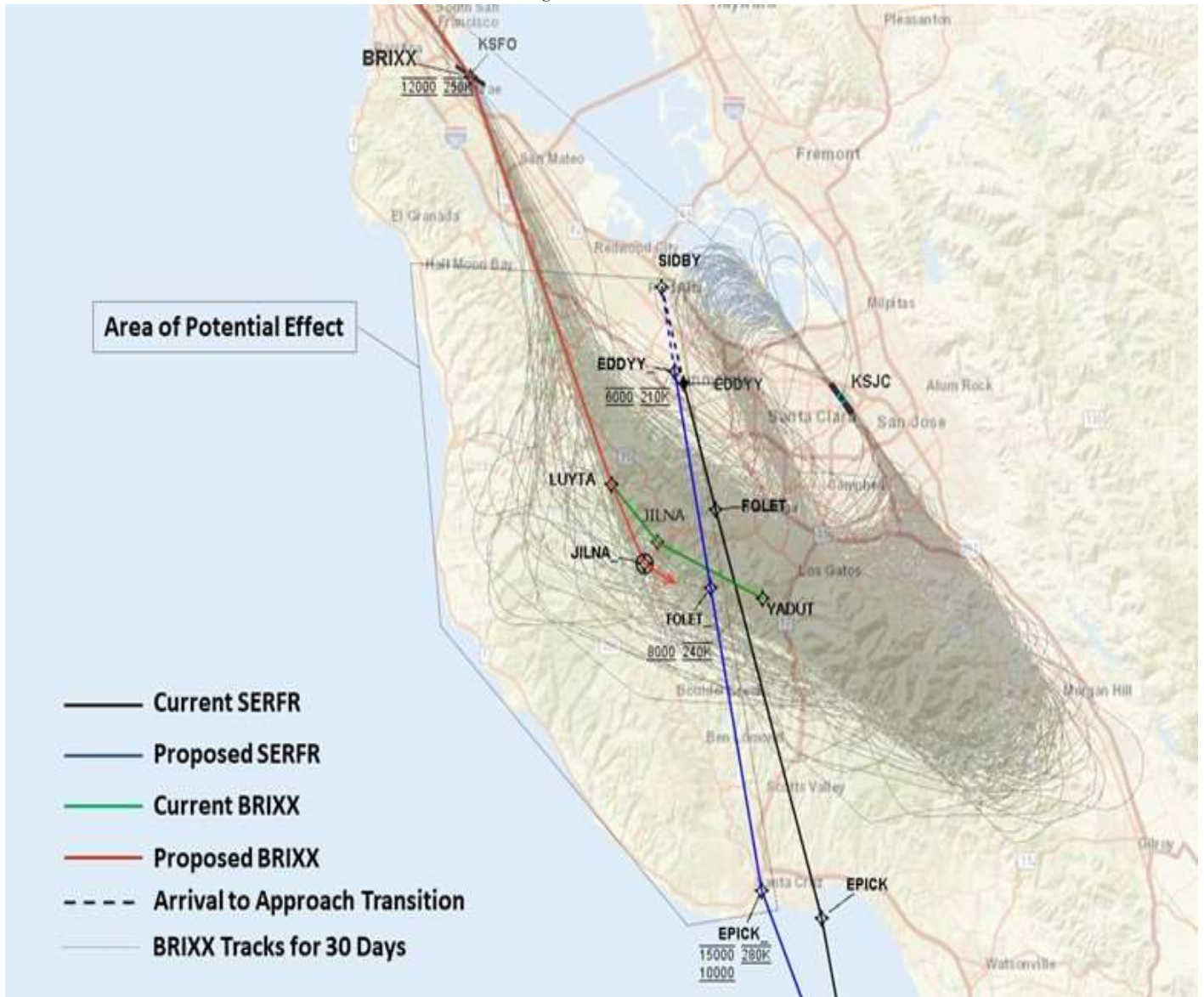
Note: Figure not to scale.



<sup>5</sup> 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)

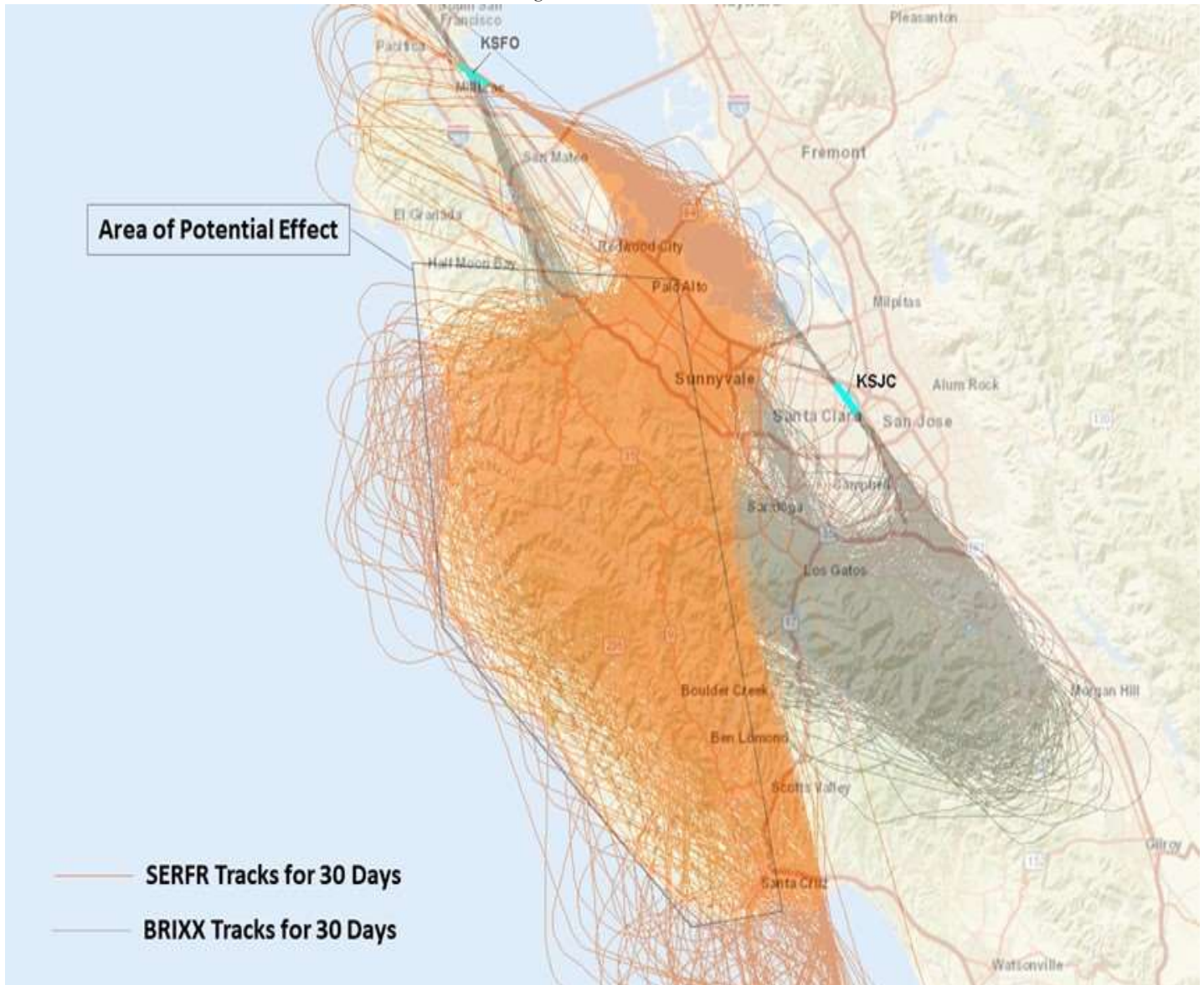
Figure-4: Thirty Days of Flight Track Data for Aircraft on the BRIXX TWO STAR Vectored for Arrival to KSJC

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 NEPAAssist, was completed to identify those properties listed on the National Register within the proposed APE.<sup>6</sup>

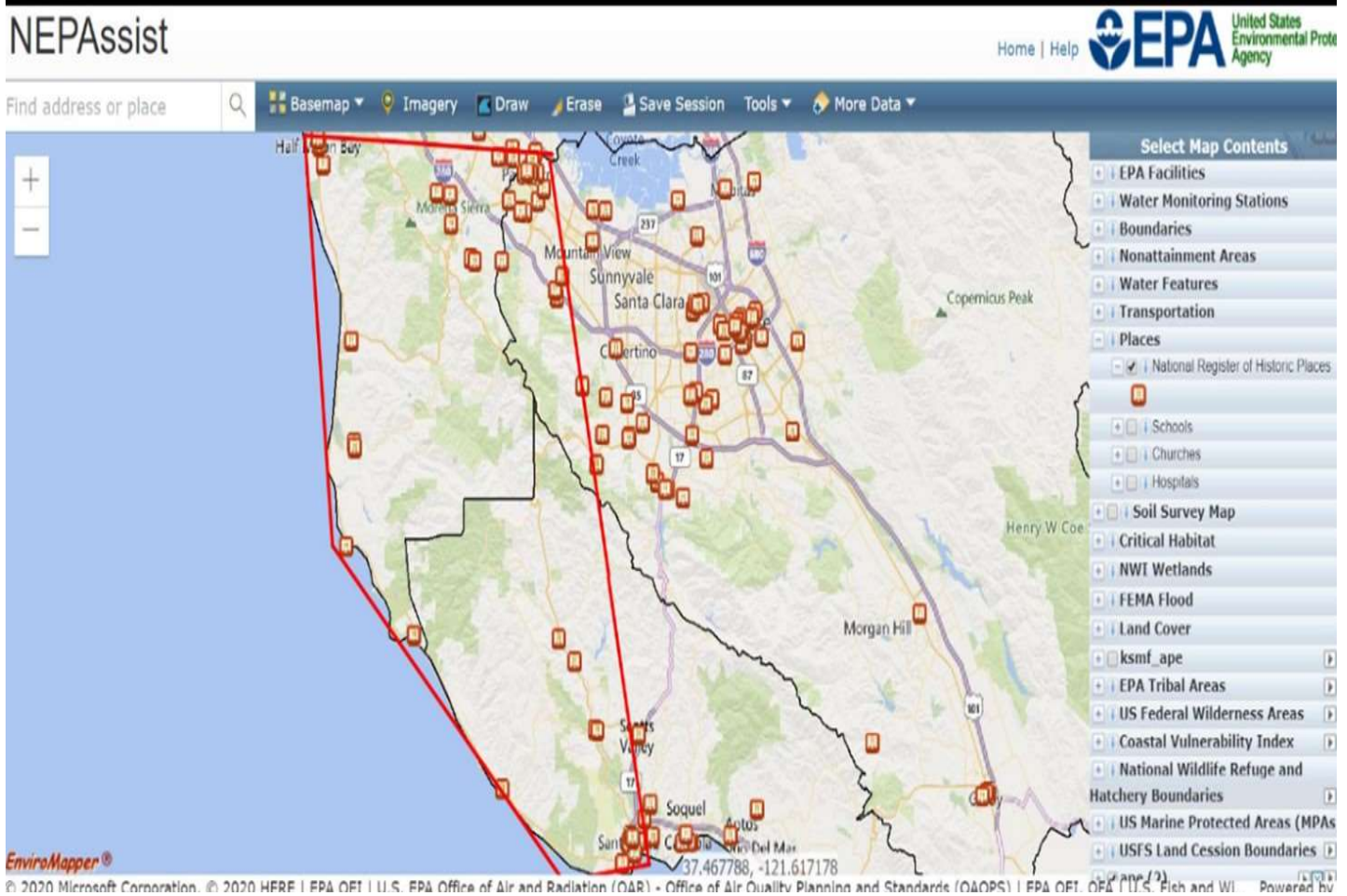
Figure-6 below depicts the approximate location of historic properties listed in the National Register accessed through NEPAAssist, which are within the proposed APE. Attachment A contains Table-3, which lists the names of the historic properties depicted in Figure-6, and includes the URL link to the 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.

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<sup>6</sup> NEPAAssist 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)<sup>7</sup> 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,

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<sup>7</sup> 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](mailto:marina.landis@faa.gov).

Sincerely,

Shawn M. Kozica  
Manager  
Operations Support Group  
Western Service Center

Attachment



## Attachment A

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

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

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

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



01/27/2021





# Federal Aviation Administration

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## 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.

(BRXX.BRXX3) FIG

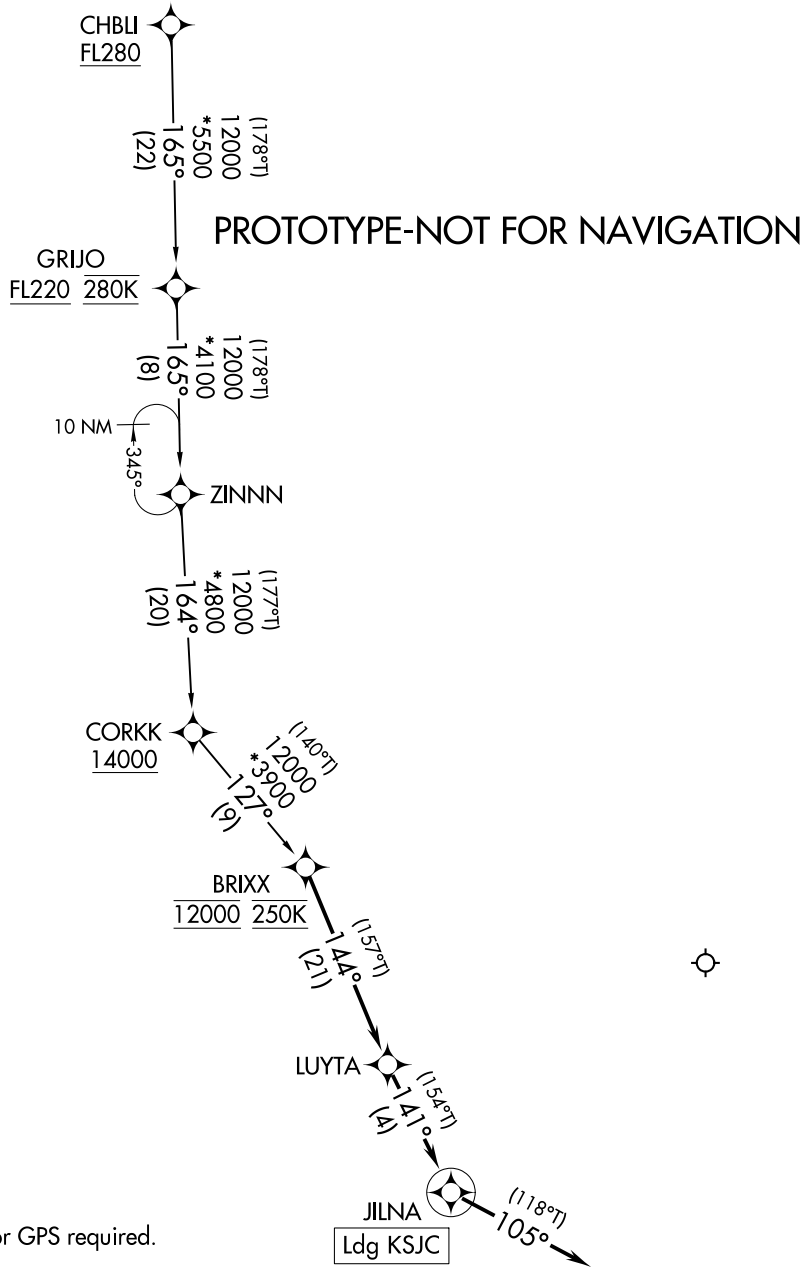
**BRXX THREE ARRIVAL (RNAV)**

AL-693 (FAA)

NORMAN Y MINETA SAN JOSE INTL (SJC)

SAN JOSE, CALIFORNIA

OAKLAND CENTER  
125.85 323.0  
NORCAL APP CON  
133.95 317.6  
D-ATIS  
126.95  
SAN JOSE TOWER \*  
124.0 257.6  
GND CON  
121.7



NOTE: RADAR required.  
NOTE: RNAV 1.  
NOTE: DME/DME/IRU or GPS required.

NOTE: Chart not to scale.

**ARRIVAL ROUTE DESCRIPTION**

CHBLI TRANSITION (CHBLI.BRXX3)

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.

AUTOMATED AL-693 BRXX ARRIVAL

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

**BRXX THREE ARRIVAL (RNAV)**

(BRXX.BRXX3) FIG Amdt 1

SAN JOSE, CALIFORNIA

NORMAN Y MINETA SAN JOSE INTL (SJC)

(BRXX.BRXX3) FIG

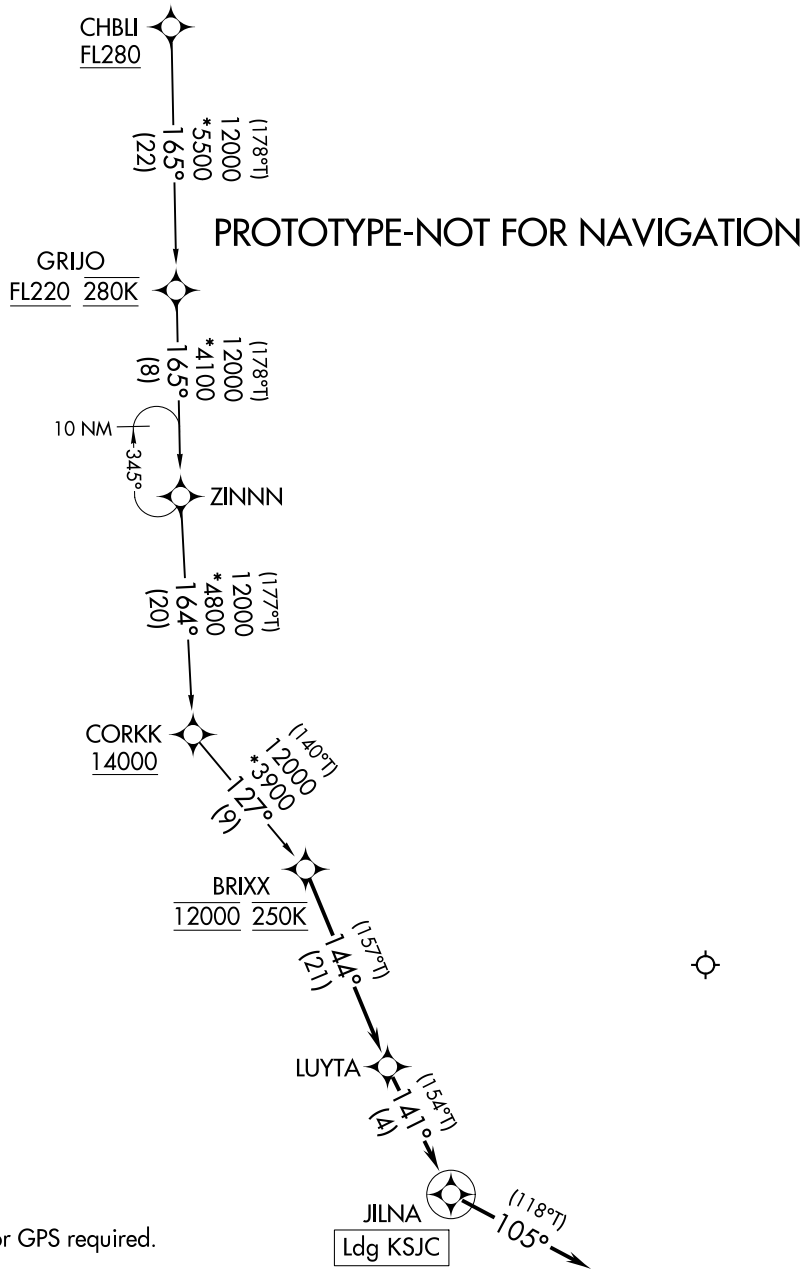
**BRXX THREE ARRIVAL (RNAV)**

AL-693 (FAA)

NORMAN Y MINETA SAN JOSE INTL (SJC)

SAN JOSE, CALIFORNIA

OAKLAND CENTER  
125.85 323.0  
NORCAL APP CON  
133.95 317.6  
D-ATIS  
126.95  
SAN JOSE TOWER \*  
124.0 257.6  
GND CON  
121.7



NOTE: RADAR required.  
NOTE: RNAV 1.  
NOTE: DME/DME/IRU or GPS required.

NOTE: Chart not to scale.

**ARRIVAL ROUTE DESCRIPTION**

CHBLI TRANSITION (CHBLI.BRXX3)

From BRXX 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.

AUTOMATED AL-693 BRXX ARRIVAL

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

**BRXX THREE ARRIVAL (RNAV)**

(BRXX.BRXX3) FIG Amdt 1

SAN JOSE, CALIFORNIA

NORMAN Y MINETA SAN JOSE INTL (SJC)

DME ESV KSJC [IFPA] BR1XX3 RNAV STAR\_20201026\_1403 MDT.

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



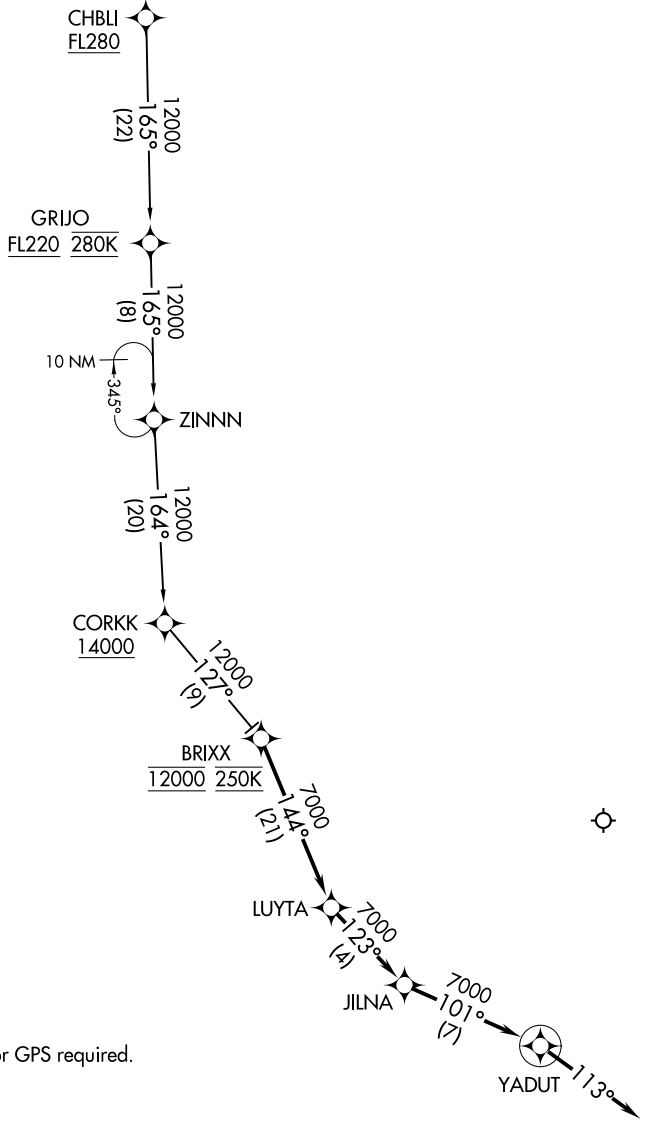
(BRXX.BRXX2) 17173

BRXX TWO ARRIVAL (RNAV)

AL-693 (FAA)

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

OAKLAND CENTER  
125.85 323.0  
NORCAL APP CON  
133.95 317.6  
D-ATIS  
126.95  
SAN JOSE TOWER ★  
124.0 257.6  
GND CON  
121.7



NOTE: RADAR required.  
NOTE: RNAV 1.  
NOTE: DME/DME/IRU or GPS required.

NOTE: Chart not to scale.

ARRIVAL ROUTE DESCRIPTION

CHBLI TRANSITION (CHBLI.BRXX2)

From BRXX 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.

BRXX TWO ARRIVAL (RNAV)

(BRXX.BRXX2) 21JUL16

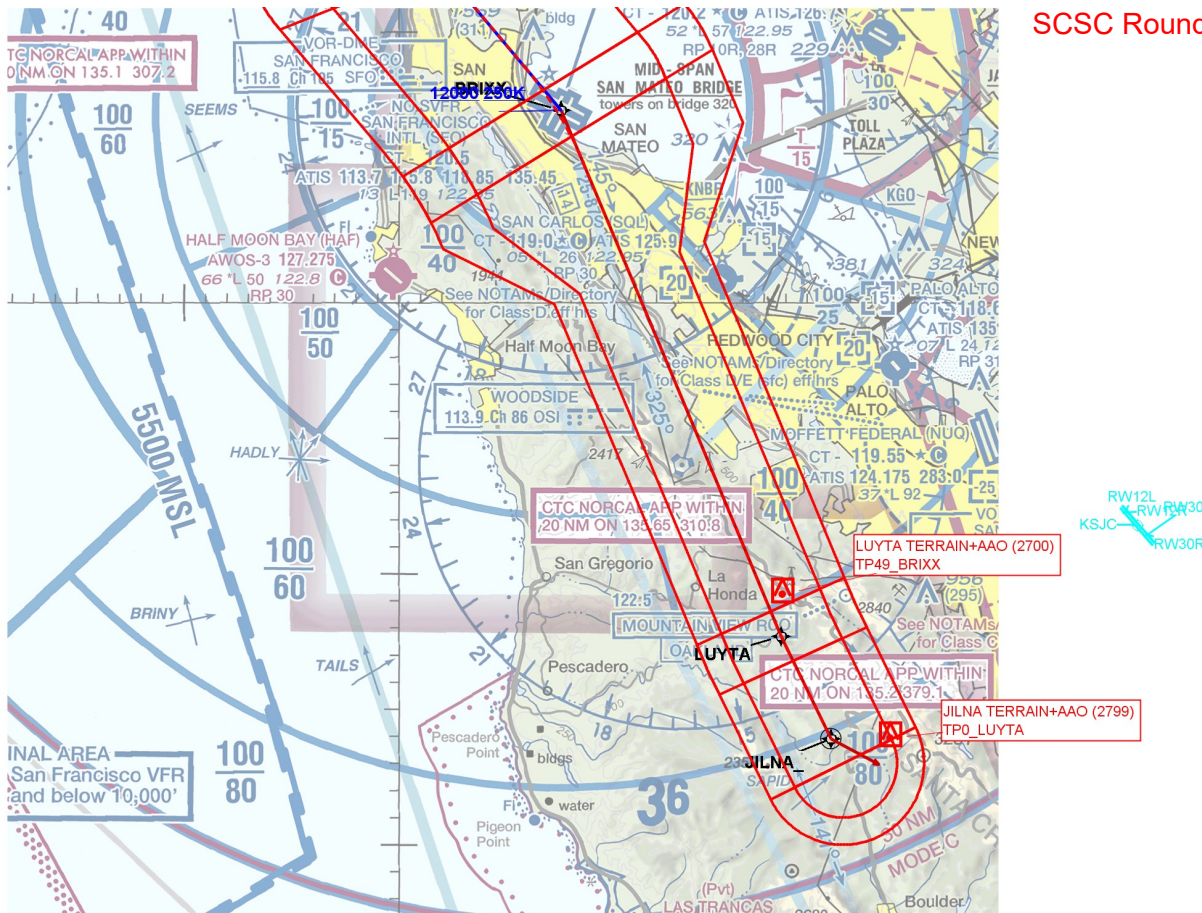
SAN JOSE, CALIFORNIA  
NORMAN Y MINETA SAN JOSE INTL (SJC)

SW-2, 31 DEC 2020 to 28 JAN 2021

SW-2, 31 DEC 2020 to 28 JAN 2021







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.<sup>1</sup>

<sup>1</sup> 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.

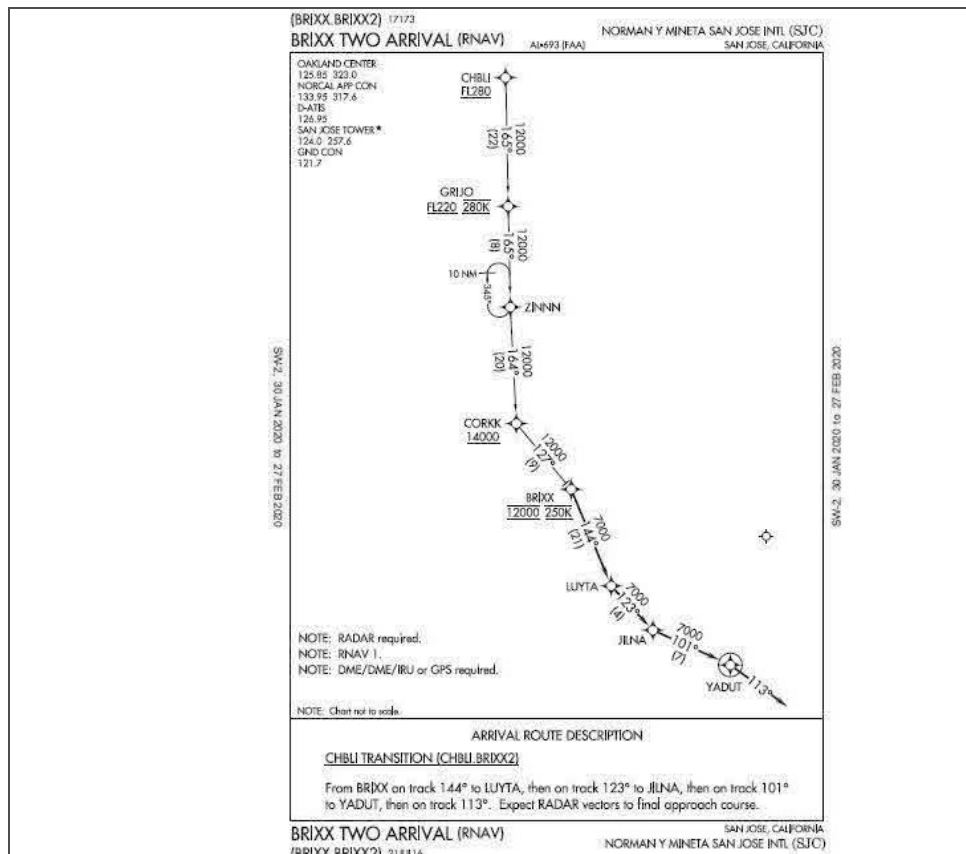
No additional benefits are applicable to the purpose and need of the project.

**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.

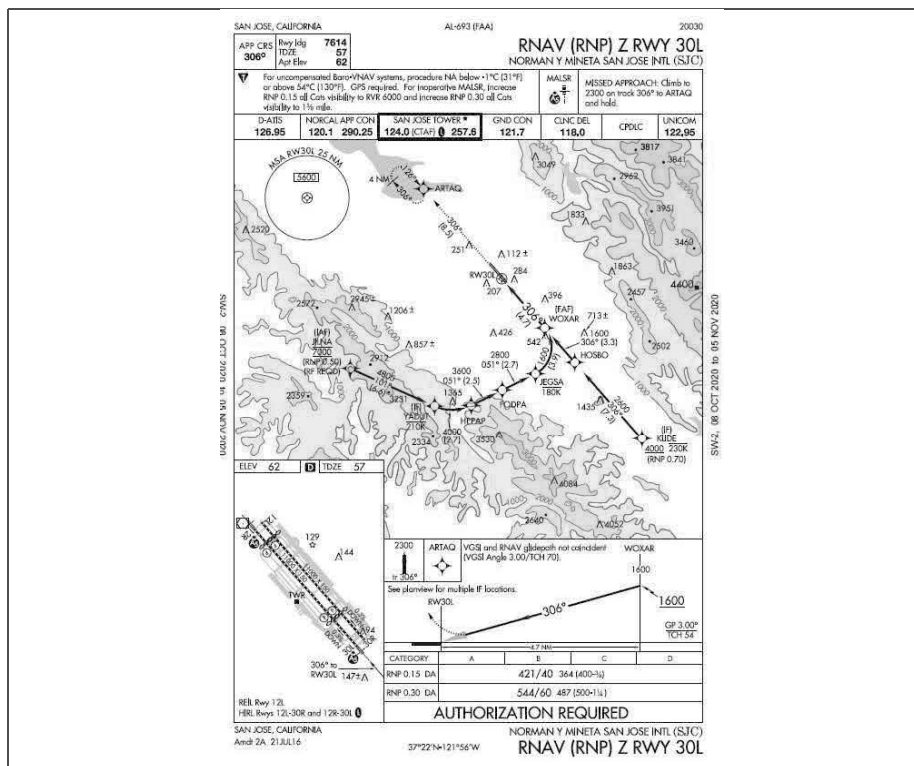
Currently, pertinent to this project, the following procedures are in use at KSJC:

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

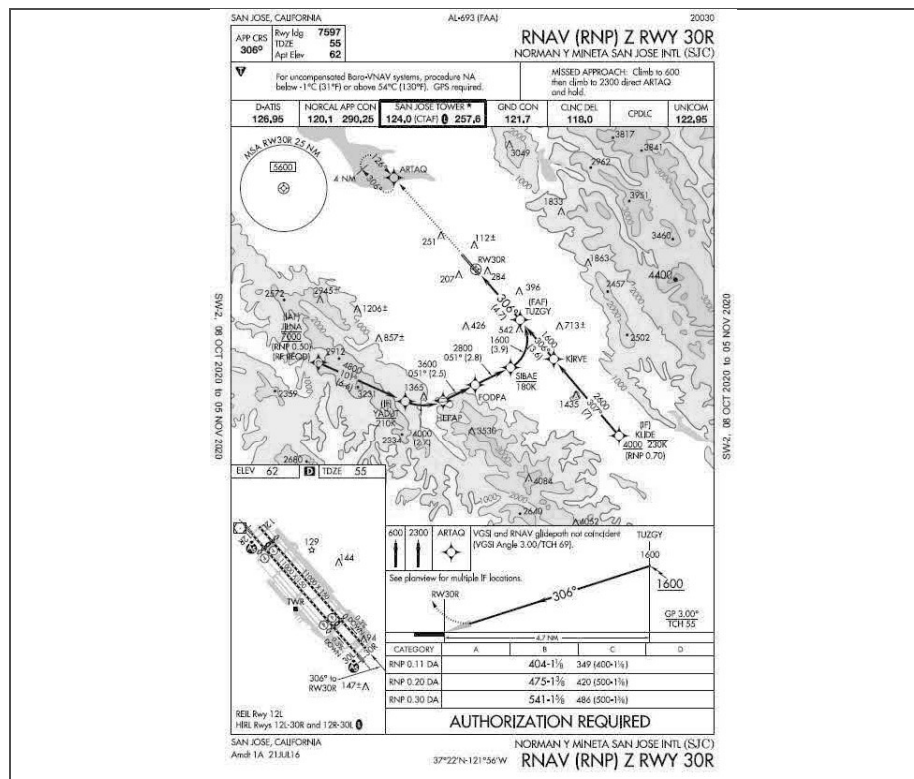
BRIXX TWO is depicted in the following figure:



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](http://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](http://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](mailto: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](http://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  $\frac{2}{3}$  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 overflowed.

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.



## SCSC Roundtable All Correspondence

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](mailto: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](#).**

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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](http://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](mailto: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](http://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.

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For more information on the Proposed Project and to view the NOP, please visit [www.oaklandairport.com/terminaldevelopment](http://www.oaklandairport.com/terminaldevelopment).

Para información en español llame al (510) 627-1198  
中文聯絡電話 (510) 627-1198

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[www.oaklandairport.com](http://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@logatosca.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.

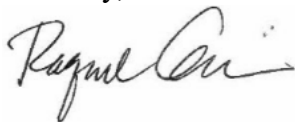
Question 3a: Can the FAA substantiate with a data analysis its statement that the 35.5% increase in the PIRAT procedure operations is solely due to an increase in market demand and has nothing to do with converting a private Tailored Arrival to SFO and other Oceanic Arrivals to SFO and OAK into a public 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<sup>1</sup> 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

<sup>1</sup> <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](mailto:Marina.Landis@faa.gov)>  
To: Mike McClintock <[glomike65@aol.com](mailto: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/](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 20<sup>th</sup> event, please access: [https://zoom.us/webinar/register/WN\\_DNdik2ibQjaq-Fp9YSKQwA](https://zoom.us/webinar/register/WN_DNdik2ibQjaq-Fp9YSKQwA) – this url can be copy/pasted for the July 20<sup>th</sup> registration

**or**

For the July 21<sup>st</sup> event, please access: [https://zoom.us/webinar/register/WN\\_VBwXcFZdR-eE2qOt3v0LqW](https://zoom.us/webinar/register/WN_VBwXcFZdR-eE2qOt3v0LqW) – this url can be copy/pasted for the July 21<sup>st</sup> 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](mailto:marina.landis@faa.gov)

Web: [www.faa.gov/go/missionsupport](http://www.faa.gov/go/missionsupport)

*This communication may contain information that is part of the agency deliberative process; as such this communication is not subject to disclosure outside the FAA or to the public.*

**From:** Landis, Marina (FAA)

**Sent:** Wednesday, July 7, 2021 12:41 PM

**To:** [tspencer@alamedaca.gov](mailto:tspencer@alamedaca.gov); [walt.judy@jacobs148.com](mailto:walt.judy@jacobs148.com); Mike McClintock <[glomike65@aol.com](mailto:glomike65@aol.com)>; Peter Marcuzzo <[peter.marcuzzo@gmail.com](mailto: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/](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](mailto:marina.landis@faa.gov)

Web: [www.faa.gov/go/missionsupport](http://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](mailto:9-AWA-NoiseOmbudsman@faa.gov)  
[9-awp-noise@faa.gov](mailto: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](http://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/](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.

## SCSC Roundtable All Correspondence

Register here for Tuesday, July 20, 2021, from 6:00-8:00 p.m. Pacific Time :

[https://zoom.us/webinar/register/WN\\_DNdik2ibQjaq-Fp9YSKQwA](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](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

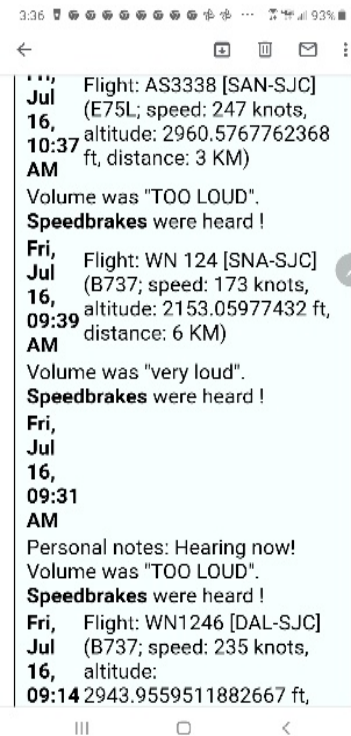
**Message**

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\_MountainView-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 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](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 misled 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!!!