



WELCOME

# **SUSTAINABLE DOT-A PROGRAM LEADS EFFORTS AT HAWAII'S AIRPORTS**

State of Hawaii Department of Transportation  
Airports Division



S U S T A I N A B L E   A I R P O R T S

sustainable **DOT-A**





WELCOME

### **AIRPORTS DIVISION MISSION (DOT-A)**

To provide an integrated Airports System that reflects the unique spirit of Aloha and connects Hawaii with the world while promoting sustainability.

### **SUSTAINABLE DOT-A MISSION**

Promote sustainability in Hawaii by empowering airport projects, fostering collaboration and communicating progress through education and outreach.

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## MESSAGE FROM OUR LEADERS



### GOVERNOR DAVID IGE

The State of Hawaii's Department of Transportation Airports Division (DOT-A) recognizes the importance of sustainability as an integral part of Hawaii's future. Our objective is to eliminate our dependence on fossil fuels and achieve 100 percent renewable energy usage by 2045. My administration commends the DOT-A's proactive leadership and helping us to achieve this goal.





## MESSAGE FROM OUR LEADERS



### **DEPUTY DIRECTOR ROSS HIGASHI**

Sustainability is an important part of the airports operational strategy. The Airports Division is the third highest consumer of electricity in the state. We are working on more innovative ways to provide new energy saving projects in our buildings, vehicles and operations.





FOCUS ON SUSTAINABILITY

Sustainability for DOT-A is preserving our natural  
resources so future generations can experience our  
lifestyle of Hawaii today

-sustainableHNL committee

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**DANIEL K. INOUE INTERNATIONAL AIRPORT 2020 GOALS**



**10%**

Energy  
reduction



**2009**

Carbon  
levels



**10%**

Water  
reduction



**4%**

Waste  
reduction





## FOCUS ON SUSTAINABILITY

### ENERGY SAVINGS ANNUALLY STATEWIDE



➤ \$15.8 million



➤ 49.9 million kWh of energy

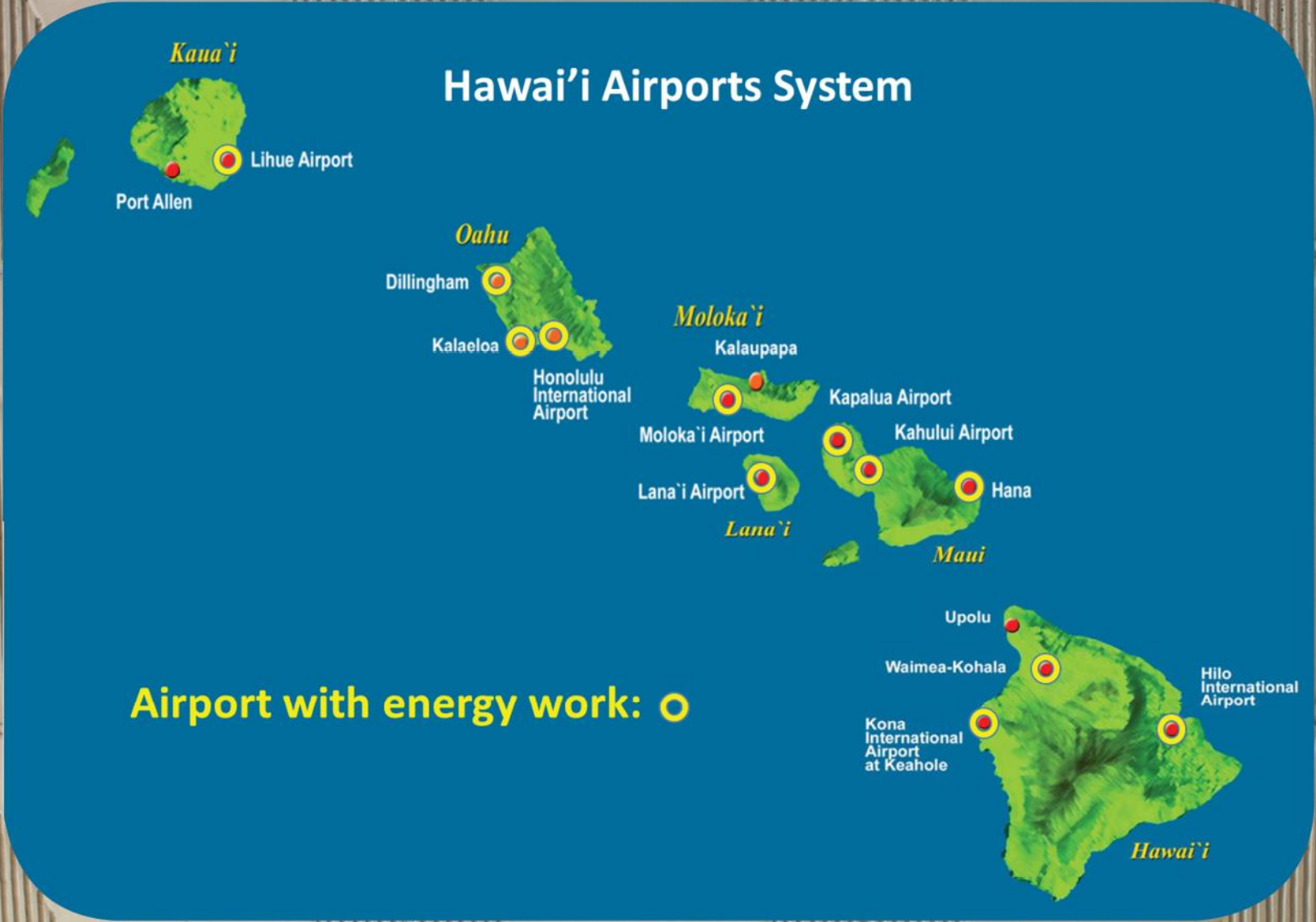


➤ 6,757 Hawaii homes annual electrical use





FOCUS ON SUSTAINABILITY







## ENERGY SAVINGS PROGRAM

### ENERGY SCOPE OF WORK

|                            | Honolulu (HNL) | Dillingham (HDH) | Kalaheo (JRF) | Kona (KOA) | Hilo (ITO) | Waimea-Kohala (MUE) | Lihue (LIH) | Kahului (OGG) | Kapalua (JHM) | Hana (HNM) | Molokai (MKK) | Lanai (LNY) |
|----------------------------|----------------|------------------|---------------|------------|------------|---------------------|-------------|---------------|---------------|------------|---------------|-------------|
| Lighting Upgrades          | ✈              | ✈                | ✈             | ✈          | ✈          | ✈                   | ✈           | ✈             | ✈             | ✈          | ✈             | ✈           |
| Air Conditioning Upgrades  | ✈              | ✈                | ✈             | ✈          | ✈          | ✈                   | ✈           | ✈             | ✈             | ✈          | ✈             | ✈           |
| Building Automation System | ✈              |                  | ✈             | ✈          |            | ✈                   | ✈           | ✈             |               |            |               |             |
| Photovoltaic System (PV)   | ✈              |                  |               | ✈          |            |                     | ✈           |               |               |            |               |             |
| New Transformers           | ✈              | ✈                | ✈             | ✈          | ✈          |                     | ✈           | ✈             | ✈             |            |               | ✈           |





## ENERGY SAVINGS PROGRAM

### LIGHTING UPGRADES



- 74,596 lighting fixtures retrofitted
- Uses less energy & produces less heat
- Reduce maintenance & repair costs
- Improves the look and safety of airports





## AIR CONDITIONING UPGRADES



- Air Conditioning keeps the terminals cool
- Major upgrades to reduce energy losses from older systems





### BUILDING AUTOMATION SYSTEM

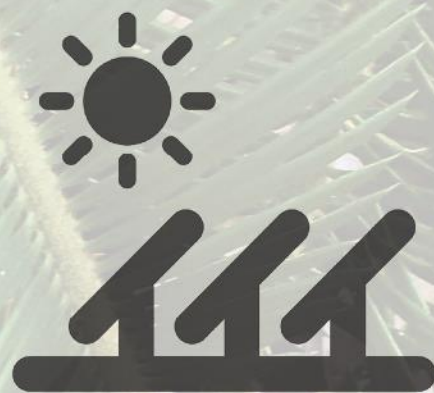


- ✈ Advanced controls of HVAC, water & lighting systems
  - ✈ Reduce unnecessary energy consumption
  - ✈ Identifies problems & notifies managers





## PHOTOVOLTAIC SYSTEM (PV)



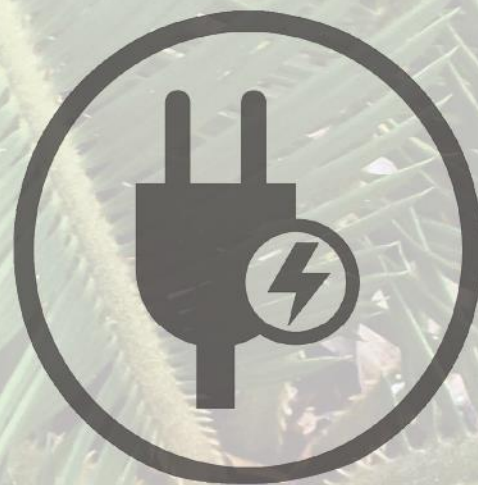
- ✈ 9,000 panels installed
- ✈ \$2.6m annual savings
- ✈ 3% of HNL energy generated onsite





## ENERGY SAVINGS PROGRAM

### NEW TRANSFORMERS



- ✈️ \$524k annual savings
- ✈️ 900+ new units efficiently transfer incoming power

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CARBON REDUCTION

## AIRPORT CARBON ACCREDITATION



- Honolulu International Airport Awarded
- Visit [www.airportco2.org](http://www.airportco2.org)

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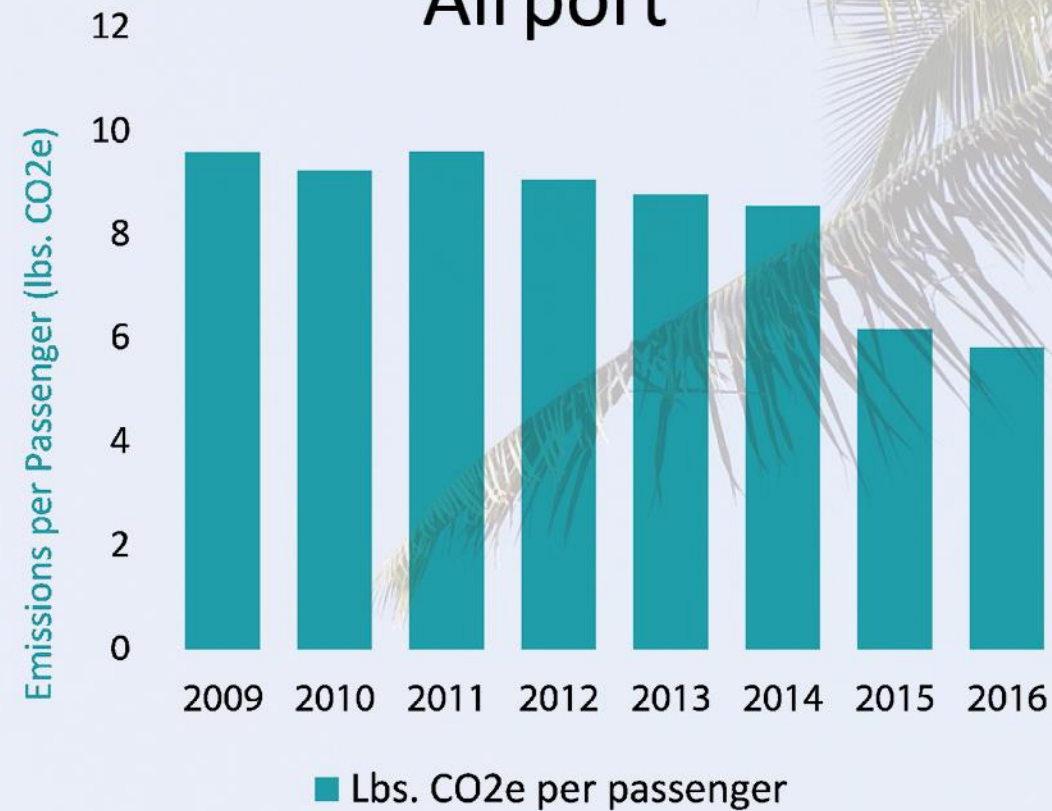
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## GREENHOUSE GAS EMISSIONS REDUCTION SUCCESS

✈️ **39% reduction at Daniel K. Inouye International Airport**







### WATER SAVINGS INITIATIVES



- ✈️ Air conditioning upgrades reduce water consumption
  - ✈️ 500 million gallons saved between 2012-2016
    - ✈️ 3,100 homes equivalent water use
      - ✈️ 22% total bill savings





### NON-POTABLE WATER LANDSCAPE IRRIGATION



- ✈ 1988 year first installed
- ✈ 86 million gallons used annually for landscape irrigation
  - ✈ 17% of HNL water consumption offset
  - ✈ 600 homes equivalent water savings annually





## AIRPORTS MODERNIZATION PROGRAM

- New construction & renovation completing in 2020
- Designed to DOTA Sustainable Design Guidelines
- Eligible projects are seeking green building certification





## MAUKA CONCOURSE AT THE DANIEL K. INOUE INTERNATIONAL AIRPORT

- LEED Silver design standards
- Recycled building materials
- Locally sourced products
- Natural indoor day-lighting
- Recycling air conditioning condensate for irrigation





### MAUI RENTAL CAR FACILITY

- LEED Silver design standards
- Consolidates rental car companies
- 25 shuttle buses eliminated, saving fuel & GHGs
- Non-potable water for waterfalls & landscape irrigation
  - Native plants for landscaping





## KONA & HILO AIRCRAFT RESCUE AND FIRE STATIONS



- LEED Silver certified buildings
- Energy efficient building systems
  - Natural indoor day lighting
  - Recycled building materials
  - Locally sourced products





## CULTURAL GARDENS



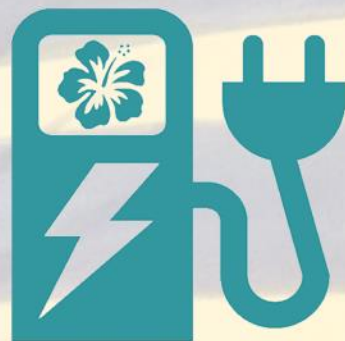
- ✈️ Hawaiian, Chinese and Japanese cultural gardens
- ✈️ Gardens are located around the HNL main terminal lobby





## GROUND TRANSPORTATION

### ELECTRIC VEHICLES



- Charging stations are available for use
  - Designated EV only parking stalls
  - Airport parking fees waived for EVs





## PROTECTING WATERS OF HAWAII

- Reduce pollutants from stormwater runoff
- Increase public awareness through education and outreach
  - Improve water quality
- Promote low impact development and green infrastructure





## **CURRENT EFFORTS TO REDUCE POLLUTION**

- ✈ Storm drain system maintenance & cleaning
  - ✈ Street sweeping
- ✈ Airport-wide trash collection events
- ✈ Good housekeeping best management practices





## GOALS FOR STORMWATER TRASH REDUCTION

- Develop Trash Reduction Plan
- 50% reduction of the baseline load (short-term plan) by 2023
- 100% reduction of the baseline load (long-term plan) by 2036





### SHORT-TERM REDUCTION PLAN

- ✈ Study to develop the baseline load from 2018-2020
- ✈ Enhancement of existing control measures (storm drain cleaning, public education, recycling, clean-up events, and inspections)
- ✈ Evaluate additional control measures (cigarette butt program, waste receptacles, and retrofits)





## STORMWATER EDUCATION

### PUBLIC EDUCATION AND OUTREACH

- Solid waste management through FOD Walks and Recycling Drives
  - School presentations
  - Storm drain inlet stenciling
- Tenant and construction stormwater training
- Visitor slide show on sustainability kiosks





## IMPROVE WATER QUALITY

- Implement erosion and sediment control measures on construction sites to prevent sediment and other pollutants from entering the State waters
- Conduct Airport tenant inspections and training to prevent pollutants from entering the State waters





## LOW IMPACT DEVELOPMENT (LID)

- Maintain natural hydrologic cycle, like a wetland
- Increase infiltration, reduce runoff volume
  - Groundwater recharge
- Minimize erosion and flooding
- Provide water quality treatment





## LOW IMPACT DEVELOPMENT AND RETROFIT INITIATIVES

- Bioretention and Pervious Concrete installation at Elliott Street New Employee Parking Lot, HNL
  - Bioswale at Kalewa Street Storage Lot Paving, HNL
    - Stormwater Inlet inserts at HNL Baseyard
- CDS Units (pollution traps) at Widening of Taxiways G & L, HNL





**THE STATE REMINDS YOU TO BE A C.O.P.**



- Continual Improvement
  - Obey All Laws
  - Prevent Pollution