



PORT of  
**vancouver**

# Overview of environmental initiatives

*November 20, 2018*

# Port of Vancouver

- Port Metro Vancouver Navigational Jurisdiction
- Port Metro Vancouver Managed Federal Lands and Waters
- Major Rail Lines
- Provincial Highways
- Trans-Canada Highway



16,000  
hectares

WE ARE RESPONSIBLE FOR MANAGING OVER 16,000 HECTARES OF WATER AND OVER 1,000 HECTARES OF LAND

16  
municipalities

# Our Vision

The Vancouver Fraser Port Authority (VFPA) vision is – *to be the world's most sustainable port.*

We've defined what a sustainable port means to us through our sustainable port definition.

<http://www.portvancouver.com/about-us/sustainability/>





# Northwest Ports Clean Air Strategy (NWPCAS)



# Northwest Ports Clean Air Strategy

Collaborative strategy launched in 2007 with Ports of Seattle and Tacoma, with participation from Canadian and U.S. regulatory agencies, to reduce port-related emissions in Georgia Basin - Puget Sound airshed.

Emissions reduction targets:

- *80% reduction in diesel particulate matter emissions per tonne of cargo by 2020*
- *15% reduction in GHG emissions per tonne of cargo by 2020*

Includes annual progress reporting on sector specific objectives.

# Port emissions inventory

The Vancouver Fraser Port Authority prepares a comprehensive activity-based emissions inventory every five years.

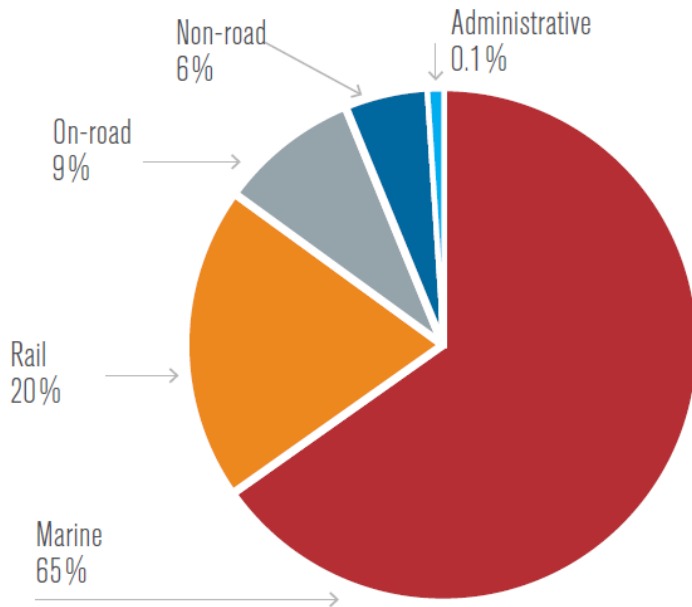




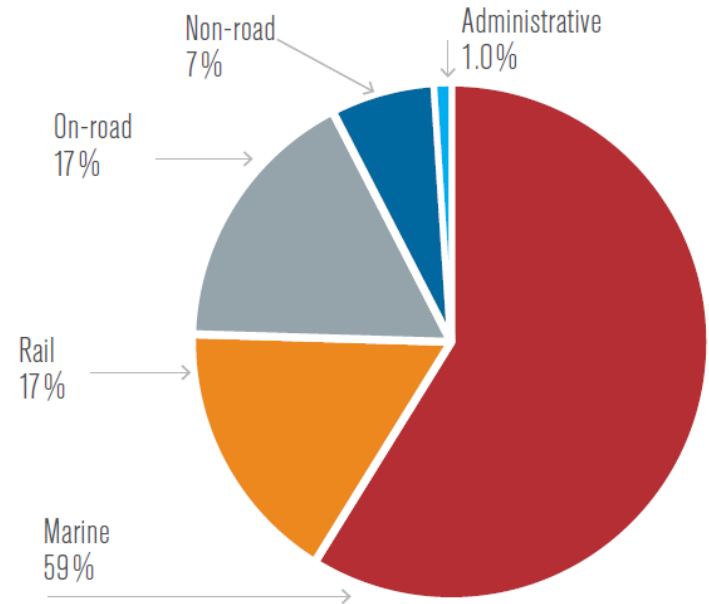
# Port emission contributions by source (2015)

Our 2015 Port Emission Inventory Report provides information on port-related emissions and air initiatives.

Air pollutant emissions by source, 2015



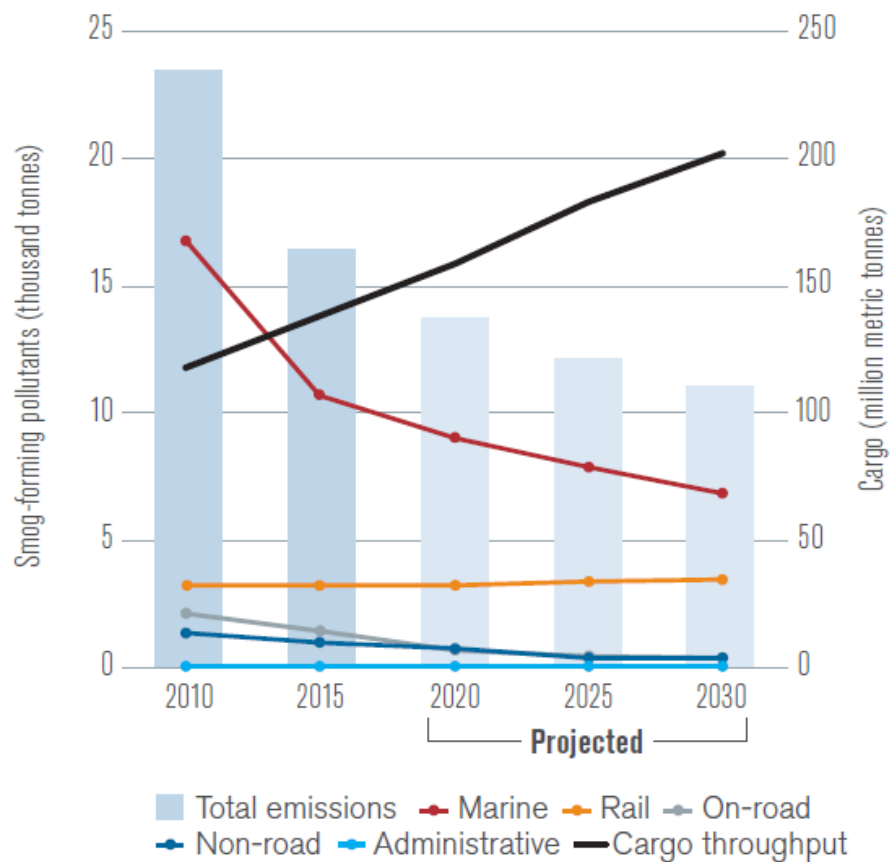
Greenhouse gas emissions by source, 2015



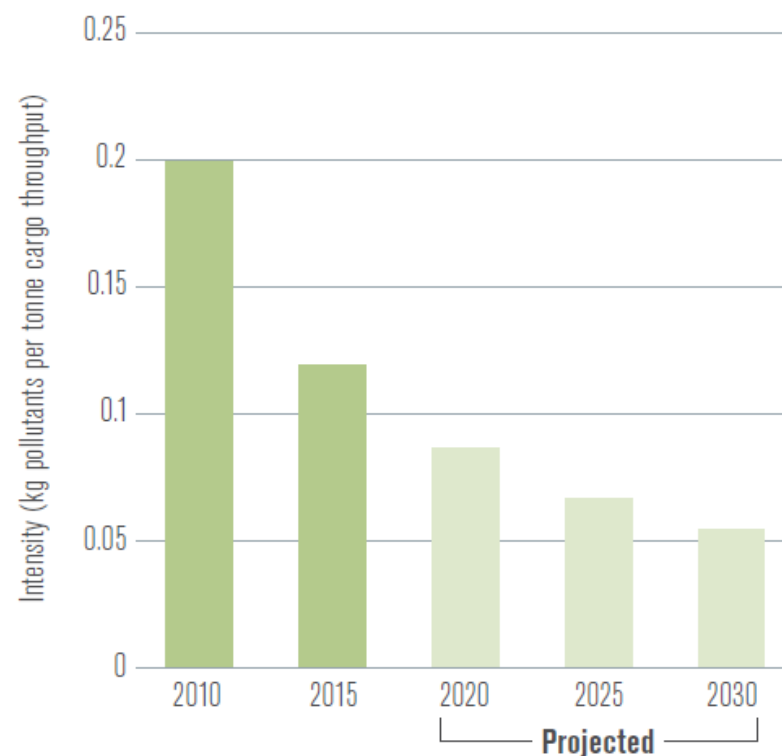
For more information visit: [www.portvancouver.com/environment/air-energy-climate-action/clean-air-strategy](http://www.portvancouver.com/environment/air-energy-climate-action/clean-air-strategy)

# Air Pollutants

Air pollutant emissions and cargo throughput, 2010-2030



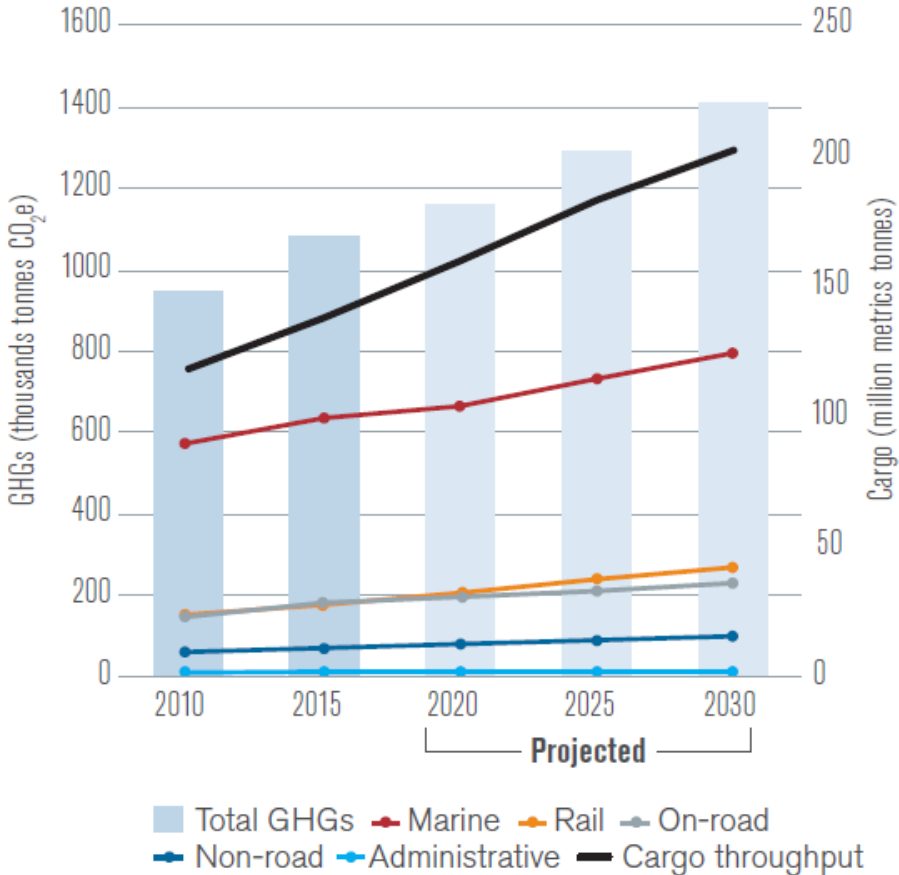
Air pollutant emissions intensity, 2010-2030





# Greenhouse gases

GHG emissions and cargo throughput, 2010-2030

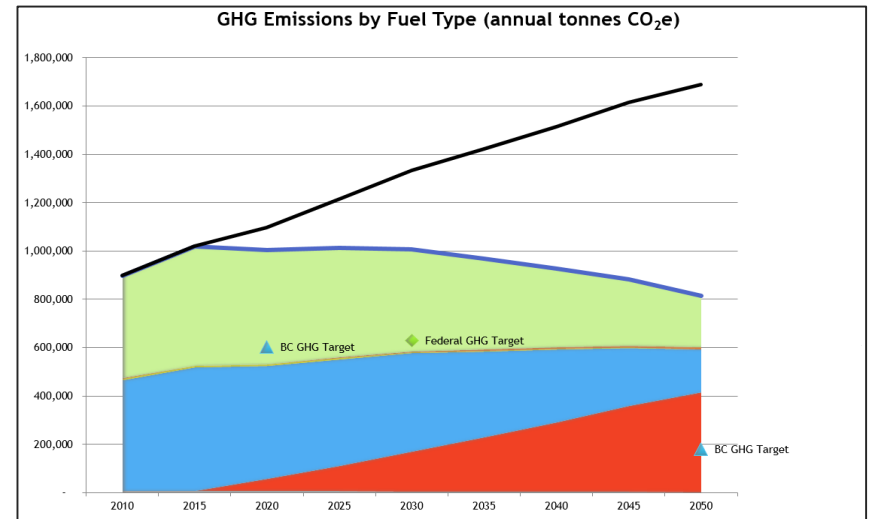
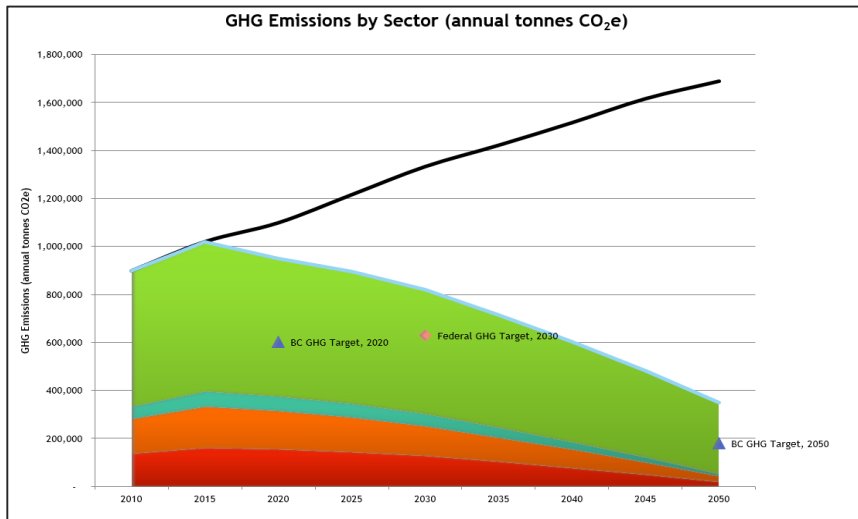


GHG emission intensity, 2010-2030

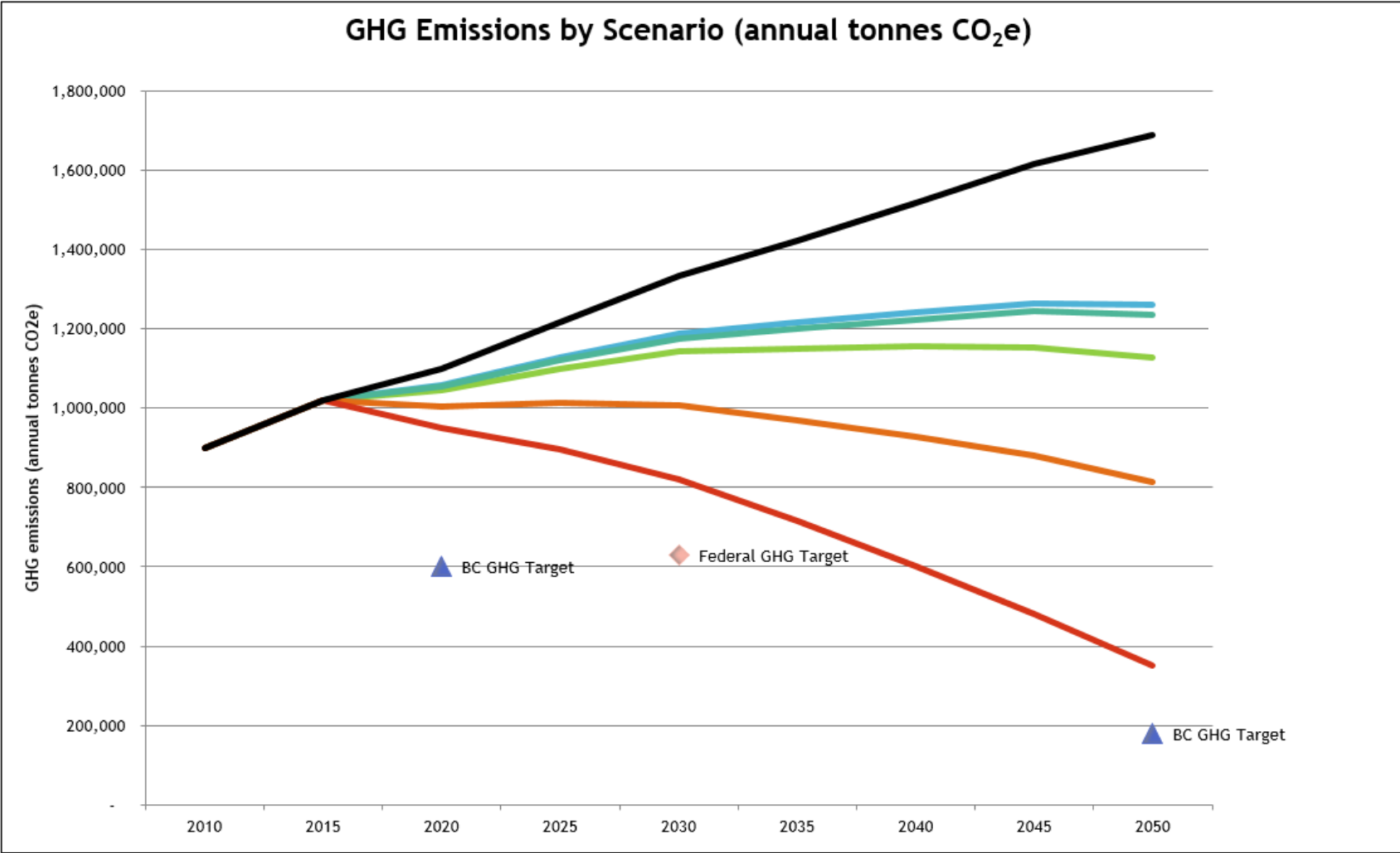


# GHG reductions analysis tool

We have developed a tool that enables us to analyze GHG reductions opportunities using the 2015 port emission inventory data.



# Example scenario comparison view



# Environmental initiatives





# Container truck environmental requirements

We introduced minimum environmental requirements for container trucks in 2008.

- Truck engine age and emissions limits
  - Working toward fleet-wide 2007 engine age or equivalent for particulate matter emissions by 2017
  - 2006 trucks and older require diesel oxidation catalyst
  - 10 year rolling truck age in 2022







# SMARTFLEET

smart decisions, clear direction, proven results

When port-related trucking operations are efficient, fair and safe, everyone benefits. A stable trucking sector improves safety, quality and profitability for everyone in the supply chain and supports a vibrant local economy and a healthy environment.



## GUIDING PRINCIPLES

- > Collaboration
- > Respect
- > Engagement
- > Fairness
- > Transparency
- > Accountability
- > Long-term Sustainability

## PROJECTS



### GPS TRACKING

Real time, accurate traffic data for transparent measurement and reporting



### RESERVATIONS AND DATA SHARING

A common reservation system and an improved interface for sharing data



### NEW TRUCK LICENSING SYSTEM (TLS)

Fair and measurable management of reliable truck supply to port facilities



### DRAYAGE MODEL

Better decision making, increased predictability and improved financial outcomes

## CONTINUAL PROCESS IMPROVEMENTS

- > Extended Hours of Operation
- > Drayage ConfidenceLine
- > Expanded Reporting & Response
- > Expanded Auditing of Rate Compliance

## BENEFITS



### OCEAN CARRIERS

- Improved access to terminals
- Better information about empty containers



### TERMINALS

- Enhanced management of operations through improved visibility of arrival times and peaks
- Better information about empty containers
- Improved cost recovery on missed appointments
- Established commitment to transparency



### DRIVERS

- Fair pay for work performed
- Enhanced productivity, with reduced terminal turn times and increased double-ended moves
- Reduced wait times
- Enhanced ability to plan each workday



### TRUCKING COMPANIES

- Improved access to reservations to improve operational planning
- Enhanced fleet management, with reduced terminal turn times and increased double-ended moves
- More revenue-generating trips per day
- Enhanced ability to manage workforce to match business needs and responsibilities



### IMPORTERS & EXPORTERS

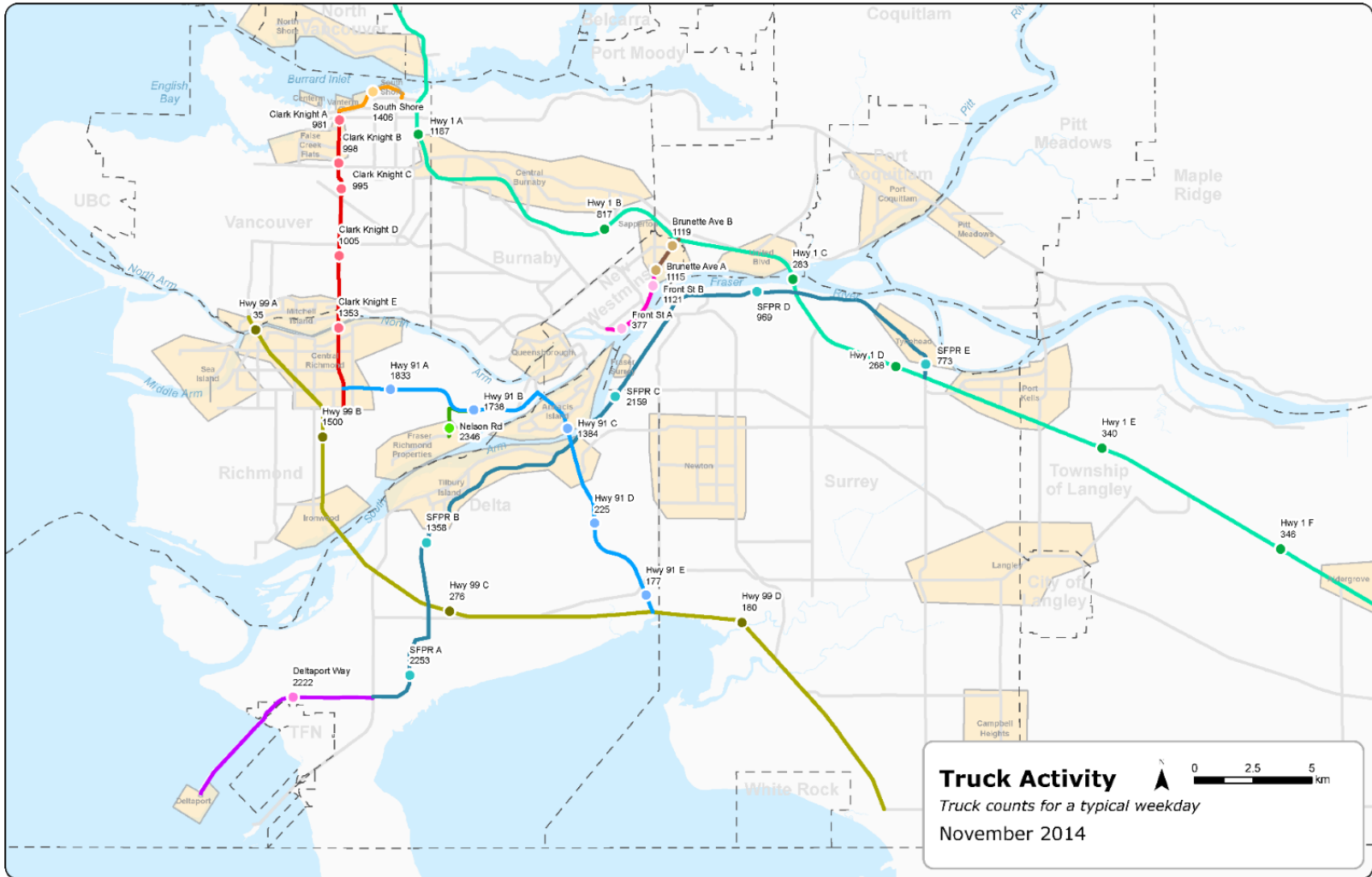
- Improved access to terminals
- Transparent and responsible use of reservations
- Better information about empty containers



### RETAILERS & CONSUMERS

- Reliability of supply
- Reduced congestion on residential streets

# Container truck fleet GPS tracking



# Non Road Diesel Emissions (NRDE) Initiative

Introduced in 2015, promotes newer and cleaner equipment through equipment replacement or retrofits.

- Fee applied to old high emitting equipment
- Targets phase out of Tier 1 and older equipment
- Promotes retrofitting equipment with diesel particulate filters or diesel oxidation catalysts
- Opacity and idle reduction plans
- Targeting 80% of fleet to meet Tier 4 by 2020

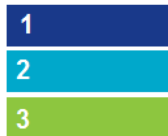
We are also funding two pilot projects to test auto stop-start technology on yard tractors.

# Climate Smart Initiative

We partner with Climate Smart to promote GHG management training and emissions reductions across tenant operations.

- Provides participation funding to tenants that engage in Climate Smart training and ongoing peer group
- Port tenants participating in Climate Smart peer group collectively reduced over 4,000 tonnes of greenhouse gases

training  
program



online  
software  
tool



one-on-one  
support



certification &  
b2b network



# Energy Action Initiative

- Launched in partnership with British Columbia Hydro and Power Authority (BC Hydro)
- Industrial Energy Management Specialist position created to help port tenants advance energy conservation measures and to develop policy and programs for Port Authority
- Focuses on electrical energy conservation and exploration of electrification (alternative energy) opportunities
- Port Authority Strategic Energy Management Plan guides conservation efforts

BC Hydro   
powersmart

 PORT of  
vancouver



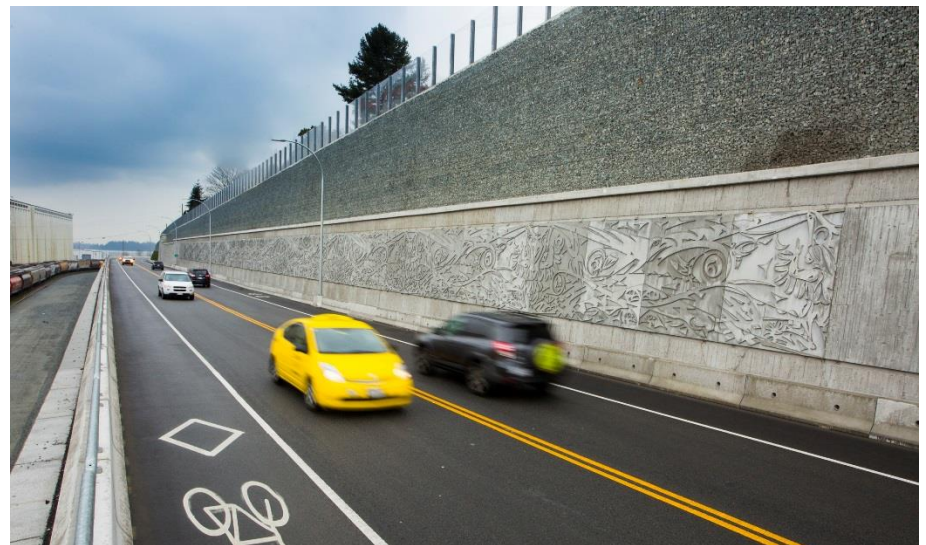


# Green infrastructure development

- Low Level Road project received the **Institute for Sustainable Infrastructure (ISI) Envision** sustainable infrastructure rating system's Platinum Award

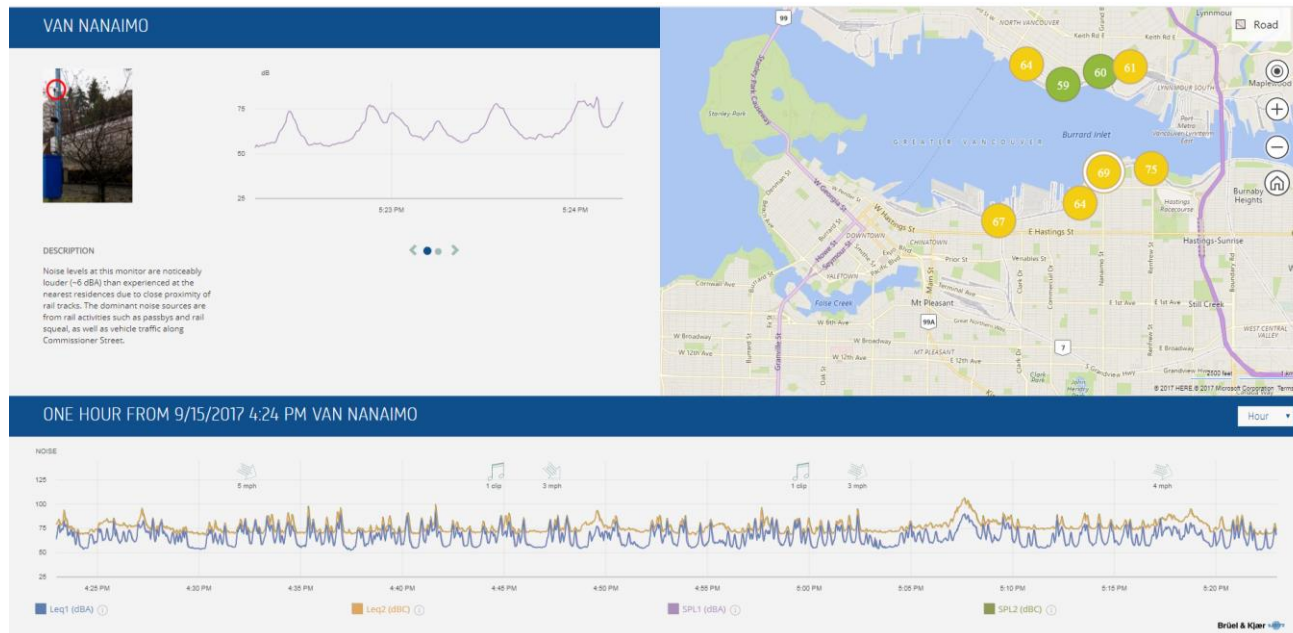
<https://sustainableinfrastructure.org/>

- First transportation project to receive an ISI Envision-verified sustainable infrastructure rating system award
- Project improved efficiency and safety of the road and rail network in the north shore trade area



# Noise monitoring network

- We host a real-time noise monitoring website that enables the community to help us identify noise concerns, and we publish an annual noise report
- We're participating in an international study with 11 ports to better understand and respond to ship noise impacts on communities



# Ecoaction Program for Ships





# Ecoaction Program for Ships

We provide discounted harbour dues for clean ships.

- Ships use our web portal to submit applications (select an eligible emission reduction measure)
- We recognize carriers with highest participation rates with the Blue Circle Award



# International collaboration on incentive programs

We are leading an initiative with support from ports of LA, Long Beach, Gothenburg, and the U.S. EPA, Transport Canada, Energy Foundation China and the Natural Resources Defense Council to advance international collaboration on incentive programs for cleaner vessels.



# Shore power facilities

We introduced shore power for cruise ships in 2009 and will have shore power available at two container terminals in 2018.



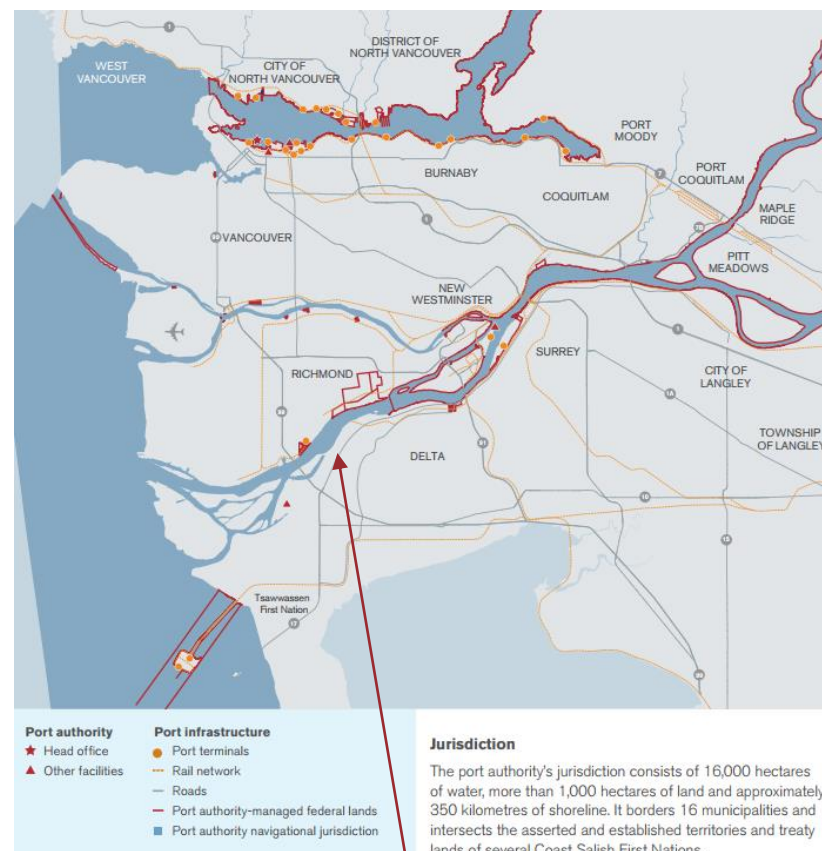
Over 18,000 tonnes of greenhouse gas emissions have been eliminated since introducing shore power for cruise ships in 2009.

# Natural gas as a marine fuel

We believe LNG can be a safe, cost effective and environmentally preferable marine fuel, and represents an important step toward a more sustainable port.

British Columbia has significant natural gas resources and infrastructure.

Fortis BC operates the natural gas utility and can provide highly competitive pricing for LNG as a marine fuel.



Location of Fortis BC liquefaction facility

# Short sea LNG vessels

BC Ferries and Seaspan Ferries operate LNG vessels in the Port of Vancouver.

Fortis BC has an existing LNG facility located in the port and currently supplies LNG fuel by truck to BC Ferries and Seaspan Ferries.



*see Seaspan Ferries presentation*



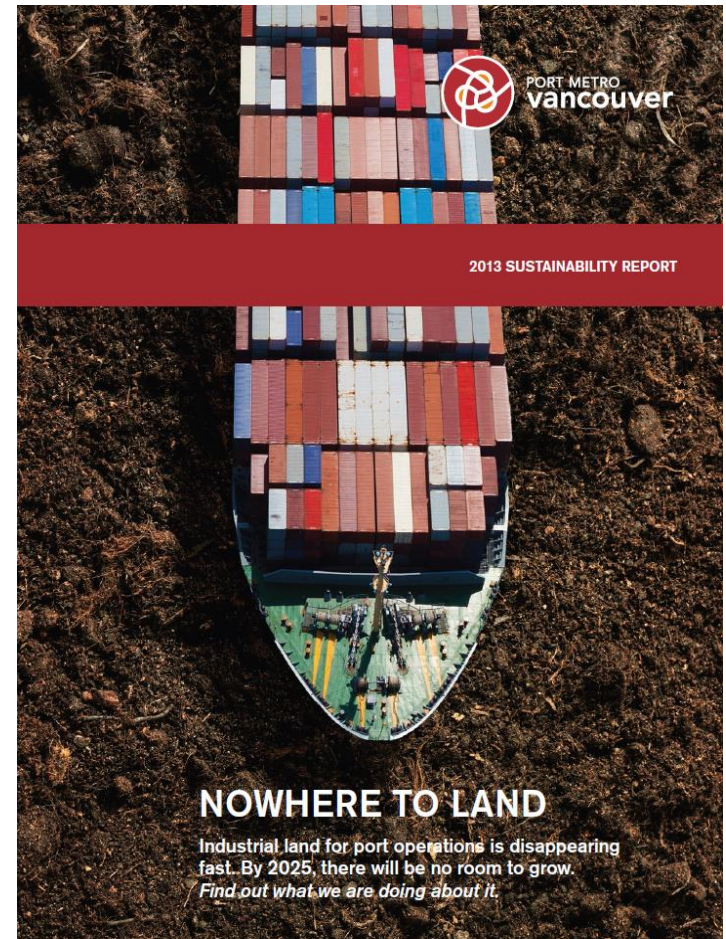
# ECHO

- Port of Vancouver-led
- Emphasis on underwater noise and endangered whales
- First port in world to develop vessel underwater noise criteria for financial incentives
- 2017 vessel slow down trial
  - Clear link between vessel speed and underwater noise

# Sustainability Reporting

We publish a sustainability report in accordance with international standards.

- Provides an overview of our environmental, social and economic performance
- Follows the Global Reporting Initiative guidelines
- Assured by an independent third-party







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Thank you!