Planning and Environmental Key Updates

Presented to: Airports REDAC Subcommittee

By: Lauren Vitagliano

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Federal Aviation Administration

RPA S1 – Airport Planning and Design

S1.1 – Tools and Models

Runway Length Evaluation - Comprehensive statistical toolset for runway length calculations for airport planning and design.

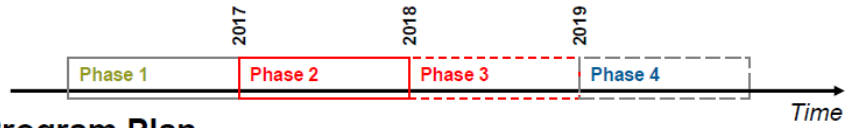
AC150/5325-4B Planning Process:

Current process is resource intensive, with data uncertainty

Goal is a new tool for airport planners (available to public) and revised AC

- Use detailed surv. data, fuses multiple trajectory data sources = **Threaded Tracks**
- Industry / Stakeholder Engagement – **Completed Fall 2018**

- **FY19 – Prototype web-based application for FAA and airport use; with revised AC guidance to follow and enable use on projects.**
  - **Airlines sharing balanced field length to validate model – American/Jet Blue**
- **Spring 2019 – small work groups (ACC) for functionality of prototype / validation**



- **Program Plan**
  - Phase 1
    - Takeoff distances from surveillance data
  - Phase 2
    - Add turn-on/lineup and balanced field length
  - Phase 3
    - Reduced thrust takeoffs
    - Landing distances
    - Develop prototype tool
  - Phase 4
    - Develop user tool

RPA E – Airport Environmental Research

E1.1 – Geospatial Data Library/Tool

Conduct a feasibility analysis including a roadmap to identify a scalable, easily accessible and centralized environmental mapping tool for the FAA Environmental Protection Specialist

Need:

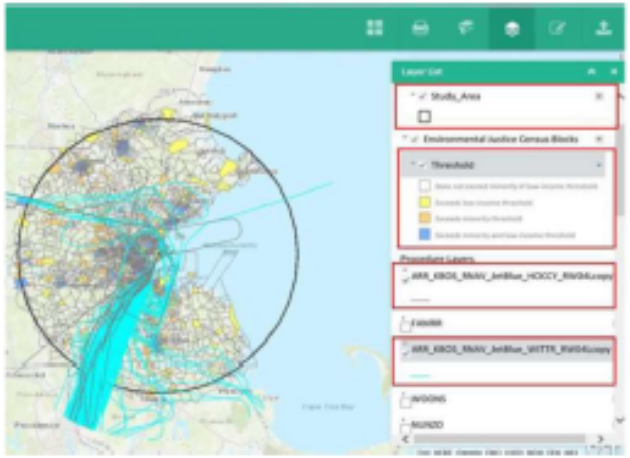
- Better and more easily accessible environmental and planning geospatial information to improve internal workflow, streamline the integration of planning and environmental processes, and support National Environmental Policy Act (NEPA) reviews.

Solution:

- The use of a geospatial solution towards developing a scalable, centralized geospatial tool can enhance the decision-making process through better management and analysis of spatial data.

Web Mapping Application (WMA):

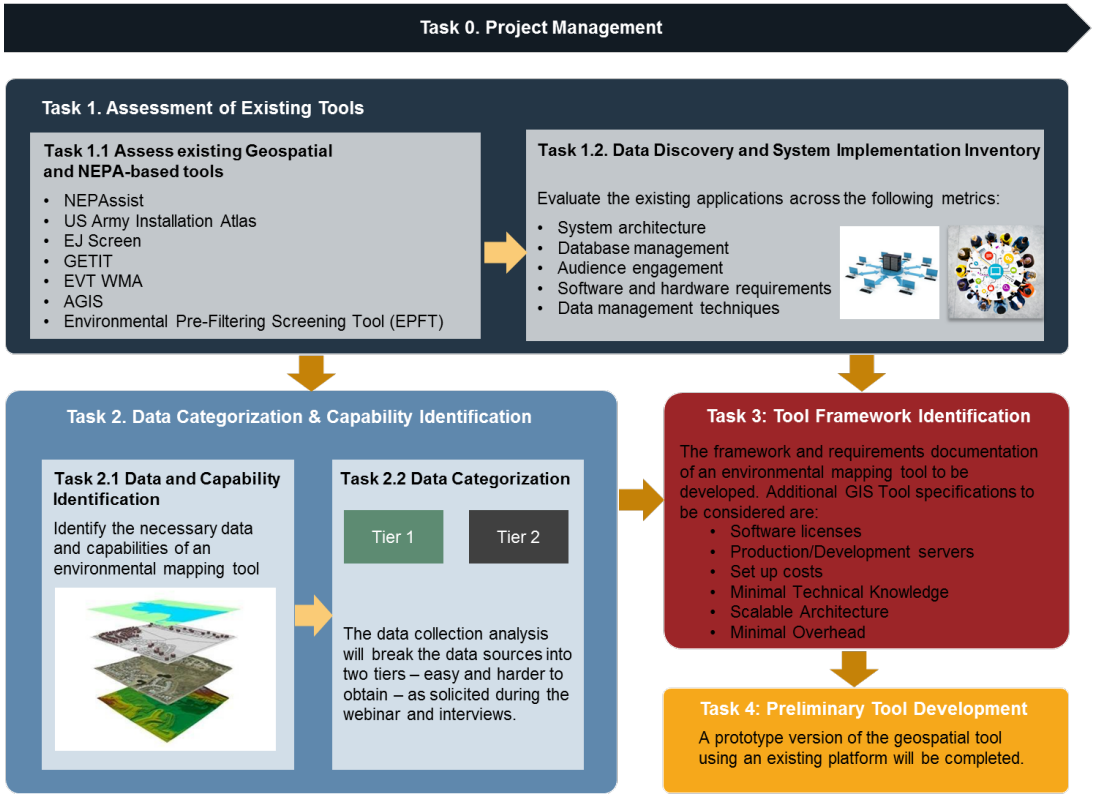
- Web mapping applications are web based maps that allow the user to interact with the data in various ways such as displaying or querying layers. It is an interactive display of geographic information that one can use to answer questions and is becoming an essential component of many GIS application solutions.*



Environmental Visualization Tool (EVT) WMA depicting active layers that can be displayed in a printed map

RPA E – Airport Environmental Research

E1.1 – Geospatial Data Library/Tool



- Conducted Webinars with internal/external stakeholders
- Categorized data
- Tool requirements refined
- Prototype development
- Roadmap for future capabilities

RPA E – Airport Environmental Research
E1.1 – Geospatial Data Library/Tool

- **AppMap – Prototype launched Oct 2018.**

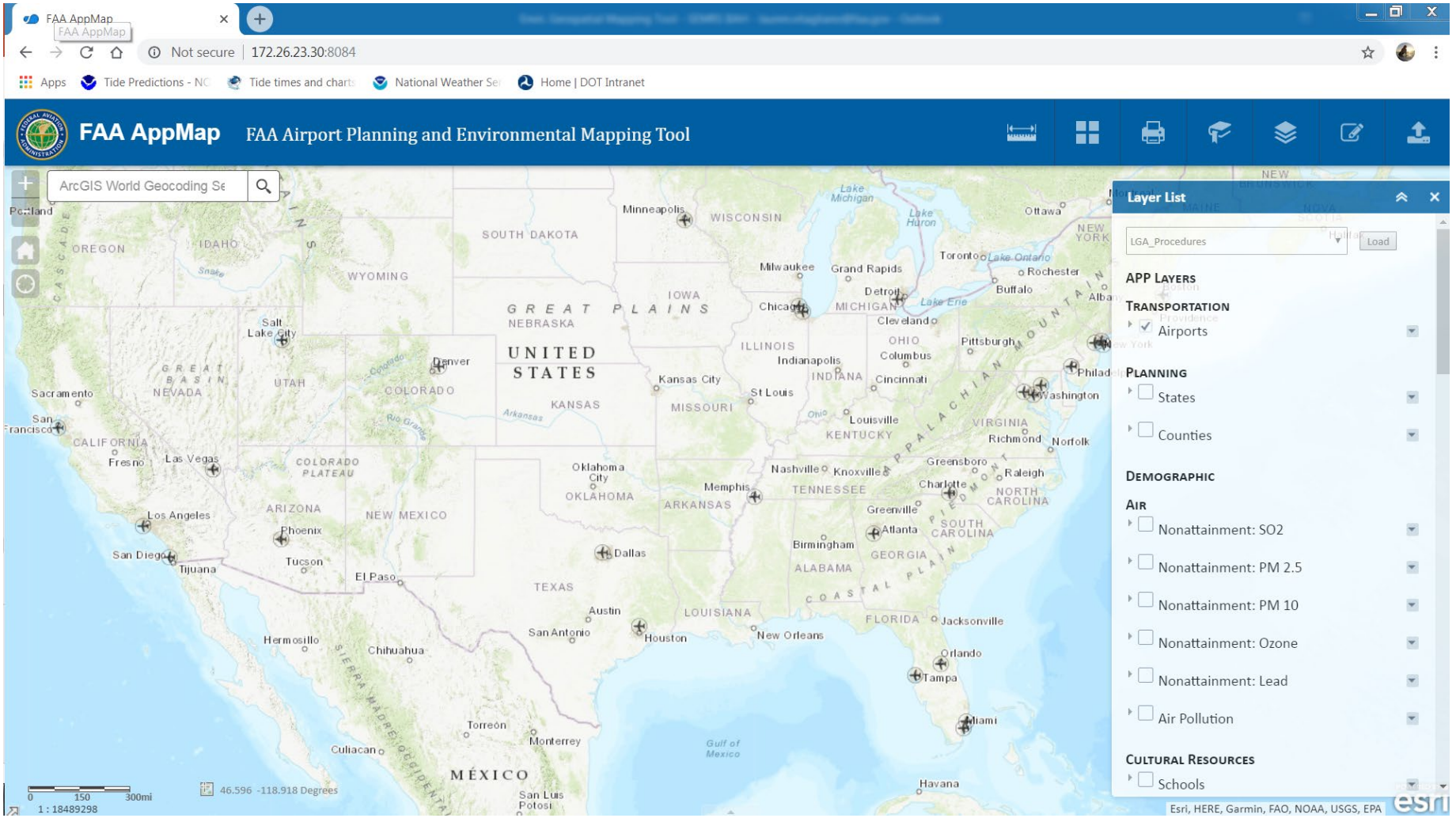
http://172.26.23.30:8084

Functionality:

- Measure Tool
- Basemap Gallery
- Print Widget
- Bookmark Widget
- Layer List Widget
- Draw Widget
- Data Upload Widget
- Data Query Capability

Live Demo

FAA AppMap


FAA AppMap
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Apps
Tide Predictions - NC
Tide times and charts
National Weather Ser
Home | DOT Intranet
FAA AppMap
FAA Airport Planning and Environmental Mapping Tool
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Airports
PLANNING
States
Counties
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Nonattainment: SO2
Nonattainment: PM 2.5
Nonattainment: PM 10
Nonattainment: Ozone
Nonattainment: Lead
Air Pollution
CULTURAL RESOURCES
Schools
UNITED STATES
GREAT PLAINS
APPALACHIAN MOUNTAIN
COASTAL PLAIN
MÉXICO
Gulf of Mexico
Esri, HERE, Garmin, FAO, NOAA, USGS, EPA
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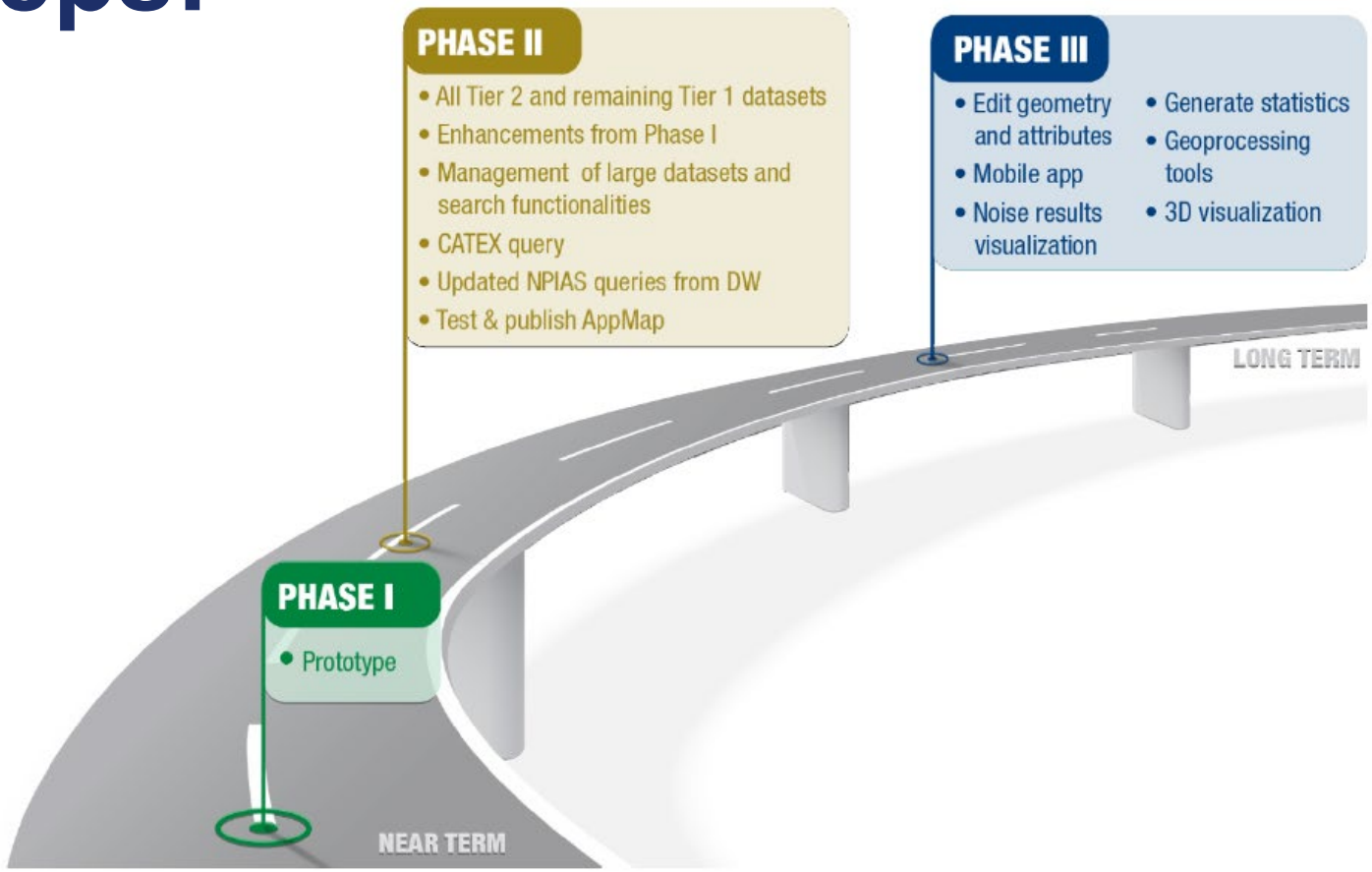
FAA AppMap

Next Steps:



RPA E – Airport Environmental Research
E1.1 – Environmental Tools

Airport Air Quality Screening Methods – Phase 2

Background: Airports must normally conduct an air quality analysis for NEPA purposes to determine whether project emissions would cause significant air quality effects (exceeding NAAQS) for 6 air pollutants.

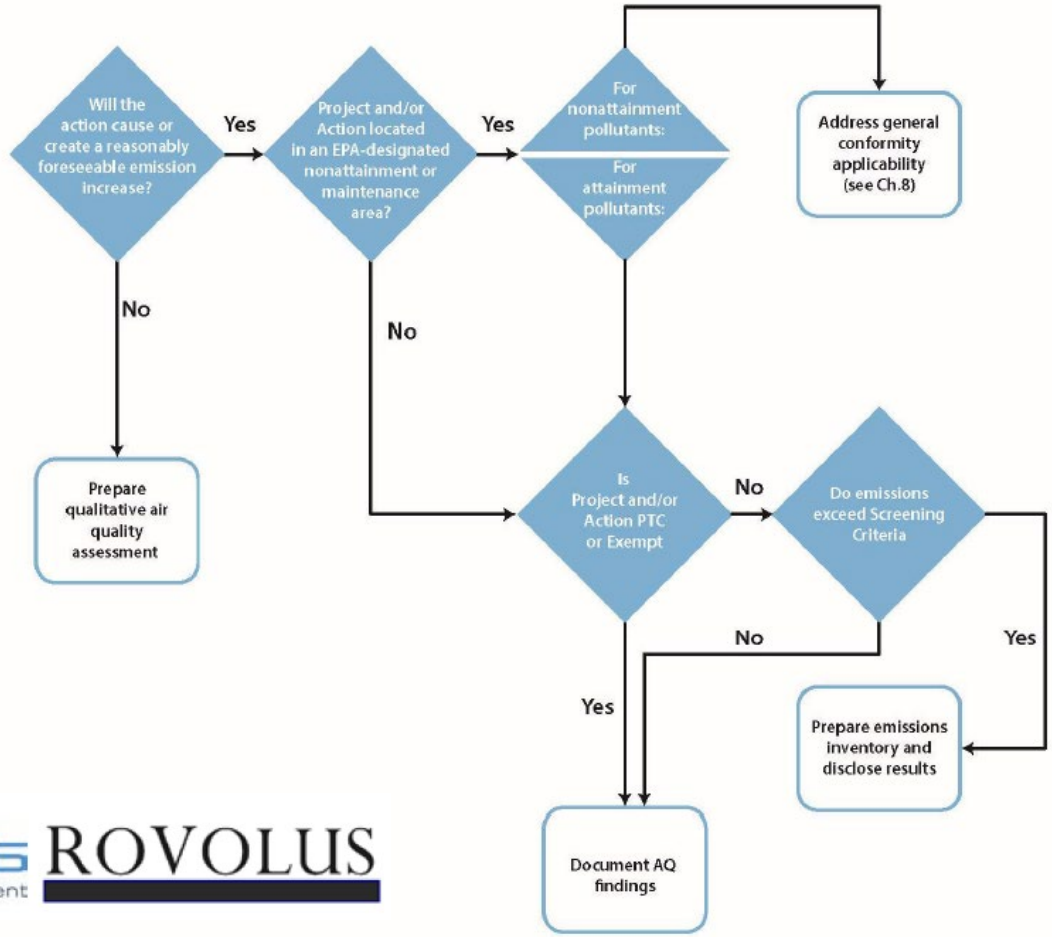
Objective: Develop new air quality screening process to assist FAA staff quickly identify analysis requirements for a proposed Federal action.

- Validate current NEPA flow chart and operational screening methods – Feb 2019
- Develop construction methodology for attainment area projects – Feb 2019
- Updates to AQ handbook and presume to conform (PTC) list.

RPA E – Airport Environmental Research
E1.1 – Environmental Tools

Revised Flowchart for Airport Air Quality Handbook

- Reduces workload
- Relieves airport sponsors from unnecessary detailed evaluations when possible.



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RPA E – Airport Environmental Research
E1.1 – Environmental Tools

NO_2 Dispersion Model

Background: Certain airport projects require emission dispersion modelling to demonstrate the project will not violate or worsen NAAQS.

- *Requires the use of EPA's tool AERMOD, in FAA's AEDT.*
- *April 2018 EPA revised the 1-hour standard for Nitrogen Dioxide (NO_2).*

Airports have had trouble/delays in demonstrating their compliance due to modelling challenges.

Objective: Develop new NO_2 emissions dispersion analysis methodology

Currently conducting a deeper dive into the meteorological data and how to process that data in AERMOD.

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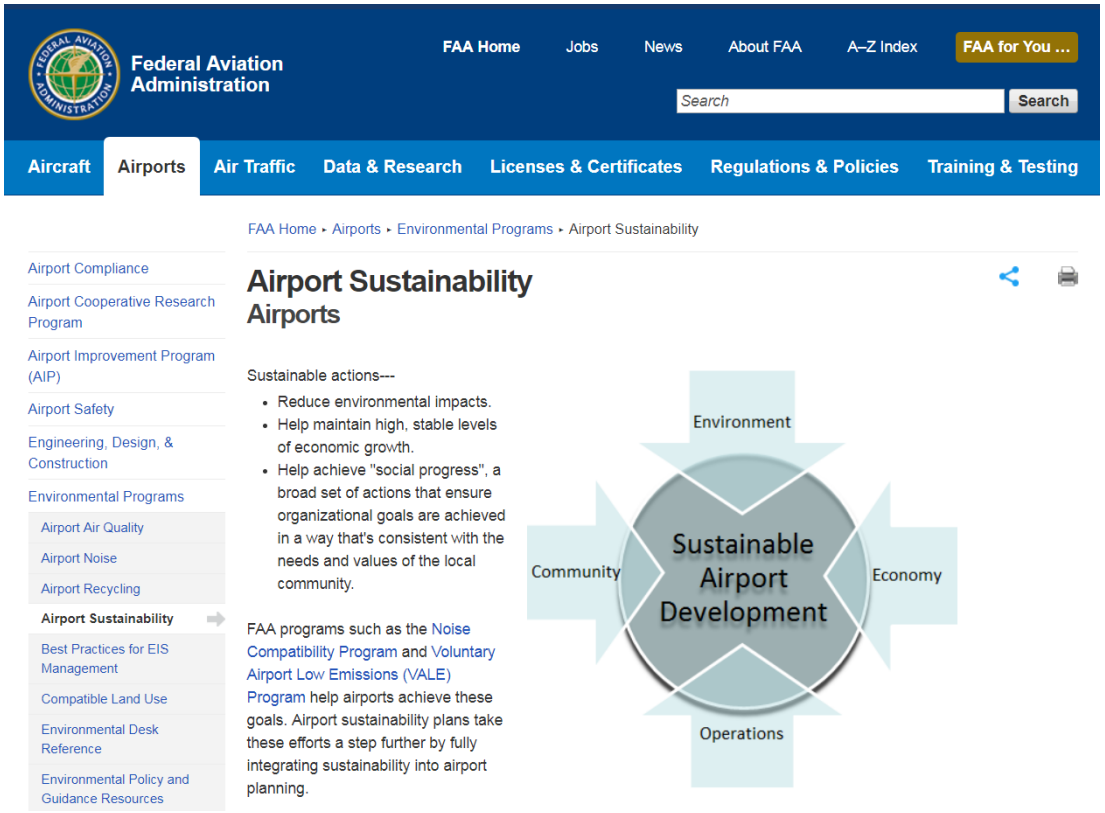
RPA E – Airport Environmental Research
E1.1 – Environmental Tools

Sustainability Analysis

Background: In 2010 APP began Sustainability Master Plan Pilot Program, provided grants to airports; 47 grants awarded

Objective: Develop a synthesis of best practices and lessons learned from the Sustainability Master Plan Pilot Program.



Currently interviewing FAA field personnel, then airport sponsors.

N – Noise Program

N1.1 Noise Annoyance Survey

- Final Report / Results remain under review FAA/DOT and other Federal Agencies

www.faa.gov/go/aviationnoise

Phone Analysis National Survey

- Using phone data collected, analyze underlying reasons for annoyance to a range of factors.
- Factor Analysis – group questions whose responses follow similar response characteristics.

N1.3 National Sleep Study

- Explore relationship between aircraft noise exposure and sleep disturbance
- 4-5 year effort through OMB
- **Sampling Methodology under review by FAA**

Penn Medicine Westat

N – Noise Program

N4 Noise Mitigation

N4.3 - Noise Abatement Procedure Effectiveness

- Explore operational procedures with the potential to reduce community noise exposure
- Understand procedure usage and effectiveness
- Document best practices and wrap into guidance, leading to more effective and frequently-used noise abatement procedures
- **Completed as of Nov 2018**

N5 Noise Operations

N5.2 - Steeper Noise Abatement Approach Operational Feasibility

- Evaluate feasibility of steeper approaches in terms of performance, terminal instrument procedures, and Flight Management System (FMS) dependencies
- ID, evaluate and document operational considerations
- **Conclusions – Operationally feasible, but limited noise benefits. Not recommended for implementation.**

Questions?