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# Airport Sustainability Planning

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# The U.S. System of Airports

- 19,536 airports overall
- 14,400 airports designated as private-use
- 5,136 airports open to the public
- 3,330 existing airports in the National Plan of Integrated Airport Systems (“NPIAS”)
- 530 airports certificated under Part 139 (commercial service by aircraft with 9 or more seats)
- 380 primary airports (scheduled commercial service with at least 10,000 annual enplanements)





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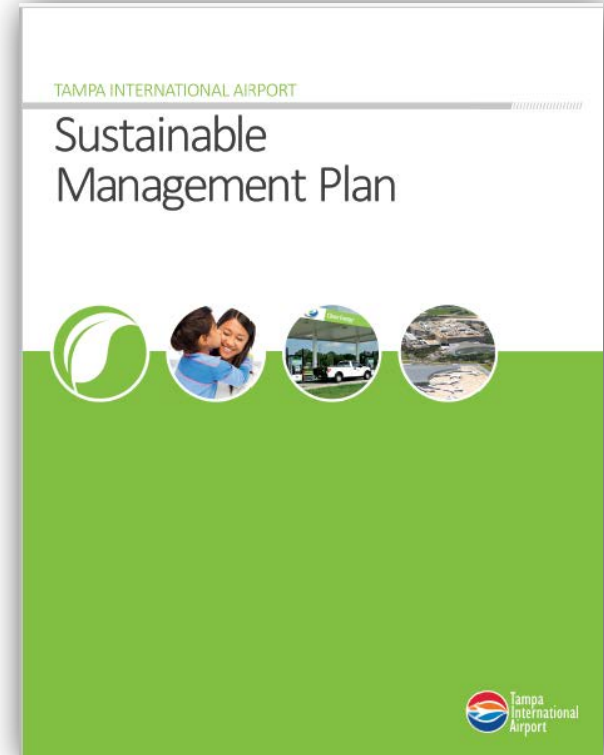
# Airport Improvement Program

- The FAA's Airport Improvement Program (AIP) provides grants to public agencies for the planning and development of public-use airports that are included in the National Plan of Integrated Airport Systems (NPIAS)



# Airport Sustainability Planning - Overview

- **FAA began a pilot program in 2011**
- **Goal:** To make sustainability a core objective in airport planning
- FAA has issued over \$20M in Airport Improvement Program grants for comprehensive airport sustainability plans
  - Awards to 47 airports
  - Most plans are stand-alone documents. But some airports have chosen to integrate sustainability into airport master plans
- As of Sep 30, 2014, airport sustainability plans always eligible for AIP grants



# Airport Sustainability Planning - Overview

- **Eligible Document Types:**
  - “Sustainability Master Plan:” An airport master plan that integrates sustainability
  - “Airport Sustainability Plan” Stand-alone sustainability planning document
- **Each document includes:**
  - A sustainability mission statement
  - A sustainability baseline assessment in certain focus areas, such as carbon, energy, waste, etc. (airport’s choose the areas)
  - Sustainability initiatives in those areas
  - A system to track implementation





## Sustainability planning: example initiatives

- Reduced energy consumption
- Reduced noise impacts
- Reduced hazardous and solid waste generation
- Climate resilience
- Reduced greenhouse gas emissions
- Improved water quality
- Improved community relations
- Cost savings





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## Airport Sustainability Planning - 2016

Grant awarded in 2016 to San Diego International (SAN)

- San Diego's stated objective:

...to deeply integrate sustainability into its Airport Development Plan...

Tasks:

- Conducting baseline assessment for each sustainability element
- Developing performance targets for each sustainability element

Baseline assessments are expected to include:

- Ground transportation and parking data
- GSE and Authority fleet inventories
- Public transit use
- Biological resource maps
- Greenhouse gas and criteria pollutant emission inventories
- Forecasted regional climate change impacts
- Solid waste composition surveys



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# Airport Sustainability Planning and Carbon

Many sustainability plans have included carbon inventories and measures to reduce carbon

- Carbon inventories provide baseline information on emission sources across the airport



Table 3.3—Sources of Airport Criteria Pollutant and GHG Emissions

Sources	Description
Aircraft	Exhaust products of fuel combustion from aircraft engines, power settings, and other aircraft operations.
Ground Support Equipment (GSE)	Exhaust products of fuel combustion from ground support equipment, including deicers and other portable equipment.
Auxiliary Power Units (APU)	Emissions are also emitted by auxiliary power units when the main engines are off.
Ground Access Vehicles (GAV)	Exhaust products of fuel combustion from airport owned vehicles, passenger vehicles, employee and cargo motor vehicles approaching, departing, and moving about the airport site. The emissions from this source vary from the type of vehicle (automobiles, vans, trucks and busses), type of fuel, and the amount of fuel consumed. Modes of transportation include bus routes, taxis, rental cars, hotel shuttles and personal vehicles.
Stationary sources and fuel facilities	Exhaust products of fossil fuel combustion in boilers for space heating and emergency generator units. The release of refrigerants also contributes to greenhouse gas emissions.
Electrical Consumption	Emissions are associated with the production of electricity at off-site utilities that use coal, oil, or natural gas.

Source: C&S Companies

Table 3.13—2010 Baseline GHG Emission Results

Source	CO <sub>2</sub> e Emissions (metric tons)
<b>Scope 1</b>	
Fuel use—airport vehicles	39
Natural gas consumption	347
<b>Scope 2</b>	
Total electricity consumption	1,898
Reduction from photovoltaic facility	1,242
Net electricity usage	656
<b>Scope 3</b>	
Aircraft Emissions	41,783
Ground Access Vehicles	11,320
<b>Total GHG Emissions =</b>	<b>54,144</b>

Source: C&S Companies





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# Airport Sustainability Planning and Carbon

## Baseline carbon inventory

- Usually funded as part of sustainability planning
- Allows a more comprehensive approach to sustainability

## Inventories can be leveraged for future grant requests

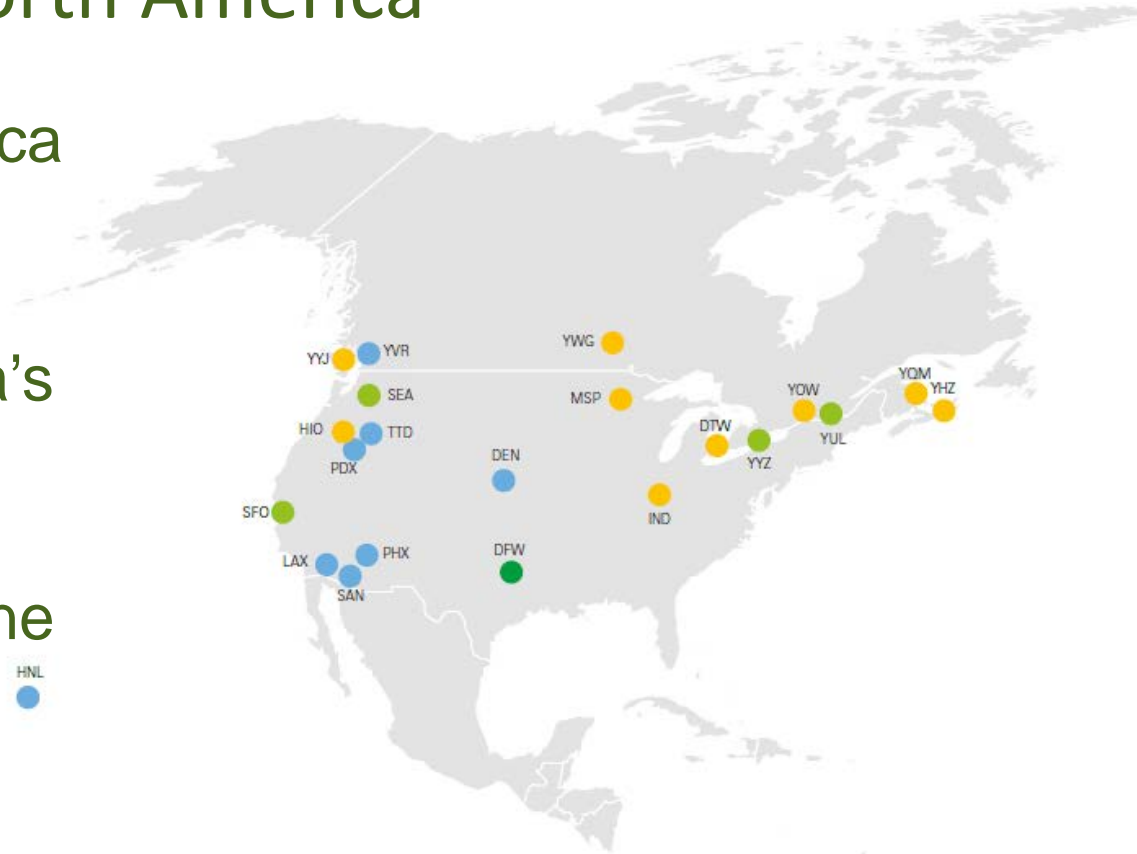
- When inventory data shows areas for airport improvement,
- Infrastructure and upgrades identified in a plan are then eligible for FAA grants
- Airport plan capital improvements and FAA can support those improvements through Airport Improvement Program (AIP) grants

Carbon inventory could also be used for accreditation



## Airport Carbon Accreditation Status in North America

- Currently 22 certified airports in North America
- **Dallas Fort Worth International Airport** became North America's first certified carbon neutral airport in 2016
- FAA support for baseline carbon inventories facilitates process







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## Other FAA grant programs

Sustainability planning is in addition to other FAA programs:

- **VALE**: Voluntary Airport Low Emissions program
- **ZEV**: Zero Emissions Vehicle program
- **Energy Efficiency** grants program (Section 512 grants)



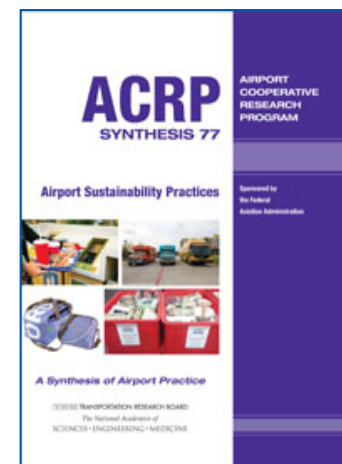
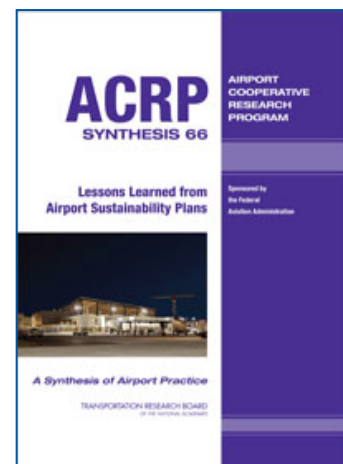
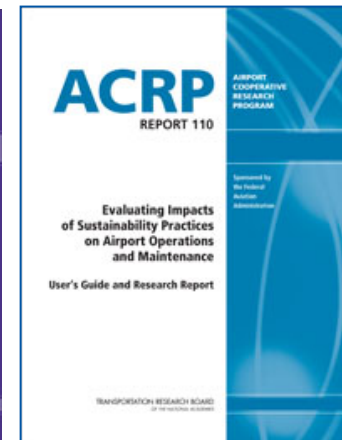
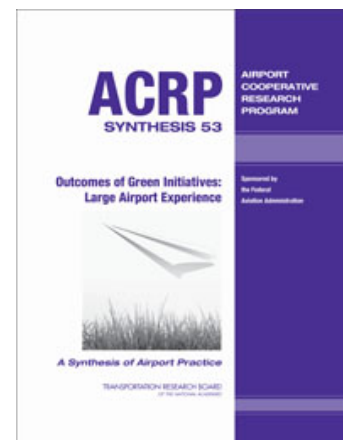
FAA Sustainability Website:

<https://www.faa.gov/airports/environmental/sustainability/>



## Resources – Recent ACRP Reports

- Outcomes of Green Initiatives: Large Airport Experience, May 2014 (Synth 53)
- Evaluating Impacts of Sustainability Practices on Airport Operations and Maintenance, July 2014 (Report 110)
- Lessons Learned from Airport Sustainability Plans, July 2015 (Synth 66)
- Airport Sustainability Practices, Sept. 2016 (Synth 77)





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