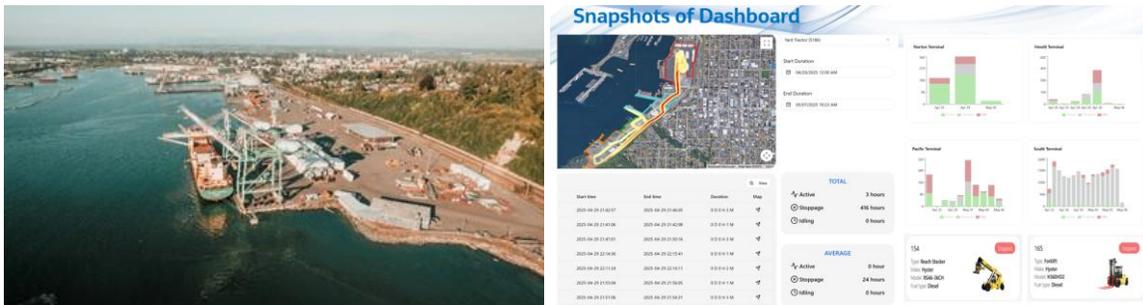




AAPA Lighthouse Award Project Highlight

DIGITAL ANALYSIS OF PORT EQUIPMENT (DAPE)



Jacobs Engineering Group Inc.
Supporting Applicants: Port of Everett, IGO Solutions Group
Port of Everett

Project Overview

Digital Analysis of Port Equipment (DAPE)

Award Category: Maritime Innovator

Completion Date: 4/1/2025

Description: The Digital Analysis of Port Equipment (DAPE) project is a pioneering initiative led by Jacobs Engineering Group Inc., in collaboration with IGO Solutions and the Port of Everett (POE). Its primary goal was to develop a scalable, affordable, and platform-agnostic tool to measure real-time emissions and operational data from port mobile equipment. By integrating telematics and Portable Emissions Measurement Systems (PEMS), the project enables predictive analytics for emissions, fuel consumption, and equipment performance. The impact is transformative—empowering ports to make data-driven decisions that enhance sustainability, operational efficiency, and regulatory compliance.

Inspiration

The project was inspired by the growing need for accurate emissions data in the port industry, driven by EPA Clean Port Grants, greenhouse gas inventories, and global sustainability goals. Traditional linear emissions estimates were inadequate for the complex and variable nature of port operations. Recognizing POE's forward-thinking leadership and commitment to sustainability, Jacobs and IGO initiated a strategic partnership to pilot this groundbreaking technology.

Challenges

Key challenges included:

- Defining the core problem.
- Identifying a facility willing to share operational data.
- Technology compatibility with varied equipment types.
- Stakeholder alignment to ensure organizational alignments.

These were overcome through:

- A collaborative, multi-national effort.
- Front end due diligence and sourcing compatible devices from the U.S. market.
- Streamlined installation protocols and stakeholder engagement.

Lessons Learned

Stakeholder involvement is critical: Early engagement with end users ensures smoother implementation and better adoption.

Technology must be adaptable: Ports vary widely in equipment and operations; flexibility is key.

Small changes in operations yield big results: Insights on key KPI's led to simple interventions that reduced emissions and fuel costs.

Value

The DAPE project is a source of pride for POE and its partners because:

- It represents the first-ever deployment of such technology in a U.S. port.
- It delivers real-time, actionable insights without disrupting operations.
- It sets a benchmark for sustainability and innovation in the maritime industry.
- It is scalable and transferable, making it accessible to ports of all sizes and industries.

Quotes

"At the Port of Everett, we're always looking for innovative ways to utilize technology to gain efficiencies, plan for the future, and enhance sustainability. This smart technology pilot is an exciting step forward, giving the port industry a new tool for gaining real-time insights into equipment performance and can be used to support short, medium, and long-range decision making. This is a great example of a modern-day port innovation."

— **Lisa Lefeber, Executive Director/CEO, Port of Everett**

Additional Information

This groundbreaking deployment empowers data-driven decisions and provides a replicable model for ports of all sizes.

Key technical features of the DAPE platform include:

- Real-Time Data Acquisition
- Operational KPI Integration
- Enhanced Operational Visibility
- Scalability and Resiliency
- Supplier-Agnostic and Industry-Transferable Architecture

"Through this collaboration, Jacobs and its partners developed a real time port equipment data analytics platform, seamlessly integrated with bespoke operational KPIs to monitor and manage cargo handling equipment fleets," say Jacobs Vice President and Director Ports & Maritime - U.S. West Aldo Ferrufino. "This marks a significant step forward in enhancing visibility, efficiency and resiliency in port operations across the industry." The DAPE pilot program represents a significant advancement in port technology that aligns with global trends in smart port infrastructure and digital transformation.

Contact

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Resources

Read more at www.portofeverett.com/DAPE