# Building Resilient, Sustainable Riverfronts

**Infrastructure Modernization | Economic Development | Fiscal Responsibility | Community**

OPTERRA
ENERGY SERVICES

IRCTI

# About OPTERRA Energy Services

*We partner with public institutions to build safer, healthier, and more resilient communities through efficient facilities and infrastructure.*

**50+ Years**
of Experience

**9,000+**
Energy Projects

**300 Employees**
Across the U.S.

LS Power

*OPTERRA is part of the LS Power family.*

**50,000 MW**
of Power Generation

**$65 Billion Invested**
In N.A. Infrastructure

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# Our Long History of Operations in Illinois


Full-service team operating out of our Central Regional Offices during the past 50+ years to service our Illinois customers

**IL PUBLIC INSTITUTIONAL PARTNERS**

# Facility & Infrastructure Modernization Measures

## Energy Management & Controls

### Controls
- Building automation controls
- Energy management systems
- HVAC set-point optimization
- Smart sensors & devices
- Variable frequency drives

### Commissioning
- Continuous commissioning
- HVAC tuning / retro-commissioning
- Operations & Maintenance
- Rooftop retro-commissioning
- Steam system retro-commissioning
- Remote Energy Monitoring

### Safety and Security Measures
- Electronic access locks
- Motion sensors
- Networked video-surveillance system

## Lighting

### Lighting Systems
- Human Centric Lighting
- LED lighting retrofits of fluorescent lights
- Natural lighting systems
- Replacing exit sign lamps with LED
- Replacing exterior / parking structure lighting with energy efficient lighting systems such as T8, induction or LED
- Replacing incandescent and halogen lamps with LED

### Lighting Controls
- Advanced controls with programmable ballast, integration with HVAC controls
- Bi-level switching
- Daylight harvesting
- Dimming
- Lighting schedule through programmable controllers
- Motion sensors
- Occupancy sensors

## Heating and Cooling Systems

### Air Side
- Demand ventilation
- Efficient fume exhaust hoods
- Heat reclamation
- Heat recovery units (enthalpy wheels)
- Outside air economizers
- Radiant heating

### Central Plant & Mechanical Room
- Electric motor replacement
- Energy recovery
- Heat exchanger systems
- High efficiency boilers
- High efficiency chillers
- Tower free cooling
- Waste heat recovery
- Water treatment systems

### Influences / Other
- Building envelope improvements
- Efficient monitor conversion & network upgrades
- Facility maintenance (re-training)
- Operating practices
- Power factor correction
- Water conservation & efficiency

## Renewables & Energy Storage

### Renewable Energy
- Cogeneration / CHP
- Geothermal
- Ground source heat pump
- Solar photovoltaic (PV)
- Solar thermal
- Waste-to-Energy / Biogas
- Wind

### Storage
- Energy storage / batteries
- Microgrids
- Thermal energy storage

## Water Conservation

- Toilet and urinal recalibration for optimal flow
- Low-flow toilet and urinal fixture replacements
- Low-flow sink and showerhead flow controls
- Smart irrigation controls
- Landscape run-off reduction

## Mobility

- Fleet transition plans (phased implementation strategies)
- Energy & smart charging infrastructure
- Resilient microgrids
- Other technology deployments (Wi-Fi, security cameras, etc.)

## Services

- Building Information Modeling (BIM)
- Education & engagement
- Engineering
- Facilities Management
- Measurement & Verification
- Operations & Maintenance
- Preventative and predictive maintenance
- Project & construction management
- Utility monitoring

# Strategic Approach to Sustainable Growth - IRCTI

ESPC improvement services target hard to fund projects in **high impact areas** by leveraging energy and operational savings to accelerate infrastructure modernization and economic development across Illinois River Cities & Towns.

**Village Hall & Courthouses**

- Mechanical Systems
- Lighting
- ADA Accessibility

**Renewable Energy**

- Geothermal
- Solar
- EV Charging
- Microgrids

**Water, Wastewater & Stormwater Flood Mitigation**

- Distribution
- Collection
- Pumping Systems
- Lift Stations

**Street Lighting & Traffic Signals**

- LED Upgrades
- Efficient Control Systems

**Riverfronts**

**Fire & EMS Facilities**

**Parks & Outdoor Public Spaces**

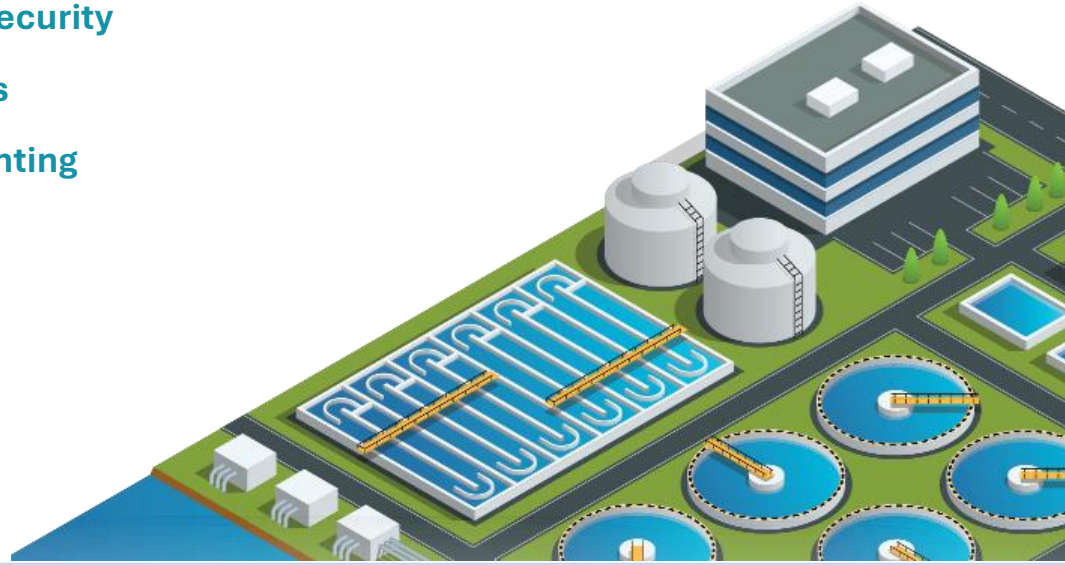
**Safety & Security**

**Restrooms**

**Sports Lighting**

**Irrigation**

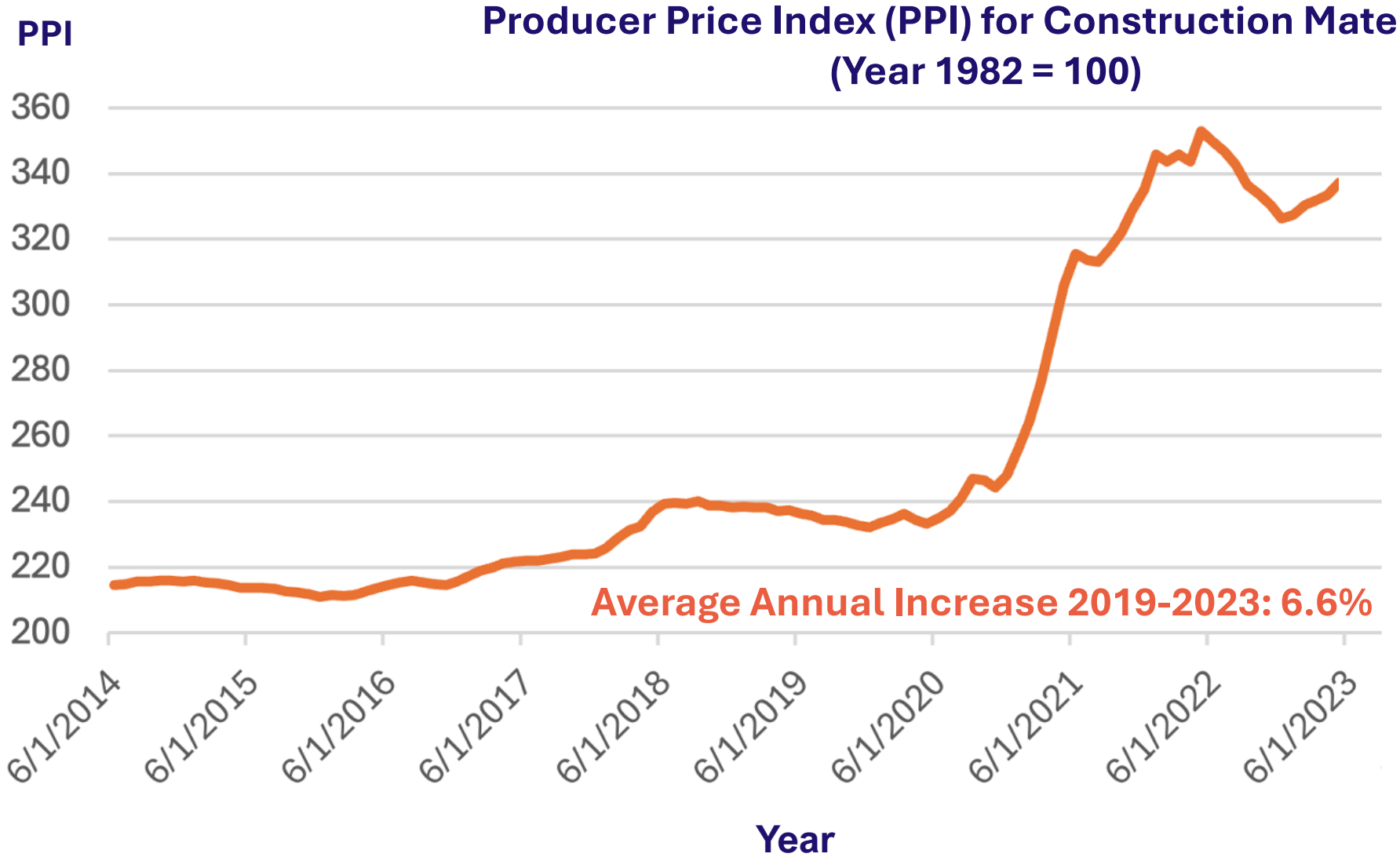
**Sidewalks**



# But How Do We Pay for It?

**PROTECTING AGAINST INFLATION**

6.6% average over the last 5 years versus 2.6% CPI




**CONSTRUCTION INFLATION AVERAGED 6.6% OVER THE PAST 5 YEARS**

**PIECEMEAL PROJECTS COST THE OWNER MORE OVER TIME**

# Illinois State Law

*50 ILCS 515 Energy savings performance contracting*

Local Government Energy Conservation Act, 50 ILCS 515; where as a local government may enter into such an agreement with a qualified provider if it finds that the amount it would spend on the project does not exceed the amount to be saved in either energy or operational costs, or both, within a 20-year period from the date of installation.

**"Energy performance contract**" or "**energy services agreement" means a contract between the governmental unit and a qualified energy service provider for evaluation, recommendation, and implementation of one or more cost-savings measures.** A performance contract may be structured as a guaranteed energy savings performance contract, which shall include, at a minimum, the design and installation of equipment, and, if applicable, operation and maintenance of any of the measures implemented, and guaranteed annual savings which must meet or exceed the total annual contract payments made by the governmental unit for that contract, including financing charges to be incurred by the governmental unit over the life of the contract;

# Energy Performance Contracts

## Local Government Energy Conservation Act, 50 ILCS 515

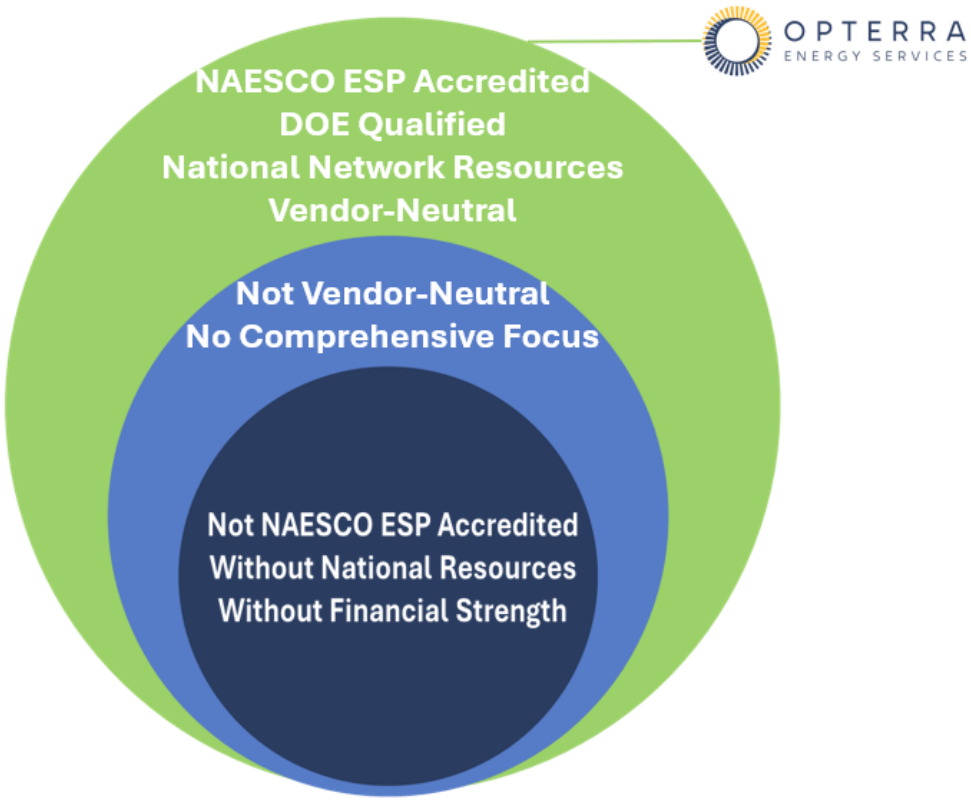
**What is it?**

**Infrastructure funded through guaranteed energy cost savings and operational savings over time**

- ☑ No/low upfront capital requirement
- ☑ Guaranteed performance metrics
- ☑ Ideal for established facilities with inefficient systems

# Top-Rated Independently Accredited ESCO

NAESCO® National Association of Energy Service Companies




**NAESCO**-accredited companies are **industry experts in Energy Savings Performance Contracts** (ESPCs): a critical aspect of **financing energy upgrades with no upfront capital**.

**Why it matters:** It gives you confidence the firm you selected has **sound business practices**, **ethical standards**, and can **structure, implement, and measure savings in complex, multi-year energy** projects.

NAESCO ACCREDITED Energy Service Provider

U.S. DEPARTMENT OF ENERGY DOE Qualified ESCO

# Dollars for Food vs. Dollars for the Future?

## A true story

# Contra Costa County Fire Protection District

Running empty on funds, they were seeking new ideas to update ageing infrastructure

## Challenge

- ❑ Outdated Heating & Cooling Equipment across the County
- ❑ HVAC units up to 30 years old
- ❑ Boiler was nearly 50 years old.
- ❑ No funding for upgrades

## Solution

- ✓ Accurately assessed public infrastructure and facilities
- ✓ Developed an energy master plan
- ✓ Prioritized and implemented projects to meet the customer's goals for cost savings and greenhouse gas emissions reduction

**100 %** ROI

**55%** Reduction in utility expenses

**$6.4m** in energy savings over the life of the installation after paying all project costs

“OPTERRA’s committed and hardworking team worked diligently with us to upgrade our outdated heating and cooling equipment across the District.”

**- Lewis Broschard, Deputy Fire Chief,**
**Contra Costa County Fire Protection District**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# Award-Winning Energy Saving Performance Contracts

## CUSTOMER AWARDS

**2024**
NAESCO Project of the Year Award – City of Menlo Park

**2024**
DC Smart Street Lighting

**2022**
Climate Protection Award –
City of Suisun City

**2020**
City of Pismo Beach

**2022**
City of Milpitas
City of Suisun City

**2019**
Best of Green Schools Award – South San Francisco Unified School District

**2018**
Honowai Elementary School

**2019**
Kapalama Elementary School

**2017**
Huntington Beach City School District

**2018**
South San Francisco Unified School District

**2016**
Forbes Impact Award – Hartnell College

**2012**
Princeton Review's Top Green Colleges in the US – Eastern Michigan University

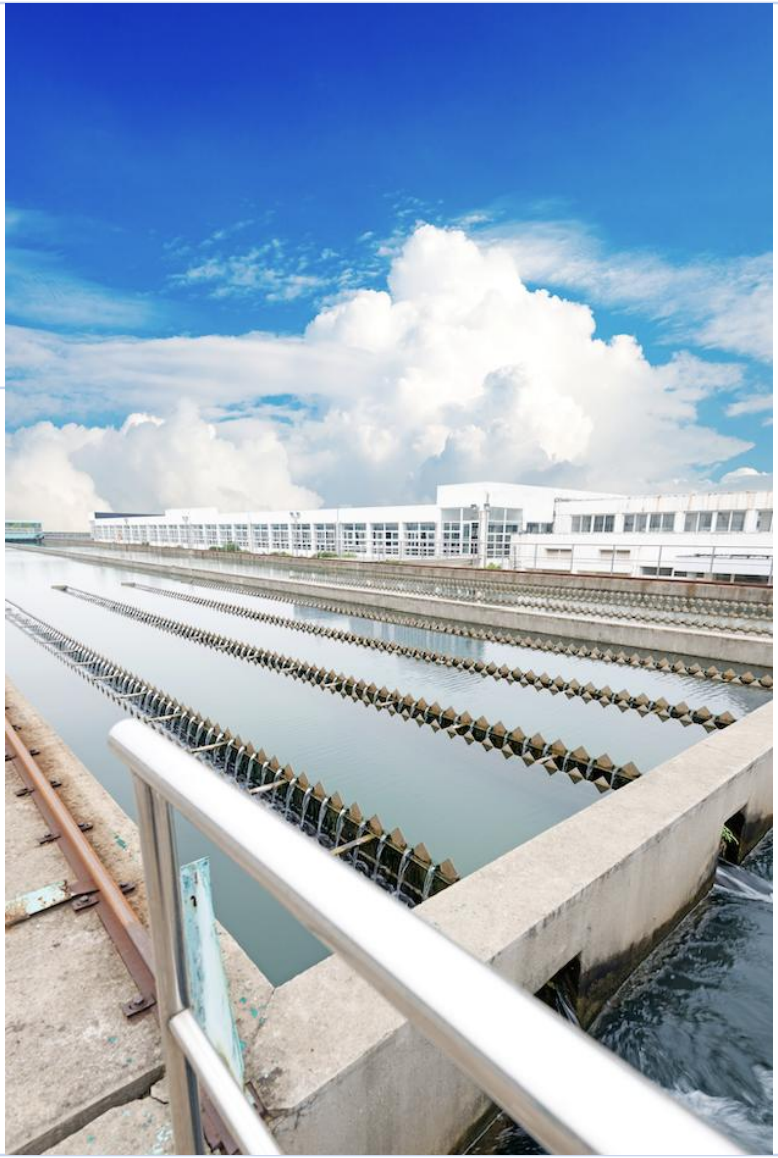
**2012**
Energy Services Coalition – Energy Efficiency Project

"With this project, we're doing so much more than just replacing lights – we're making our streets safer, our communities more connected, and our city more resilient."

**– Muriel Bowser, Mayor, Washington, D.C.**

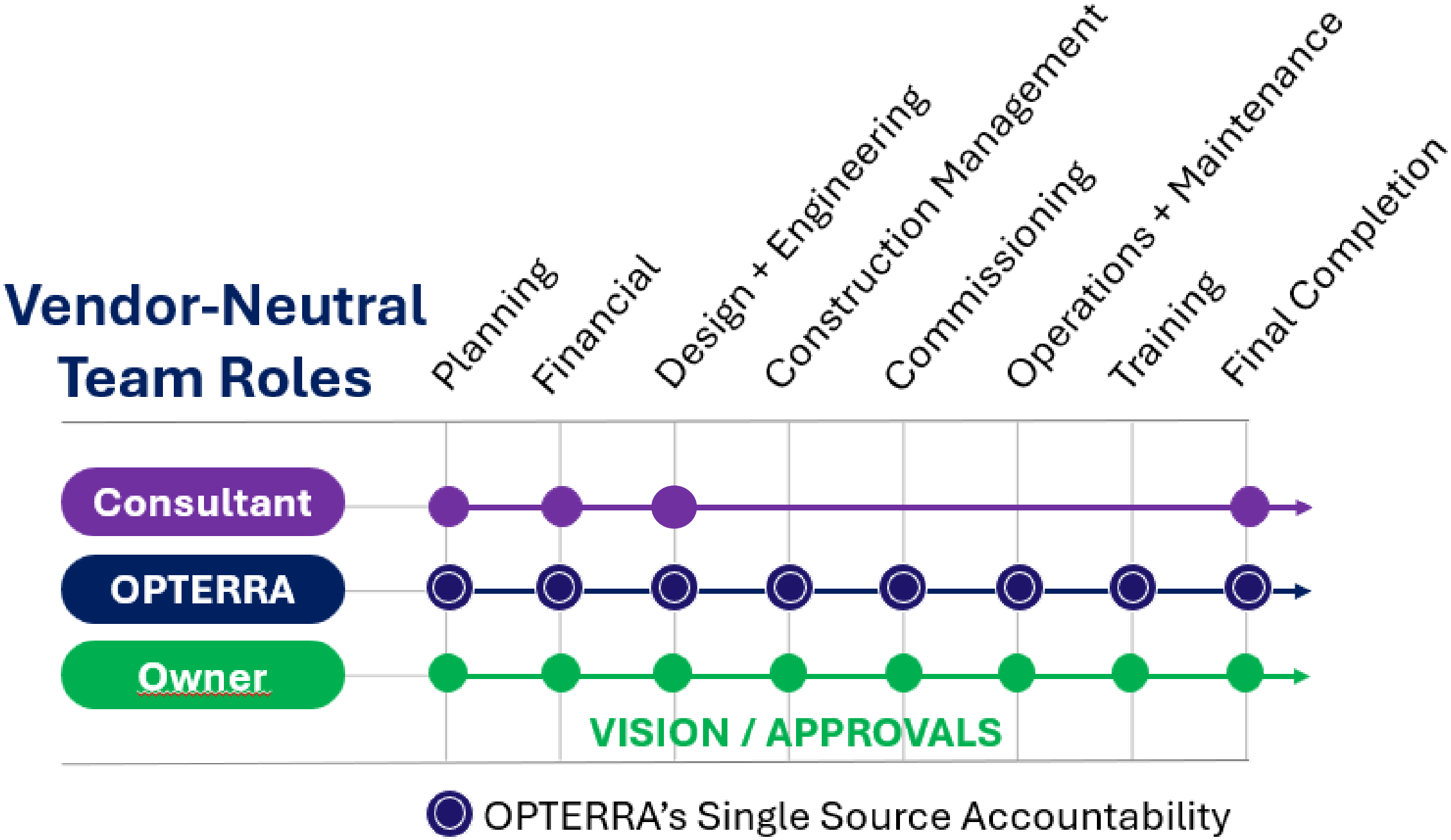
# 01

# A More Comprehensive & Holistic Approach to Building Resilient & Sustainable Riverfronts



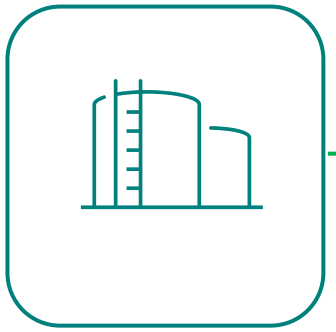
# TEAMING WITH YOUR PREFERRED PROVIDERS

## Vendor-Neutral Team Roles



# PROVIDING ACCOUNTABILITY WITH LOCAL WORKFORCE ACTIVATION

*OPTERRA provides a vendor-neutral single point of accountability*



***You articulate your vision for the desired outcome***

- **Architects + Engineers**
- **Other Design Consultants**
- **General Contractors**
- **Other Trade Contractors**
- **Specialist Contractors**
- **Equipment Suppliers**

- Value
- Quality
- Speed
- Holistic + All-Inclusive
- Durability + Life-Cycle
- Resiliency + Sustainability
- Decreased Risk + Liability
- Reduced Burden
- Decreased Operating Cost
- Optimized Performance
- Safety + Security
- Control + Flexibility
- State-of-the-Art
- Memorability + Aesthetics

# ELIMINATING BURDEN FOR THE CITY

## Throughout the 8-step project process

# Energy Savings Performance Contract Results

## Risk Comparison of Delivery Methods

| Metric | Design-Build vs. Traditional | Design-Build vs. Construction Manager at Risk (CMAR) |
|---|---|---|
| Delivery Speed | 33.5% faster | 23.5% faster |
| Construction Speed | 12% faster | 7% faster |
| Schedule Growth (Missed Deadline) | 11.4% less | 2.2% less |
| Unit Cost | 6.1% less | 4.5% less |
| Cost Growth (Overrun) | 5.2% less | 12.6% less |
| **Conclusion:** | **We deliver superior results vs. traditional low-bid as shown above** | **We deliver superior results vs. CMAR as shown above** |

*Color Key*

| Scheduling Risk | Financial Risk |
|---|---|

*Source: Construction Industry Institute (CI)/Penn State Research comprising 351 projects from 5000 to 2.5mm square feet*

# GENERATING FUNDING FOR THE CITY

**NATIONAL**
**Inflation Reduction Act (IRA) Investment Tax Credit (ITC) Direct Pay, Department of Energy (DOE), + More**

**STATE**
**Board of Education, Environmental Protection Agency (EPA), Renewable Energy Credits (RECs), + More**

**LOCAL**
**Local Utility Rebates, Incentives, Grants, + More**

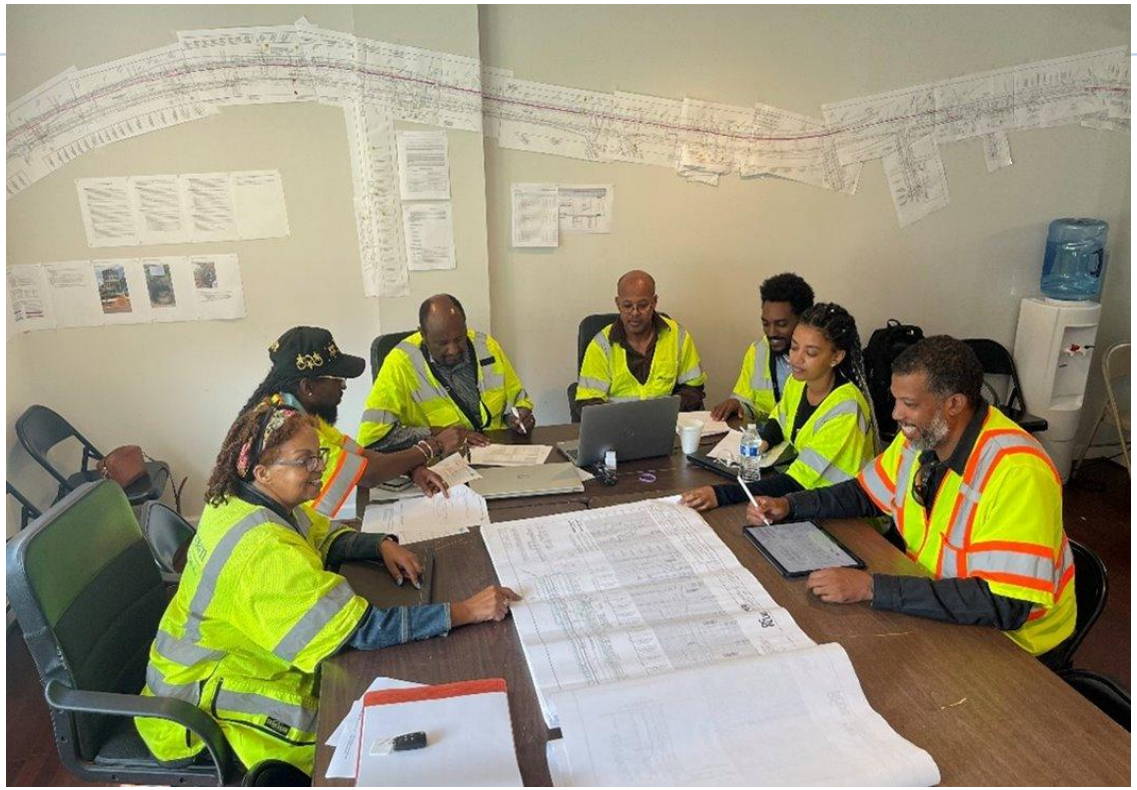
***National, State, + Local Team Funding Experts***

# Developing Small Business Capacity

- ✓ **Beyond Just Job Creation — Empowering Small Businesses for Lasting Success:**
  We don't just create jobs; we strengthen the skills, resources, and resilience of small businesses so they can thrive for years to come.

- ✓ **Excellence Through OPTERRA Project Management:**
  With rigorous oversight and hands-on support, we ensure every contractor not only meets but exceeds industry standards for quality and performance.

- ✓ **Delivering on What Matters Most:**
  Our focus is on achieving results that matter — measurable, meaningful outcomes



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# Washington, D.C.

## Smart Street Lighting Project

The OPTERRA team engaged local small businesses including those certified as Disadvantaged Business Enterprise (DBE) to help deliver this transformation project. This included a commitment to hiring and training a local workforce, with local subcontractors helping OPTERRA deliver on the conversion and operations work..

### Benefits

- **50% reduction** in streetlight energy consumption
- **38,000 metric tons** of greenhouse gas emissions eliminated annually
- **Improved safety** for pedestrians and bicyclists in all neighborhoods
- **Local job creation,** including minority- and women-owned businesses
- **OPTERRA-sponsored internships**
- City-wide completion within **2 years** (May 2024)

**$55M in contracts directed to local businesses**

# 02

# OPTERRA Case Studies

# What is Energy Resilience?

The ability to withstand and rapidly recover from power outages and continue operating energy-dependent services. A resilient power system reduces the likelihood of long-duration outages, limits the scope and impact of outages when they do occur, and rapidly restores power after an outage.

# West County Wastewater

## REDUCING EMISSIONS AND OPERATING COSTS

- This wastewater district in California's Bay Area set aggressive goals to reduce greenhouse gas emissions.
- West County Wastewater also faced looming state regulations on short-lived climate pollutants (SLCP) and wanted to reduce ongoing disposal costs
- A comprehensive plan was developed with OPTERRA to include improvements to energy infrastructure and plant processes.

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# West County Wastewater

## REDUCING EMISSIONS AND OPERATING COSTS

### Solutions

- **1.1 MW** of onsite solar power generation
- Upgrades **to LED lighting**
- New **EV charging stations**
- **Wastewater treatment process improvement upgrades** to generate electricity and recover Class A biosolids
- 20-year Energy Savings Performance Contract implemented and maintained by OPTERRA

### Benefits

- **$83 million** forecast in net program life savings
- **4.2 million kWh** energy reduction guaranteed per year
- **93% reduction** in greenhouse gas over the life of the program
- Reduced disposal costs, less waste, and a **new revenue stream** via Class A biosolids production

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# City of Milpitas

## SMART CITY INFRASTRUCTURE PROGRAM

### Solution

- **200 kW solar PV system**; resilient microgrid solution for the city's senior and community centers; electric vehicle charging stations
- **15,600 advanced metering infrastructure (AMI) water meters** with leak detection; water, wastewater, and stormwater management automation; touchless efficient water fixtures
- **2,185 LED streetlight retrofits;** 4,453 streetlight controls upgrades with outage detection; City wide LED lighting upgrades in parks, sports fields, City buildings, and community facilities
- Integrated **community impact program**; O&M and performance guarantees

### Benefits

- **$30M in net savings** over the life of the program
- **Improves city services and infrastructure** for residents and businesses
- **Energy resiliency** (back up power) for community centers
- Addresses **safety, efficiency and climate action goals**
- Provides **workforce and education opportunities**


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# Charter Township of Canton - Multiple Phases

**Capital Improvements:** $5,171,934

**Goals Achieved:**

- Avoid costs + generate funds to save taxpayer money
- Replace aging equipment at 18 sites
- Reduce growing energy + operational costs
- Energy + water savings
- Improve comfort + reliability
- Upgrade community water park + playground
- Control indoor climate/air quality

**Our Comprehensive Scope:**

- Lighting retrofits
- BAS upgrades
- Heating plant modifications
- HVAC + building envelope improvements
- Water retrofits
- LED promotional message board
- Irrigation system controls

***"The results from our project are incredible. Every community in Michigan should follow this example."***

***Brad Sharp,***
***Former Facilities Manager***

*Photo by: Dwight Burdette*

# City of Grand Rapids - MI

**Capital Improvements:** $1,935,669

**Goals Achieved:**

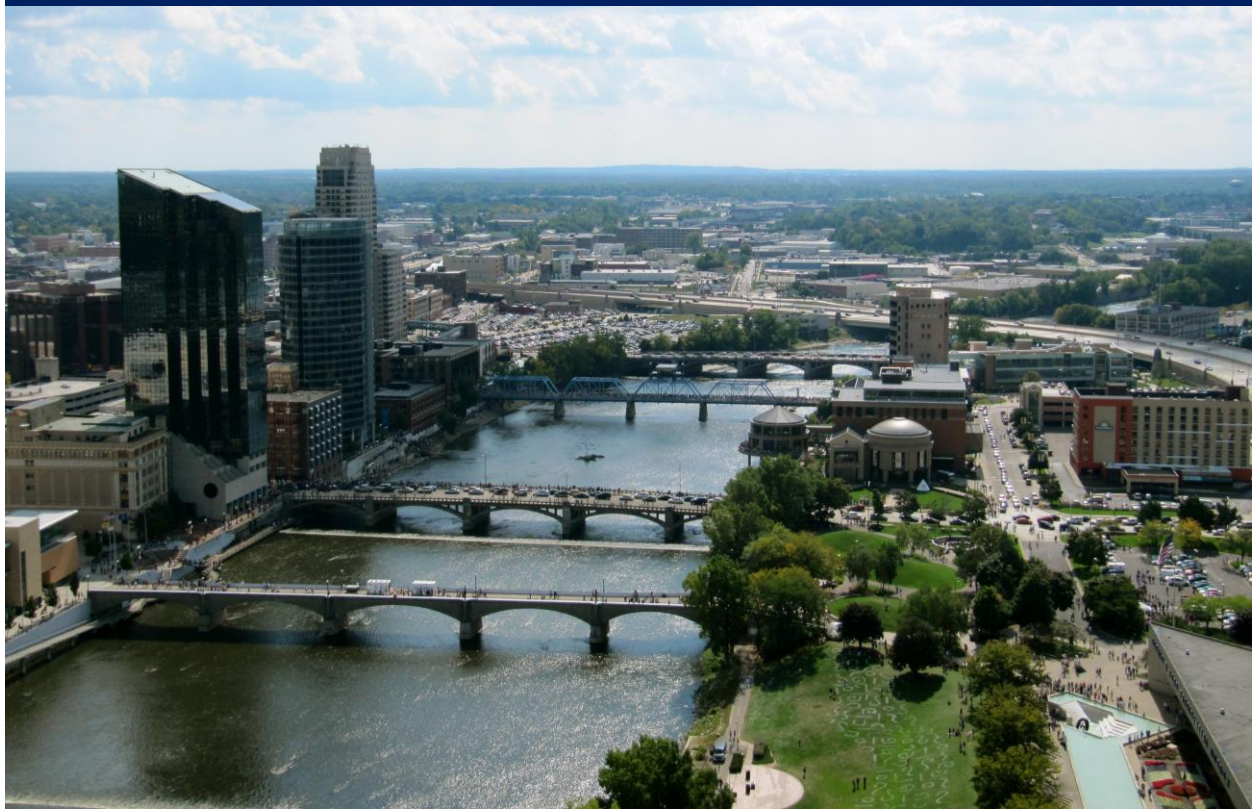
- Leverage savings to mitigate anticipated energy rate escalations
- Meet sustainability goals
- Improve air controls + HVAC efficiency
- Increase quality of residential life
- Use performance contracting vehicle to help fund facilities modernization

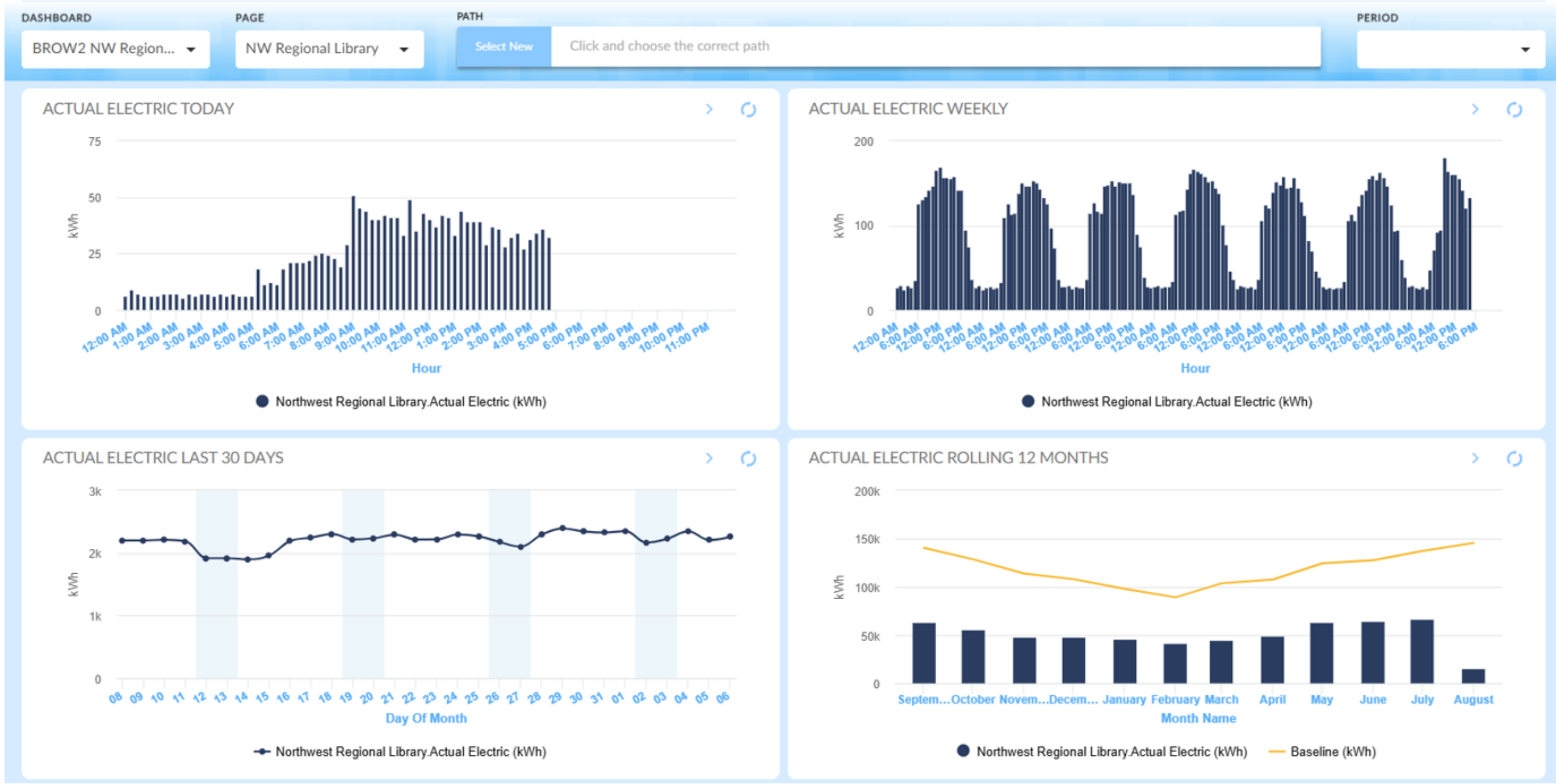
**Our Comprehensive Scope:**

- Expanded + redesigned energy recovery HVAC systems
- Boiler replacements
- Heat exchangers for final effluent fluids
- Ventilation system upgrades
- Heat pump upgrades
- Cooling system replacements
- BAS upgrades
- Building envelope improvements

***"The OPTERRA project is delivering significant savings through improved efficiency, reduced energy costs, + unitary controls of all the HVAC systems at the Water Resource Recovery Facility."***

***Michael Lunn, Former Manager of Environmental Services***






**Option C M&V on NW Regional Library at Broward County Wide, FL.**

The multiple ECMs were lighting upgrade, install new chiller, replace R-22 split system (evap coil & condensing unit only).

Edit

DASHBOARD: CESC City of Escalon

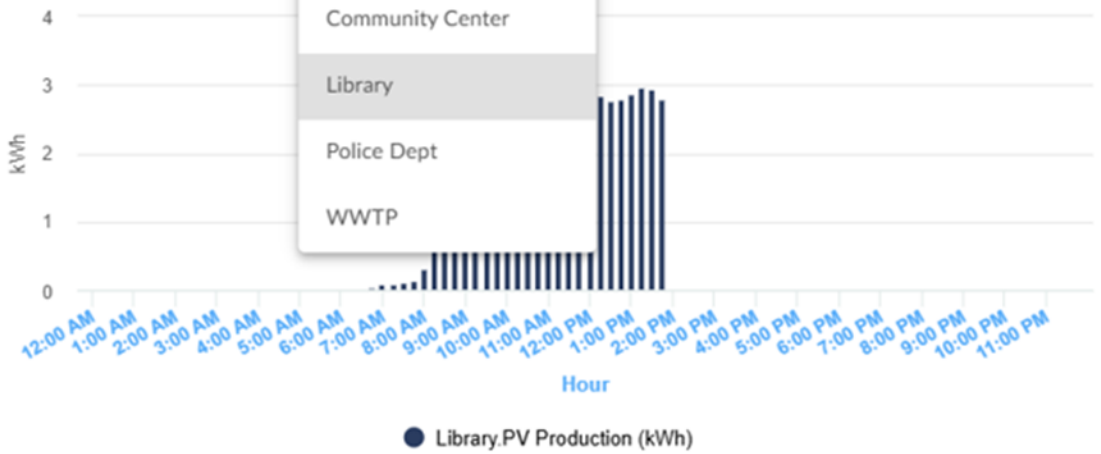
PAGE

- All Sites
- City Hall
- Community Center
- Library
- Police Dept
- WWTP

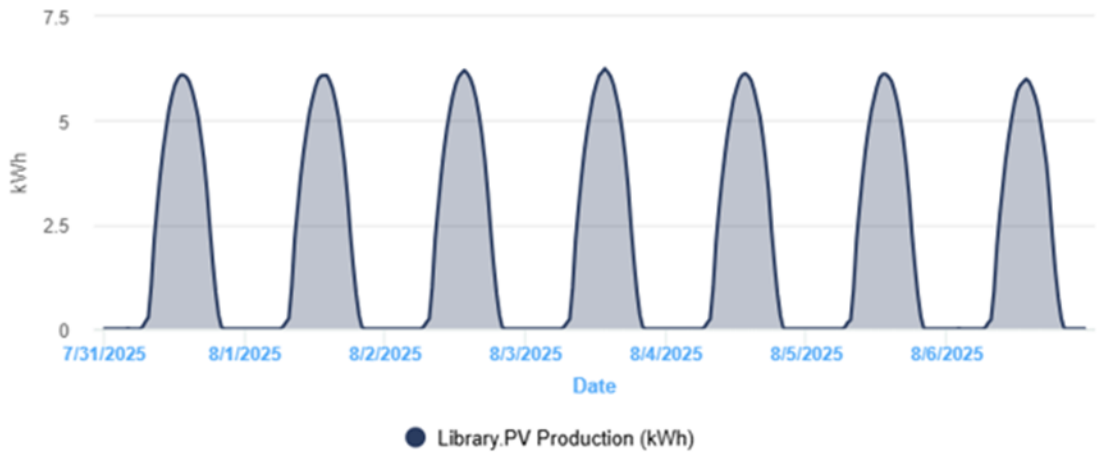
PATH: Select New — Click and choose the correct path

PERIOD

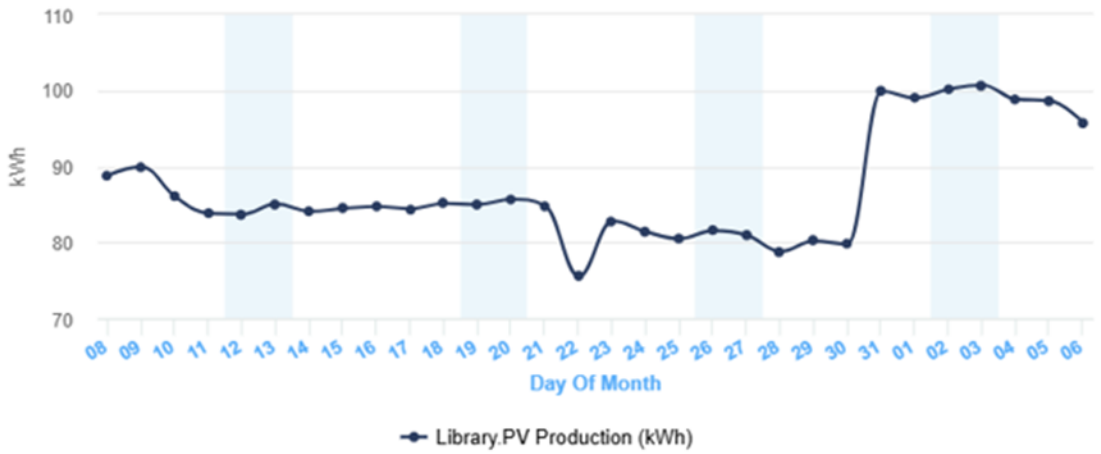
## PV PRODUCTION TODAY - L



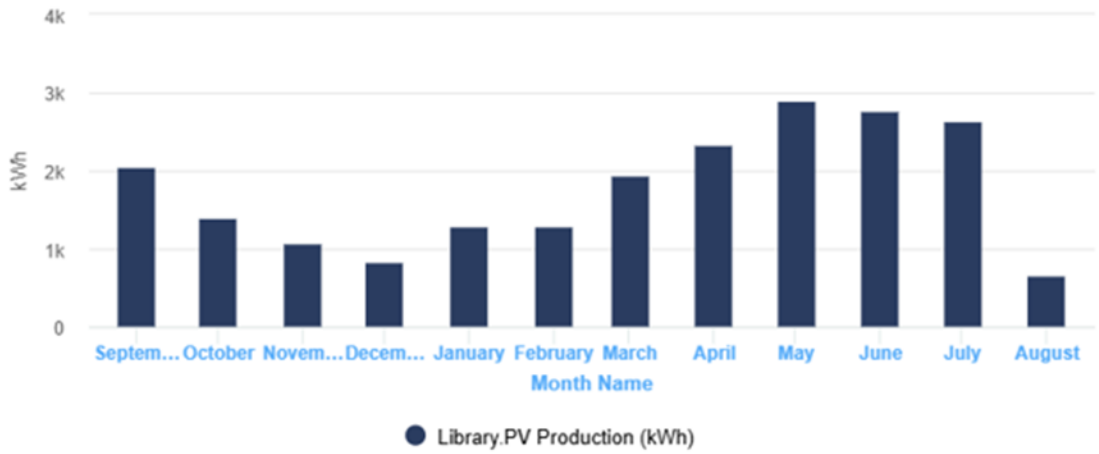

## PV PRODUCTION TRAILING 7 DAYS - LIBRARY

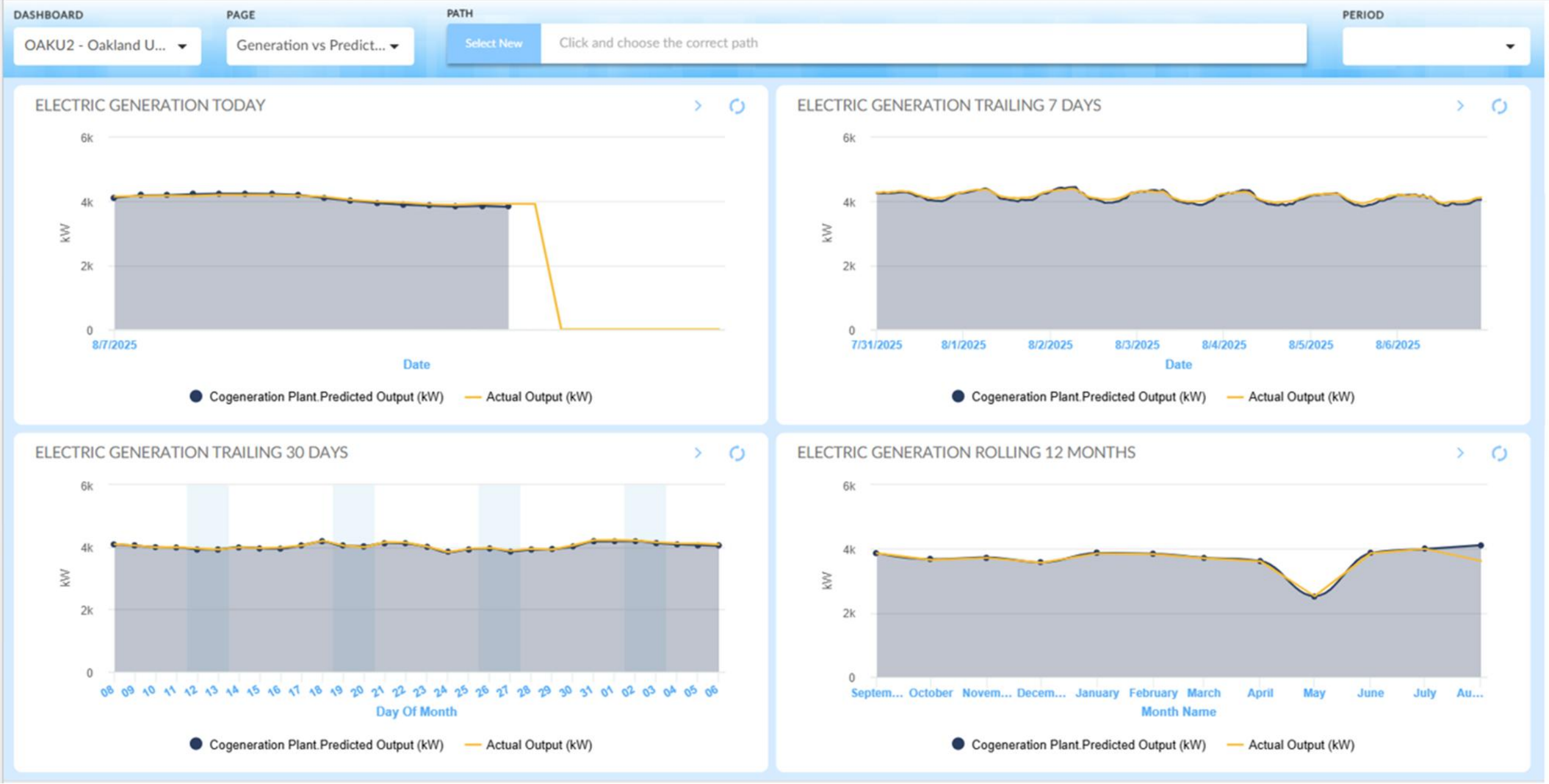



## PV PRODUCTION TRAILING 30 DAYS - LIBRARY




## PV PRODUCTION ROLLING 12 MONTHS - LIBRARY






**Option B M&V on the Steam Turbine we installed for Oakland University, MI.**

# 03

# Procurement & Project Management

# STREAMLINING TO AVOID SUPPLY CHAIN ISSUES

Click on the logos below for an active link

## OMNIA

**Contract Number**
**R221501**

OMNIA® PARTNERS

## PCA

**Contract Number**
**3-184-18**

PCA
Purchasing Cooperative of America
Awarded Contract
www.pcamerica.org
844-722-6374

## TIPS-USA

**Contract Numbers**
**220104**
**24020101**
**24020102**

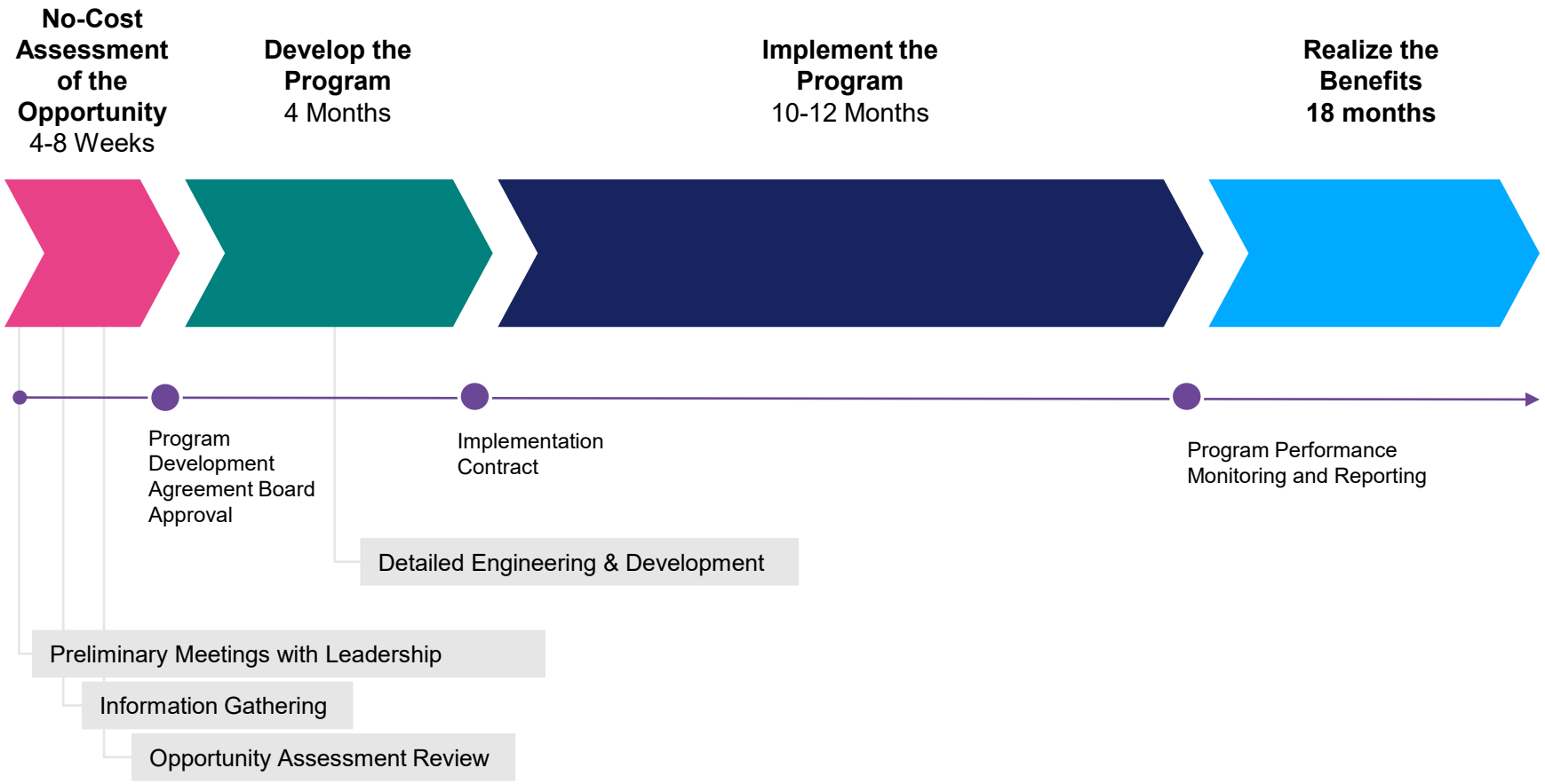
TIPS
THE INTERLOCAL PURCHASING SYSTEM

## GSA

GSA Advantage!
www.gsaadvantage.gov

**Contract Number**
**47QSWA19D004H**

# Project Management Process



# Contact us to help accelerate your vision

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