



# CLIMATE ACTION STRATEGY

## NOVEMBER 2023



## OUR MISSION

To promote commerce and economic development through strategic public investments for the benefit of our communities.

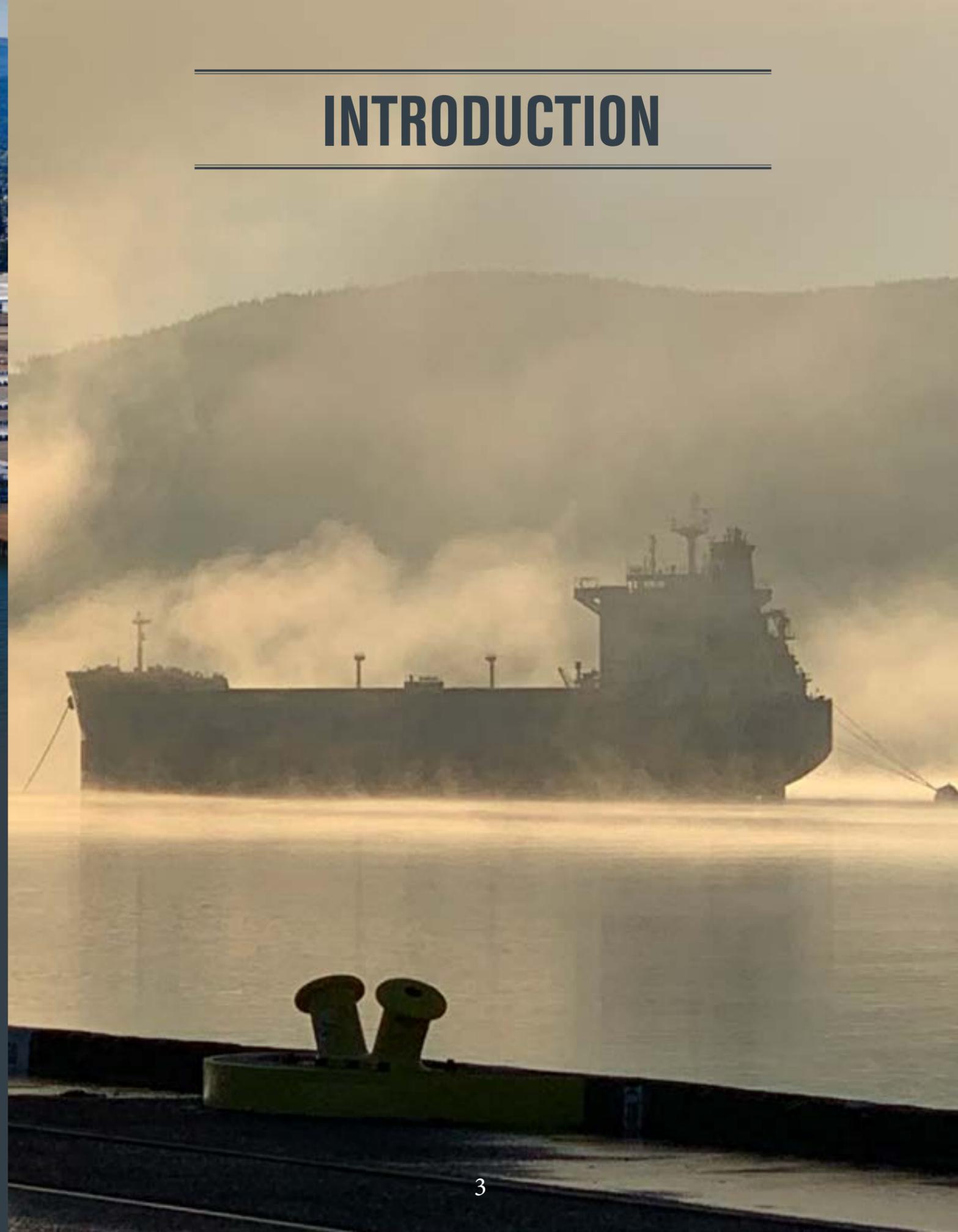
## OUR VALUES

Safety | Partnerships | Integrity | Leadership | Fiscal Responsibility |  
Environmental Stewardship | Forward-Thinking | Respect | Professional Staff

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# INTRODUCTION

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## ABOUT THE CLIMATE ACTION STRATEGY

The Port of Longview's mission to promote commerce and strategic investments requires the Port to look forward and identify risks and opportunities to Port operations and developments. In the Port's 2021 Strategic Business Plan, the Port Commission set priorities for the Port to position the Port of Longview for long-term economic and environmental resiliency. As the regulatory environment requires more stringent and comprehensive changes, it is in the Port's interest to adopt and adapt policies that allow the Port to be flexible and responsive.

The goal of the Climate Action Strategy is to provide the Port with a scientific based, practical, financially feasible and scalable strategy. The Climate Action Strategy took a two-pronged approach in evaluating how the Port could reduce its environmental footprint and be positioned to meet the challenges of future climate uncertainty.

On a granular level, the Port evaluated its greenhouse gas emissions in daily operations to determine what steps it could take to reduce GHG over time. The Port performed a Scope 1 and Scope 2 analysis, focusing on its direct emissions from operations and indirect emissions created by the production of energy. Scope 3 analysis evaluates emissions that are under the Port's tenants and customers control, such as ship, energy, vehicle and train emissions servicing the facilities. As the Port begins implementing its Climate Action Strategy, the Port will work with its tenants and customers to provide education on the strategy and facilitate coordinated efforts that will assist in their own reduction in overall emissions.

On a higher level, the Port evaluated how the changing climate may impact Port operations and what adaptation measures could be implemented to ensure the Port is resilient. The information garnered will drive collaboration with the Port's local and regional partners to begin evaluating how to build more resilient communities.



## Our Climate Pledge

The Port of Longview intends to grow responsibly while maintaining our flexibility to handle cargoes coming into the Columbia River. Strategic investments that include adaptive infrastructure and improve the Port's capacity to handle risk are central to our mission to promote commerce and economic development for the community. Utilizing proven methods, the Port strives to reduce GHG emissions and collaborate with regional partners on climate impact reduction activities.

## WHY DOES THE PORT HAVE A CLIMATE ACTION STRATEGY?



### Community Resiliency.

Insulate the local economy from negative impacts of weather events that could disrupt business.

- Protect jobs, revenue to local businesses and tax revenue generated to support public services
- Improve position as a community resource in the event of an emergency
- Be of regional assistance as the first operating port with access to the ocean
- Identify cost effective opportunities to keep the Port operational in an emergency



### Environmental Accountability.

Preserve the Pacific Northwest's natural resources the Port relies on for continued business success.

- Ensure river conditions remain predictable and adequate for shipping
- Maintain "quality of place" for the community and stakeholders
- Provide a safe and healthy working environment
- Reduce the Port's environmental footprint
- Prepare for increased regulatory requirements



### Business Competitiveness.

Attract new customers that prioritize environmental practices

- Customers are evaluating ports' environmental programs as they select transportation routes
- Help customers meet their own environmental goals
- Customers are evaluating their entire supply chain, including ports, to calculate and mitigate their carbon footprint
- Utilizing an environmentally responsibly port can help customers access new capital resources



### Financial Responsibility.

Invest in resources that provide both operational and environmental returns.

- Prioritize infrastructure investments that provide the greatest resiliency
- Ensure new equipment investments meet operational needs and current/future environmental regulations
- Get access to grant funding opportunities that require demonstration of climate action initiatives
- Improve cost/environmental benefit analysis when buying equipment and/or other purchases



# PROCESS & OUTCOMES



## WHAT'S IN OUR STRATEGY?

### 2021 Strategic Business Plan

#### Commission Priorities

- Investigate opportunities and incorporate environmentally sustainable development, infrastructure and energies where feasible

#### Lines of Business

- Identify and improve operating cost efficiencies
- Explore sustainable energy generation options to increase Port and community resiliency
- Develop Port infrastructure for current and future operations

#### Community Investment

- Develop and implement a business marketing strategy to position the Port for domestic and international trade
- Communicate the Port's initiatives that provide environmental benefits to the community
- Develop and implement policies and programs to build upon and improve environmental quality, operate sustainably and increase resiliency

#### Internal Resources

- Continue to develop financial and asset tracking systems that inform business decision making
- Build a feasible financial plan that supports highest return on investment

The Climate Action Strategy was developed in two phases. Phase I laid the groundwork through emissions inventory, identification and documentation of existing sustainability initiatives and development of potential actions.

In Phase II, the Port worked with internal and external stakeholders to identify short, mid and long-term strategies to protect and improve the Port's economic and environmental future.

In all phases, the Port adhered to the priorities set forth in the 2021 Strategic Business Plan and the goals identified for this plan.

#### What the Strategy Does:

- Evaluates Port-owned and operated equipment, facilities and energy purchases as part of Port operations
- Proactively addresses risks to infrastructure and operation related to changes in weather, such as high temperatures and more frequent storms or flooding
- Includes an implementation plan that prioritizes the most cost-efficient, achievable and effective actions

#### What the Strategy Doesn't Do:

- Evaluates emissions from sources that are not owned and/or operated by the Port
- Identifies or recommends actions for entities other than the Port

## COMMUNITY OUTREACH

Successful implementation of a Climate Action Strategy requires support from the community. The Port conducted multiple internal and external stakeholder outreach efforts including Port staff and labor force, elected officials, tenants, industry neighbors, local regulatory agencies and business interests. The Port informed the community of the planning effort through social media, the Port's bi-annual newsletter, which reaches every household in the port district, created a project website and conducted a community survey. Additionally, project information postcards were sent to specific neighborhoods that are most impacted by Port operations.

The Port believes it will improve its role as a good neighbor and community leader for environmentally sound practices through the adoption and implementation of this strategy.



## WHO DID WE WORK WITH?



### Port Commission

The project team met with the commissioners in January 2023 for one-on-one interviews to solicit guidance and input.



### Key Stakeholders

The project team interviewed representatives from Port security, ILWU labor and trades labor in January/February 2023 to understand how the project could best support their organizations and activities.



### Port Staff

The project team met with staff members from various departments throughout the project timeline to discuss the project objectives and to brainstorm potential recommendations that could support port operations.



### Community

A page on the Port's website was launched in September 2022 to announce the project to the public. Periodic updates to the website and in the Port's bi-annual newsletter helped keep interested community members up to date.

### Project Timeline



## GREENHOUSE GAS INVENTORY

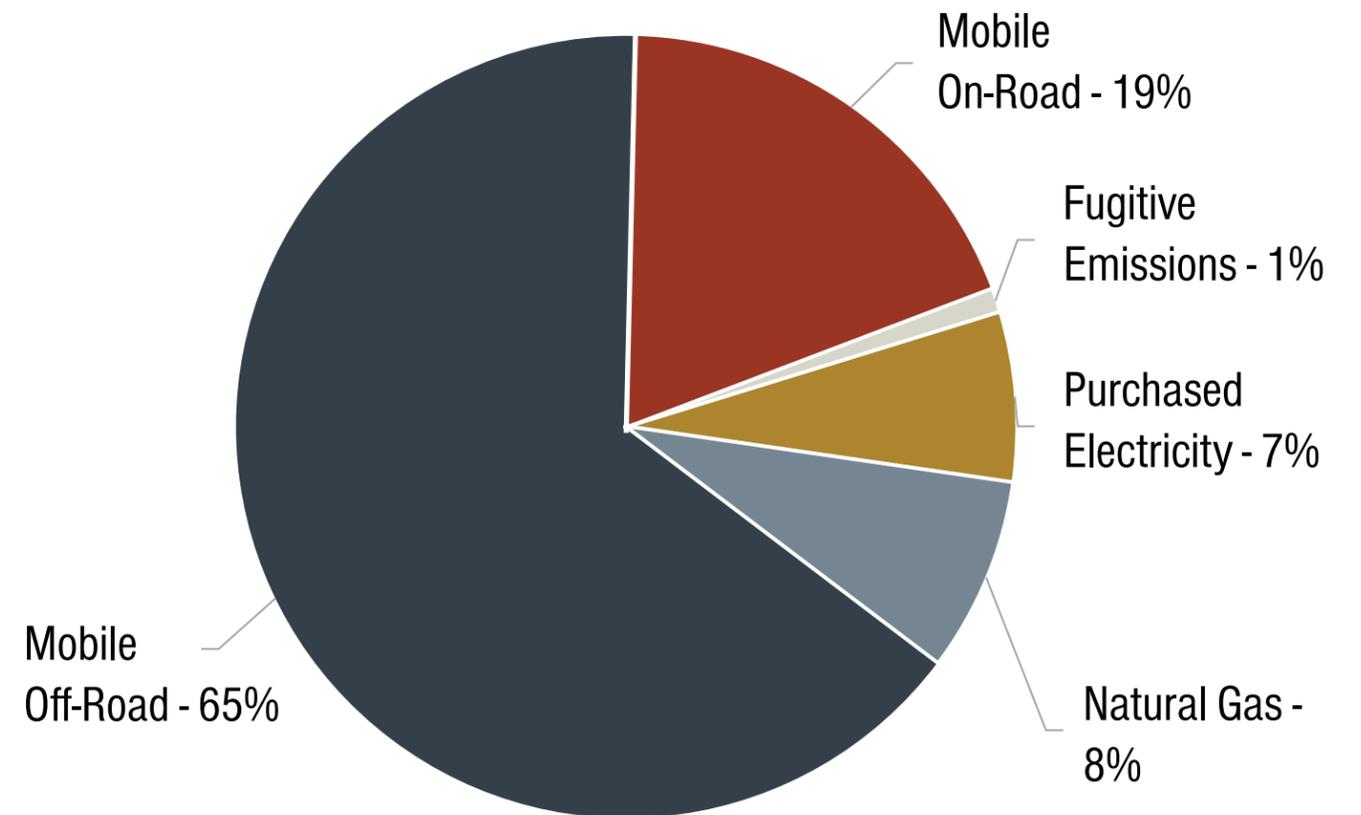
The Port completed a greenhouse gas (GHG) inventory of Port-owned and controlled activities for calendar year 2019, which corresponded with the most recent complete year prior to the COVID-19 pandemic.

The Port conducts a wide variety of activities on any given day, from cargo operations, administrative functions, procurement, construction, maintenance and repair of our terminals, infrastructure, wetlands and community park.

The Port's 2019 emissions from mobile on-road and off-road equipment totaled 1,305 metric tons of CO2 equivalent (CO2e). In the inventory of opportunities to reduce emissions, it became clear that the largest source of emissions comes from the Port's mobile off-road equipment such as cranes, dump trucks and loaders. The secondary major source comes from mobile on-road equipment, such as light and heavy duty trucks. The Port focused its model analysis on these emissions. However, even though not modeled, the inventory of other emission reduction opportunities will also be part of the overall reduction actions.



Electricity emissions are relatively low due to the regional hydro power electricity generation, which was fewer associated emissions. The figure below shows the breakdown of GHG emissions of Port-owned and controlled activities.

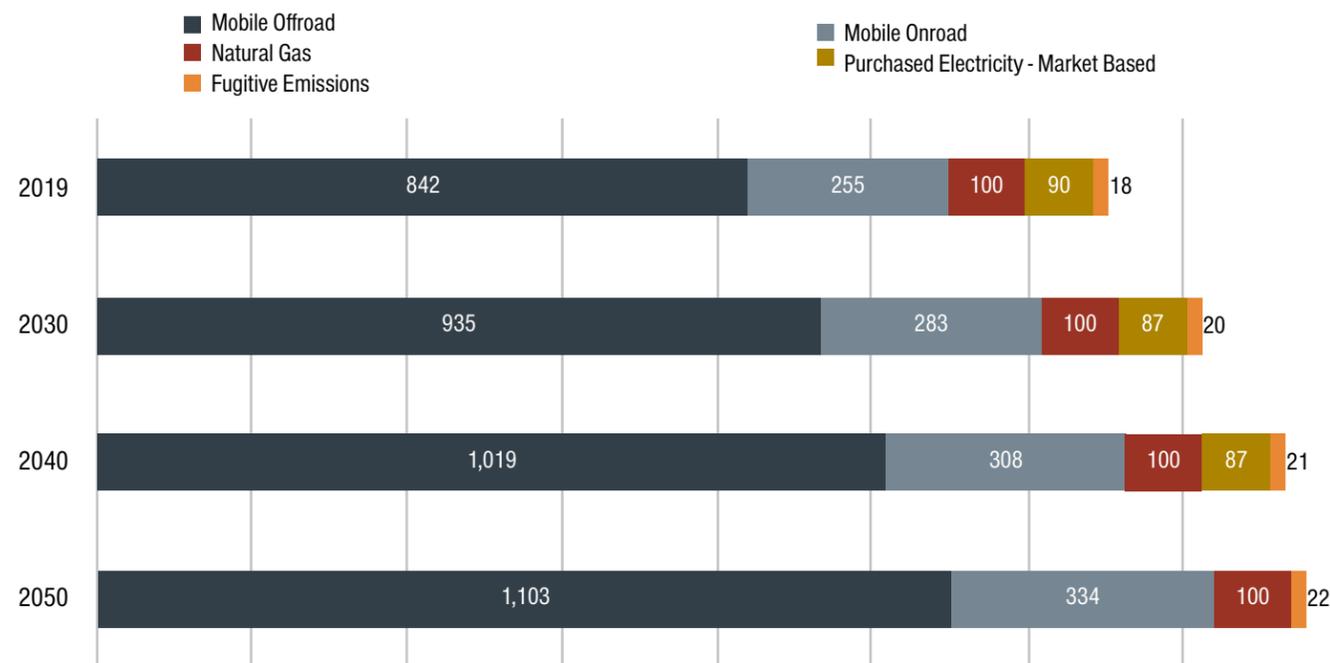




## FORECASTING EMISSIONS

After completing the base year assessment, a forecast was developed through 2050 to determine how GHG emissions will change over time. The forecast drew information from projected demolition and construction projects, projected cargo throughputs, equipment uses and operational changes.

The Port's estimated increase in GHG is 20 percent, or 1,559 metric tons CO<sub>2</sub>e by 2050. In the analysis, it was assumed that the utility provider will meet the requirements of Washington State's Clean Energy Transformation Act, requiring net-zero electricity by 2045 as illustrated with the disappearance of the electricity (gold bar in the figure below) in 2050.

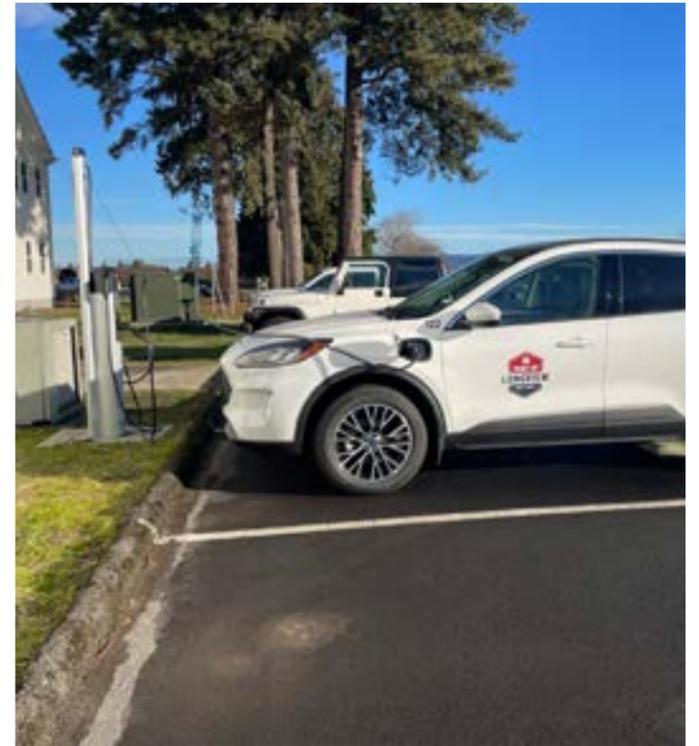


The Port's next step was to evaluate emissions reduction actions. These included transitioning to renewable fuels, electrification or other non-emitting technology, energy efficiency, clean power generation and other strategies to reduce the Port's total GHG emissions.

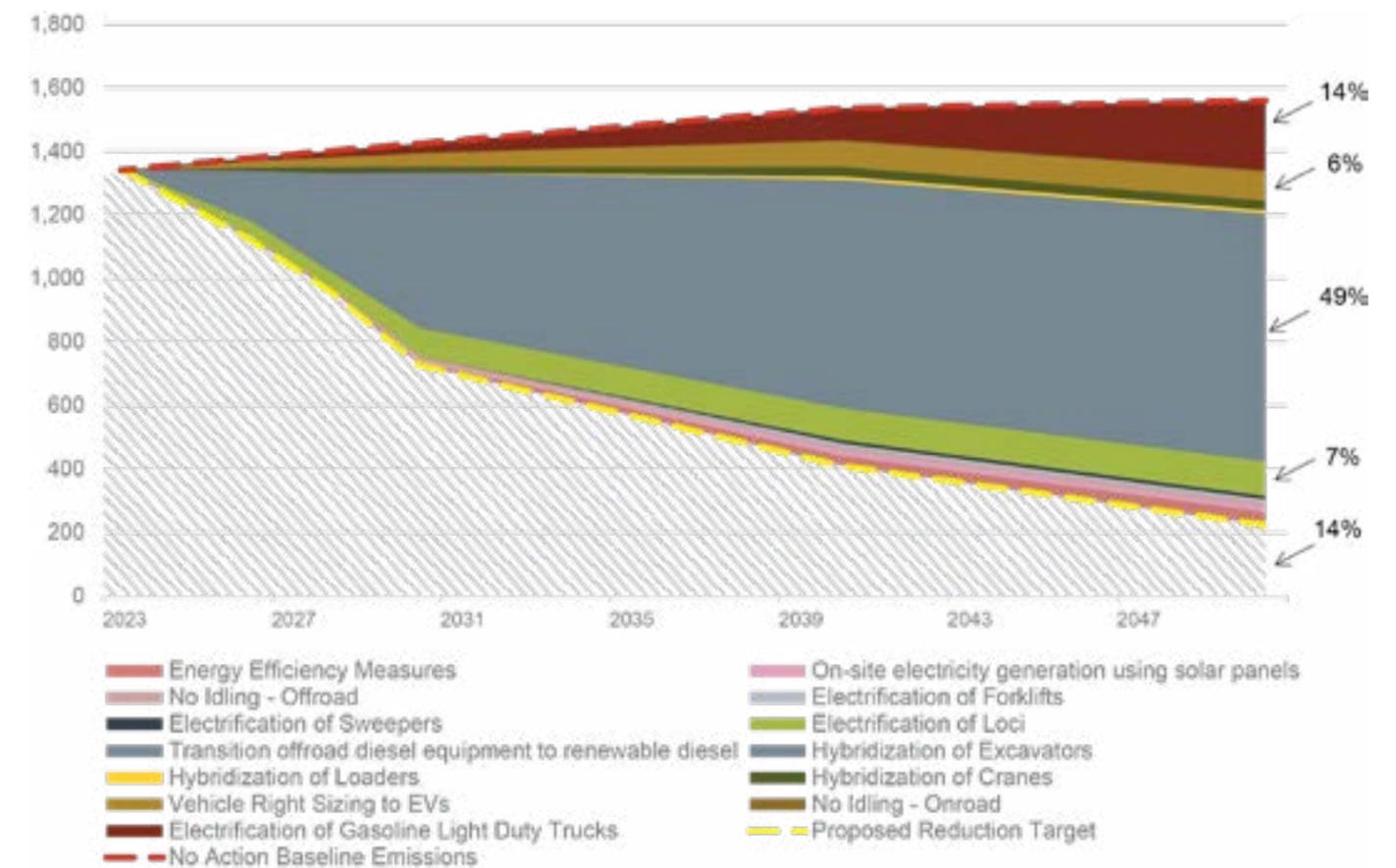
Ultimately, the Port focused on the highest reduction actions which included:

- Transition off-road diesel equipment to renewable diesel (49%)
- Transition to alternative fuels or electrification of gasoline light duty trucks (14%)
- Transition to alternative fuel, hybridization or electrification of the Port's locomotive (7%)
- Vehicle right sizing (6%)

Based on the emission reduction model, the Port's greenhouse gas emissions will be reduced by approximately 85% by 2050.



## Emission Reduction Potential of Proposed Actions



# CLIMATE VULNERABILITY AND RESILIENCY

The Port's infrastructure and staff resources are vulnerable to weather extremes. The Port has taken many proactive steps to be a resilient resource for the community, which include developing a Business Continuity and Resumption of Trade plan, exercising its emergency response plan, updating its accident prevention plan to ensure safe outdoor working conditions during extreme heat and wildfire events, investing in cyber security systems for emergency data retrieval, hazard mitigation planning, worker warning systems and water quality infrastructure to accommodate extreme rainfall events.

However, to better understand the Port's vulnerability to projected weather extremes, the Port conducted a climate hazard impact analysis that reviewed climate hazards in present day, mid (2050's) and far-term horizons (2080's). The analysis looked at eight climate hazards: extreme heat, extreme cold, extreme rainfall, sea level rise, flooding, wildfire, water stress + low river levels and wind events.

Climate Hazard	Time Horizon			Confidence	Magnitude of Impact
	Present Day	2050s	2080s		
Extreme Heat	1	1	2	High	Minor to Moderate
Extreme Cold	1	1	1	High	Minor
Extreme Rainfall	2	3	3	Medium	Moderate to Major
Sea Level Rise	1	1	1	High	Minor
Flooding	2	3	3	Low	Moderate to Major
Wildfire	2	2	2	Medium	Moderate
Water Stress + Low River Levels	1	1	2	Medium	Minor to Moderate
Wind Events	2	2	3	Low	Moderate

4	Present-day or imminent hazards for which adaptation strategies should be evaluated and developed as necessary.	3	Adaptation strategies may need to be developed in the near future or for which further information is needed.	2	Impacts should be monitored but may not need action at this time.	1	Hazards currently modeled to occur after the Port's climate planning time horizon; may be re-evaluated in the future.	0	Site is not directly exposed to this hazard.
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# CRITICAL INFRASTRUCTURE AND CLIMATE HAZARD ASSESSMENT

The Port then compared climate hazards to Port-owned assets or resources critical to Port operations. The table below illustrates how certain climate hazards may impact critical Port infrastructure or navigation works and other resources.

The upward red arrows are the highest potential risk and two arrows indicate heightened concern. Unsurprisingly, high rainfall or flooding events cause greater impacts to water-based infrastructure. Additionally, the Port has determined that extreme heat also poses a risk to equipment and human health and is evaluating risks and mitigation strategies to reduce heat impacts.

	ASSETS	CRITICALITY				CHANGE IN CLIMATE HAZARDS							
		Minor	Moderate	Major	Catastrophic	Extreme Heat	Extreme Cold	Extreme Rainfall	Sea Level Rise	Flooding	Wildfire	Water Stress + Low River Levels	Wind Events
LAND-WATER INTERFACE ASSETS	Navigation aids and River Information Services					↑	↓	↑↑	→	↑↑	→	↑	→
	Dredging/Disposal					↑	↓	↑↑	→	↑↑	→	↑	→
	Turning Basin					↑	↓	↑↑	→	↑↑	→	↑	→
	Terminals					↑	↓	↑↑	→	↑↑	→	↑	→
	Levee					↑	↓	↑↑	→	↑↑	→	↑	→
	Waterfront Revetments					↑	↓	↑↑	→	↑↑	→	↑	→



# IMPLEMENTATION

The Port views the Climate Action Strategy as a living document. As such, the Port will regularly evaluate the strategy's recommendations for greenhouse gas reduction and climate adaptation actions. On an annual basis, the Port will assess its progress and implement actions through its annual budgeting process. The Climate Action Strategy website will also be updated to inform the public of the Port's implementation activities and outcomes.

The Port will continue to update the GHG and climate risk modeling considering new technological advancements and data. This will ensure the Port is utilizing the best available science and technology as we implement recommendations identified in the Climate Action Strategy. The Port will also strive to make administrative and operational changes that were not modeled to continue our commitment to being an environmental steward and a sustainable and resilient port.

# GREENHOUSE GAS REDUCTION IMPLEMENTATION

As part of the implementation of the Climate Action Strategy, the Port evaluated a path forward targeting the areas of greatest impact and cost effectiveness.

In general, the Port will be working on reducing its GHG through a variety of avenues with target years for implementation. For example, evaluating the use of renewable diesel or hydrogen for its off and on-road equipment, electrification of its on-road fleet, shore power for vessels and solar options for existing or new buildings for energy efficiency. The Port will strive to develop partnerships with transportation industries to support their goals in decarbonization.

Some of the actions have a low implementation cost and can be accomplished in a fairly short time frame. These are considered 'more cost effective.' Others will take several years to come to fruition and have a high cost of implementation. They are noted as 'less cost effective.' However, those with a medium to high cost may provide the most environmental benefit. Additionally, all actions will need to be weighted with the need for regulatory compliance, scalability of the action and financial feasibility.

Emissions Reduction Action	Time Horizon	GHG Impact	Estimated Cost	Cost Effectiveness
Energy efficiency measures	2030	Low	Cost Savings (high)	More cost effective
Transition from diesel to alternative fuels	2040	High	High	Cost effective
Vehicle right sizing	2040	Medium	Medium	Cost effective
Leveraging anti-idling technologies – off and on road fleets	2040	Low	Medium	Less cost effective -Cost effective
Transition gasoline to alternative fuels	2050	High	High	Cost effective
On-site electricity generation	2050	Low	High	Less cost effective
Hybridization of select diesel off-road equipment	2050	Low - Medium	Low - High	Less cost effective - Cost effective

Estimated total GHG reductions - High: greater than (>) 300 MT CO2e; Medium: >100 MT CO2e but less than (<) 300 MT CO2e; Low: <100 MT CO2e. Estimated total costs - High: >\$500,000; Medium >\$100,000 but <\$500,000; Low: >\$0 but <\$100,000; Cost savings (high): <\$500,000; Cost savings (low): <\$100,000; Estimated total costs, cost per MT CO2e reduced - Less cost effective: >5,000; Cost effective: >1,000 but <5,000; More cost effective: <1,000.

# CLIMATE RESILIENCY IMPLEMENTATION

Changing weather impacts Port operational activities, such as changing work hours due to high heat warnings or limiting worker exposure to wildfire smoke, as well as impacts to engineering design for infrastructure development and maintenance projects.

The analysis that was conducted provided a baseline of planning, operational and capital adaptation strategies that the Port could consider. These strategies range from short-term to long-term implementation. No one can predict the future, so those strategies that are beyond the mid-term recommendations will need to be further evaluated as time progresses.

Some of the strategies are tangible actions that the Port will evaluate in engineering design and maintenance projects. Others are less tangible and require additional evaluation and planning to further refine and define impacts to the Port, the Port District and Cowlitz County. As with the greenhouse gas reduction recommendations, actions taken by the Port will be weighted with the need for regulatory compliance, scalability of the action and financial feasibility.



	Present	2030	2050	2080
<b>Adaptation Focus</b>	<p><b>Short-term</b></p> <ul style="list-style-type: none"> <li>Evaluate and prepare. Take straightforward, low-cost actions</li> </ul>	<p><b>Mid-term</b></p> <ul style="list-style-type: none"> <li>Detailed planning for Port resiliency and bigger projects</li> </ul>	<p><b>Long-term</b></p> <ul style="list-style-type: none"> <li>Broad actions and planning informed by ongoing climate data</li> </ul>	
<b>Riverine Flooding</b>	<ul style="list-style-type: none"> <li>Evaluate regional flood risk with regional partners</li> <li>Flood operations planning</li> </ul>	<ul style="list-style-type: none"> <li>Conduct analysis to identify long-term predicted high and low water averages</li> <li>Coordinate with regional response entities</li> <li>Initiate planning to address future changes to Port infrastructure and facilities</li> </ul>	<ul style="list-style-type: none"> <li>Reduce overall risks associated with river flooding through strategic partnerships, infrastructure adjustments and advanced planning</li> </ul>	
<b>Extreme Rainfall</b>	<ul style="list-style-type: none"> <li>Evaluate the Port's ability to handle rainfall volumes with predicted increases in short duration, high rainfall events</li> </ul>	<ul style="list-style-type: none"> <li>Evaluate stormwater capacity and needs</li> <li>Determine fuel storage and access resiliency during high rainfall events</li> <li>Develop a specific Port Flood Response Plan</li> </ul>	<ul style="list-style-type: none"> <li>Increased infrastructure resilience during precipitation events, including ability to access fuel during any flood event and effective operational response</li> </ul>	
<b>Extreme Heat</b>	<ul style="list-style-type: none"> <li>Evaluate the Port to understand heat impacts on operations and infrastructure</li> </ul>	<ul style="list-style-type: none"> <li>Identify infrastructure vulnerable to extreme heat</li> <li>Determine extreme heat impact to operations</li> <li>Target upgrades or equipment replacements when sensitive to overheating</li> </ul>	<ul style="list-style-type: none"> <li>Continue to review and update heat data and extreme heat infrastructure impacts as conditions change</li> </ul>	

