



# WAIKIKI SEA WATER AIR CONDITIONING

**MAUKA // MAKAI**

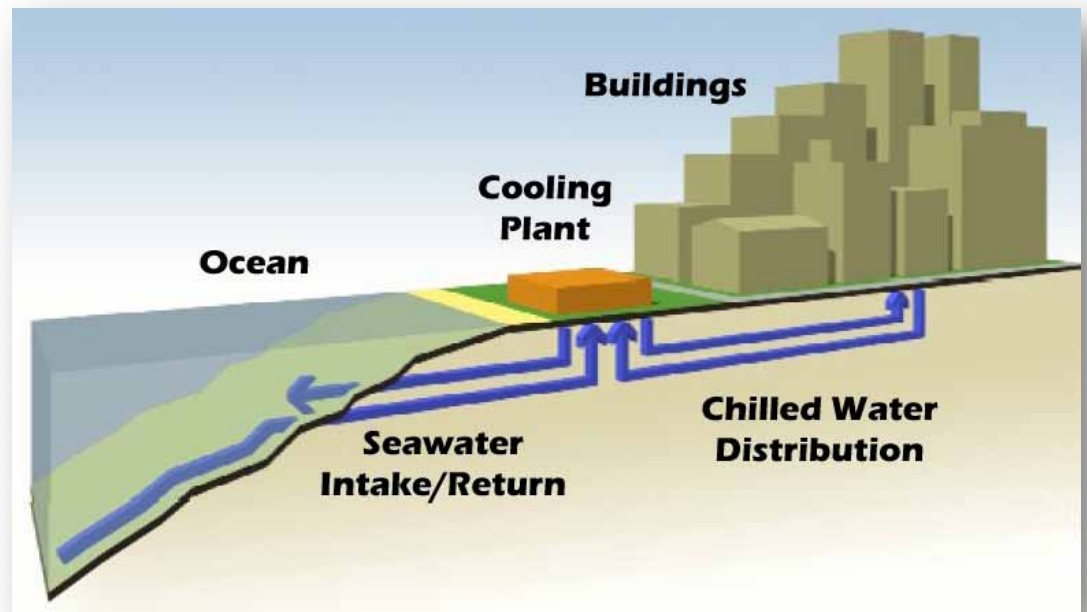
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2013   
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Summit and Expo

September 10, 2013

# What is Seawater Air Conditioning (SWAC)?

- SWAC replaces traditional air conditioning systems
- Cold seawater is pumped to cooling plant
- The cold temperature of the seawater is transferred to freshwater in a closed-loop system
- The chilled freshwater is provided to buildings for air conditioning usage



# Why SWAC in Waikiki?

## Hawaii's Challenges

Electrical rates are near the highest in the U.S.

## SWAC Solutions

Reduce customer electrical consumption by up to 40%

Waikiki SWAC (25,000 tons)	Fossil Fuels (barrels/yr.)	Electrical (kWh/yr.)	Emissions (tons/yr.)	Water (gallons/yr.)	Sewage (gallons/yr.)
<b>SAVINGS</b>	<b>118,750</b>	<b>53,750,000</b>	<b>56,250</b>	<b>175,000,000</b>	<b>77,500,000</b>

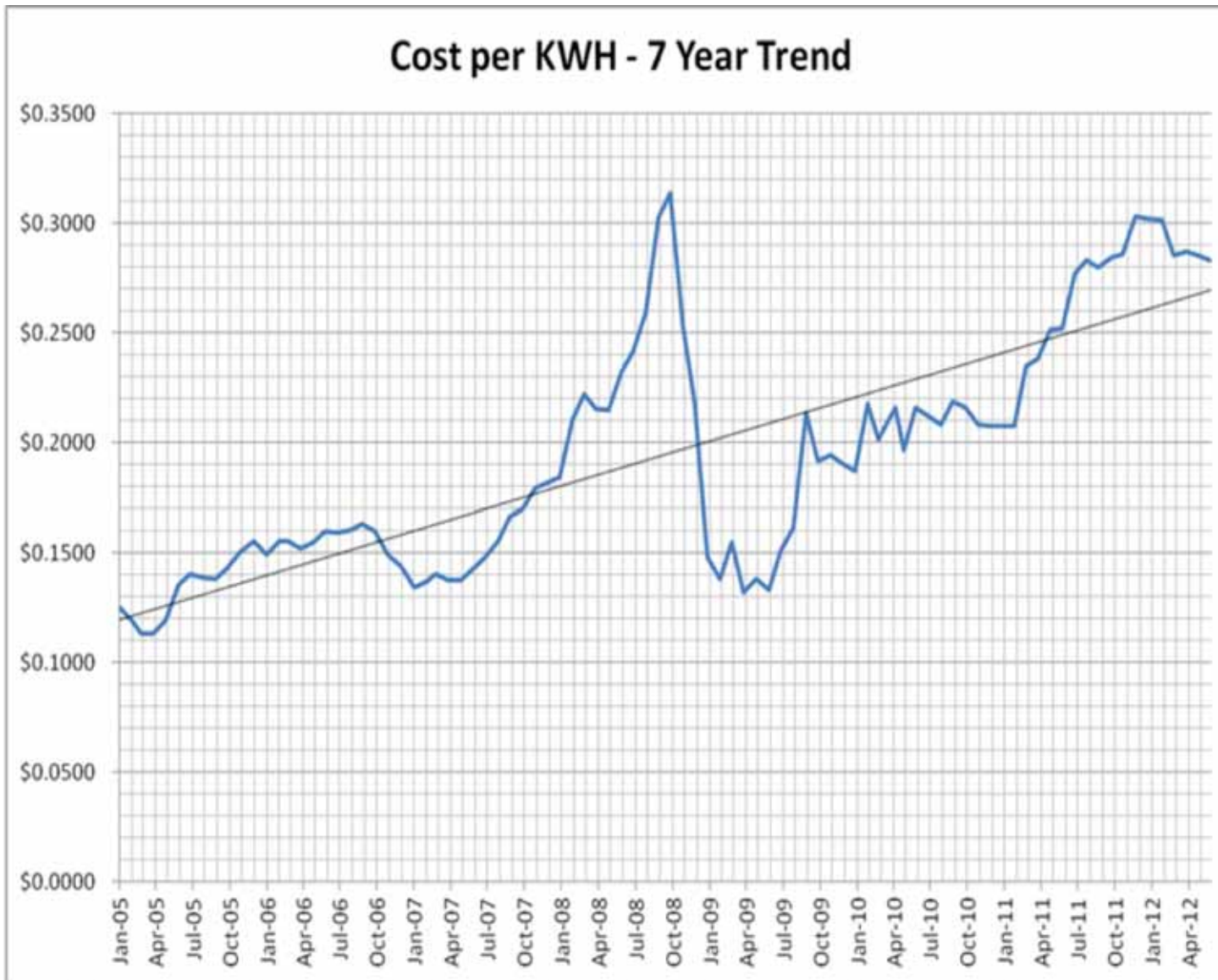
# Service Area



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# Electrical Trends



HECO rate increase:

- 12.3% per year
- \$0.0225 kWh per year
- 86% aggregate increase

# Customer Savings

5 Year Increments	<u>1 - 5</u>	<u>6 - 10</u>	<u>11 -15</u>	<u>16 -20</u>	<u>21 - 25</u>	<u>Total</u>
Electricity	379,300	1,572,451	3,268,595	5,634,309	8,886,591	<b>19,741,246</b>
% Savings	4%	13%	21%	28%	35%	<b>24%</b>

HECO Rate Increase	<u>Base (5%)</u>	<u>Average (10%)</u>	<u>Best (15%)</u>
<b>TOTAL SAVINGS</b>	<b>\$ 42,575,536</b>	<b>\$ 131,261,707</b>	<b>\$ 331,771,025</b>
<b>% Savings</b>	<b>16%</b>	<b>37%</b>	<b>59%</b>

<b>TOTAL SAVINGS</b>	<b>4,694,606</b>	<b>3,298,092</b>	<b>5,962,648</b>	<b>12,064,928</b>	<b>16,555,262</b>	<b>42,575,536</b>
<b>% Savings</b>	<b>19%</b>	<b>11%</b>	<b>13%</b>	<b>18%</b>	<b>17%</b>	<b>16%</b>

# Customers



Sheraton Princess Kaiulani



**Hilton**  
Hawaiian Village®  
Beach Resort & Spa



**Sheraton**  
WAIKIKI



CONVENTION CENTER  
Where Business and Aloha Meet



MOANA SURFRIDER  
A WESTIN RESORT  
WAIKIKI BEACH



Letters of Intent for 42% of Waikiki SWAC load

# Development Components

## Finance

- \$200M State approved Special Purpose Revenue Bonds (Act 129)
- Private Equity

## Customers

- Identified 50,000 tons of customer load
- Letters of Intent for 42% of Waikiki SWAC design load

## Entitlements

- City, State, & Federal agency coordination
- Ala Wai channel, directional drilling

## Site Location

- In negotiation with City, State, & private land owners
- Proximity to the Ala Wai canal



# Ancillary Uses



Waikiki beach replenishment



Education & research lab



Ala Wai canal flushing



Desalination facility



Chilled soil agriculture



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