

FAA and Environmental Reviews 101

UC Davis Aviation Noise & Emissions Symposium 2020

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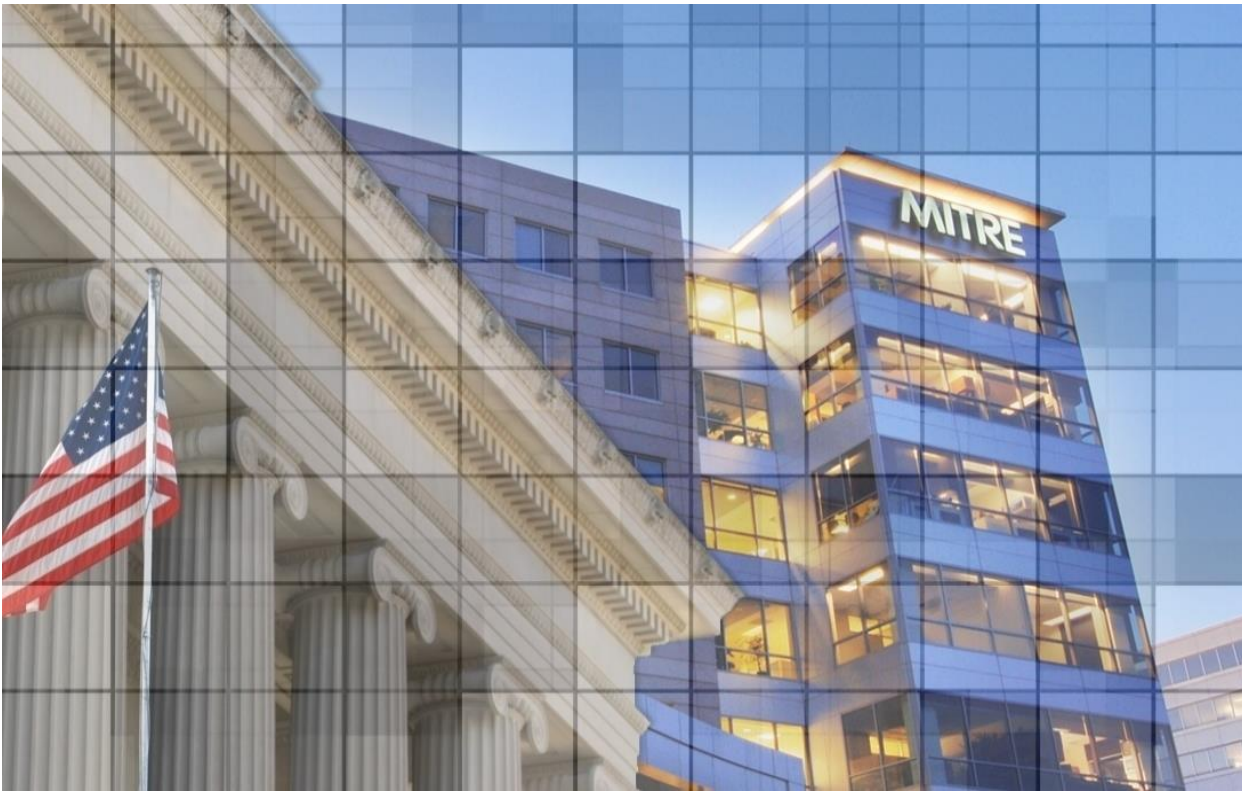
Agenda

- **Welcome and Introductions**
- **NEPA Statutes, Regulations, and FAA Policy**
- **Environmental Reviews**
- **Environmental Impact Categories**
- **Environmental Impact Analysis – Noise**
- **FAA Roles and Responsibilities**
- **Wrap-up / Q & A**



Introduction

MITRE is Unique



objectivity & independence

public interest

long-term relationship

strategic partner

established **1958**

not-for-profit

conflict-free environment

science & technology

7 centers since 1958



1958



1990



1998



2009



2010



2012



2014



Center for Advanced Aviation System Development (CAASD)



OUR MISSION:

To serve the public interest by advancing the safety, security, effectiveness, and efficiency of aerospace and transportation in the United States and around the world

Training Objective

- **Provide an overview of the National Environmental Policy Act (NEPA) and related FAA policies and processes**
- **Describe the different types of environmental reviews conducted by the FAA to comply with NEPA**
- **Explain how environmental impacts are considered as part of NEPA and other environmental reviews**
- **Clarify the roles of different FAA offices and lines of business in meeting NEPA requirements and setting policies for the agency**
- **Answer frequently asked questions about the NEPA process**

Approach to Training

- Ask questions throughout
- If we don't know the answers, we will try to get them
- Briefing materials will be made available afterwards so no need to write things down
- We won't be commenting on specific projects

Anything we say should be considered our own opinions; not the official position of the Federal Aviation Administration or The MITRE Corporation



Questions This Course Will (Hopefully) Answer...

- **What is NEPA?**
- **What constitutes a Federal Action (which requires NEPA review) and what doesn't?**
- **What are the different types of environmental reviews that FAA conducts to comply with NEPA (i.e., CATEXs, EAs, EISs) and when are they applicable?**
- **How are noise and emissions considered as part of NEPA reviews?**
- **How does FAA conduct NEPA reviews of airport actions?**
- **How does FAA conduct NEPA reviews of airspace/procedures actions?**
- **What are the roles of different FAA offices and LOBs in conducting NEPA reviews and setting NEPA policies/procedures for the agency?**
- **When/how does the FAA move forward with an action (e.g. Record of Decision)?**

NEPA Statute, Regulations, and Policy

The Statute

■ National Environmental Policy Act

- Title I - Declaration of national environmental policy
 - “Utilize a systematic, interdisciplinary approach which will insure the integrated use of the natural and social sciences and the environmental design arts in planning and in decisionmaking which may have an impact on man’s environment”
 - Prepare a “detailed statement” for major federal actions significantly affecting the quality of the human environment
- Title II - Establishes the **Council on Environmental Quality** within the Executive Office of the President
 - CEQ issues implementing regulations, provides guidance and oversight of federal agency compliance, advises the President, among other things

NEPA does not relieve FAA from compliance with other special purpose laws

Why NEPA?

Pre-NEPA Way

- **Federal decision based on**
 - Cost
 - Schedule
 - Operational issues



NEPA Way

- **Federal decision based on**
 - Cost
 - Schedule
 - Operational issues

and

- Environmental considerations

NEPA Considerations

- NEPA looks ahead to **predict future conditions**
- NEPA compares effects of **No Action and Proposed Action** in the future
- Comparison based on future steady-state condition
- Focuses on the natural and physical environment and the relationship of people to it

NEPA does not require remediation for past environmental impacts

The Federal Regulations

- **CEQ Regulations**
 - 40 CFR Part 1500 – 1508

- **Establish the “NEPA process” for federal agency actions**
 - **Categorical Exclusion** - for categories of actions which the agency has found to not individually or cumulatively have a “significant” effect
 - **Environmental Assessment** – to determine the potential for “significant” environmental impact
 - **Environmental Impact Statement** – when significant impacts are known or expected

FAA Implementing Policy and Procedures

■ Agency-Wide Guidance

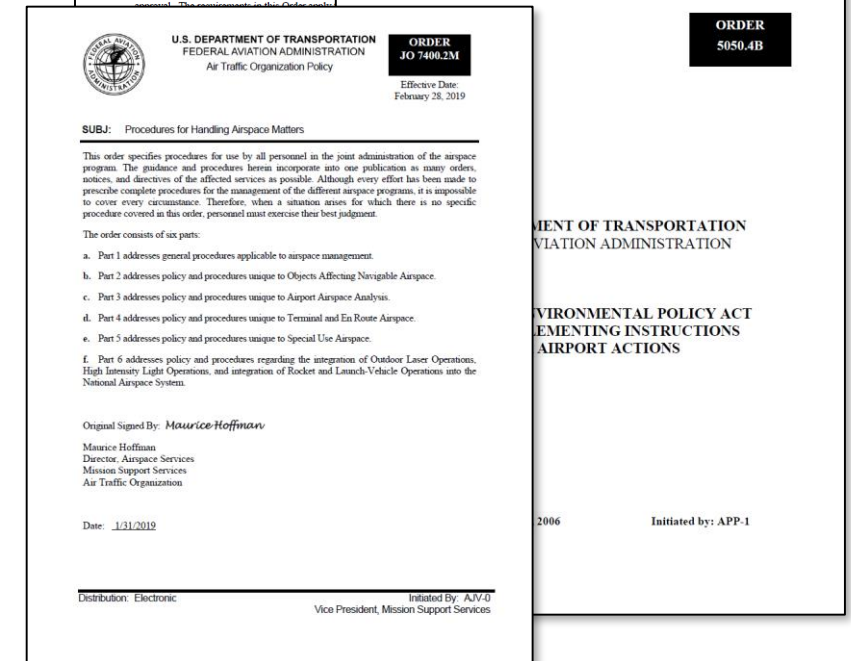
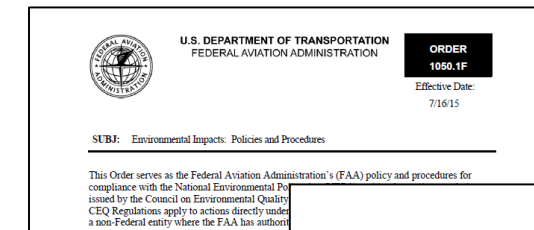
- Order 1050.1F – *Environmental Impacts: Policies and Procedures*
- 1050.1F Desk Reference
- Section 106 Handbook

■ Other Orders

- JO 7400.2M – *Procedures for Handling Airspace Matters*, Chapter 32 – Environmental Matters
- Order 5050.4B – *NEPA Implementing Instructions for Airport Actions*

■ Key FAA Offices and Organizations

- Office of Environment and Energy (AEE)
- Office of Airports (ARP)
- Air Traffic Organization (ATO)
- Office of the Chief Counsel (AGC)



NEPA – A Procedural Statute

- **Litigation challenging NEPA reviews is based on claims that an agency failed to follow procedures and/or that its analysis was flawed**
 - Courts do not decide if an action should be implemented
 - Courts decide if the decision-making process was sufficient
 - Courts may require an agency to conduct additional environmental review and reconsider its decision, which can delay implementation or change the outcome

“In the view of the Supreme Court, NEPA merely prohibits uninformed rather than unwise Agency action.”

Vermont Yankee Nuclear Power Corporation v. Natural Resources Defense Council

The NEPA Process

- **Applies to federal actions, such as**
 - Adoption of official policy
 - Adoption of formal plans guiding alternative uses of federal resources
 - Systematic and connected agency decisions allocating agency resources
 - Approval of specific projects

Example FAA NEPA triggers:

- Redesigning airspace
- Providing an AIP grant to an airport for new infrastructure
- Approving a Special RNAV Procedure
- Regulatory changes affecting route of flight

Federal Actions May Be

- **Unconnected single actions**
 - Have “independent utility”
- **Similar actions**
 - Common timing or geography
- **Connected actions**
 - Automatically trigger other actions requiring NEPA
 - Cannot or will not proceed unless other actions are taken previously or simultaneously
 - Are interdependent parts of a larger action

Connected actions must be addressed in the same NEPA document and cannot be segmented to limit impacts

Judicial Precedents

- **Courts have helped to shape NEPA practice over the past 50 years**
- **“Reasonable” level of analysis**
 - “Worst case” analysis not required
- **Use **best available** science**
- **Federal agency’s **judgment** on **future** environmental conditions**
- **Federal agency’s **judgment** on **thresholds** of significant impact**
- **Consider and **document everything****

The Record is Key

- **Administrative Record is court's **basis for deciding case****
- **Legal challenges to FAA NEPA reviews go directly to the Federal Circuit Court of Appeals**
 - No jury
 - No expert witnesses
 - Only the Administrative Record



Key Points

NEPA Is About

- Informed decision-making
- Reasonable alternatives
- Open disclosure
- Agency/public participation
- Predicting future impacts
- Balancing environmental issues with other relevant issues
- Public responsibility

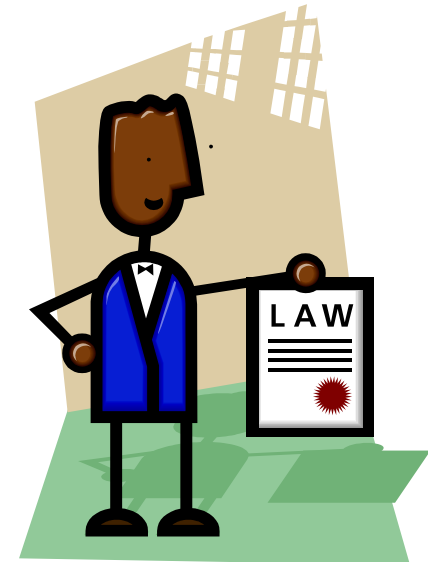
NEPA Is Not About

- Abrogation of authority
- Environment above all else
- Avoiding controversial decisions
- Analysis to the “nth degree”
- Impeding progress
- Generating useless paperwork

Remember. . . .

In addition to NEPA.....

- **Special Purpose Laws**
 - Clean Air Act
 - Clean Water Act
 - National Historic Preservation Act
 - Endangered Species Act
 - U.S. DOT Act – Section 4(f)
 - ... and many, many others
- **Some specify “not to exceed” limits**



Environmental Reviews

Levels of NEPA Review

**Categorical
Exclusion (CATEX)**

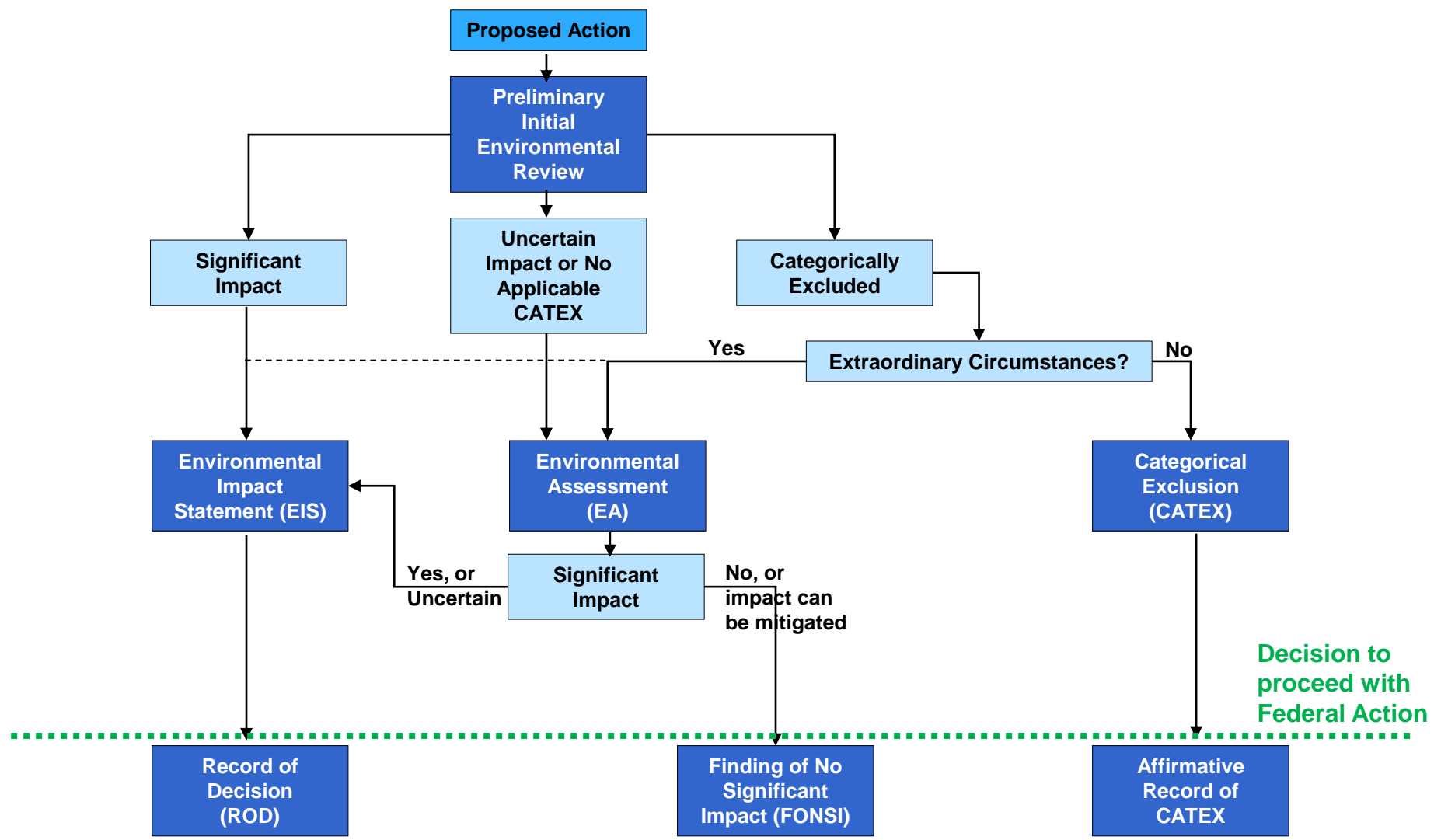
**Environmental
Assessment (EA)**

**Environmental
Impact Statement
(EIS)**



Detail,
Complexity
and Time
Increase

NEPA Process



NEPA Process (cont'd)

- **An agency shall commence preparation of a NEPA document as close as possible to the time the agency is developing a proposal**
- **During an ongoing NEPA study, no action may be taken that limits the choice of reasonable alternatives**
- **Agencies shall not commit resources prejudicing selection of alternatives before making a final decision**



Categorical Exclusion (CATEX)

- For types of actions with no significant impact individually or cumulatively
- Must not have extraordinary circumstances (factors or circumstances in which a normally categorically excluded action may have a significant environmental impact). For example:
 - An impact on noise levels of noise sensitive resources
 - An adverse effect on historic properties
 - Impacts on the human environment that are likely to be highly controversial on environmental grounds (i.e., substantial dispute involving reasonable disagreement over the degree, extent, or nature of a proposed action's impacts).
- Compliance with special purpose laws required

A CATEX is not a waiver or exemption from NEPA – it is a type of NEPA review.

Mere opposition is not sufficient to be considered highly controversial on environmental grounds.

FAA CATEXs

- **Administrative/General Actions**
- **Certification Actions**
- **Equipment and Instrumentation Actions**
- **Facility Siting, Construction, and Maintenance Actions**
- **Procedural Actions**
- **Regulatory Actions**

Environmental Assessment (EAs)

- **Concise public document providing evidence and analysis to determine whether a proposed action has the potential to significantly affect the human environment**
- **In some cases EA may consider only Proposed Action and No-Action alternatives**
- **Consider potential impacts to various resources**
- **Mitigation measures may be invoked to avoid significant impacts**
- **Outcome of EA is an FAA “Finding” or EIS**
 - Finding of No Significant Impact (FONSI)
 - Notice of Intent to prepare an EIS
- **Timeframe – two months to three years**

Why an EA?

- **Evaluate potential for significant impact**
- **Significance of impacts is not well understood**
- **Similar actions will occur in the “same time and space”**
- **When the proposed action is not categorically excluded**
- **Extraordinary Circumstances may preclude use of a CATEX**

Order 1050.1F, Chapter 4, says an EA is typically prepared for:

New air traffic control procedures (e.g., instrument approach procedures, departure procedures, en route procedures) and modifications to currently approved procedures that routinely route aircraft over noise sensitive areas at less than 3,000 feet above ground level (AGL) (unless otherwise categorically excluded under Paragraphs (procedures category) 5-6.5q and 5-6.5r).

Theory of an EA

- Prepared by an agency to determine if there is significant impact
- Limited external agency involvement
- Limited public involvement
- Relatively quick and short
- Focus on areas of unknown impact

CEQ Regs at 1508.9 says an EA:

(a) Means a concise public document for which a Federal agency is responsible that serves to: (1) Briefly provide sufficient evidence and analysis for determining whether to prepare an environmental impact statement or a finding of no significant impact.

...

(b) Shall include brief discussions of the need for the proposal, of alternatives ..., of the environmental impacts of the proposed action and alternatives, and a listing of agencies and persons consulted.

EA Document Purpose

- **Serve as an action forcing device**
- **Inform the public and decisionmakers of alternatives**
- **Provide full and fair discussion of impacts**

A NEPA document provides a written, public record of the NEPA process related to a federal action

Required EA Sections

- **Cover Page**
- **Proposed Action**
- **Purpose & Need**
- **Alternatives (including the Proposed Action)**
- **Affected Environment**
- **Environmental Consequences**
- **List of Preparers**
- **List of Agencies and Persons Consulted**
- **Appendices (if any)**
 - e.g., Noise Analyses/Methodology, Comments & Responses, Historic/4f Resources

Purpose & Need and Proposed Federal Action

- **Outlines the “problem” (Need) the Proposed Action will “solve” (Purpose)**
 - Describes **why** the Federal Action is necessary
 - Describes **what** problem will be solved
 - Describes **how** the problem will be solved
 - Provides a basis for determining reasonable alternatives
- **Defines the Proposed Federal Action in broad terms**
- **Critical component of the EA – any alternative proposed must solve the problem that the agency defines**
- **Independent of other sections**

Purpose = solution
Need = problem

Example: Houston Metroplex Purpose

2.2 Purpose of the Houston OAPM Project

The purpose of the Houston OAPM project is to address the three components of the need, as described in Section 2.1. The FAA's primary drivers are improved efficiency of airspace operations, increased flight path predictability and flexibility, and decreased errors in controller/pilot voice communication, along with preserved or improved air traffic safety. In order to address the need, the FAA intends to implement readily available NextGen technologies designed to support these types of improvements. The following sections discuss each element of the purpose.

Example: Houston Metroplex Need

2.1 Need for the Houston OAPM Project

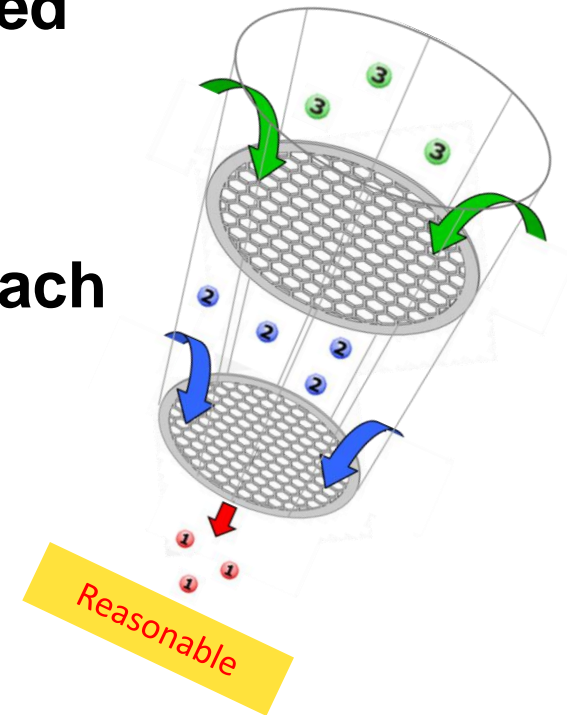
By law, the FAA must “develop plans and policy for the use of the navigable airspace and assign by regulation or order the use of the airspace necessary to ensure the safety of aircraft and the efficient use of airspace.”³⁸ The Houston OAPM Study Team concluded that existing published (i.e., charted) air traffic procedures³⁹ in the Houston Metroplex are less efficient, less flexible, and more complex than what recent advances in technology would enable (further discussed below).

The Houston OAPM Study Team materials reflected three key factors as causes for the inefficiencies and complexities in the Houston Metroplex (see Appendix E for airspace and route structure analysis by the Study Team):

1. Limitations of the conventional, ground-based navigation system and existing RNAV procedures
2. Limited flight path predictability and flexibility, particularly during adverse weather conditions
3. High occurrence of voice communications among controllers and pilots, leading to excessive workload, and increased hear-back and read-back errors⁴⁰

Alternatives

- In an EA, there may only be No Action and Proposed Action alternatives, though other alternatives may be considered
 - No Action may reflect **future** conditions
- When there are multiple alternatives, a screening approach may be used to get from the universe of alternatives to reasonable alternatives
- Reasonable alternatives must satisfy the Purpose and Need
- Equal treatment of each reasonable alternative



Affected Environment

- **Succinctly describes the environmental conditions of the potentially affected geographic area or areas**
- **Section should be no longer than necessary to understand the impacts of the alternatives**
- **Level of analysis and data commensurate with the importance of the impact and focused on resources that will be impacted**
- **Defines the study area(s) for impact assessment**
 - Encompasses area where impacts could occur
 - May be multiple Study Areas for different impact categories

Environmental Consequences

- Detailed discussion in comparative form of potential impacts from alternatives for each **relevant** environmental impact category defined in Order 1050.1F
- This section is the bulk of the main body of an EA
- May be supported by several appendices
- Noise modeling is often the pacing item (3 to 6 months), though Section 106, Section 4(f), and tribal consultation can often drive schedules
- Must reflect what is in the Alternatives and Affected Environment sections
- Should demonstrate compliance with other applicable requirements

Order 1050.1F lists 14 impact categories that may be relevant in an EA

Environmental Consequences (cont'd)

- **Expected environmental impacts** of each reasonable alternative **after implementation** of the action for each impact category
- **Comparison with No-Action and other alternatives considered for the same period**
- **Order 1050.1F requires out-year look for noise impacts**
 - Typically five years out, though depends on timeframe for action
- **Includes discussion of cumulative impacts**
 - **Discussion** commensurate with level of planning
 - Past and reasonably foreseeable future actions
 - Not just FAA actions
- **May include mitigation measures**
 - Must include mitigation for significant impacts to support a FONSI

Agency/Public Involvement

- **Describes the consultation with and issues raised by:**
 - Other government agencies (federal, state and local)
 - Native American communities
 - The public
- **Discusses any formal or informal public meetings that were held**
- **Discusses the comment process if there was a Draft EA circulated for comment**
 - Detailed comments and response/disposition for each are typically in an appendix

Preparers

- **Lists those who contributed to the EA**
 - Name
 - Education
 - Areas of expertise/contribution

Finding of No Significant Impact (FONSI)

- Document the FAA determination that a Proposed Action does not have the potential for significant environmental impacts
- Briefly describe the Proposed Action, the Purpose and Need, and the alternatives considered
- Support the conclusion that the Proposed Action would not significantly affect the quality of the human environment
- Present any mitigation measures that are a condition of project approval

FAA frequently elects to prepare a FONSI/ROD

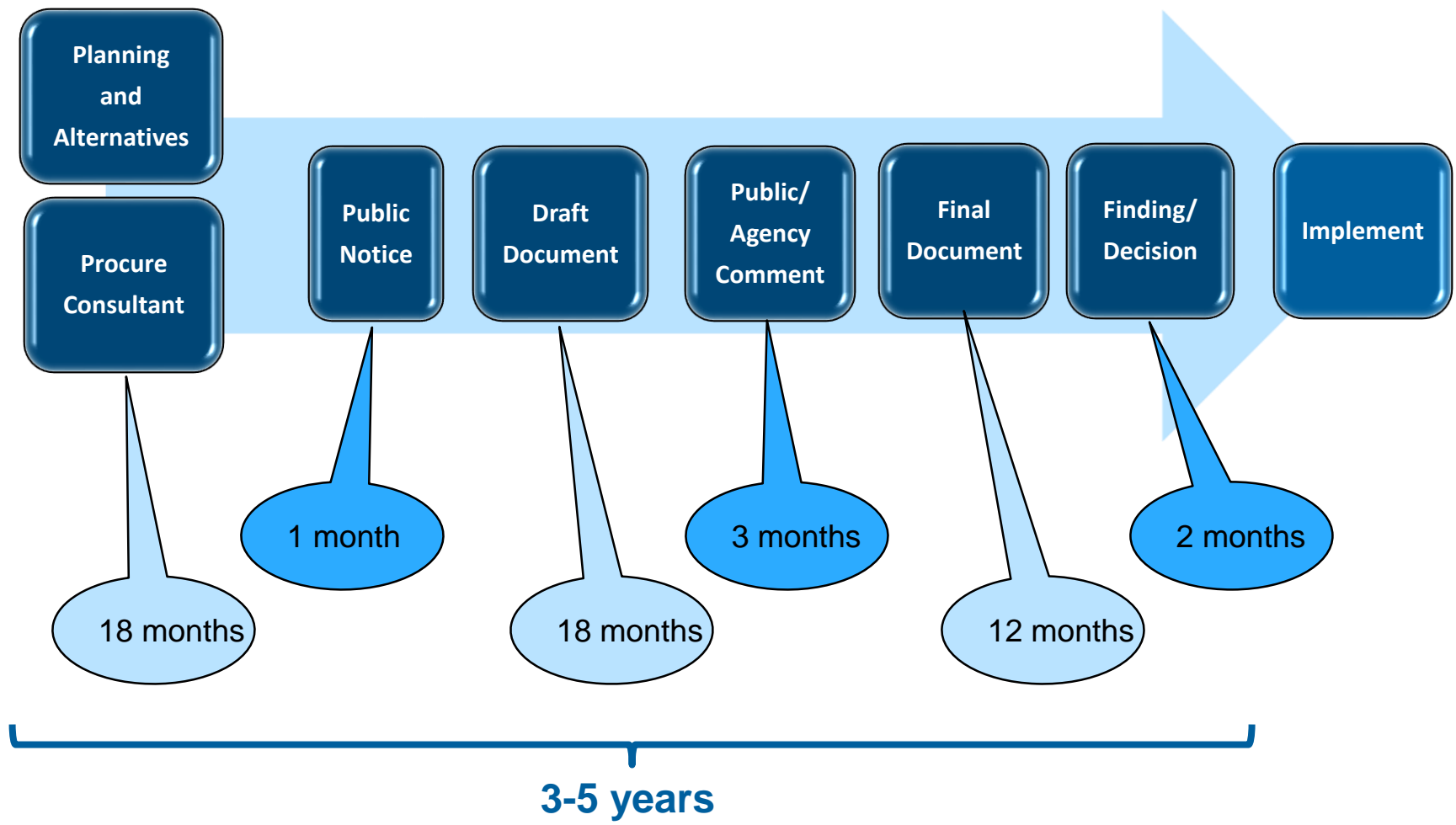
Environmental Impact Statement (EIS)

- **“Significant” impact is known or anticipated**
- **Scoping is required**
- **Mitigation measures must be considered**
- **Detailed analysis of proposed action AND reasonable alternatives**
- **Mandatory public involvement and comment opportunity**
- **Timeframe was historically three to five years, though there is a new two-year requirement for major infrastructure projects**

Required EIS Sections

- **Cover Page, Executive Summary, and Table of Contents**
- **Purpose & Need**
- **Alternatives (including the Proposed Action)**
- **Affected Environment**
- **Environmental Consequences**
- **Mitigation**
- **List of Preparers**
- **List of Agencies, Organizations, and Persons to Whom EIS Copies are Sent**
- **Comments & Responses**
- **Index and Footnotes**
- **Appendices (if any)**
 - e.g. Noise Analyses/Methodology, Historic/4f Resources

Example of an EIS Timeline



Executive Order 13807: *Establishing Discipline and Accountability in the Environmental Review and Permitting process for Infrastructure Projects* (August 2017) includes new requirements for NEPA efficiency and tracking.

Requirements include a two-year average timeframe to complete EISs for major infrastructure projects.

New DOT requirement sets page limits for all EAs and EISs

Record of Decision (ROD)

- **Presents FAA's decision on the Proposed Action**
- **Identifies all alternatives the FAA considered and which alternative(s) is/are considered to be environmentally preferable**
- **Identifies any mitigation measures committed to as part of the decision**
- **States whether all practicable means to avoid or minimize environmental harm from the selected alternative(s) have been adopted, and if not, why**
- **Includes any findings required by Executive Order, regulation, or special purpose law or requirement (e.g., wetlands, Section 4(f), etc.)**

Environmental Impact Categories

FAA Impact Categories

- Air quality
- Biological resources (including fish, wildlife, and plants)
- Climate
- Coastal resources
- Department of Transportation Act, Section 4(f)
- Farmlands
- Hazardous materials, solid waste, and pollution prevention

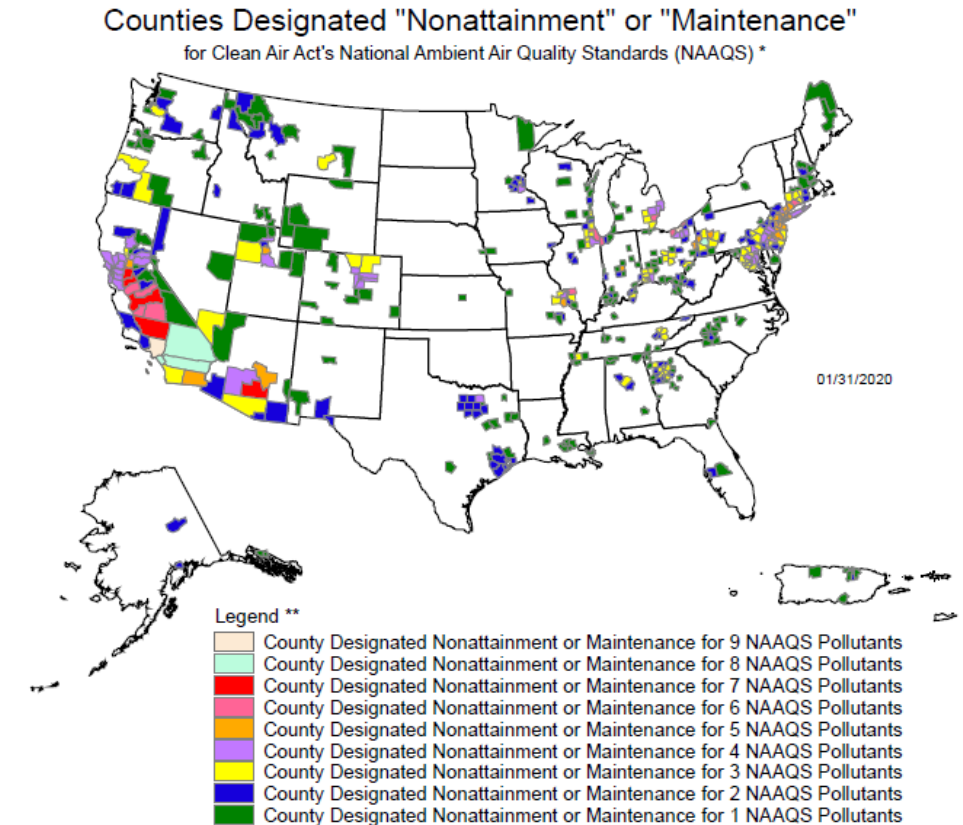
 More detail in this section

 Discussed in later sections

- Historical, architectural, archeological, and cultural resources
- Land use
- Natural resources and energy supply
- Noise and compatible land use
- Socioeconomics, environmental justice, and children's environmental health and safety risks
- Visual effects (including light emissions)
- Water resources (including wetlands, floodplains, surface waters, groundwater, and wild and scenic rivers)

Air Quality – Clean Air Act

- **Clean Air Act (CAA) regulates pollutant emissions**
- **CAA requires Environmental Protection Agency (EPA) to establish National Ambient Air Quality Standards (NAAQS) for criteria pollutants**
 - Carbon Monoxide (CO)
 - Lead (Pb)
 - Nitrogen Dioxide (NO₂)
 - Ozone (O₃)
 - Particulate Matter (PM_{2.5} and PM₁₀)
 - Sulfur Dioxide (SO₂)
- **EPA must also identify nonattainment and maintenance areas, and those areas must maintain a State Implementation Plan (SIP) describing limits, control measures, NAAQS compliance timetables, and monitoring and enforcement mechanisms**



Guam - Piti and Tanguisson power stations are designated nonattainment for the SO₂ (1971) NAAQS
 Piti and Cabras power stations are designated nonattainment for the SO₂ (2010) NAAQS

* The National Ambient Air Quality Standards (NAAQS) are health standards for Carbon Monoxide, Lead (1978 and 2008), Nitrogen Dioxide, 8-hour Ozone (2008), Particulate Matter (PM-10 and PM-2.5 (1997, 2006 and 2012), and Sulfur Dioxide. (1971 and 2010)

** Included in the counts are counties designated for NAAQS and revised NAAQS pollutants. Revoked 1-hour (1979) and 8-hour Ozone (1997) are excluded. Partial counties, those with part of the county designated nonattainment and part attainment, are shown as full counties on the map.

Source: EPA Green Book

Air Quality – General Conformity

- All Federal Actions in non-attainment or maintenance areas must conform to the applicable SIP
- Is the action exempt because it will result in no increase in emissions or an increase that is clearly *de minimis* (e.g., “air traffic control actions above the mixing height”)?
- Will the proposed Federal Action produce emissions that exceed *de minimis* levels?
- If so, additional analyses may be required (e.g., emissions inventory, dispersion modeling)

Air Quality Assessment Examples

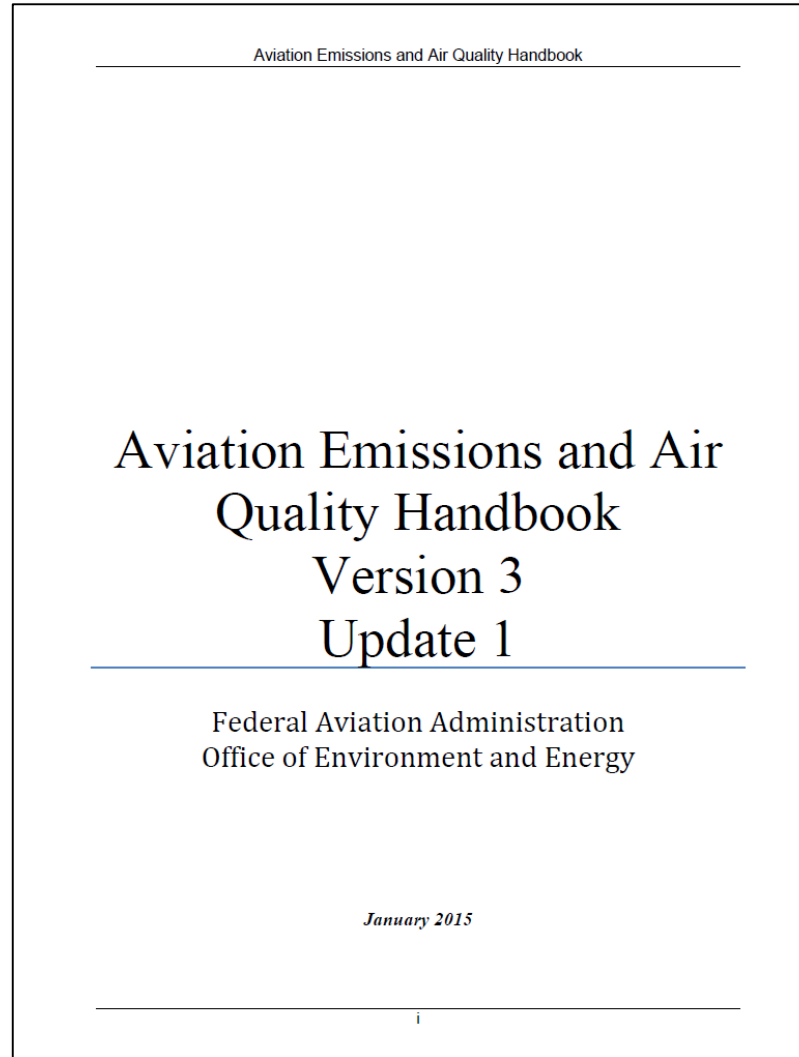
Project/Action Category	Operational Emissions Inventory	HAPs Emissions Inventory	GHG Emissions Inventory	Construction Emissions Inventory	Dispersion Modeling
Project Type					
New Airport	■	■	■	■	☑
New Runway	■	■	■	■	☑
Major Runway Extension	☑	☑	☑	■	☑
New or Expanded Terminal	☑	☑	☑	■	☑
Relocated Terminal	☑	☑	☑	■	☑
Roadway Modifications	☑	☑	☑	■	☑
New or Expanded Cargo Facility	☑	☑	☑	■	☑
New or Expanded Parking	☑	☑	☑	■	☑
New or Expanded Utility Plant	☑	☑	☑	■	☑
New Fuel Storage System	□	☑	□	■	□
New or Modified Taxiway	□	☑	□	■	☑
Runway Safety Area	□	□	□	☑	□
Runway Rehabilitation	□	□	□	□	□
Obstruction Removal	□	□	□	□	□
Air Traffic Control Tower	□	□	□	☑	□
Action Type					
Increase in Aircraft Operations	☑	☑	☑	□	☑
Change in Runway Utilization	☑	☑	☑	□	☑
Change in Fleet Mix	☑	☑	☑	□	☑
Increase in Taxi Time/Delay	☑	☑	☑	□	☑
Increase in Motor Vehicle Trips	☑	☑	☑	□	☑
Air Traffic Procedures < 3,000 ft	☑	☑	☑	□	□
Air Traffic Procedures > 3,000 ft	□	□	□	□	□
Land Acquisition	□	□	□	□	□
Navigational System	□	□	□	□	□

¹The symbols indicate the relative level of appropriateness of an analysis to a project/action: ■ = High, ☑ = Medium, □ = Low

²Importantly, the information provided in this figure is not meant to be definitive or all-inclusive in terms of dictating the type(s) of air quality assessments that are required for FAA projects or actions. Rather, the information is provided as a guide in determining which analyses are the most appropriate.

Source: Aviation Emissions and Air Quality Handbook

Air Quality – For More Information



Climate

- **The FAA has not established a significance threshold for Climate**
- **Analysis of greenhouse gas (GHG) emissions are quantitatively assessed in certain circumstances, but otherwise may be qualitatively assessed**
- **CO₂ emissions are quantified under the following circumstances**
 - When there is reason to quantify emissions for air quality purposes
 - When fuel burn is computed and reported in the NEPA document



DOT Section 4(f) Resources

- **Unique to DOT Modal Administrations**
- **Publicly-owned parks, recreation areas, wildlife refuges**
- **Any historic site (i.e., listed or eligible for the National Register of Historic Places)**
- **Physical use**
- **Constructive use**
 - **Substantial impairment** of the use of the resource for its intended purpose
 - DNL 65 dBA threshold may not apply to properties where a quiet setting is a generally recognized purpose or attribute of significance

...the Secretary of Transportation will not approve any program or project that requires the use of any publicly owned land from a public park, recreation area, or wildlife and waterfowl refuge of national, State, or local significance or land from an historic site of national, State, or local significance as determined by the officials having jurisdiction thereof, unless there is no feasible and prudent alternative to the use of such land and such program, and the project includes all possible planning to minimize harm resulting from the use.

Historical, Architectural, Archeological, and Cultural Resources

- **Applicable statute**
 - Section 106 of the National Historic Preservation Act
 - Advisory Council on Historic Preservation issues regulations and oversees Federal agency compliance
- **Consider effects to resources listed in or **eligible** for listing in the National Register of Historic Places**
 - Resources are listed by the National Park Service
 - Generally more than 50 years old
 - Criteria in 36 CFR section 60.6
- **Role of State/Tribal Historic Preservation Officer**
 - Section 106 process requires consultation with SHPO/THPO and other interested parties

Historical, Architectural, Archeological, and Cultural Resources (cont'd)

- **FAA identifies an Area of Potential Effect (APE) and resources within the APE listed in or eligible for listing in the National Register**

- **If historic properties are affected, apply criteria of adverse effect**
 - No adverse effect
 - Requires SHPO/THPO concurrence
 - Consulting parties can object
 - Adverse effect
 - Advisory Council on Historic Preservation must be notified
 - Requires Memorandum of Agreement to avoid, minimize, or mitigate adverse effects

Historical, Architectural, Archeological, and Cultural Resources (cont'd)

- **Adverse effect may involve**
 - Physical impacts
 - Demolition or alteration of the resource
 - Non-physical impacts
 - Introducing visual, **audible** or atmospheric elements that would diminish the integrity of the property's significant historic features
- **Tribal Cultural Properties (TCP) are particularly difficult to identify and assess**
 - Confidentiality issues
 - Cultural differences

Other Examples of Significant Impacts

- **Endangered Species Act**

- FAA determines major effects on population dynamics and sustainability
- Consultation with the Fish and Wildlife Service or National Marine Fisheries Service if action is likely to adversely affect endangered species

- **Environmental Justice**

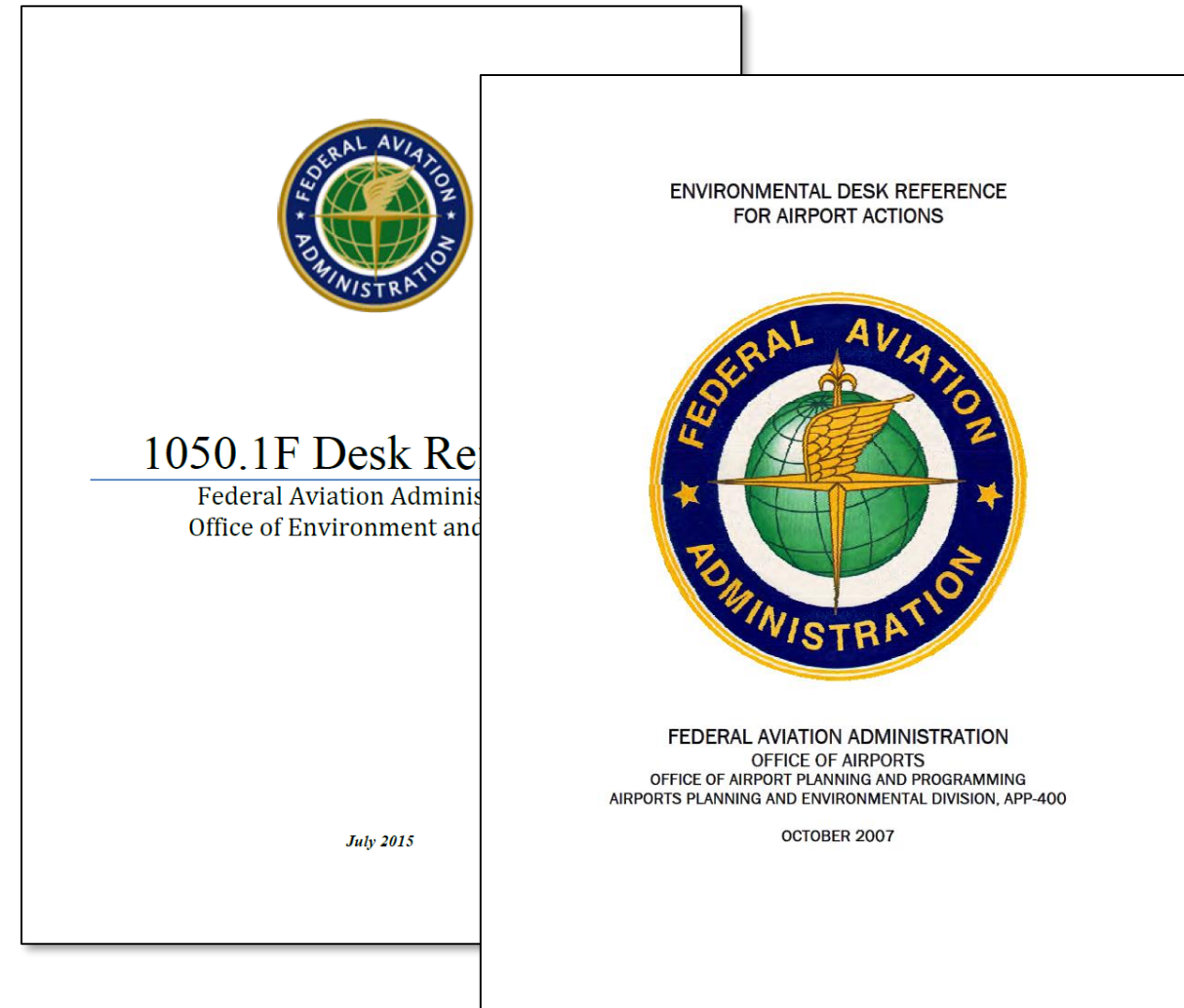
- Disproportionately high health or environmental effects on minority or low-income populations due to significant impact in other categories or impacts unique/significant to that population

- **Children's Environmental Health**

- Disproportionately high health or safety risk to children

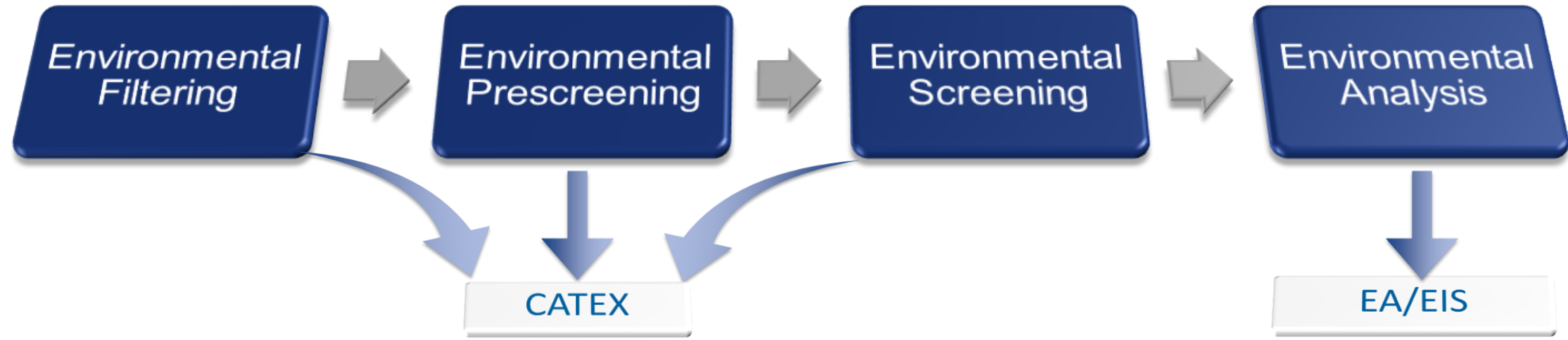
Desk References

- **1050.1F Desk Reference**
 - Provides explanatory guidance for environmental impact analysis
 - Complements Order 1050.1F
- **Environmental Desk Reference for Airport Actions**
 - Helps FAA integrate compliance with NEPA and applicable special purpose laws
 - Provides explanatory guidance for environmental impact analysis for airport actions
 - Complements Order 5050.4B



Environmental Impact Analysis – Noise

Noise Impact Assessment Processes and Tools – Primarily for Air Traffic Actions



Primary Tools:

- IFP Environmental Pre-Screening Filter
- Abbreviated Environmental Review Form

Primary Tools:

- Initial Screening Guidance Wizard
- MITRE Guidance for Noise Screening of Air Traffic Actions

Primary Tools:

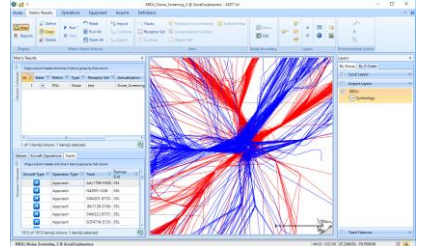
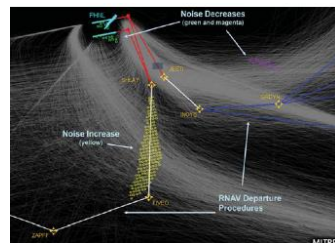
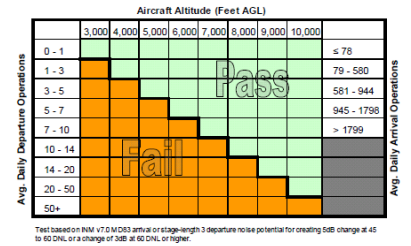
- TARGETS Environmental Screening Tool
- Area Equivalent Method (AEM)

Primary Tools:

- Aviation Environmental Design Tool (AEDT)

Filter Submissions

Request ID	Airport	Pub Date	Created	Updated	Service Center	FP	Airport Contact	Env Specialist	SIPD Letter Date Issd	CATEX Eligible	Workflow State
KDCA_170501_48	DCA		06/20/17	03/20/18	E	Design/Procedure	Contact/Airport	Environ Service Center			env act
KDCA_170501_27	ADG		07/05/17	03/12/18	E	Design/Procedure		Service Center			env act
KDCA_170501_23	DCA		07/05/17	07/03/17	E	Design/Procedure	Brian Jones	Service Center			env act
KDCA_170501_26	DCA		07/05/17	12/12/17	E	Design/Procedure		Service Center			env act
KDCA_170501_28	DCA		07/05/17	07/03/17	E	Design/Procedure	Contact/Airport	Brian Jones			env act



No Action Condition

- **Average Annual Day traffic and flight tracks**
 - Multi-day and multi-season radar data sample
- **No Action aircraft noise level**
 - Consider all operations at the airport
 - Runway use
 - Aircraft and engine type
 - Flight tracks and altitudes
 - Day/Night Average Sound Level (DNL) - not single event
 - One operation counted as 10 from 2200-0700
 - AEE approval required for non-standard data/profiles

Future “With Project” Condition

- **What changes from No Action**
 - Flight tracks and altitudes from new procedures?
 - Runway use?
- **What does not change**
 - Most flight tracks and altitudes?
 - Runway use?
 - Average Annual Day number of operations and fleet mix?

Noise Metrics


- **Equivalent Sound Level (L_{eq})** - Time average of the total sound energy over a specified time period
- **Sound Exposure Level (SEL)** - L_{eq} normalized to one second
- **Day-Night Average Sound Level (DNL)** - Similar to L_{eq} for a 24-hour period with a 10 times weighting (10 dB penalty) for nighttime events (10pm – 7am)
- **FAA Order 1050.1F requires DNL except for California**
 - DNL calculated based on an average condition (Average Annual Day)
 - DNL does not describe what a person hears
 - DNL is useful for comparing alternatives
- **Community Noise Equivalent Level (CNEL)** - California metric also adds a 3 times weighting (4.77 dB penalty) for evening events (7pm – 10pm)

Number of Average Day Events Representing 65 DNL

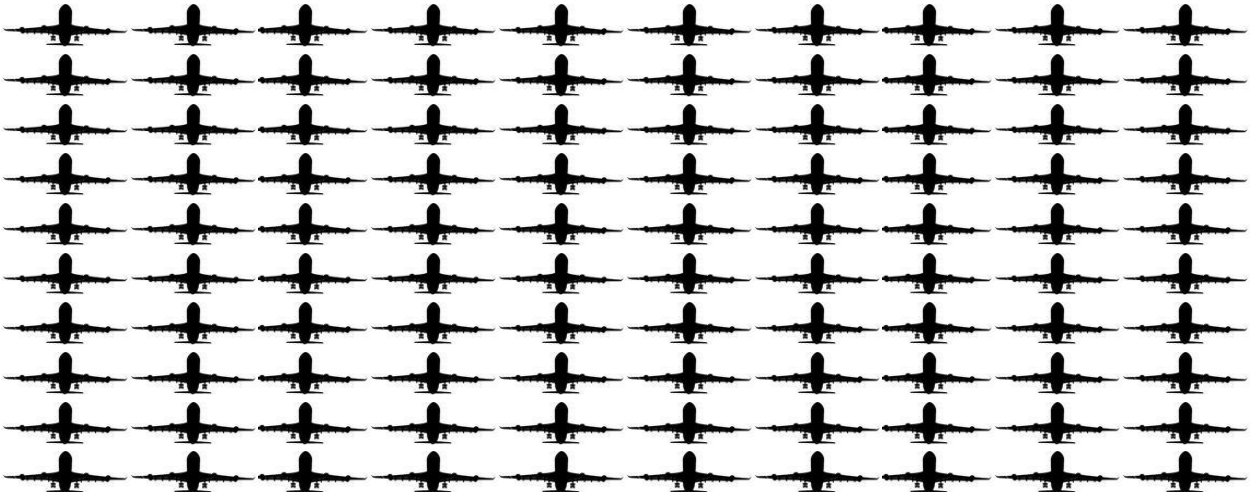
1 Event/AAD SEL 114.4 dBA = DNL 65



10 Events/AAD SEL 104.4 dBA = DNL 65



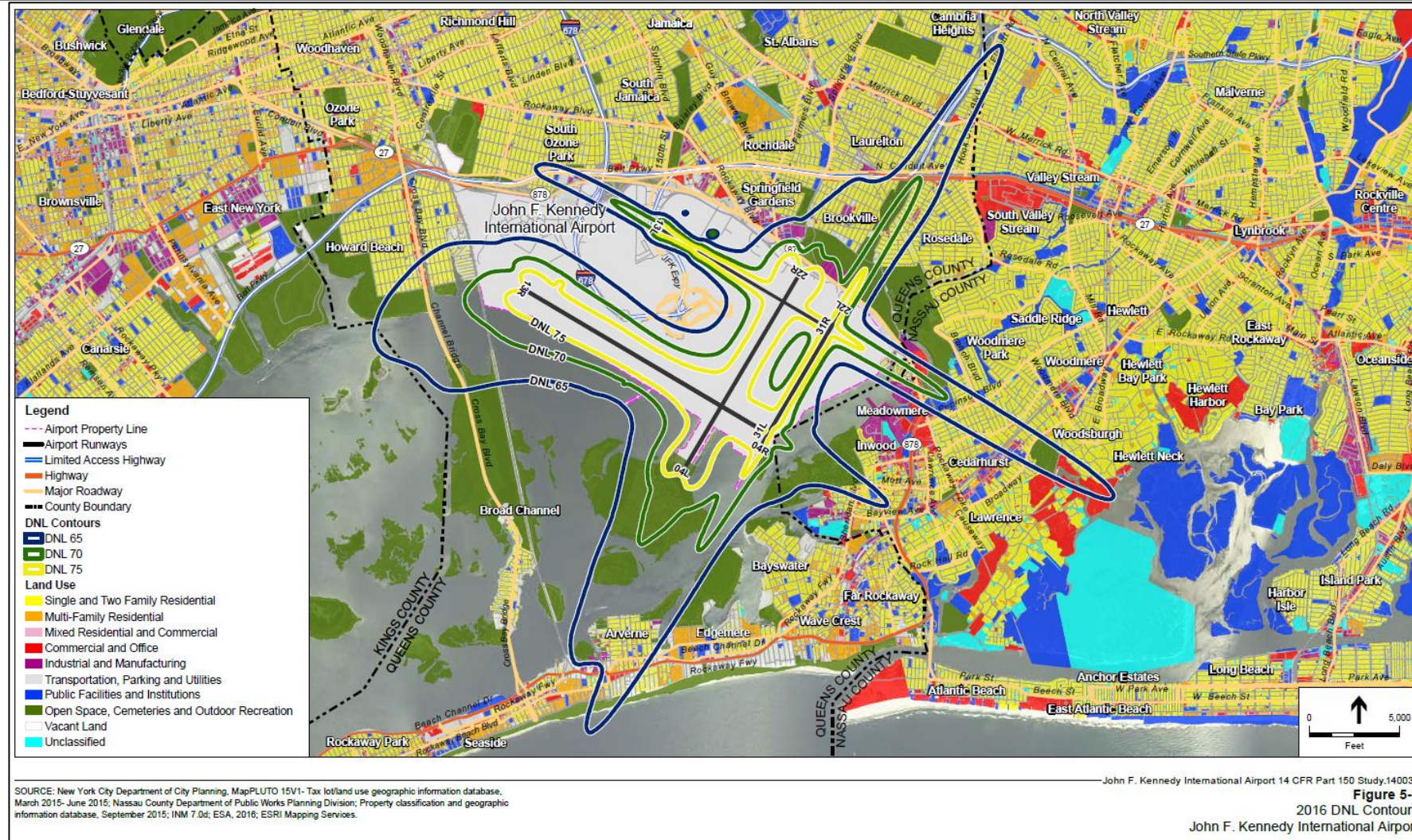
100 Events/AAD SEL 94.4 dBA = DNL 65



FAA Noise Impact Thresholds

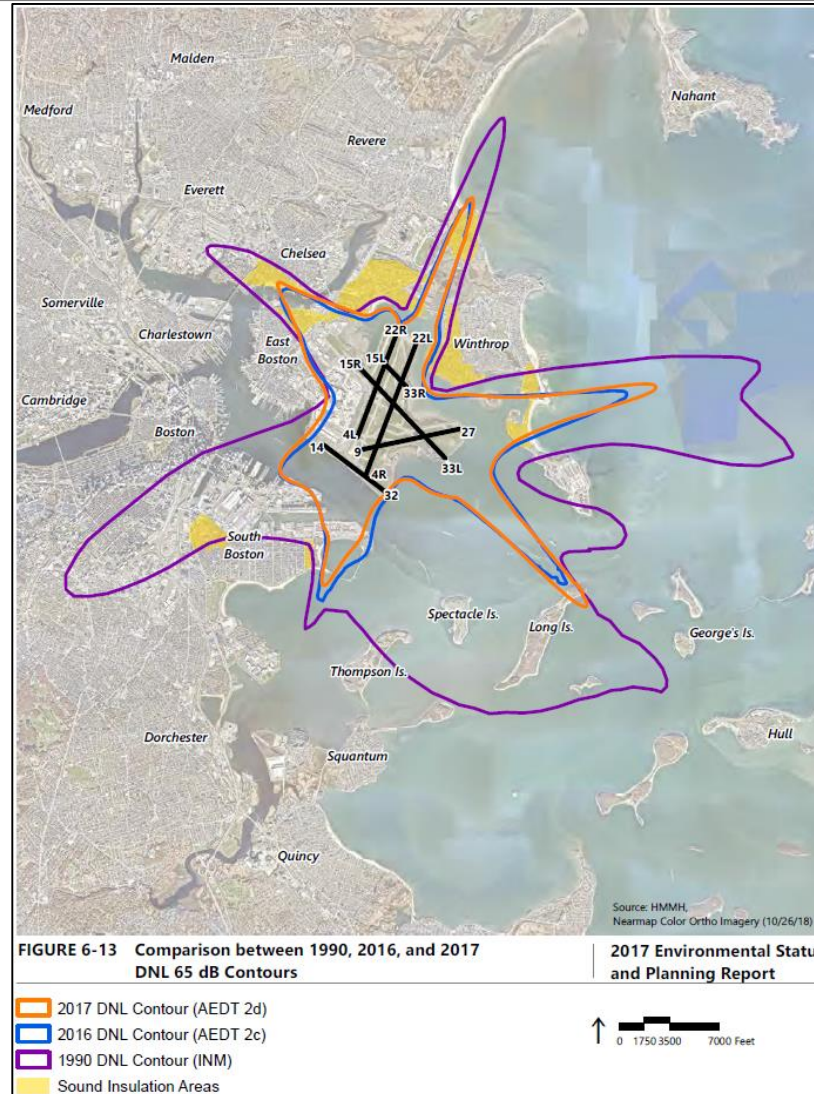
- **Significant impact**
 - DNL 1.5 dBA increase at or above DNL 65 dBA
 - Requires an EIS
- **Impact**
 - DNL 3 dBA increase between DNL 60 and 65 dBA
 - DNL 5 dBA increase between DNL 45 and 60 dBA
 - Reported for disclosure only

Example DNL 65, 70, and 75 dBA Noise Contours - JFK

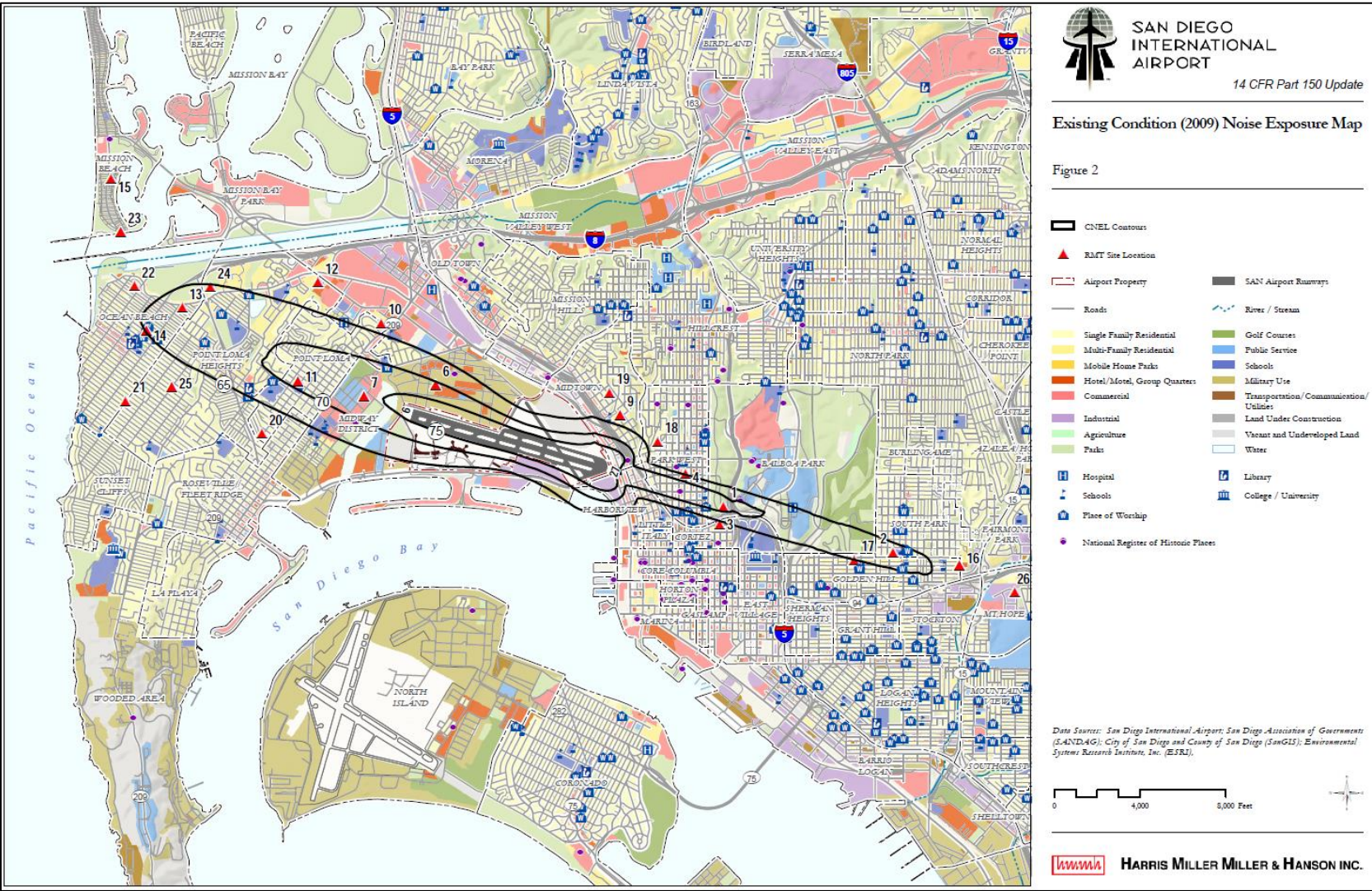


Source: John F Kennedy International Airport Title 14 Code of Federal Regulations (CFR) Part 150 Final Noise Exposure Map Report, April 2017

Example DNL 65 dBA Noise Contours - BOS

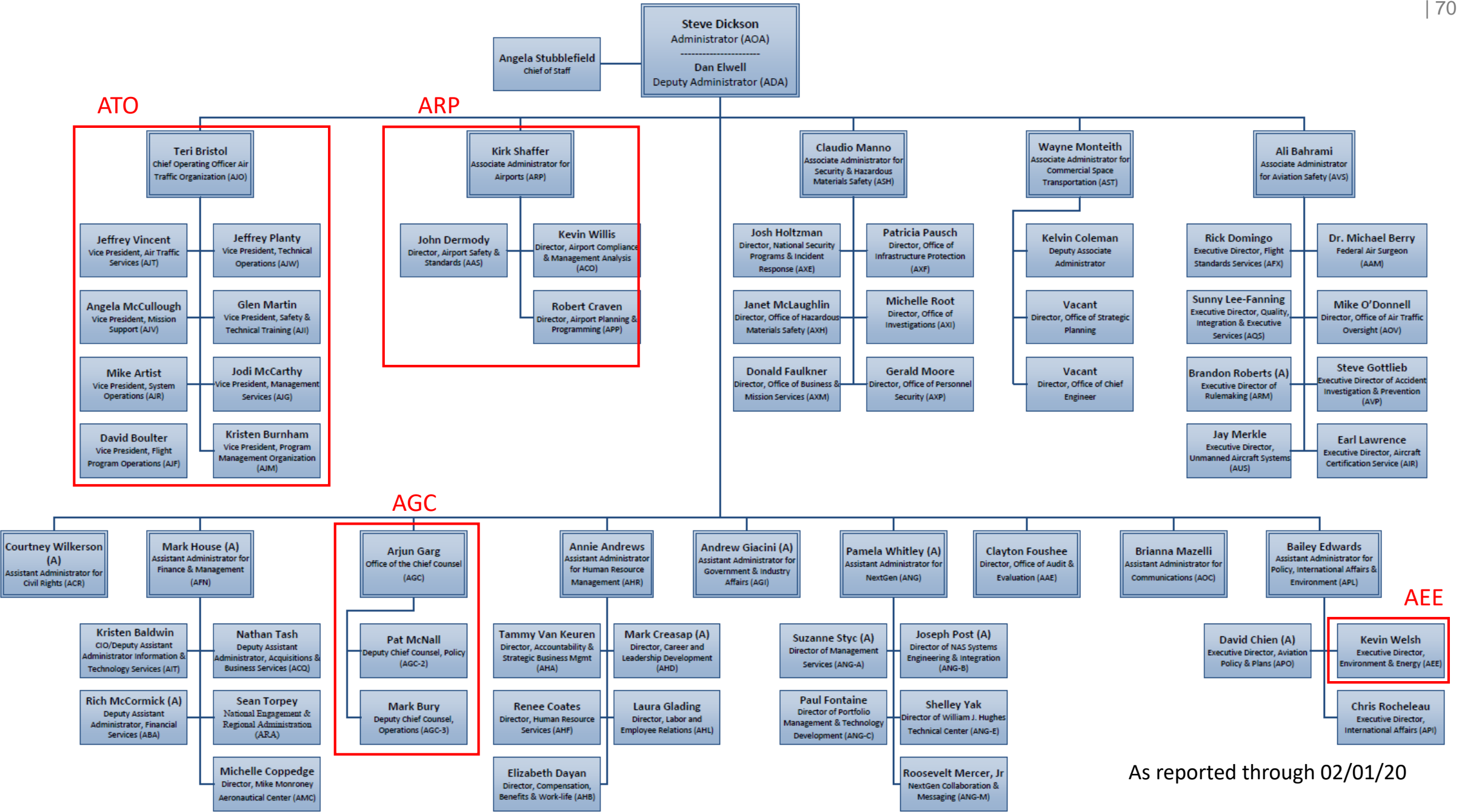


Example CNEL 65, 70, and 75 dBA Noise Contours - SAN



Source: San Diego International Airport Part 150 Update Noise Exposure Maps, August 2009

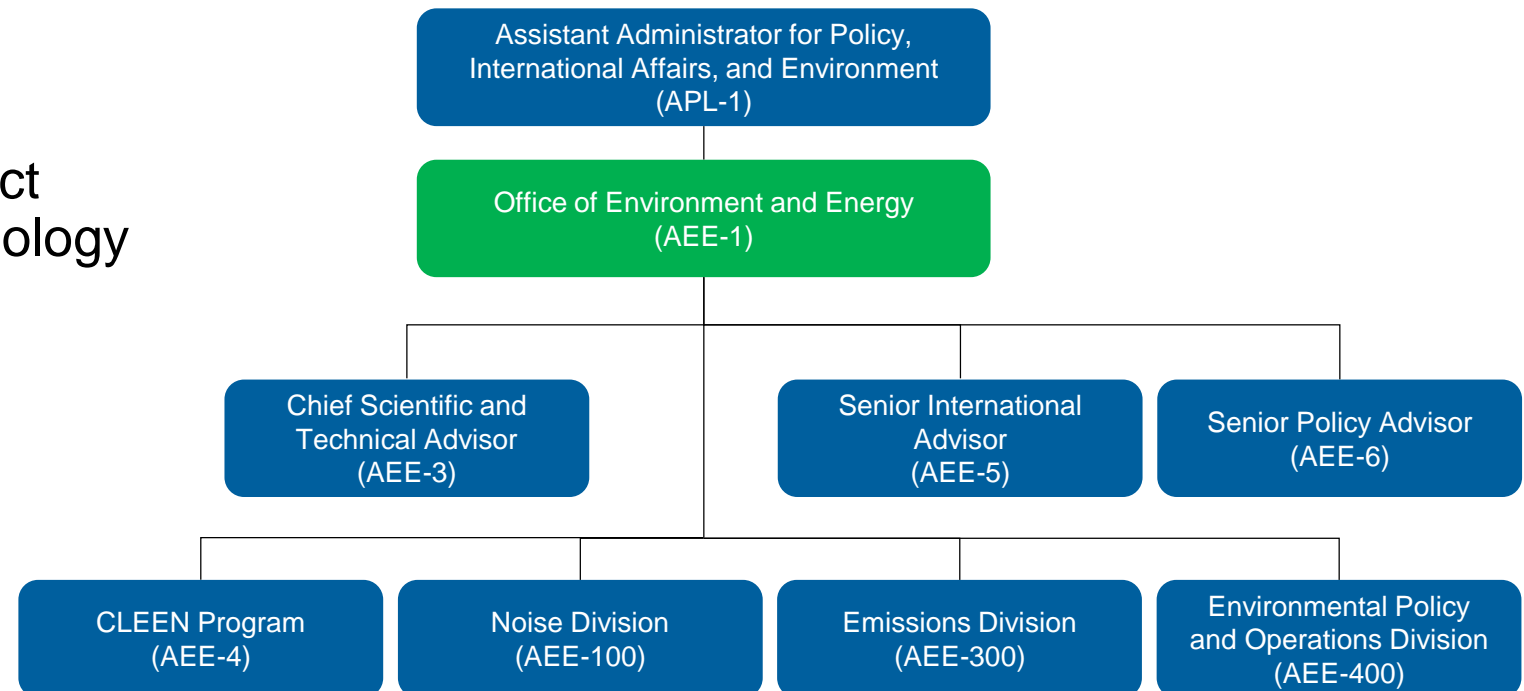
FAA Roles and Responsibilities



As reported through 02/01/20

Office of Environment and Energy (AEE)

- Develops, recommends, and coordinates national and international standards, policy and guidance, research and studies, and analytical capabilities on aviation environmental and energy matters
- NEPA perspective:
 - Agency-wide NEPA policy
 - Noise and air quality impact analysis tools and methodology



Office of Airports (ARP)

- Planning and developing a safe and efficient national airport system
- Programs related to airport safety, inspections, and standards for airport design, construction, and operation
- National airport planning and environmental/social requirements
- Policies related to airport rates and charges, compliance with grant assurances, and airport privatization
- NEPA perspective:
 - Federal Actions that involve airport infrastructure projects
 - Airport Planning & Environmental Division (APP-400)
 - Airports District Offices (ADOs)

Headquarters Offices

- Office of the Associate Administrator for Airports
- Office of Airport Planning and Programming
 - Airports Financial Assistance Division
 - Airport Planning and Environmental Division
- Office of Airport Safety and Standards
 - Airport Engineering Division
 - Airport Safety and Operations Division
- Office of Airport Compliance and Management Analysis
 - Airport Compliance Division

Airports Regional and District Offices



- **Alaskan** (AK) [25]
- **Central** (IA, KS, MO, NE) [14]
- **Eastern** (DC, DE, MD, NJ, NY, PA, VA, WV) [2]
 - Beckley ADO (WV) [5]
 - Harrisburg ADO (DE, NJ, PA) [3]
 - New York ADO (NY) [2]
 - Washington ADO (DC, MD, VA) [4]
- **Great Lakes** (IL, IN, MI, MN, ND, OH, SD, WI) [10]
 - Chicago ADO (IL, IN, WI) [10]
 - Detroit ADO (MI, OH) [11]
 - Dakota / Minnesota ADO (MN, ND, SD) [12, 13]
- **New England** (CT, ME, MA, NH, RI, VT) [1]
- **Northwest Mountain** (CO, ID, MT, OR, UT, WA, WY) [18]
 - Denver ADO (CO, UT, WY) [20]
 - Helena ADO (ID, MT) [19]
 - Seattle ADO (OR, WA) [18]
- **Southern** (AL, FL, GA, KY, MS, NC, PR, SC, TN, VA) [6]
 - Atlanta ADO (GA, SC, PR, VA) [6]
 - Jackson ADO (AL, MS) [8]
 - Memphis ADO (KY, NC, TN) [7]
 - Orlando ADO (FL) [9]
- **Southwest** (AR, LA, NM, OK, TX) [15]
 - Arkansas/Oklahoma ADO [16]
 - Louisiana/New Mexico ADO [17]
 - Texas ADO [15]
- **Western-Pacific** (AZ, CA, HI, NV, GU, AS, MH) [21]
 - Honolulu ADO (HI, GU, AS, MH) [24]
 - Los Angeles ADO (Southern CA) [21]
 - San Francisco ADO (Northern CA) [22]
 - Phoenix ADO (AZ, NV) [23]
 - Find ADO by County (California only) (MS Excel)

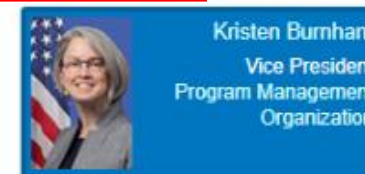
Air Traffic Organization (ATO)

- Operational arm of the FAA
- Responsible for providing safe and efficient air navigation services to 29.4 million square miles of airspace
- NEPA perspective:
 - Federal Actions related to air traffic control infrastructure or procedure changes
 - Mission Support Services (AJV)

Air Traffic Organization Leadership



Service Units



Office of the Chief Counsel (AGC)

- Provides legal services to the FAA Administrator and all agency organizations worldwide
- Primary functions are providing legal advice, reviewing agency actions for legal sufficiency, and providing representational services
- NEPA perspective:
 - Determines legal sufficiency

The Airports and Environmental Law practice area provides legal advice on all airport matters and on environmental matters for all lines of business.

The Environmental Law practice area supports the following areas:

- Environment and Energy
- Airport Environmental Program
- Air Traffic Organization Environmental Program
- Commercial Space Transportation Environmental Program
- National Parks Air Tour Management Program

The practice area reviews environmental impact statements and other environmental documents for airport development projects and projects proposed to enhance safety and/or efficiency in the national airspace system. The practice area also maintain relationships with state and local governments on environmental concerns.

Wrap-Up

Questions This Course (Hopefully) Answered...

- **What is NEPA?**
- **What constitutes a Federal Action (which requires NEPA review) and what doesn't?**
- **What are the different types of environmental reviews that FAA conducts to comply with NEPA (i.e. CATEXs, EAs, EISs) and when are they applicable?**
- **How are noise and emissions considered as part of NEPA reviews?**
- **How does FAA conduct NEPA reviews of airport actions?**
- **How does FAA conduct NEPA reviews of airspace/procedures actions?**
- **What are the roles of different FAA offices and LOBs in conducting NEPA reviews and setting NEPA policies/procedures for the agency?**
- **When/how does the FAA move forward with an action (e.g. Record of Decision)?**

Questions?

References

References

- [National Environmental Policy Act](#)
- [CEQ Regulations \(40 CFR Part 1500 – 1508\)](#)
- [FAA Order 1050.1F – Environmental Impacts: Policies and Procedures](#)
- [FAA Order JO 7400.2M – Procedures for Handling Airspace Matters](#)
- [Order 5050.4B – NEPA Implementing Instructions for Airport Actions](#)
- [1050.1F Desk Reference](#)
- [Environmental Desk Reference for Airport Actions](#)
- [Aviation Emissions and Air Quality Handbook](#)
- [Section 106 Handbook](#)

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