

# Peer-to-Peer Workshop

*The Huntington Beach Experience  
Wednesday, November 7th, 2018*

# What You'll be Hearing Today

- I. Welcome & Introduction to SoCalREN Public Agency Program
- II. Peer Success Story: City of Huntington Beach
- III. Public Sector Financing Perspective
- IV. Technical Assistance Perspective
- V. Panel Discussion/Q&A—Let's hear from you!
- VI. Huntington Beach Public Library Tour!

# Today's Speakers



**Lauren Seymour**  
SoCalREN Project Manager  
The Energy Coalition



**Antonia Castro-Graham**  
Assistant to the City Manager  
City of Huntington Beach



**Eric Espino**  
Senior Managing Consultant  
PFM



**Sean Murphy**  
Energy Engineer  
Empowered Solutions

# Southern California REGIONAL ENERGY NETWORK



The SoCalREN Public Agency Program strives to achieve an unprecedented level of energy savings across Southern California by helping public agencies identify and implement projects



*The program is administered by the County of Los Angeles and funded by California utility ratepayers under the auspices of the CPUC*

Learn more about the Southern California Regional Energy Network at [www.socalren.com](http://www.socalren.com)



**Antonia Castro-Graham**  
Assistant to the City Manager  
City of Huntington Beach

# Peer Success Story

*City of Huntington Beach*



# HUNTINGTON BEACH AT A GLANCE

Fourth largest city in Orange County

Sixteenth largest city in California

City population nearly 200,000

More than 16 million beach visitors each year

26 square miles

9.5 miles of beach



# HUNTINGTON BEACH AT A GLANCE

- **Budget \$373.1 million**
- **Employees 950+**

Police (364), Fire (198), Community Services (44), Public Works (199), Library Services (28), Community Development (44), Information Services (30), Finance (33), Human Resources (15), City Attorney (12), City Clerk (4), City Treasurer (2), City Administration (8), City Council (1)





# CITY OF HUNTINGTON BEACH

## Profitability through Sustainability





# HB Broader Sustainability Strategies



- Energy Efficiency Projects
  - Streetlights Acquisition & Retrofits to LED lighting
  - Energy Incentives for Commercial Customers
  - SCE and Gas Company Rebates
- Recycling Market Development Zone (RMDZ)
- Sustainable Business Certification Program (part of California Green Business Network)
- Solar Installation and Battery Storage
- Environmental Board
- AEC Project

# Project Financing Tactics

- \$8 million streetlight acquisition and retrofit
  - California Infrastructure and Development Bank – CLEEN Center Loan – 1<sup>st</sup> in the State
  - California Energy Commission - \$3 million 1% loan only for retrofit
- Challenges with financing – bond restrictions on revenue generation opportunities.



# HB Experience: CEC

## Timeline:

- City submitted application October 2015
- Loan officially executed June 2016

## Project Details:

- Interest Rate: 1%
- \$3M Max Loan
- Eligible for EE Only
- No prepayment penalty

## Process & Reporting:

- Funds provided via reimbursement, invoices submitted and approved by CEC on rolling basis
- Requires Quarterly Reporting



# HB Experience: IBank

## Timeline:

- City submitted application August 2015
- Loan officially executed November 2015

## Project Details:

- Interest Rate: 2.3%
- [\\$7.6M Loan Approved](#)
- Eligible for acquisition, cutover, and retrofit
- Negotiated no prepayment penalty

## Process & Reporting:

- Funds provided via reimbursement, invoices submitted and approved by CA IBank on rolling basis
- Requires Quarterly Reporting







**Eric Espino**

Senior Managing Consultant  
PFM Financial Advisors LLC

# Public Sector Financing Perspective

# PFM and Environmental Finance

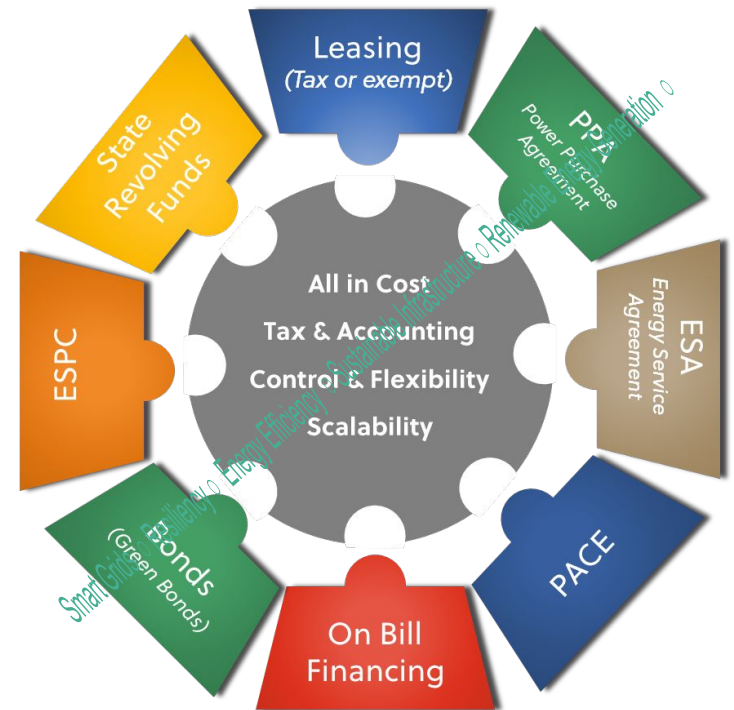
PFM's Environmental Finance Group works with SoCalREN to provide independent financial advice to ensure maximum value is achieved when agencies are considering efficiency projects.

## Planning Phase

- Financial assessment and scenario analysis
- Unbundling of project costs to evaluate assumptions and maximize savings opportunities
- Stakeholder education assistance
- RFQ/RFP assistance for project/financing implementation

## **Implementation Phase**

- Full economic analysis with ongoing updates
- Funding RFP, analysis, and selection assistance
- Timeline, documentation, and contracting alignment for successful implementation



# Environmental Finance Engagements

## Property Assessed Clean Energy (PACE) Programs

- Our team helped establish what is now the largest PACE program in the country and we are working with a number of other government agencies to begin or expand residential as well as commercial PACE programs around the country
- We provide financial, operational, as well as technology support for PACE clients



## City of Palmdale– SoCalREN Energy Efficiency Financing

- Through our partnership with SoCalREN, PFM served as the financial advisor for the City as it executed a lease purchase agreement to fund energy efficiency projects.
- Through the financing, the City was able to achieve net savings through the term of financing as a result of reduced utility costs.



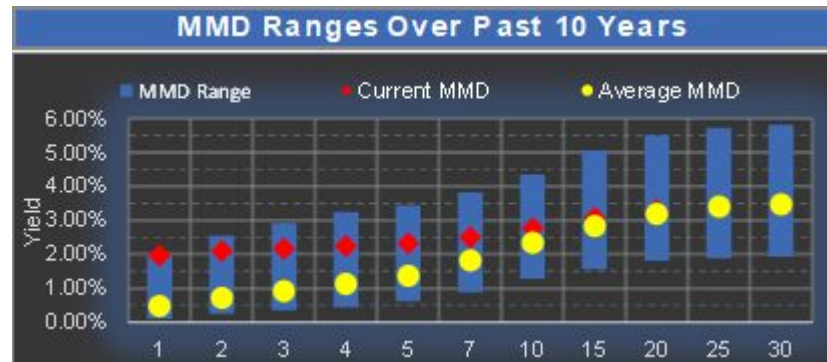
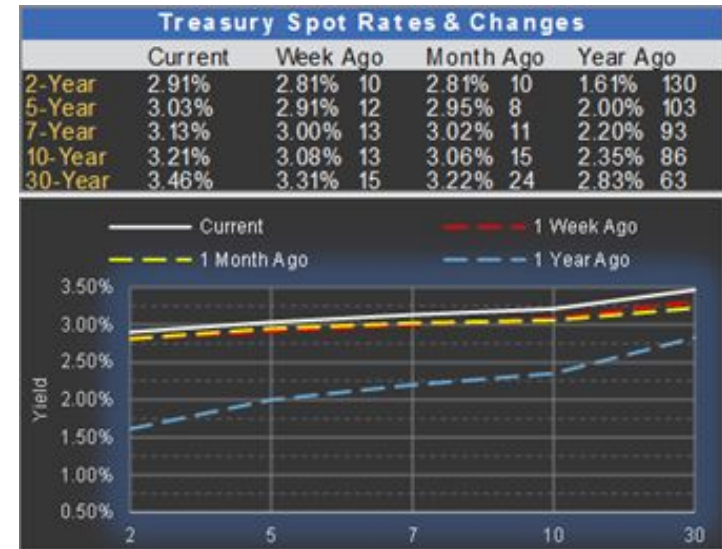
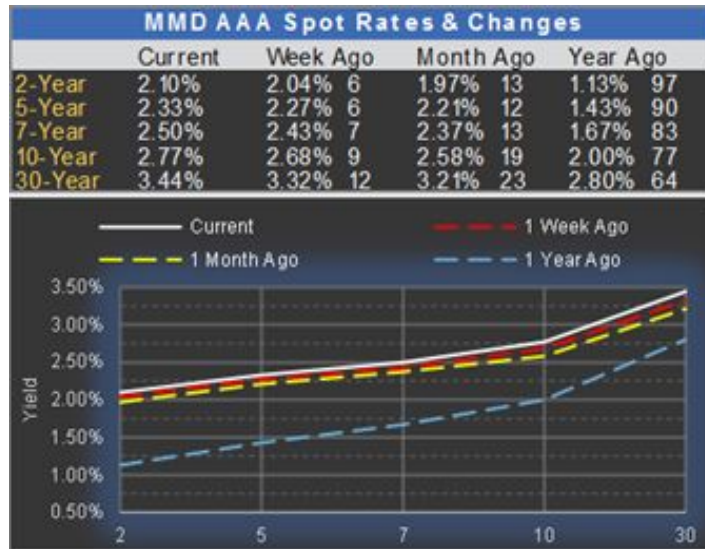
## City of Simi Valley, CA – Energy Efficiency Financing

- PFM has worked with the City to develop financing for multiple projects using both taxable and tax-exempt lease structures
- Assisted with the application that led to award of tax credit bonds (Clean Renewable Energy Bonds) and structured lease program to replace pledged real property collateral upon completion of solar installation. Subsequent energy project was able to re-use property for tax-exempt lease.



# Market Update

## Increasing Interest Rates but Still Below Historical Highs





# Financing Trends

## Interest in Energy Efficiency Project Remains Strong But Headwinds are Forming

- Significant interest in sustainability, “green,” or ESG projects
- Rising interest costs can impact project economics
- Incentives exist but some resources are being depleted or phased out
- “Low-hanging fruit” projects are not as prevalent – what next?
- Smaller projects not always attractive but bundling of projects can move projects forward
- Regional Financing mechanisms – WRCOG Regional Streetlight Program
- Los Angeles County Revolving Loan Fund to provide bridge funding for projects (2019)
- Increasing marketing by Energy as a Service providers

# Summary of Financing Options

(other than traditional bonds)

	Budget Financing	Leasing	ESA	ESPC	PPA/P3
<b>Suitable Projects</b>	All	All multi-use equipment	Energy efficiency	Energy efficiency	Renewable generation
<b>Project Owner</b>	Host (Muni)	Muni (typically)	Developer/SPV	Host (Muni)	Developer / SPV
<b>Balance Sheet</b>	On B/S	Exempt: on B/S Tax lease: either	Off B/S (operating lease) <sup>1</sup>	On B/S (most cases)	Off BS (most cases)
<b>Typical Project Size</b>	All within budget	\$2mm - \$200mm	\$2mm - \$10mm	Avg. \$15mm	\$10mm+
<b>Avg. Term</b>	N/A	Useful Life Typically < 15 years	5 – 10 years	10 – 20 years	Varies, typically > 10 years with EBO
<b>Payment Method</b>	N/A	Periodic rent payments (can be tailored)	Portion of energy savings (avoided cost) payments to ESCO	Share energy bill savings with ESCO over contract term	Cost per kWh energy under take or pay contract. Prepay may be attractive
<b>Indicative Pricing</b>	Cost of allocated balance sheet	Market borrowing rate (taxable or tax-exempt)	0-20% (dependent on payback, credit, term & tax)	0-20% (depends on payback, credit & term)	Varies with incentive technology, & development costs
<b>Advantages</b>	Quick , simple no fees Retained ownership	100% financing Not debt Usually direct placement	100% financing Install & ops. by ESCO Tax efficient for Muni	Owned by Host Performance gty. Gty. helps financing	No up front cost Development risk Tax efficient for Muni
<b>Considerations</b>	Budgetary asset efficiency Dev / Operations	Min size Fees/Docs (tax) Prepayment cost	Mortgage restrictions Performance gty.	Net savings greater than finance cost. Lease finance Baseline energy	Developer & EPC Partnership issues Fees/Docs

1. Host may need to record PV of future payments on B/S beginning in Dec. 2018. Clients should consult with their tax and accounting advisors

2. Based on many assumptions including AA credit & 10 year term (20% residual, 5 year equipment life & no PO for tax lease)

# SoCalREN Project Lease Financing

- Flexible financing tool for Public Projects
- Designed for public agencies trying to finance energy efficiency, water conservation, and renewable energy projects.
  - Standardized documentation and process
- Up to 20-year borrowing terms
- Funds received prior to start of construction
  - Not a reimbursement program

# Communicating with Finance Departments

Effective Communication and Messaging with Finance Colleagues Can Be Key to Project Success

Their Concerns:	Responses:
Budget, budget, budget!	Financing can offset large capital expenditures in one budget year and spread costs across budget years
Prioritization of projects	
Can it free up revenue in future years?	
Projects are too small for financing	Smaller projects can be bundled or included in larger financing to achieve economies of scale
Is project self-sufficient?	Projects can be self-supporting and debt service paid through project savings
Does agency have assets to pledge as collateral?	Including financial advisor in your communications with finance team can assist in making case
What type of financing is required and how will additional debt impact credit rating?	
Will project end up in headlines or result in questions from senior management?	Energy Efficiency projects can generate positive headlines and provide a good story for elected officials to convey to citizens



# Resources

Many resources exist to assist government agencies in evaluating Environmental Finance Projects

Resources for government agencies include:

- Energy audits
- Assistance with project selection
- Utility rebate & incentive application support
- Financing tools
- Events, whitepapers, and policy guidance
- Financial Advisor to assist with financial analysis and financing execution

# Disclosures

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**Sean Murphy**  
P.E., C.E.M., LEED AP  
Energy Engineer  
Empowered Solutions

# Technical Assistance Perspective

# Facility Overview



- 118,400 ft<sup>2</sup>: built 1975 (75,400 ft<sup>2</sup>), expanded 1994 (43,000ft<sup>2</sup>)
- Primarily library stacks with reading rooms, meeting rooms, and theaters
- 2,900,000 kWh/yr; 27,000 therms/yr
- 1,600,000 kWh/yr via solar PV
- \$272,000 /yr total energy costs
- 8 packaged AC units (DX cooling, gas heat)
- 4 built-up dual-duct AHUs (CHW cooling, HW heating)
- 350-ton chiller and cooling tower
- 2 x 1500 MBH boilers, 1 x 600 MBH boiler

# Project Identification - Airside

- 4 AHUs and 8 AC Units
- Mechanical Capabilities
  - Supply, return, exhaust fan VFDs
  - Outside air economizers, power exhaust fans
  - Unit replacement, coil cleaning, duct sealing
- Control Sequences of Operation
  - Scheduling, optimal start, setbacks
  - HVAC occupancy sensors
  - Demand-control ventilation
  - Heating, cooling, economizer control
  - Setpoints: ZAT, SAT, static pressure
  - Resets on setpoints



# Project Identification - Hydronic

## Chillers and Cooling Towers

- Unit replacement, VFD retrofit
- Staging parallel equipment
- Setpoints and resets: CHW and CW



## Boilers

- Unit replacement, cleaning, descaling
- Staging parallel equipment
- Setpoints, resets, OAT lockouts

## Pumps

- VFD retrofit, isolate bypass piping, 3-way to 2-way valves
- Staging parallel equipment
- Setpoints, resets, interlocks

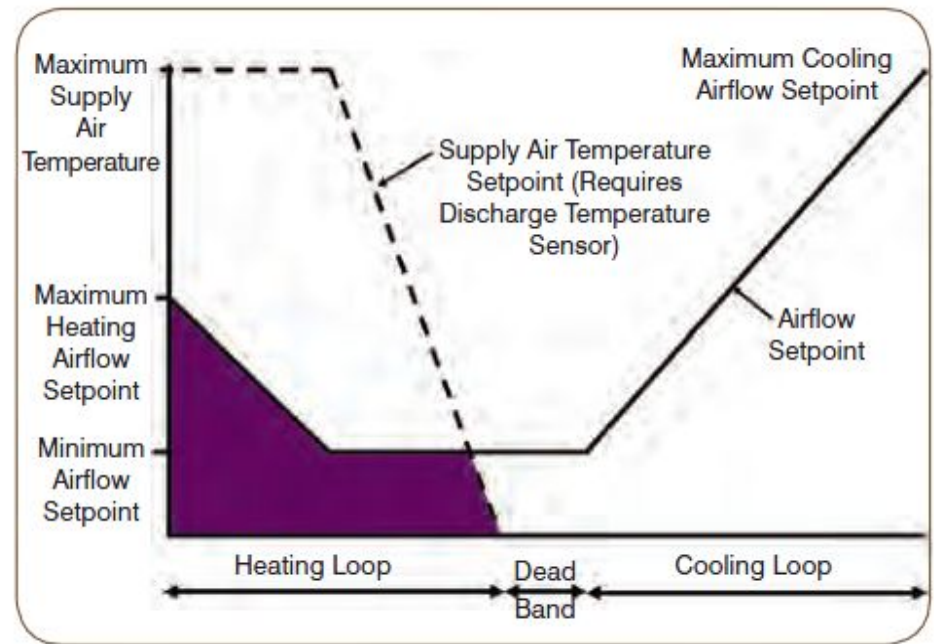




# Project Development

## AC-3 and AC-8 Supply and Exhaust Fan VFD Retrofit

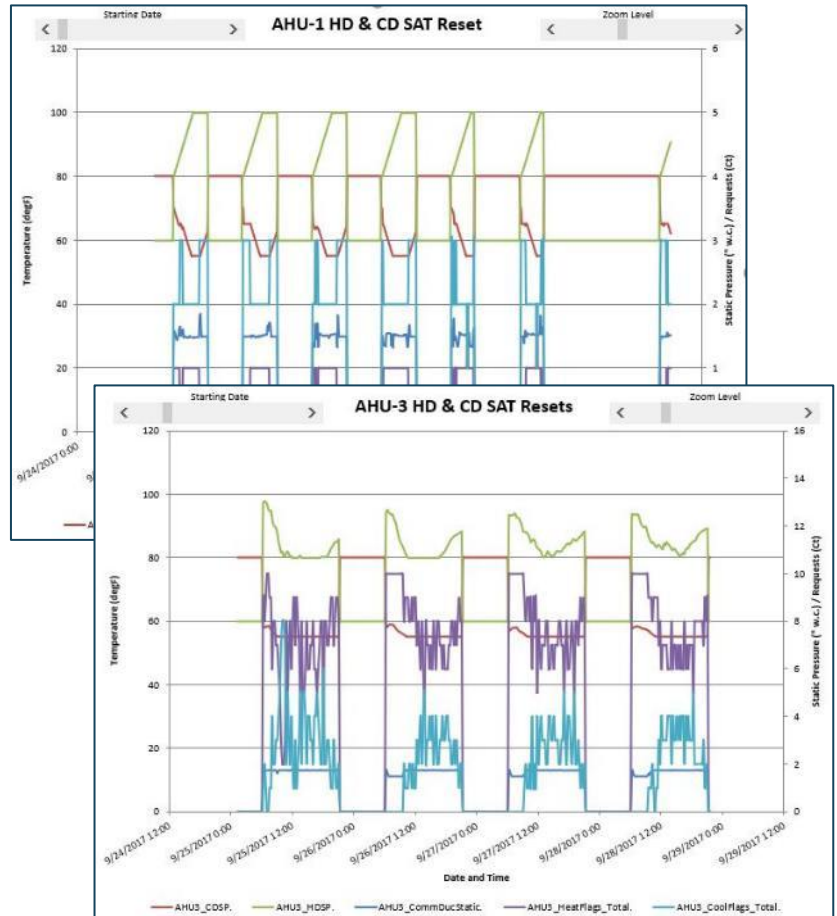
- AC units in good condition and not slated for replacement
- Supply and exhaust fans are large enough (5-20 hp) for retrofit to provide financial payback worthy of cost and effort
- Single zone AC units with straightforward control sequence allows for airflow to reduce before reducing heating and cooling



# Project Development

## AHU Supply Air Temperature Reset Optimization

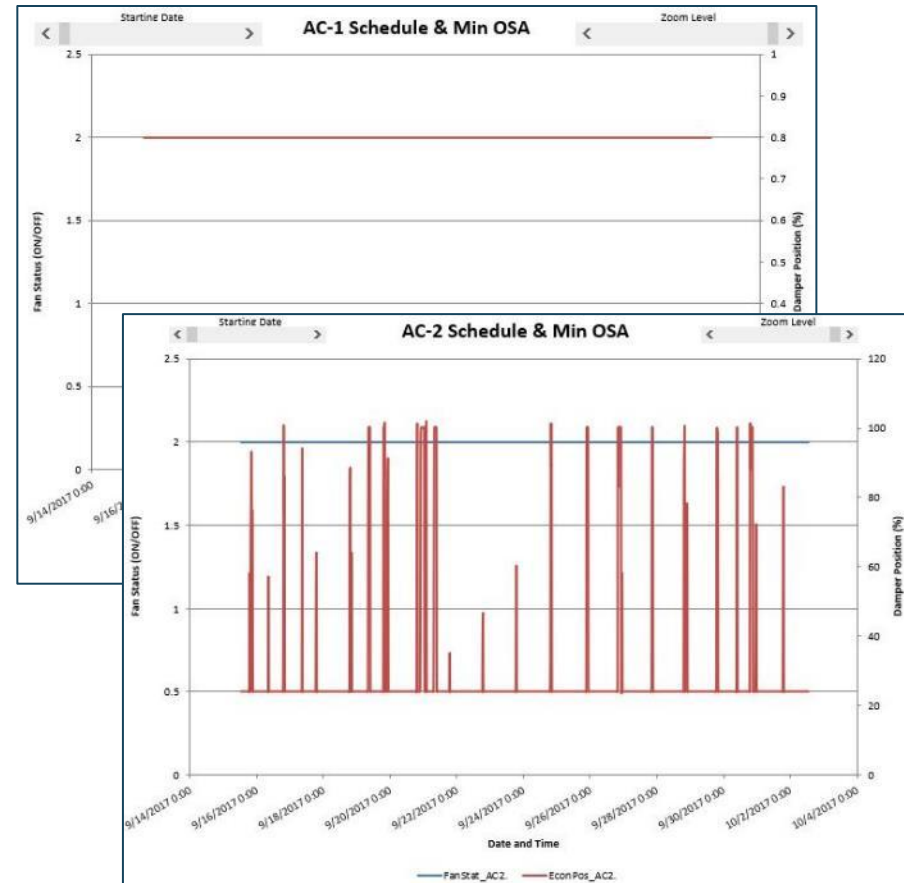
- Dual-duct air handlers present unique challenges and opportunities
- SAT reset was already programmed for AHUs, but simultaneous heating and cooling persisted
- Proposed SOO would eliminate simultaneous heating and cooling based directly on zone temperature conditions



# Project Development

## AC-1 and AC-2 HVAC Occupancy Sensor

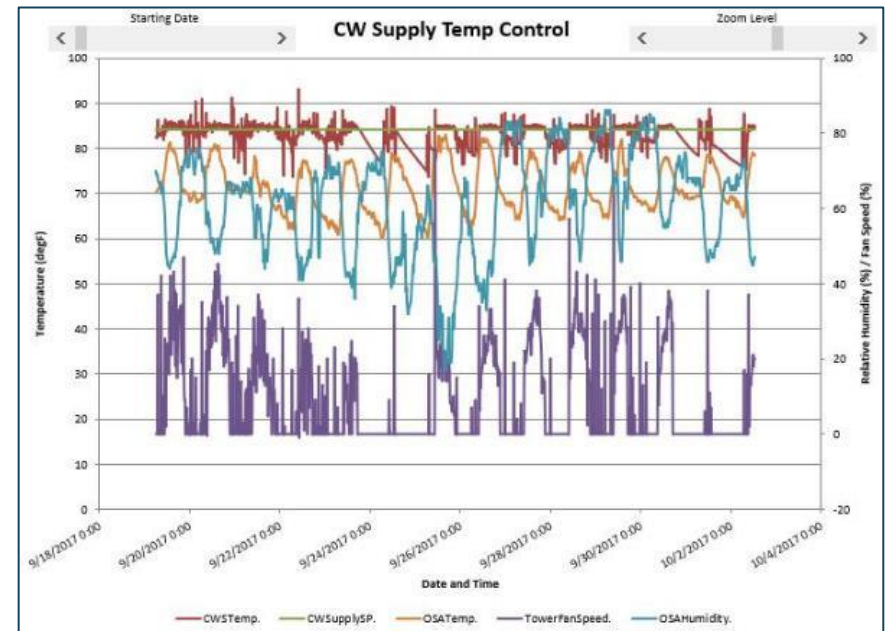
- AC-1 and AC-2 serve individual meetings rooms and were programmed to operate 24/7 due to erratic room use
- HVAC occupancy sensors allow the room setpoints to setback when unoccupied and respond when occupied
- Simple retrofit with significant savings potential



# Project Development

## Condenser Water Supply Temperature Reset

- Currently a fixed condenser water supply temperature (CWST) setpoint being maintained by CT fan VFD
- Fixed setpoint causes CT fan VFD to run excessively hard sometimes and not adjust to maximize chiller efficiency
- Simple programming measure with little-to-no material cost



$LWT_{sp} = WB + 0.29 * (WB_{dsn} - WB)$ , where

$LWT_{sp}$  = leaving condenser water temperature setpoint

$WB$  = actual outside air wetbulb temperature

$WB_{dsn}$  = design wetbulb temperature for CZ06, 69°F (ASHRAE)

# Utility Incentives - Challenges

- Potential for changes to incentives and programs, likely reducing incentivized measures
- Extensive documentation and energy modeling requirements, irrespective of project complexity
- Lead-time and review time from incentive application submission to incentive application project approval
- 12-month time limit from project approval to project completion

# Utility Incentives - Opportunities

- New Behavioral, Retro Commissioning, and Operational (BRO) incentivized measures with existing-condition baseline for incentives
- New and growing programs and opportunities that capture measured savings based on reduction of metered energy consumption – limited review of calculations, limited site inspections
- Energy Leadership Partnerships (ELPs) can double or triple incentives, increasing the cost cap to 80%!



Panel Discussion  
*Let's Hear from You!*

# Panel/Q&A



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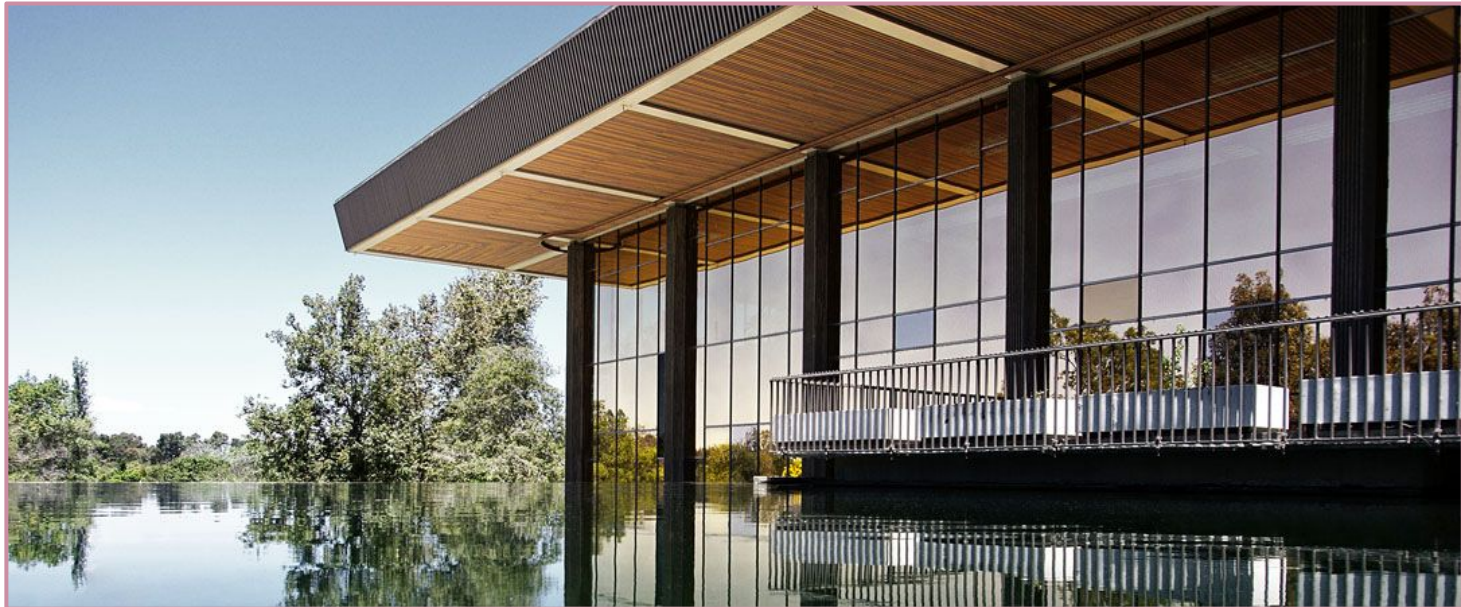
**Eric Espino**  
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# The Huntington Beach Library

Teeing up our tour!



# *Thank you for joining us today!*

## **Additional Questions? Contact us:**

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