Creating Sustainability at Airports

John Galloway, San Francisco International Airport
Tom Green, Seattle-Tacoma International Airport
Katie Lamond, The Port Authority of New York & New Jersey
Stephanie Meyn, Seattle-Tacoma International Airport
Chad Reese, San Diego County Regional Airport Authority
Erik Herzog, EPA

June 5, 2019
Today’s webinar is being recorded.

Attendees phone lines are muted to preserve audio quality.

Submit a question via the Questions box on your GoTo control panel.

After the presentation, as time permits, our EPA presenters will answer questions submitted via the Questions box.

Please complete the survey at the end of today’s webinar. Your feedback is important to us!
Air freight is the fastest growing mode in goods movement.

Worldwide, aviation accounts for about two percent of global greenhouse gas emissions,

with emissions expected to grow at about three to four percent per year.
ICAO has launched a three-pronged effort to reduce aviation's net carbon emissions to zero by 2050

- New Aircraft Standards
- A Market Based Trading Program (CORSIA)
- Operational Improvements
In addition to the aircraft, many other aspects of airport operations can impact the environment:

- Electricity consumption
- Ground transportation
- Ground support operations for aircraft
- Fuel tank farms
ACI’s Airport Carbon Accreditation Program provides a common, worldwide framework for airports to:

- Measure their carbon footprints
- Take measures to reduce their carbon footprints
- Engage third parties at and around the airport to measure and reduce their carbon footprints as well
- Achieve carbon neutrality through carbon reductions and offsets

93 Airports worldwide, 11 in North America have been accredited
Today we will hear from 4 Experts overseeing sustainability programs at U.S. Airports
John Galloway -- SFO Carbon Neutral Airport Program Manager, San Francisco International Airport

John oversees SFO’s greenhouse gas reporting, policy, and reduction projects and leads a study on distributed energy and microgrids. He previously managed a group at PG&E connecting large-scale renewable energy power plants to the grid. He has developed action plans for energy and waste reduction, sustainability, and greenhouse gas management for private companies and Federal and municipal agencies, including the Federal Aviation Administration as an operating unit of the U.S. Department of Transportation.
Tom Green – Senior Manager, Air Cargo Operations and Development, Seattle-Tacoma International Airport

Tom Green is the Senior Manager for Air Cargo Operations and Development at Seattle-Tacoma International Airport, owned and operated by the Port of Seattle. In this role, Tom is responsible for all facets of the air cargo program at Sea-Tac Airport, from airfield cargo operations to the development of new and expanded air cargo routes and frequencies, and for the operation and development of related airport cargo facilities. He leads a very lean team consisting of an Air Cargo Operations Manager, and an Air Cargo Facilities Manager, and reports to the airport’s Director of Operations.

Tom has been with the Port of Seattle for 18 years, from Corporate Finance to Aviation Business Development, and in Aviation Operations since 2008. Tom has Bachelor’s degrees in Economics, and Biology, from the University of Texas at Austin, and a Master’s Degree from the University of Washington.
Katie Lamond -- Manager, JFK Environmental Programs at The Port Authority of New York & New Jersey

Kathryn Lamond is an Environmental and Sustainability Specialist at the Port Authority of New York and New Jersey. She supports the NEPA, environmental compliance, and sustainability programs for the five airports within the PANYNJ Aviation Department network.
Chad Reese – Environmental Affairs Manager, San Diego County Regional Airport Authority

Chad Reese is an Environmental Affairs Manager at the San Diego County Regional Airport Authority, the agency that manages the day-to-day operations of San Diego International Airport (SAN). As the sustainability program area lead at the Airport, Chad contributes to energy efficiency and renewable energy capital projects, waste reduction initiatives, clean transportation policy and projects, and behavior change programs including the Airport’s new “SAN Green Concessions Program” (a green business program specifically designed for Airport concessions tenants). Chad also manages “The Good Traveler” carbon offset program developed by the Airport, and is responsible for annual greenhouse gas emissions inventories and certification via Airport Council International’s “Airport Carbon Accreditation” program.
Zero-Emission Vehicle Readiness and Energy Resiliency at SFO

John Galloway
Carbon Neutral Program Manager
San Francisco International Airport
SFO’s Big Zero Goals

- Zero Net Energy
- Carbon Neutrality
- Zero Waste
SFO’s Additional Goals

- Biodiversity
- Transit-First
- Water Conservation
- Green and Healthy Buildings
ZEV Readiness & Transit First
Electrification of Planes and Ground Support Equipment
Distributed Energy Resources & Decarbonization
Partnerships
Thank you!
SUSTAINABILITY MEASURES AT SEATTLE-TACOMA INT’L AIRPORT

Tom Green
Sr. Manager, Air Cargo Operations and Development

Stephanie Meyn
Climate Protection Program Manager
Fast Growing Large Hub Airport

- 8th busiest in the U.S.
- 49.8 Million Passengers (2018)
- 432,315 Metric Tons Cargo
- 150,000+ Jobs

Current Projects:

- Expansion of North Satellite Terminal
- International Arrivals Facility
- Sustainable Airport Master Plan
Competing Priorities at Port of Seattle

“Meet all increased energy needs through conservation and renewable sources.”

“Reduce Scope 3 emissions by 50 percent below 2007 levels by 2030.”

“Triple air cargo volume to 750,000 metric tons.”
Sustainability Focus Areas

- Carbon Reduction
- Energy
- Transportation (landside)
- Climate Adaptation
- Water Quality
- Water Conservation
- Social Responsibility
- Economic Sustainability

- Air pollution
- Green Buildings
- Waste
  - Construction waste
  - Hazardous waste
  - Terminal and airfield waste
- Fish and Wildlife
- Noise
Measuring Sustainability at SEA

• What’s directly in our control is relatively easy to measure

• Challenge to obtain sustainability metrics for activities related to airport but not within our control
  – Solutions include modeling, partnering to obtain data, or using third party, etc
Measuring Landside Vehicle Activity

Vehicle Types Measured
• *Pick-up* taxis, limos, shuttles, etc measured with RFID-type tags
• TNC drop-off and pick-up activity data collected via app
• Rental cars, bus trips

Camera Data
• Captures vehicle counts on drives/curbside but doesn’t distinguish type – *opportunity for AI/machine learning?*

Roadway Camera views

Air Cargo Road not captured
Sustainability Measures for Air Cargo

• As a “landlord” to air cargo operations, activity is not directly under our control, and thus difficult to measure
• Airfield infrastructure upgrades (in-ground power) have reduced fuel use and related emissions, but hard to quantify
• On the landside, amount of air cargo related trucking has increased along with growth in flown tonnage
• Efforts to analyze trucking congestion identified difficulty in tracking and measuring activity among commercial operators
What We’re Currently Working On

• More complete sustainability integration into our Capital Project Planning & Approval process
• “LEAN” for process improvement in air cargo trucking
• Exploring more third-party sustainability measurement systems (cameras, app-based, etc)
• Expanded social sustainability programs such as diversity in contracting
• Expanded use of renewable energy (electricity, gas, and liquid fuels)
Sustainability at Our Airports: Embracing the Paris Climate Agreement

June 5th, 2019
Kathryn Lamond, PE – Environmental and Sustainability Specialist
PANYNJ Aviation Department
**Sustainability Policies**

- 1993: Environmental Policy
- 2006: Sustainable Design
- 2008: Sustainability Policy
- 2018: Embracing the Paris Climate Agreement

**Emissions Reductions**

- 35% by 2025
- 80% by 2050

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**PANYNJ SUSTAINABILITY GOALS**
Embracing Paris: The Clean Dozen
The “Clean Dozen”

1. Thirty-six electric intra-airport shuttle buses
2. Electrify 50% of light duty fleet vehicles
3. JFK fast-charging hub (public/for-hire vehicles)
4. Electric portside and airside equipment
Electric Ground Support Equipment (eGSE)

Charging infrastructure for eGSE

Pursuing grant money, such as VALE and VW Settlement funds to accelerate conversion to eGSE

JetBlue JFK Terminal 5

$4 million FAA grant

38 charging stations

118 pieces of electric ground support equipment
The “Clean Dozen”

5. LED lighting by 2019
   PABT, GWB, HT, EWR, WTC, JFK

6. $100 million investment in upgraded equipment
Energy Efficiency

Project Portfolio

59 million annual Kwh savings
25,000 metric tons GHG reduced
27 million pounds of coal not burned

$100M commitment for new energy efficiency projects 2019 - 2025

6,400,000 Kwh annual energy savings
1,800 metric tons GHG reduced
The “Clean Dozen”

7. Solar, fuel-cell and renewable grid power

8. RFP for 5MW JFK community solar project
Solar/ Renewables

1,400 tons
YTD
GHG reductions from current on-site installs at EWR, SWF and PATH

Under development:

1.6 MW
SWF solar carport

700 KW
PATH MacMillan Building

1.5 MW
LGA West Garage

10+ MW
JFK behind-the-meter & Community Solar

1.2 MW
all-electric fuel cell WTC

Clean Electric Vehicles
Energy Efficiency
Solar/ Renewables
Building Green Facilities
Ocean-Going Clean Vessel Incentives
Offshore Wind
Partnerships
The “Clean Dozen”

9. $28 billion in new airport facilities featuring best-in-class sustainability measures
Construction of FIVE new Terminals
LGA – replacement of two primary terminals
EWR – replacement of one terminal
JFK – two new terminals will replace three of the six existing terminals

Building Green Facilities

Sustainable Building Design Guidelines
LEED-based Silver minimum

Climate Resilience Design Guidelines

Clean Electric Vehicles
Energy Efficiency
Solar/Renewables
Building Green Facilities
Ocean-Going Clean Vessel Incentives
Offshore Wind
Partnerships
Building Green Facilities – JFK

- Streamlined roadways and frontages
- Co-generation renewal/microgrid

Redevelopment Sustainability
- EV charging/eGSE
- Greywater capture/reuse
- Deicing fluid capture/recycling
- Preconditioned Air/ground power
- Renewables/source energy reduction
10. Financial incentives for environmentally-friendly ship management practices
The “Clean Dozen”

11. Support identification of offshore-wind supply-chain facilities in both NY and NJ
The “Clean Dozen”
Other Scope 3 Initiatives

- LGA AirTrain
- JFK-EWR AirTrain Enhancements
- Sustainable Aviation Fuel
- Airport Ground Management/ Ground Based Augmentation Systems
"Sustainability Measures at Airports"

EPA SmartWay Webinar

Chad Reese
Manager, Planning & Environmental Affairs

June 5, 2019
San Diego International Airport

- 51-Gate Large Hub Airport
- Over 24 Million Passengers
- Busiest Single Runway in the US
- Confined to 661 Acres
- 50% Passenger Growth Expected by 2035
Plan and build an enduring and resilient customer-focused enterprise by effectively managing our financial; social; and environmental risks, obligations and opportunities.”
Sustainability Management Planning

Main Topic Areas

- Sustainable Energy: Implementing
- Water Stewardship: Implementing
- Carbon Neutrality: Draft
- Clean Transportation: Draft
- Zero Waste: Developing
- Climate Resilience: Developing
- Biodiversity: FY2020
San Diego International Airport – pre-expansion

2019–2020 Existing and Proposed EV Charging Ports
Clean Transportation Plan

01 Minimize the Airport’s reliance on fossil fuels for Authority fleet vehicles and equipment.
- Alternative Fuels and Vehicle Efficiency
  Conversion of Authority-owned vehicles to hybrid, electric, or alternative fuels.
  100% by 2033

02 Provide enabling infrastructure for electric and other alternative fuel vehicles used by employees, passengers, and tenants.
- Alternative Fuels and Vehicle Efficiency
- Employee Transportation
- Efficient and Sustainable Transportation
- Infrastructure
- Congestion and Emissions Reduction
  Airport wide parking (employee, passenger, etc.) designated for clean air vehicles* and/or EV-ready, with pre-wiring.
  Step 1: 20% of total spaces
  Step 2: 50% of total spaces

03 Incentivize adoption of low carbon strategies by ground transportation operators.
- Alternative Fuels and Vehicle Efficiency
- Congestion and Emissions Reduction
  Use GHG rating (GGR++) to measure GHG intensity (gCO2e/mile) of ground transportation providers (taxis, shuttle buses, hotel vans, limas, TNCs, etc.).
  Step 1: minimum GGR of 9
  Step 2: GGR of 10

04 Provide regional leadership, collaboration, and infrastructure to increase use of public transit and other sustainable methods of transportation.
- Public Transit
- Congestion and Emissions Reduction
- Employee Transportation
  Passengers/employees that use sustainable transportation methods (e.g., public transit, vehicles sharing options such as carpool, vanpool, bicycle) to travel to/from the Airport.
  15% by 2035

05 Encourage and help propel reductions in air emissions from airline, tenant, contractor, and construction vehicles and equipment.
- Construction
- Alternative Fuels and Vehicle Efficiency
- Congestion and Emissions Reduction
  Conversion of non-authority vehicles to hybrid, electric, or alternative fuels.
  100% by 2035
### GOAL 1: Authority’s Fleet Vehicles & Equipment

<table>
<thead>
<tr>
<th>Metrics</th>
<th>Targets</th>
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<tbody>
<tr>
<td>Conversion of Authority owned vehicles to hybrid, electric, or alternative fuels.</td>
<td>100% by 2035</td>
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<tr>
<td>Conversion of Authority owned equipment to hybrid, electric, or alternative fuels.</td>
<td>80% by 2035</td>
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Clean Transportation Plan

GOAL 2: Clean Vehicles & Airport-Wide Parking

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<td>Airport-wide parking (employee, passenger, etc.) designated for clean air vehicles* and/or EV-ready with pre-wiring.</td>
<td>Step 1: 20% by 2025</td>
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<tr>
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<td>Step 2: 50% by 2035</td>
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SDG&E Power Your Drive

- SDG&E installed, and will operate and maintain 10 dual-port chargers for 10 years (allows 20 spaces for electrical vehicles to be charged)
- ChargePoint chargers are located at the Employee Parking Lot
- The cost of the energy used to charge an EV is billed directly to the driver via a separate SDG&E Power Your Drive account.
**Clean Transportation Plan**

**GOAL 3: Low Carbon Ground Transportation Operators**

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| Use GHG rating (GGR*) to measure GHG intensity (gCO₂e/mile) of ground transportation providers (taxis, shuttle buses, hotel vans, TNCs, etc.) | Step 1: GGR of 9 by 2020  
Step 2: GGR of 10 by 2030 |

*GGR of 9 = 205-237 g/mile; GGR of 10 = 0-204 g/mile (www.fueleconomy.gov)
Clean Transportation Plan

GOAL 4: Transit & Other Sustainable Modes

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<td>Passengers and employees that use sustainable transportation methods (e.g. public transit, vehicles sharing options such as carpool/vanpool, bicycle) to travel to/from SAN</td>
<td>15% by 2035</td>
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### GOAL 5: Airline, Tenant, & Contractor Clean Vehicles

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<tr>
<td>Conversion of vehicles to hybrid, electric, or alternative fuels</td>
<td>100% by 2035</td>
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Thank You!

SmartWay website: https://www.epa.gov/smartway
SmartWay Hotline: 734-214-4767

SmartWay email: smartway_transport@epa.gov

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