# MaineDOT Clean Ports Planning Project

## Portland, Maine

Stakeholder Engagement Meeting

April 30, 2026


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Funding Support
EPA

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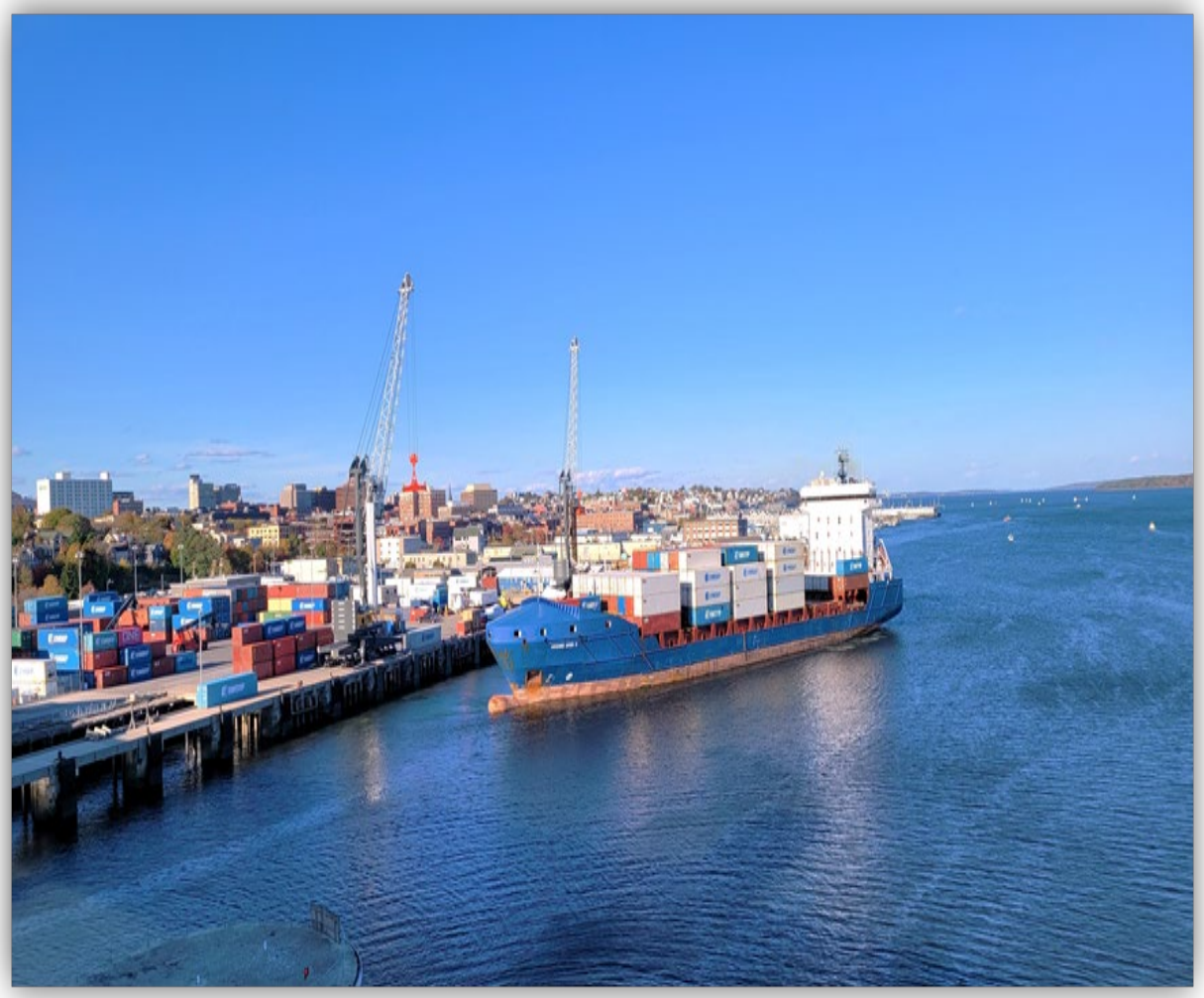
# Introductions

# Agenda

- EPA Clean Ports Program Introduction
- MaineDOT CPP Project Overview & Goals
- Site Specific Considerations
- Project Framework
- Task Descriptions
- Stakeholder Input



# EPA Clean Ports Program

EPA

## Clean Ports Program

EPA is funding zero-emission (ZE) port equipment and infrastructure to reduce greenhouse gases and air pollutants at our nation's ports, delivering cleaner air for communities across the country.

SEAPORT ACTIVITY ACCOUNTS FOR:

**31 Million Jobs***

**26% of the U.S. economy***

**Ports serve as vital gateways** for the movement of goods and passengers across the country.

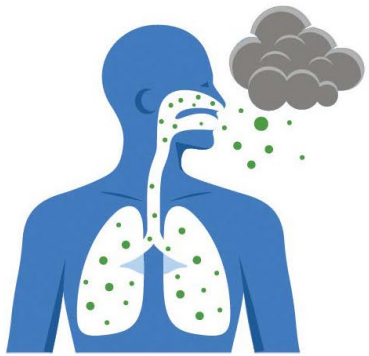
# EPA Clean Ports Program

Exposure to diesel exhaust can lead to serious health conditions like **asthma.**

Older diesel equipment emits **harmful pollutants** including air toxics.

This pollution can worsen existing heart and lung disease, especially in **children** and the **elderly**.

## PROGRAM BENEFITS



**Decreases exposure** to harmful **pollutants**

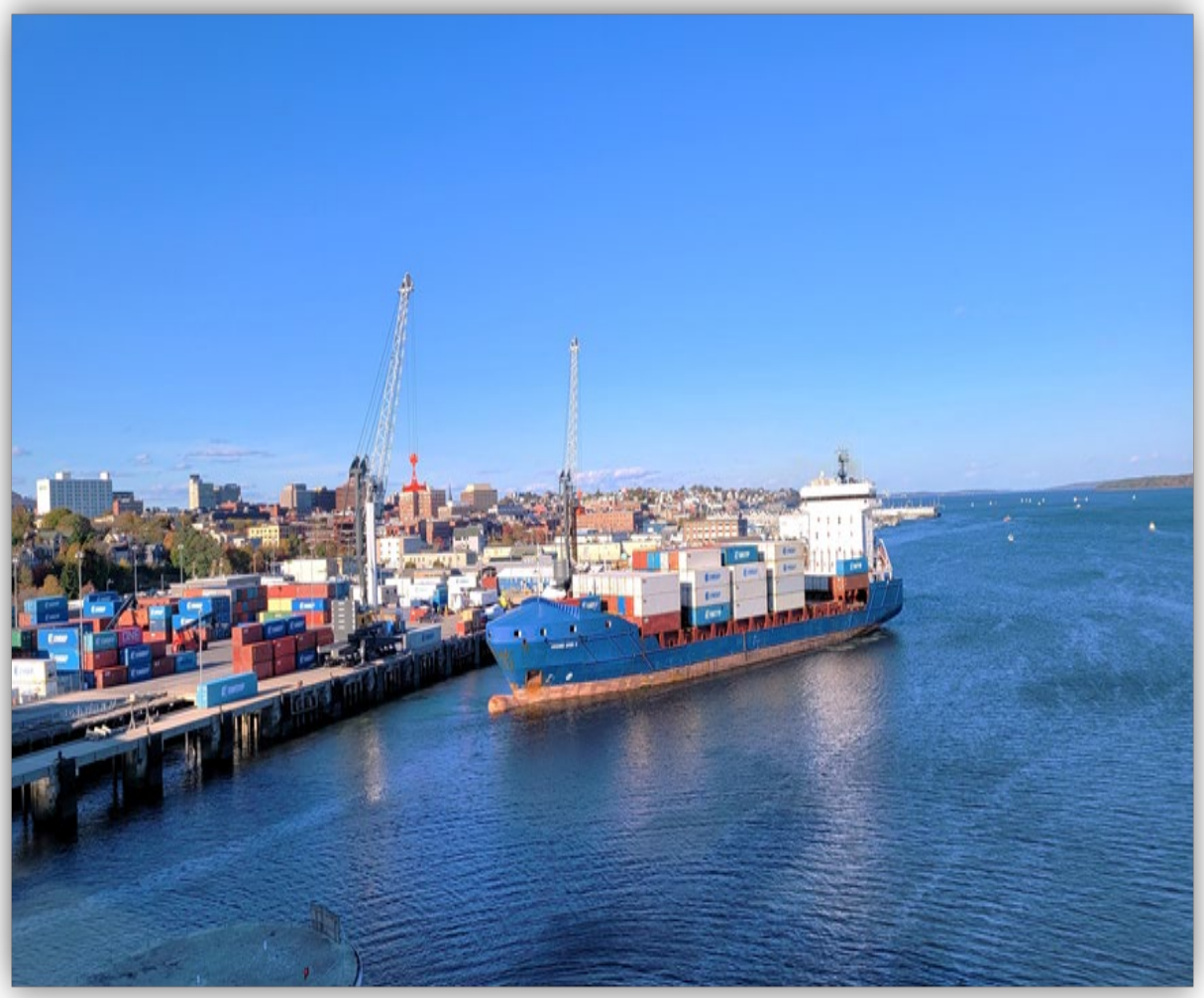

**Reduces** greenhouse gas **emissions**

*American Association of Port Authorities (AA PA) , ***https://www.aapa-ports.org/advocating/content.aspx?ItemNumber=21150***.

For more information, please visit **Clean Ports Program | US EPA**
To learn more about reducing emissions at ports, visit **EPA Ports Initiative**

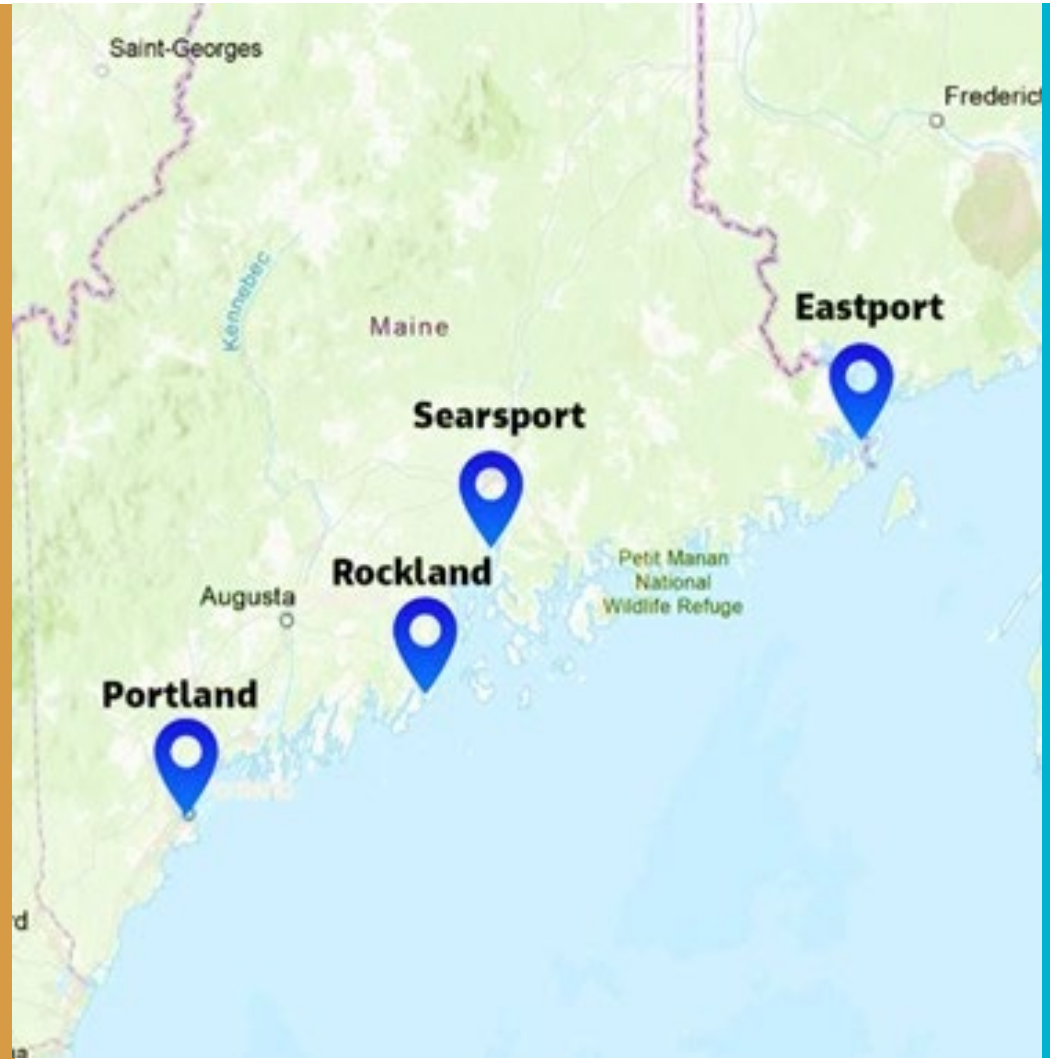
# MaineDOT Clean Ports Planning Project

- Funded through the **U.S. EPA Clean Ports Program**
- **Led by the Maine Department of Transportation** in partnership with state and maritime stakeholders
- Evaluate the **feasibility of port electrification technologies and shore power** at four Maine ports
- Develop a **planning roadmap** for potential future investments



***This project is a planning study, not a construction project.***

# Ports Included in the Study

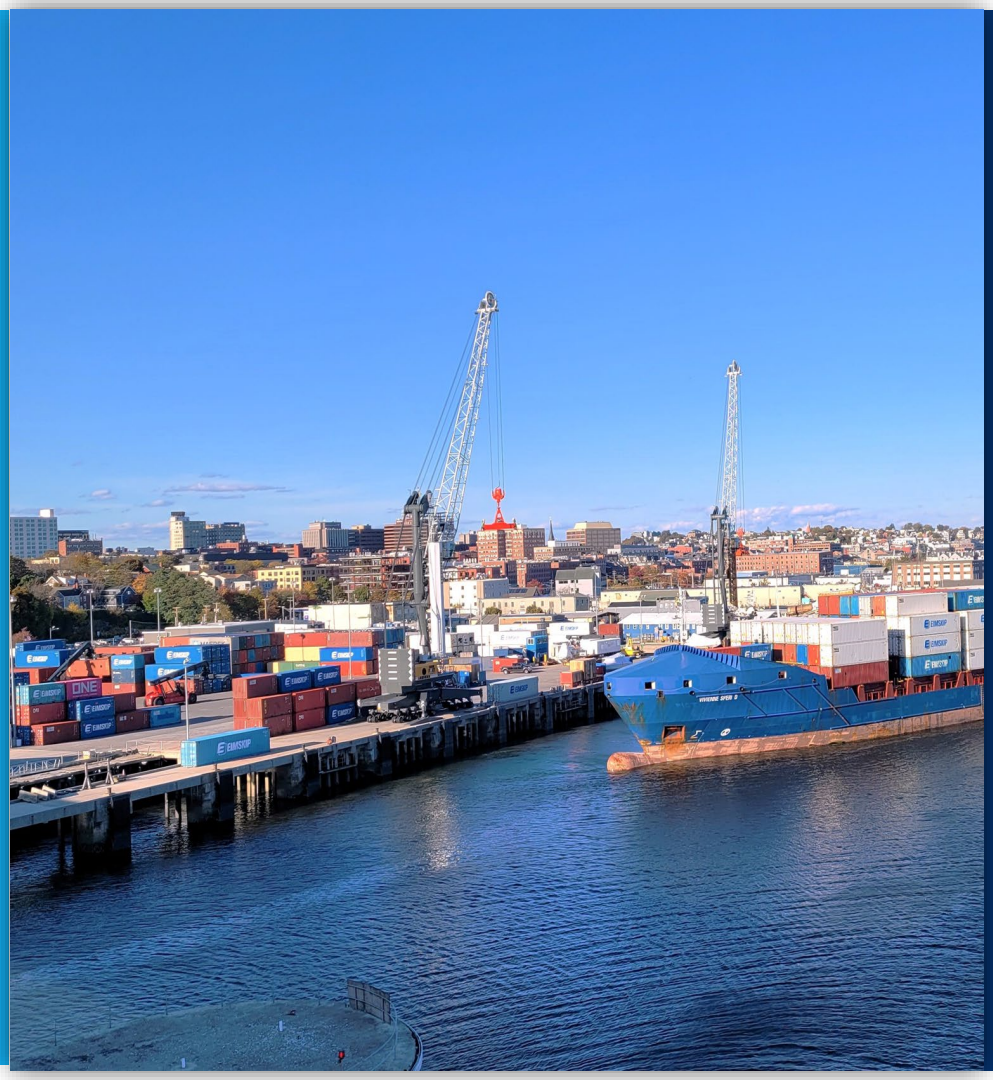



- **Each port has unique** infrastructure, vessel activity, and operational needs.
- The study will evaluate conditions at each port individually and identify **port-specific electrification opportunities and planning needs.**

The planning effort evaluates electrification opportunities at four Maine ports:

- Portland
- Searsport
- Eastport
- Rockland

# MaineDOT Clean Ports Planning Project Goals



- Characterize emissions from port-related activities including: source types, magnitude, and ownership across all four Maine ports
- Develop baseline and future-year emissions scenarios and evaluate the effectiveness of identified emissions-reduction strategies
- Provide technical analyses of port operations and electrification pathways to support informed planning and investment decisions
- Evaluate the feasibility of shore power and related electrification upgrades to inform and support future engineering, design, and infrastructure planning phases

# Portland Considerations

**The clean ports planning analysis in Portland will evaluate facility-specific needs across three waterfront locations**

| International Marine Terminal | Ocean Gateway | Maine State Pier |
|---|---|---|
| • Cargo operations<br>• Reefer demand<br>• Freight activity | • Cruise ship operations<br>• Pedestrian activity<br>• Pier and berthing use | • Small cruise activity<br>• Ferry services<br>• Public access and event uses |

## Portland-Wide Considerations

- **Downtown and neighborhood proximity**
- **Coordination with operators and maritime partners**
- **Air quality and community impacts**

**This helps ensure the study reflects local operational needs and community context**

# MaineDOT Clean Ports Planning Framework

- **This project will include the below tasks and will be completed by the end of 2027.**

  Task 1 - Kickoff, Collection of Data, Gap Analysis

  Task 2 - Grid Infrastructure, Capacity & Transmission Analysis

  Task 3 - Emissions Inventories

  Task 4 - Emissions Reduction Planning

  Task 5 - Port Electrification Feasibility Studies

  Task 6 - Stakeholder Communication and Engagement

  Task 7 - Workforce Development Tied to Electrification

- **These elements will inform the final planning recommendations.**

# 1: Understanding Current Conditions

**The project will begin by evaluating existing conditions at each port.**

**This includes:**

- Vessel activity and operational patterns
- Port equipment and energy usage
- Existing electrical infrastructure
- Operational and safety considerations
- Environmental and regulatory factors

# 2: Grid Infrastructure Analysis

**Electrifying port operations may significantly increase electricity demand.**

**The study will evaluate:**

- Current electrical infrastructure serving each port
- Potential power demand from electrified operations
- Grid capacity and constraints
- Potential upgrades required to support electrification
- Review onsite and offsite supply options to meet demand

**This analysis will be conducted in coordination with regional utilities.**

# 3: Emissions Inventory

**The study will develop an emissions inventory for each port.**

**This evaluates emissions from:**

- Vessel activity
- Cargo handling equipment
- Port vehicles and trucks
- Other port-related operations

**This baseline inventory helps identify opportunities for emissions reductions.**

# 4: Emissions Reduction Planning

**The study will develop a plan for emissions reduction for each port.**

**Emissions reduction planning includes:**

- Conduct scenario analysis
- Port-specific reduction targets
- 2050 planning for each port

**The emissions reduction scenarios will inform the final planning report.**

# 4: Electrification Opportunities

**The study will evaluate several potential electrification strategies.**

**These may include:**

- Shore power for vessels at berth
- Electrified cargo handling equipment
- Electrified port vehicles and support equipment

**Each strategy will be evaluated for technical feasibility, cost considerations, and operational compatibility.**

# 4: What is Shore Power?

**Shore power** allows vessels to connect to electrical power supplied from the port while docked.

✓ This allows ships to shut down onboard diesel engines used to generate electricity while at berth.

**Potential benefits include:**

- Reduced air pollution near port communities
- Lower greenhouse gas emissions
- Reduced engine noise while vessels are docked

**The feasibility of shore power varies depending on vessel type, infrastructure, and electrical capacity.**

# 5: Infrastructure Feasibility

**For each port, the study will examine:**

- Space requirements for electrical equipment
- Infrastructure siting considerations
- Port operational constraints
- Potential permitting considerations
- Rough order-of-magnitude cost estimates

The goal is to determine **whether electrification solutions are practical for each facility**.

# 6: Stakeholder Engagement

**Stakeholder engagement is a critical part of the planning process.**

**The project will gather input from:**

- Port operators and maritime industry stakeholders
- Local and state government agencies and officials
- Utilities and infrastructure partners
- Workforce organizations and training programs
- Environmental and community-based organizations

**Stakeholder insights will help inform the technical analysis and planning recommendations. The project team is committed to keeping stakeholders updated as the project progresses.**

# 7: Workforce Development

**Electrification of port infrastructure could create new workforce opportunities.**

**The study will evaluate:**

- **Skills required to transition, operate, and maintain electrified equipment**
- **Training and workforce development needs**
- **Opportunities to partner with local organizations for skilling and upskilling**
- **Equitable access to workforce opportunities and career pathways**

**Workforce planning will help prepare Maine's maritime workforce** for potential future transitions.

# Stakeholder Priorities and Input

## Open discussion to hear from you on:

- Operational considerations related to electrification
- Infrastructure constraints or opportunities
- Safety or emergency management considerations
- Workforce and training considerations
- Long-term priorities for the port community

# Stakeholder Priorities and Input

## Operational considerations related to electrification

- Current utility delivery tariff structures
- Third-party supply contracts
- Fuel prices for future onsite generation
- Electrification timeline

**Stakeholder insights are critical to our planning process!**

# Stakeholder Priorities and Input

## Infrastructure constraints or opportunities

- Existing onsite generation
- Available land and roof space for new onsite generation

**Stakeholder insights are critical to our planning process!**

# Stakeholder Priorities and Input

## Safety or emergency management considerations

- Emergency access and response considerations at port facilities
- Fire and electrical safety considerations
- Reliability of power for critical operations during emergencies
- Coordination needs with local emergency responders

**Stakeholder insights are critical to our planning process!**

# Stakeholder Priorities and Input

## Workforce and training considerations

- Active unions and labor contracts
- Workforce development goals
- Anticipated challenges for workforce

**Stakeholder insights are critical to our planning process!**

# Stakeholder Priorities and Input

## Long-term priorities for the port community

- Cost savings vs maximum emissions reduction
- Share of electric load met by renewable energy
- Resilience and redundancy (if the larger electric grid goes down)

**Stakeholder insights are critical to our planning process!**


# Thank you!

**Your feedback will help inform this planning study and future recommendations.**

**Visit**
**maine.gov/dot/major-projects/cleanports**