

# About Riverside Public Utilities

- Riverside Public Utilities is a consumer-owned water and electric utility
- Established in 1895
- Southern California
- Approximately 120,00 Customers





**IFAS**  
 • Financial data

**Outage Mgmt**  
 • Outage data  
 • Automated analytics & reports



**SAS & Synergi**  
 • Planning analytics tool

# PI SYSTEM

**Substation Data**  
 • Equipment alarms  
 • Ability to prevent equipment failure  
 • Condition-based maintenance



**Oracle UWAM**  
 • Work order and asset management data

**Electric & Water SCADA**  
 • System alarms  
 • Events



**GIS**  
 • Changing the way our field crews work  
 • Enhancing decision-making



**Land Mobile Radio**  
 • Vehicle location



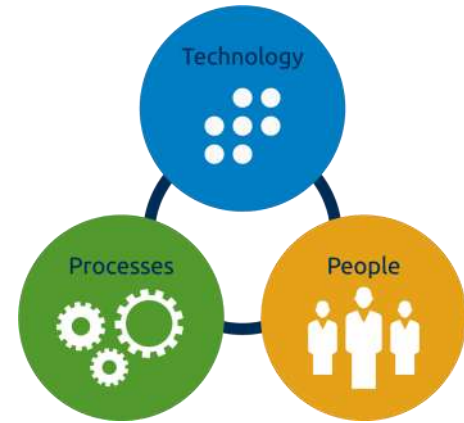
**Grid Sensors**  
 • More visibility into outages  
 • Faster response times



**Other**  
 • Weather, CAISO & spreadsheets

# What we Accomplished

1. Digital and **connected** utility
  - Connect people, processes and data across the utility
2. More **visibility** into our system
  - Transform data into **information**
3. **Actionable** intelligence
  - Empower the business units through technology to make better business decisions





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National Institutes of Health  
*Turning Discovery Into Health*



# Data and Analytics Driven Operational Excellence

Presented by: Brandon Wagner, Brian Clifford, Don Guan  
Division of Technical Resources  
National Institutes of Health

# NIH and What We Do

- A federal government agent
- Leading biomedical research center
- Annual research funding ~ \$37 billion
- 27 research institutes
- 18,000 employees, 4,000 post-doctors and 1,200 principal investigators
- Houses world-class 240-bed research hospital
- Total area~12 million sqft, many state-of-the-art research facilities



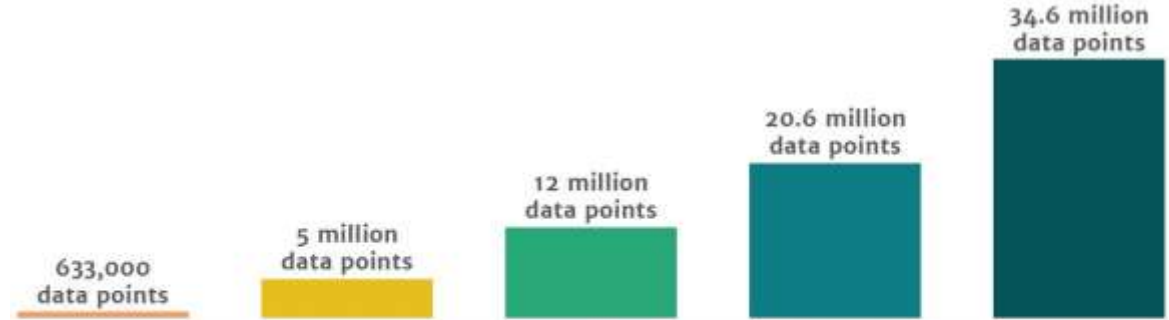
# NIH Central Utility Plant (CUP) Overview

- One of the largest CUPs under one roof in the USA
- Provides campus with chilled water, steam, electricity, and compressed air
- CUP Component
  - Twelve 5,000 Ton capacity chillers
  - Five gas/ diesel dual fuel fired boilers
  - 800 KPPH, 980 KPPH w/Cogen
  - Cogeneration Power Plant**
  - One the cleanest Cogen plants in the world
  - 23 MW, 180KPPH steam (40% of campus demand)
  - ~ \$7.5 Million Per Year Savings in Energy
  - Cogeneration Energy Savings is Equivalent to Energy Usage of ~ 5,000 house, reduce CO<sub>2</sub> emissions equivalent to emissions from 10,000 cars.



# CUP from a Data Analytics Perspective

- **Data Management Platform** is at the heart of **actionable** operational intelligence.
- Goal: leverage Data Management platform and assist real-time operational decision making and systems optimization





# Data Platform Powering the CUP Control Room



You can't manage what you can't measure!

# Predictive Analytics - ANN based Load Forecaster

96-hour Forecast Data

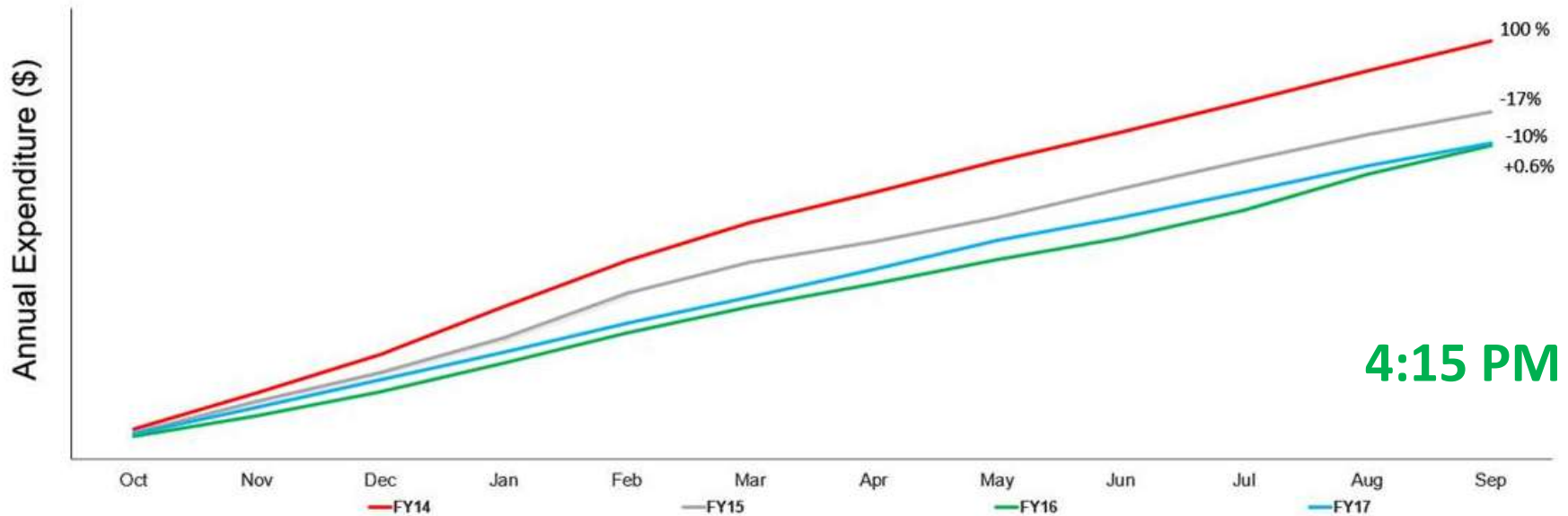


\*Not the actual data

# Tangible Results – Financial

Millions of dollars saved despite increased utility cost & demand!

Bethesda Campus Energy & Water Billing



4:15 PM



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# About Aera

- One of California's largest oil and gas producers
- Produces ~25% of California's oil and gas
- Formed in June 1997
- ~1100 employees
- Owned by affiliates of Shell and ExxonMobil

*“Our energy powers great todays  
and better tomorrows.”*

Who We Are

**About  
Aera**

Our EA PI  
Journey

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2017

Thank you

# Our EA PI System journey

- Started our PI System journey in December 2014
- Built out PI System infrastructure for 9 months
- Currently pulling ~1.1 million tags from all 6 locations
- ~30 active users (and growing), leveraging PI DataLink and/or PI Coresight (Vision) dashboards into our daily work activities

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**Our EA PI  
Journey**

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## Just one example of Digital Transformation

Aera's largest field (Belridge):

- Pipeline health dashboard  
~\$6.8 million annual savings
- Pressure transient analysis  
~\$7.2 million annual savings

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Thank you

# Thank you

From Aera Energy to everyone  
in the PI Community, we thank  
you all

(visit Marcus Coleman at session Wednesday 10:45 – 11:30 to learn more)



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