

# HART

HONOLULU AUTHORITY for RAPID TRANSPORTATION

## Sustainability Strategy

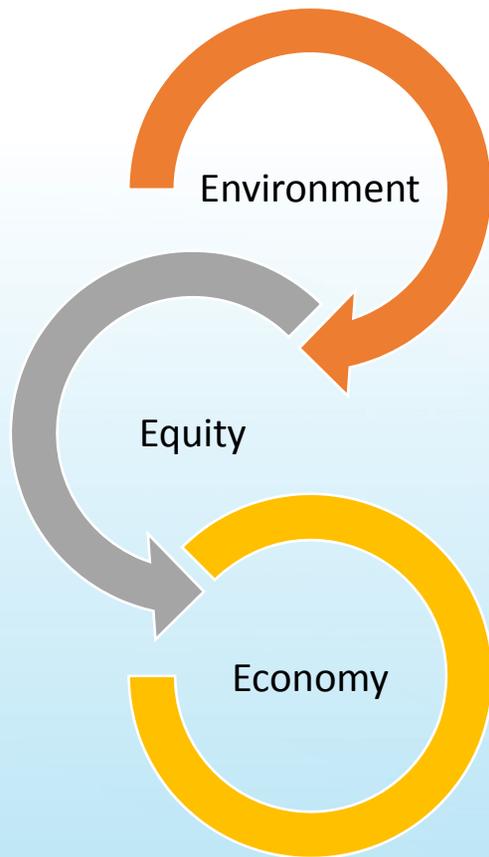
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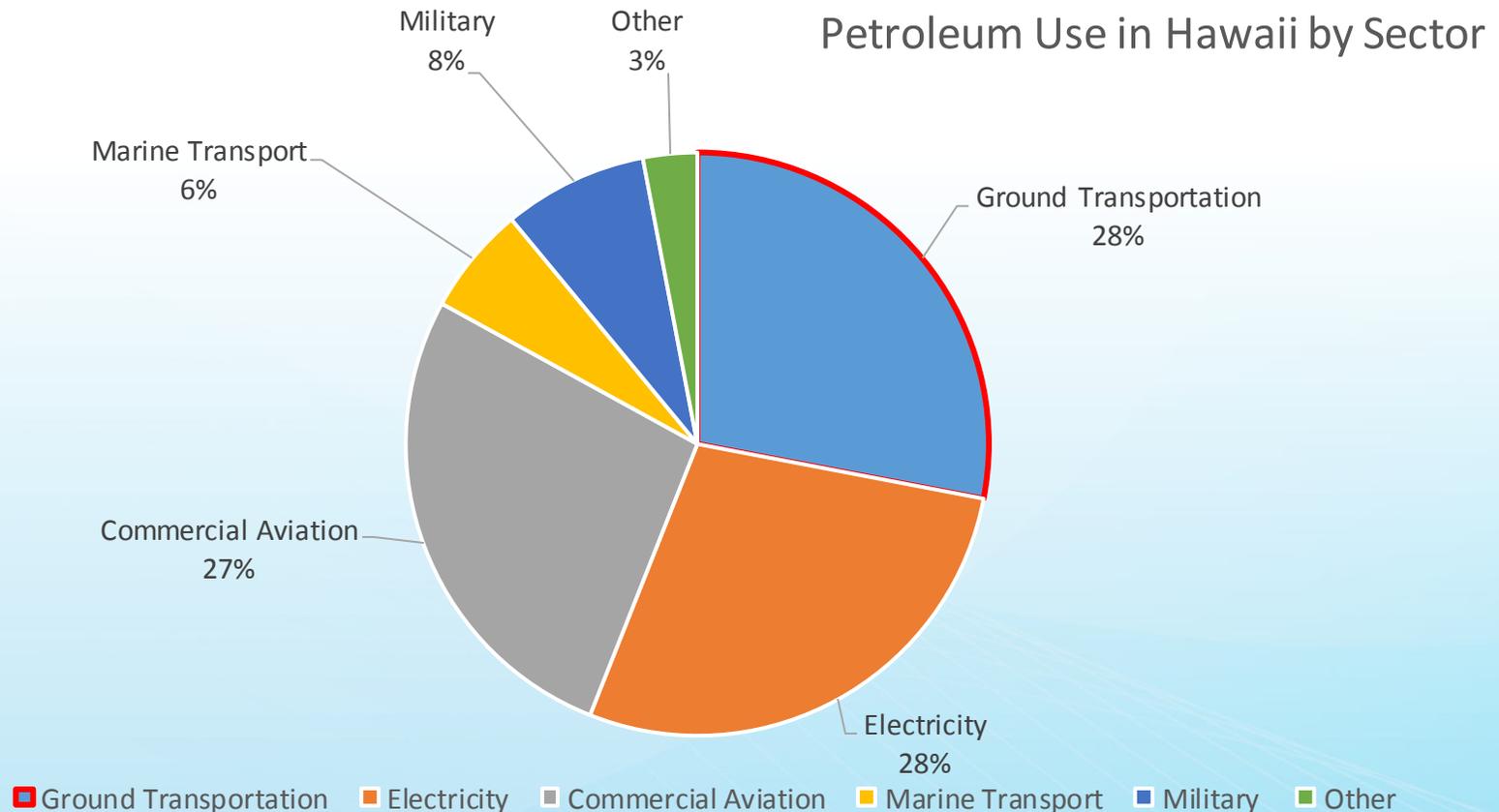
# What is Sustainability?



*“To meet the needs of the present without compromising the ability of future generations to meet their own needs.”*

*– Brundtland Commission, United Nations, 1987*

# Sustainability and Transportation



Source: Hawaii Department of Business, Economic Development and Tourism, Hawaii Energy Facts and Figures. May 2015

# State of Hawaii Legislation

- Act 38
  - Commitment to “increas[ing] energy security and self-sufficiency through the **reduction and ultimate elimination of Hawaii's dependence on imported fuels for electrical generation and ground transportation**”.
- Act 97
  - “Goal of one hundred per cent renewable by 2045... [to] ensure that Hawaii moves beyond its dependence on imported fuels and continues to grow a local renewable energy industry.”

# Rail will reduce energy demand in transportation

Each day HART:

- *Serves almost 120,000 passenger trips*
- *Removes 40,000 car trips*
- *Saves 20,000 gallons of gasoline*

The Project will reduce daily transportation energy demand by 3%.  
3%/day = 52,700 mT CO<sub>2</sub>/year = **ENERGY SAVINGS** equivalent to:



**6,500**  
homes use of electricity  
for one year



**120,000**  
barrels of  
oil consumed



**2.2 million**  
propane cylinders used  
for home barbecues



**5.9 million**  
gallons of  
gasoline consumed

Source: Honolulu Authority for Rapid Transportation, Final Environmental Impact Statement  
Note: Calculations include energy used to run the train.

# American Public Transportation Association Sustainability Commitment

- Signed March 2014
- Joined over 100 other transit agencies and private companies committed to sustainable transportation
- Committed HART to:



Sustainability  
Champion

Sustainability  
as Strategic  
Objective

Outreach  
Program for  
Staff

Baseline  
Measurements  
for Operations

# Sustainability Strategy

Energy

Green Building

Waste

Land Use

Culture

Photovoltaics

Efficiency

Storage

LEED

Green Infrastructure

Construction

Operations

TOD

Multimodal

Community

Agency

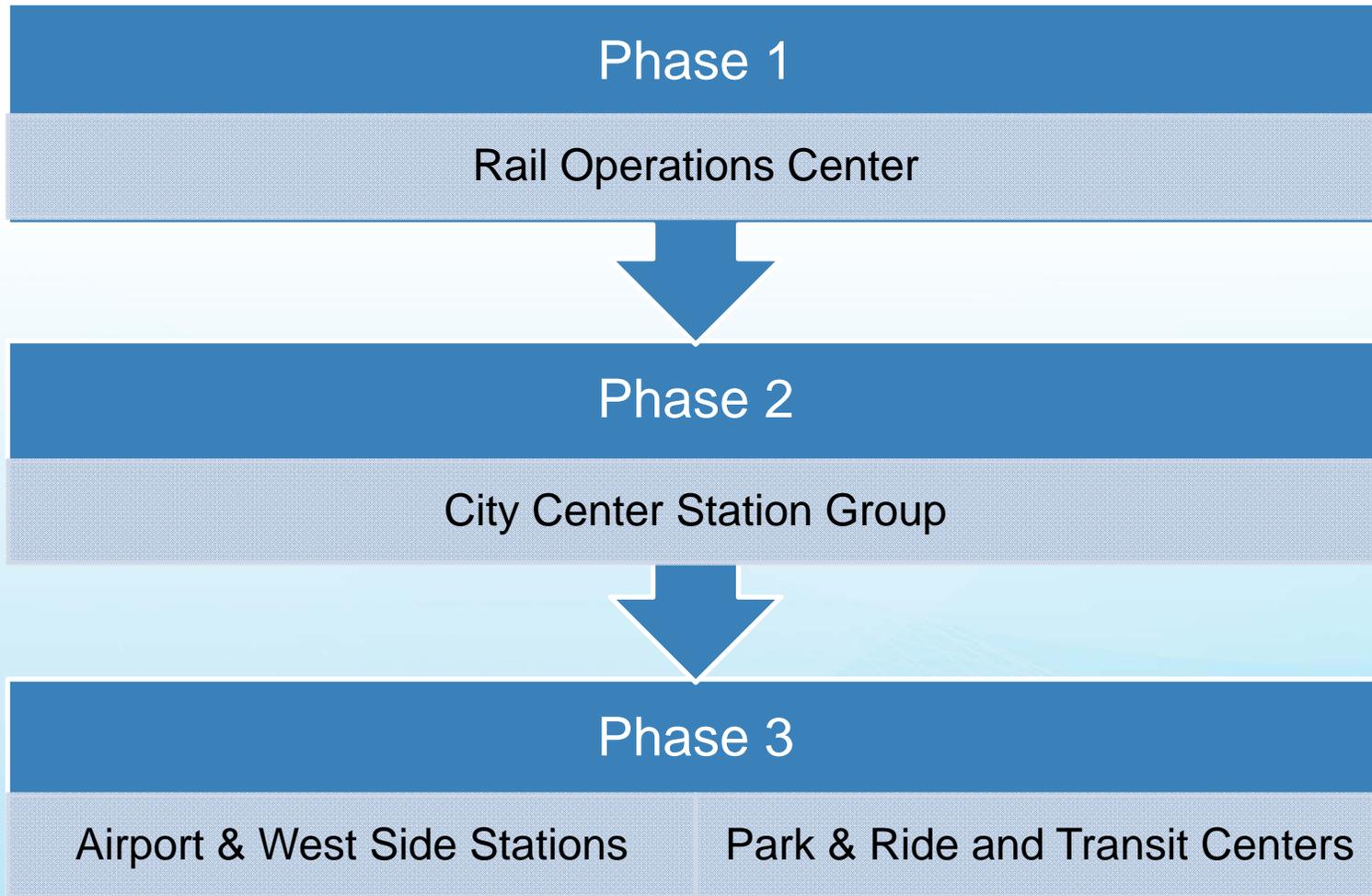
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# Renewable Energy Strategy



# Phase 1: Rail Operations Center

- **Purchase Power Agreement**
  - Third Party Agreement for installation and maintenance
  - No Capital Cost
  - Reduced Utility Cost
- **ROC Characteristics**
  - Ground and Roof Mount Available
  - Offset loads for Operations Service Building and Maintenance of Way building
  - Option for battery storage
  - RFP announcement in 2016



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## Phase 2: Downtown Stations

- PVs added to City Center Station and Guideway Design Build RFP to offset energy used by stations
- Integration into station package allows for built in photovoltaic panels (BIPVs)



# Phase 3: Airport & West Side Stations; Park & Ride

- RFP for PPA
  - 13 potential stations
  - 3 potential park & ride lots
  - Installation after construction of stations
  - Offset electrical loads



# LEED Silver Rail Operations Center

- Energy efficient designs energy savings and cost
  - Maintenance of Way: 20.6 percent
  - Operations Service Building: 15.6 percent
  - Average savings: 16.8 percent
- Expected rebate from Hawaii Energy of \$152,000; Opportunities for future rebate
- Recycled water to wash trains
- Eight electric vehicle charging stations



**Hawaii Energy**  
YOUR CONSERVATION & EFFICIENCY PROGRAM

# Parks and Trees

- Project mitigation includes \$750,000 in improvements to historic parks
- Coordinating with Department of Parks and Recreation & Enterprise Services to transplant affected street trees
- Local high schools are using repurposed wood



# Other initiatives

- Electric vehicle charging stations at all park-and-rides
- Bicycle parking at all stations
- Energy efficient escalators
  - 650 mWh/year savings
  - ~\$200,000 in savings per year, not including maintenance
- Over 3,000 LED lights which use 1/6 amount of energy as metal halide and last 3.5 times longer



# *Mahalo!*



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