



Stewardship and Sustainability with the Development of the Prince Rupert Gateway

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AAPA Energy and Environment Seminar
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PORT OF PRINCE RUPERT
Welcome to North America's Leading Edge

Agenda

- Who we are
- Current Facilities Overview
- Building the Gateway:
 - From 500 ships and 25 million to 2000 ships and 100 million by 2025
- Getting Ready For Growth
- Operations, Marine Safety
- Environmental Initiatives
- First Nations and Community Focus

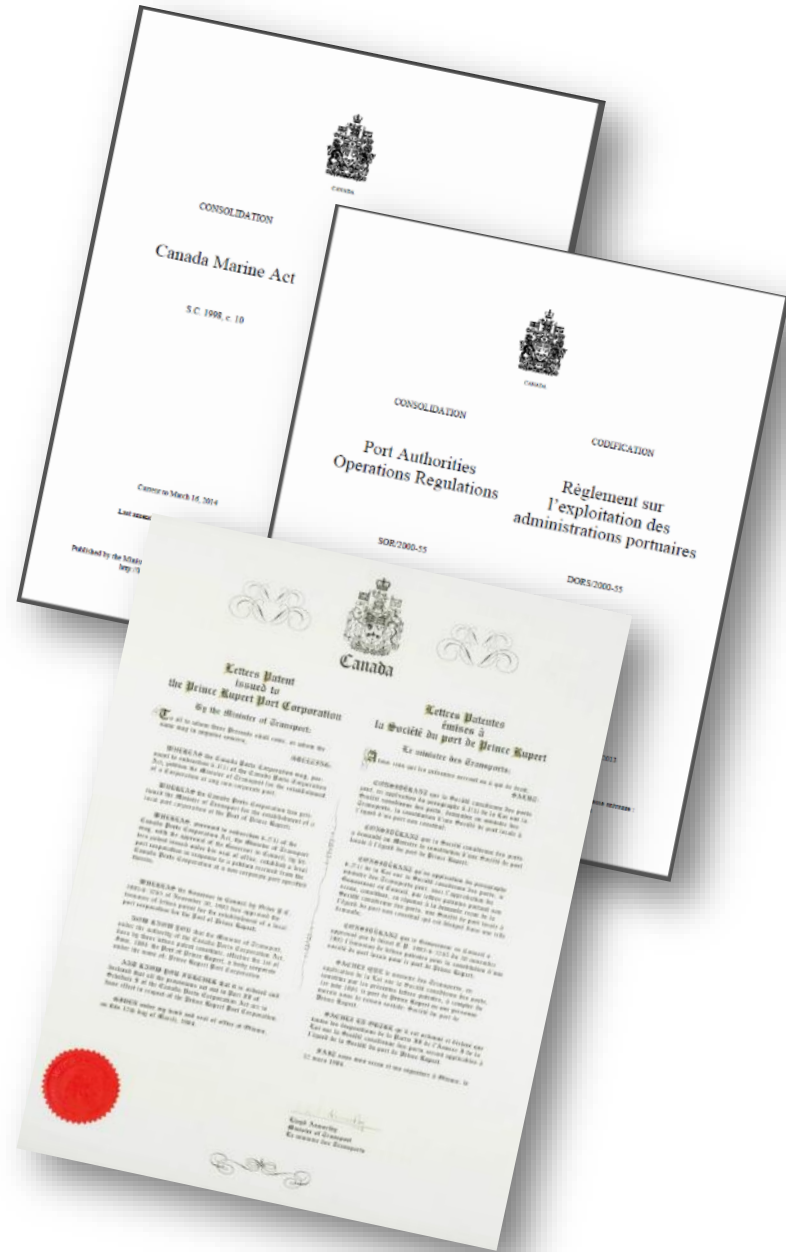




Canada Marine Act

Port was established and is governed by three distinct articles:

- Canada Marine Act - 1998
- Port Authority Operations Regulations
- PRPA Letters Patent
- **Build marine infrastructure for Canada**
- **Manage services and infrastructure in a commercial manner**
- **Provide and ensure a high level of safety and environmental protection**



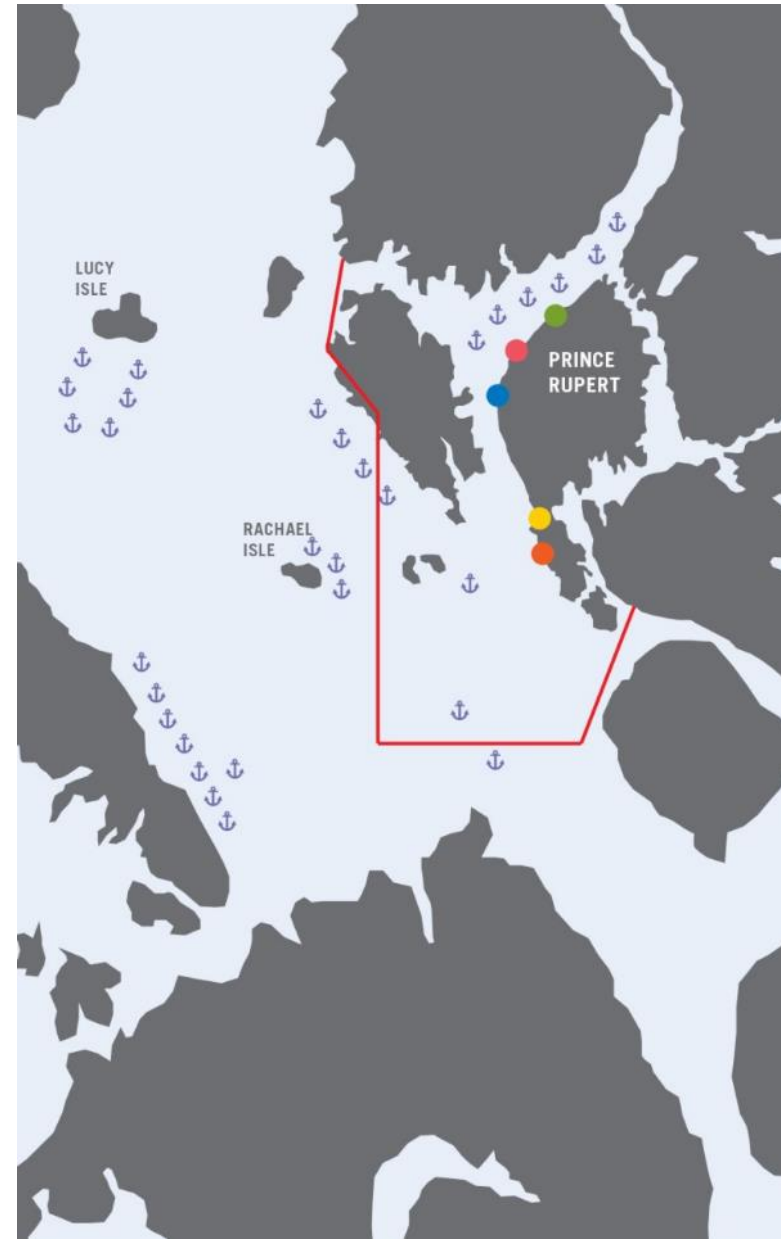
Harbour Boundaries and Oversight

LAND

- 2,400 acres of land
- Total land holdings – 966 hectares

WATER

- 35,000 acres of water
- Owned harbour – 14,000 hectares
- Navigable waters – approx. 350 km of shoreline
- Natural deep water port – no draught restrictions
- Easily accessible from Great Circle Route





Northland Cruise Terminal



Westview Terminal



Fairview Container Terminal



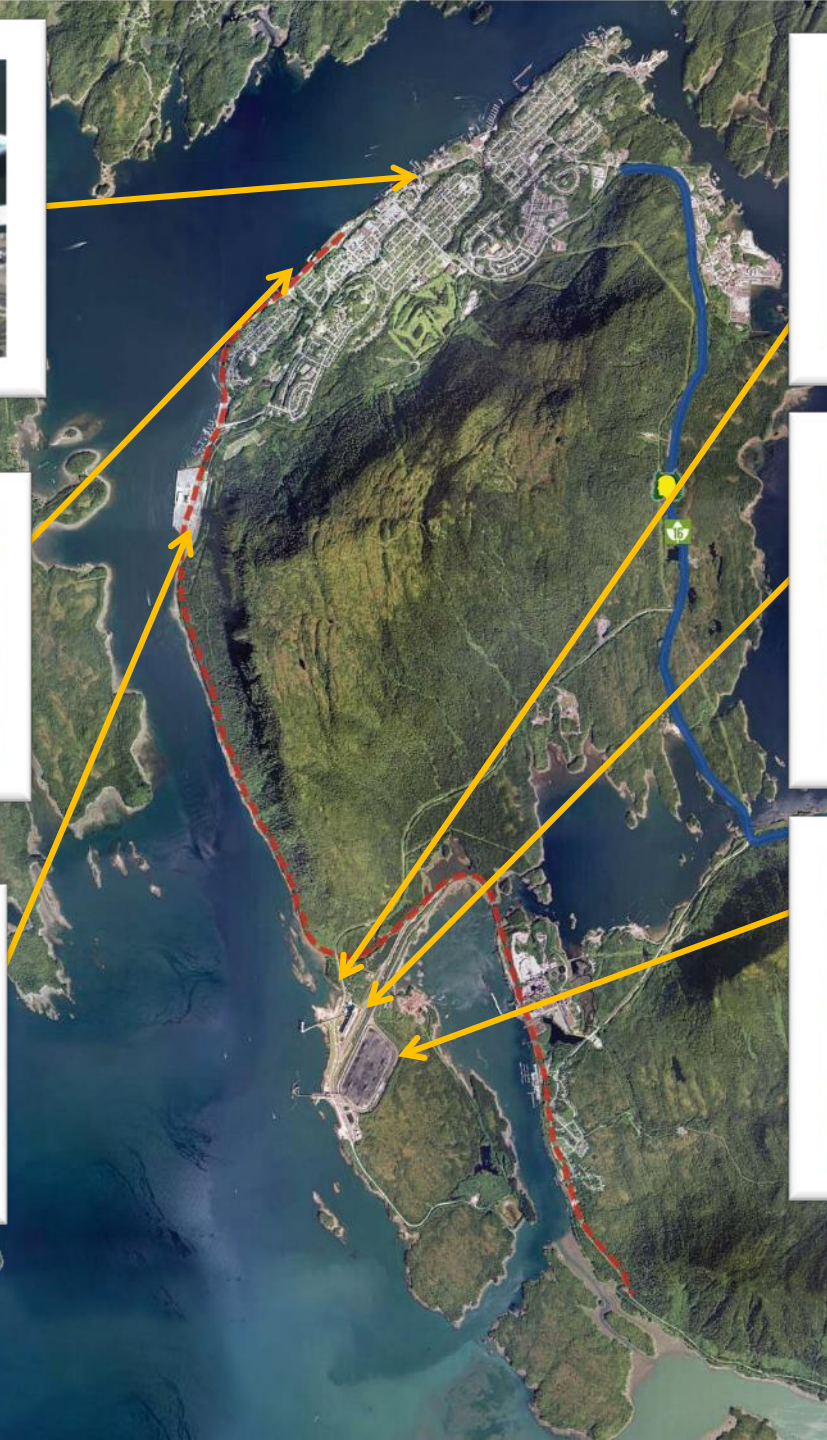
CT Terminal



Prince Rupert Grain



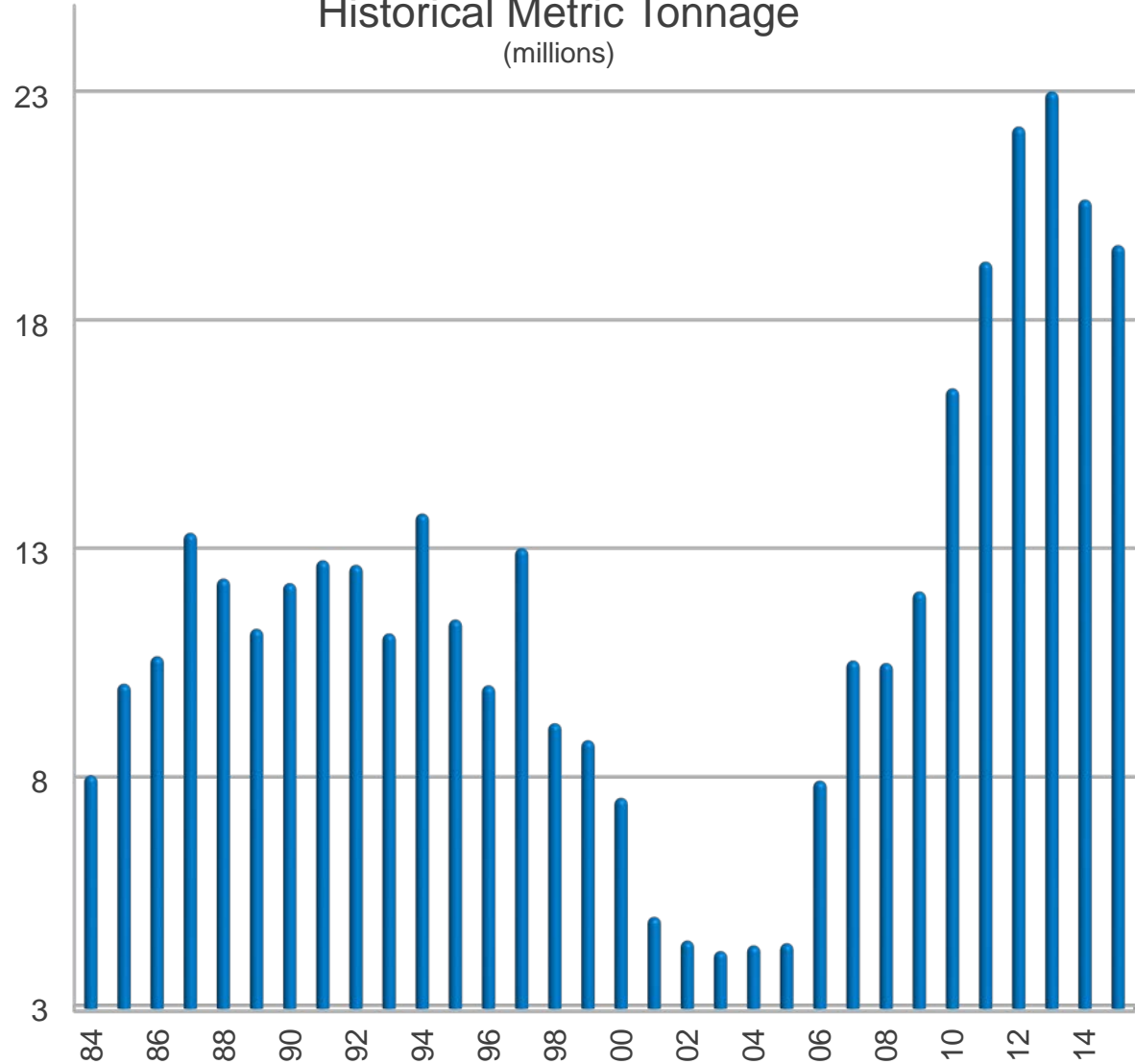
Ridley Terminal



LINKING A WORLD OF OPPORTUNITY



Historical Metric Tonnage (millions)



GATEWAY 2020 – LAND USE PLANNING



GATEWAY 2020 – ROAD RAIL UTILITY CORRIDOR



GATEWAY 2020 – ROAD RAIL UTILITY CORRIDOR



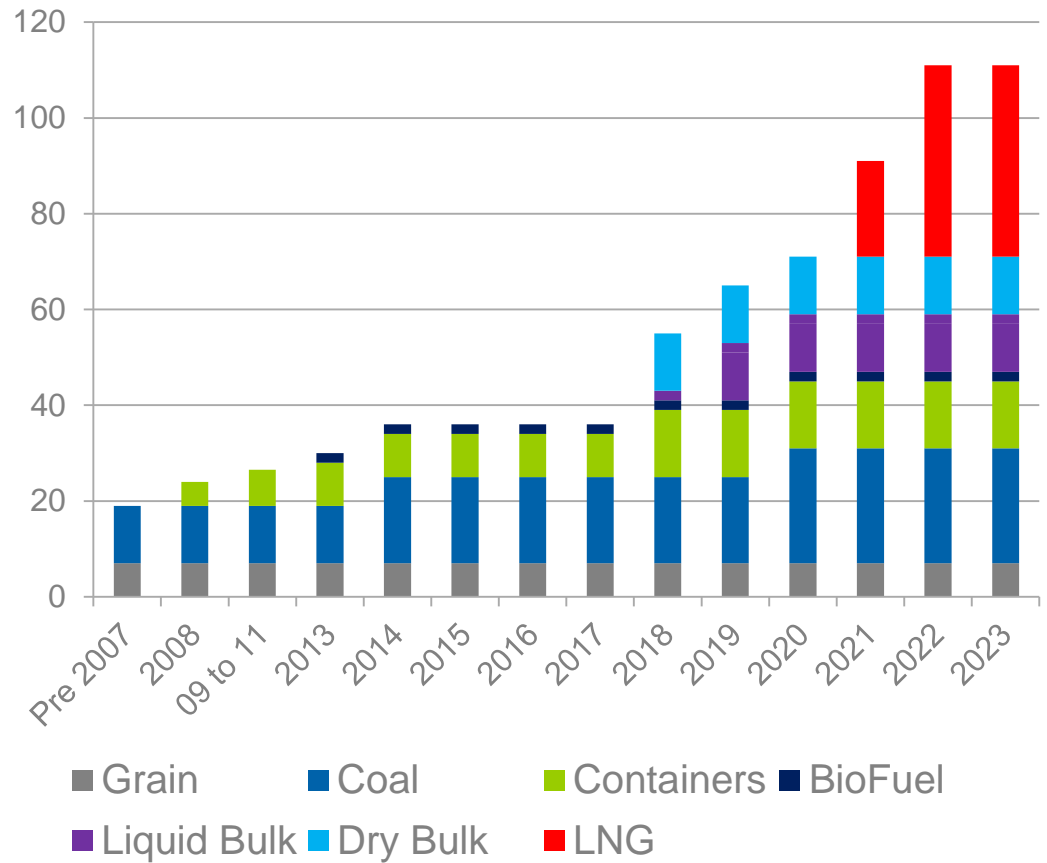
GATEWAY 2020 – FAIRVIEW TERMINAL EXPANSION



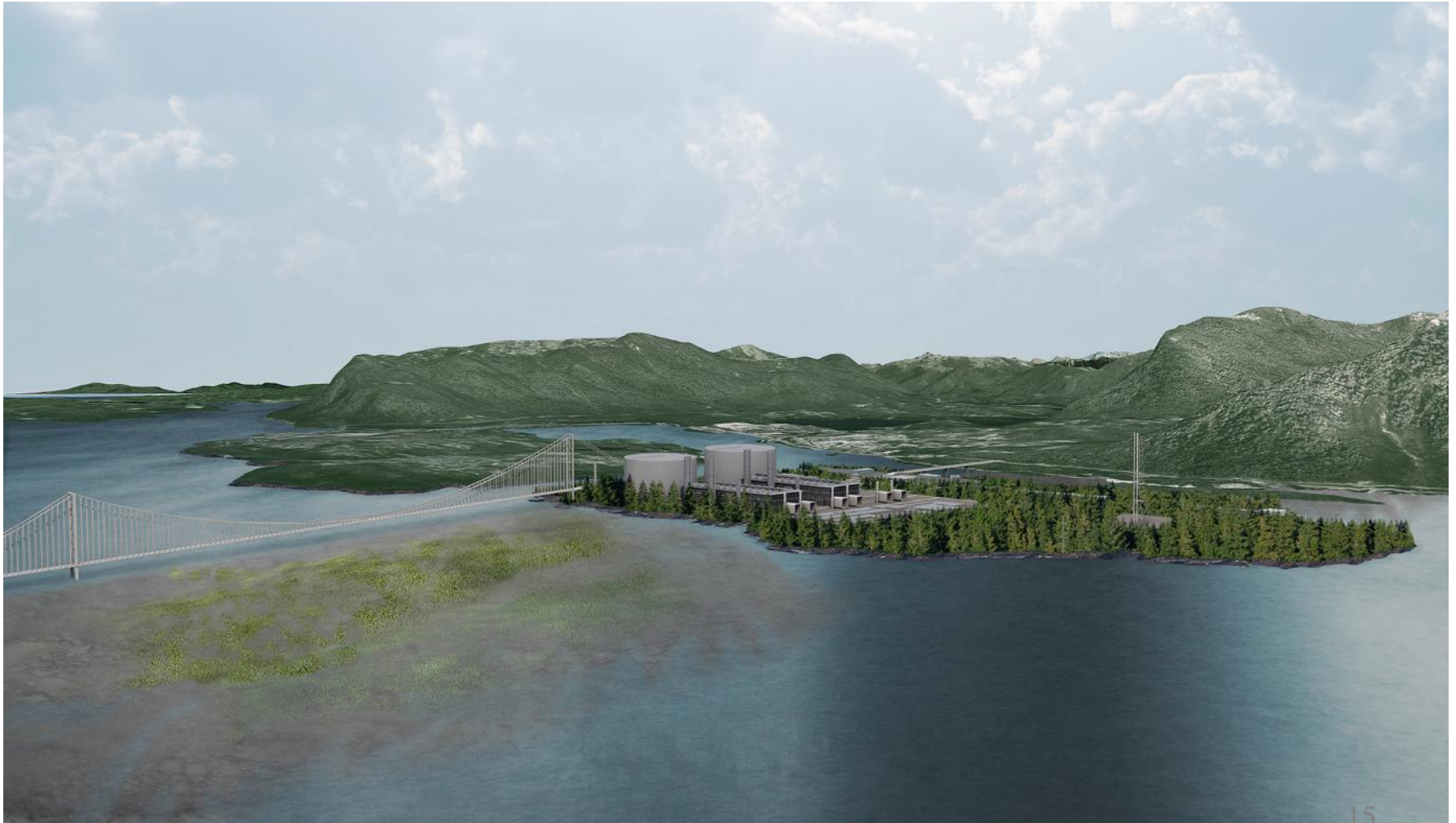


Port Capacity: Advanced Projects

Million Metric Tonnes



Getting Ready For Growth



Operational Excellence

Maintaining safe, secure and sustainable operations (**and maintaining social acceptance**) involves:

- **Daily** collaboration and communication with partners
- Shared information and resources
- Port led Environmental Stewardship Committee, Port Ops and Port Security and Emergency Preparedness Committees
- Annual Port led Tabletop and live exercises
- Achieving highest standards of navigational safety and environmental stewardship



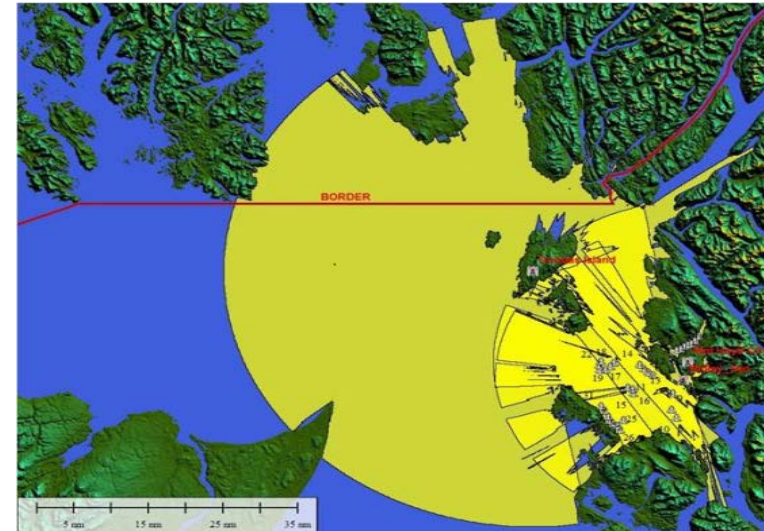
PRPA Harbour Master's Office (HMO)

- Oversight of marine operations
- Schedules and controls all commercial vessel movements and anchorages
- Maintains Port Security Operations Centre (PSOC)
- Emergency Management Plan and Incident Command System
- MV Charles Hays daily harbour patrols
- On-water emergency response
- Chair of Committee meetings
- E-Navigation enhancements



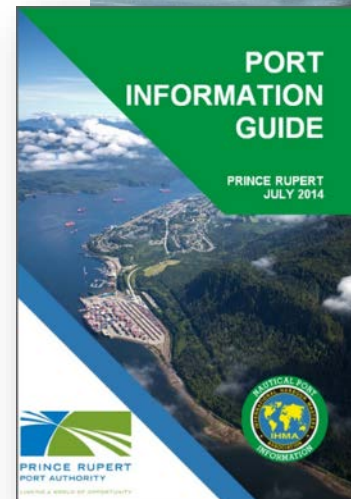
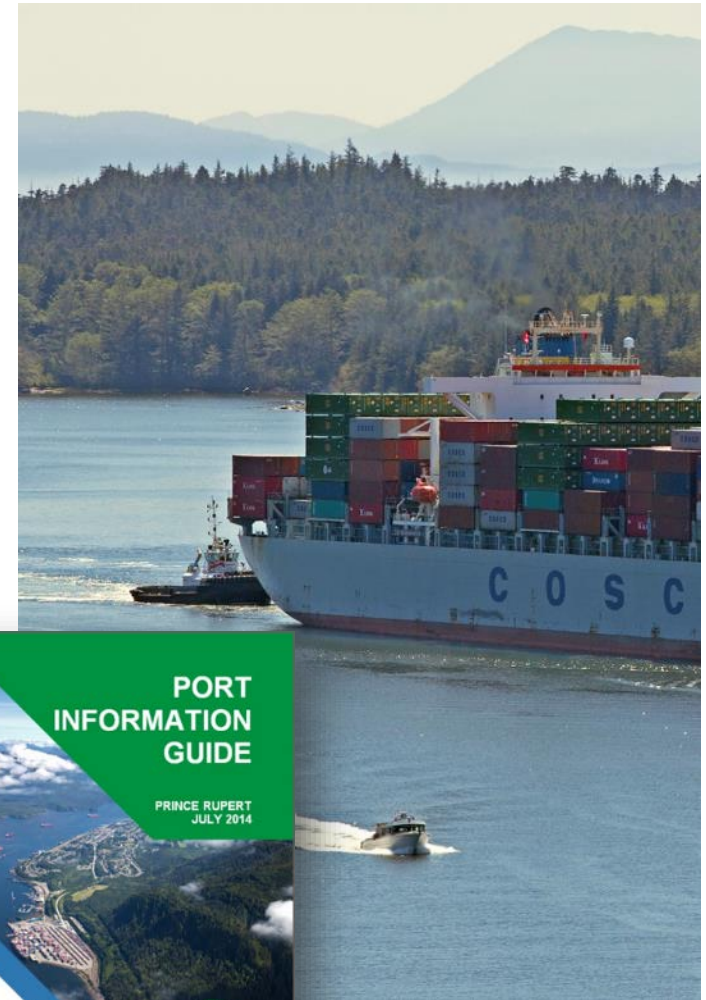
Prince Rupert Marine Risk Assessment

- Conducted by Det Norske Veritas, global leader in risk assessment
- Used an estimate of 1,250 vessels by 2020, including 100 LNG carriers & 100 tankers
- Found local risk levels comparable or less than other world-class ports
- Escort tugs reduce grounding incidents by estimated 80%
- Additional measures include enhanced and new NavAids, **Shore Based Radar**, traffic separation, increased tug requirements, operating limits for weather conditions



Port Practices & Procedures

- Critical to safe and secure operations of any port and harbour
- Pertinent and easy to read info for mariners in a single document
- Relevant to all mariners
- Website accessible and user friendly
- Synchronizes knowledge and expectations across all user groups
- Serves as a foundation to build new and improved protocols as circumstances change: updated as required



Improved E-Navigation

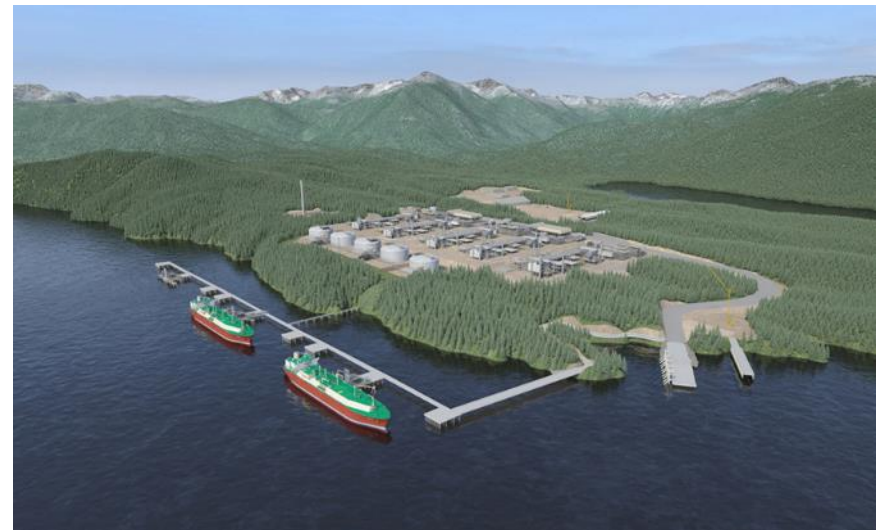
- Installing live tide and current monitoring equipment
- Introducing shore-based radar to cover harbour and its approaches
- Creating new Aids to Navigation in collaboration with CCG (Philips Point and Kaien Island Sector light)
- Adding port patrol vessels to support escorts and enhance harbour safety
- Effecting traffic separation for transiting commercial vessels and safety zones to define safe distances for all harbour users



New Projects

PRPA is working closely with project proponents to ensure best practices are incorporated into all aspects of new developments. This includes collaboration on:

- Vessel berth design for marine terminals
- Environmental assessments, construction management planning and environmental compensation strategies
- Full simulations for vessel arrival, berthing, transiting Prince Rupert Harbour
- Project and vessel specific Practices & Procedures, particularly with new cargoes like LNG



Environmental Initiatives

- Completion of an environmental footprint study to understand baseline of air quality, water quality, noise
- Development of a Environmental Sustainability Plan
- Establishment of Port Environmental Stewardship Committee
 - Port tenants and users
 - Proponents
 - First Nations
 - Government agencies
 - Academics
 - NGOs



Green Marine Program

- Joined program in 2010
- First west coast participant
- Continued improvement
- Facilitated communication and collaboration with other participants and supporters.
- Part of a working group developing program performance indicator for underwater noise



Air Quality

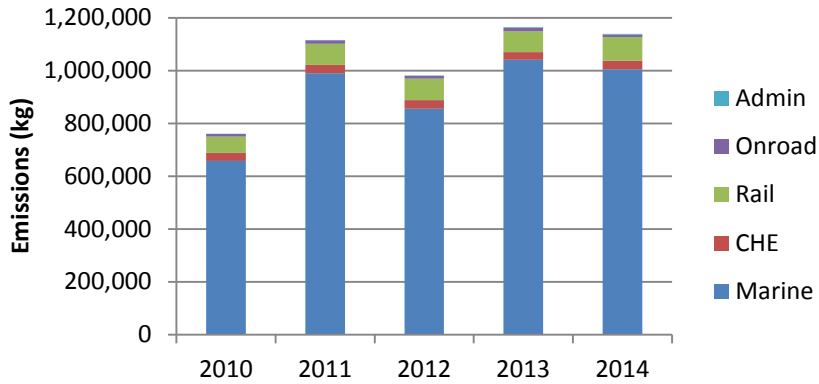
Understand baseline, establish long-term monitoring and implement measures to manage and mitigate impacts

- Energy and Emission Inventory (PEIT)
- Meteorological stations
- Wet deposition station
- Air quality monitoring
- Shore Power
- Green Wave
- Clean Trucking Pilot Program

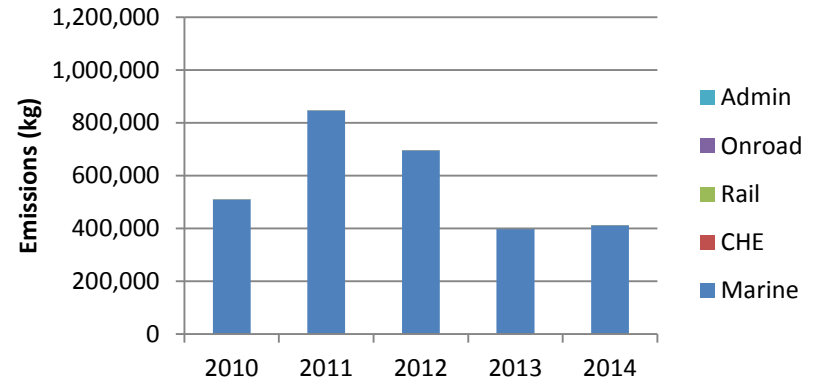


Emission Inventory Data

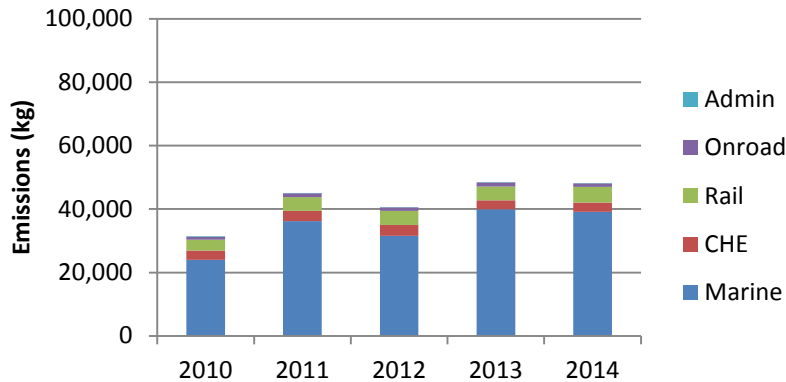
Port-wide NO_x (Port Boundary)



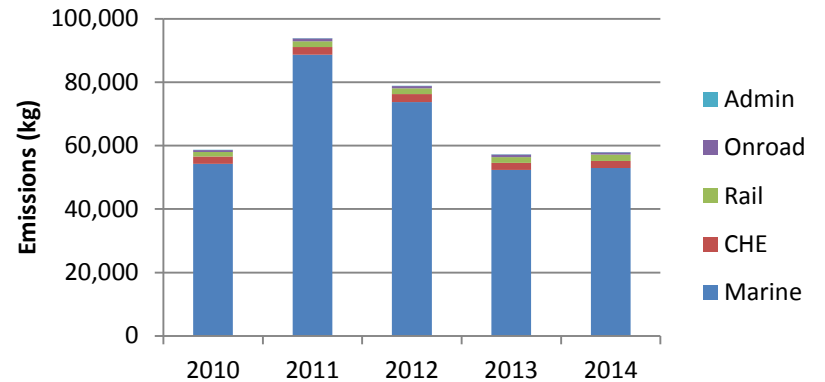
Port-wide SO_x (Port Boundary)



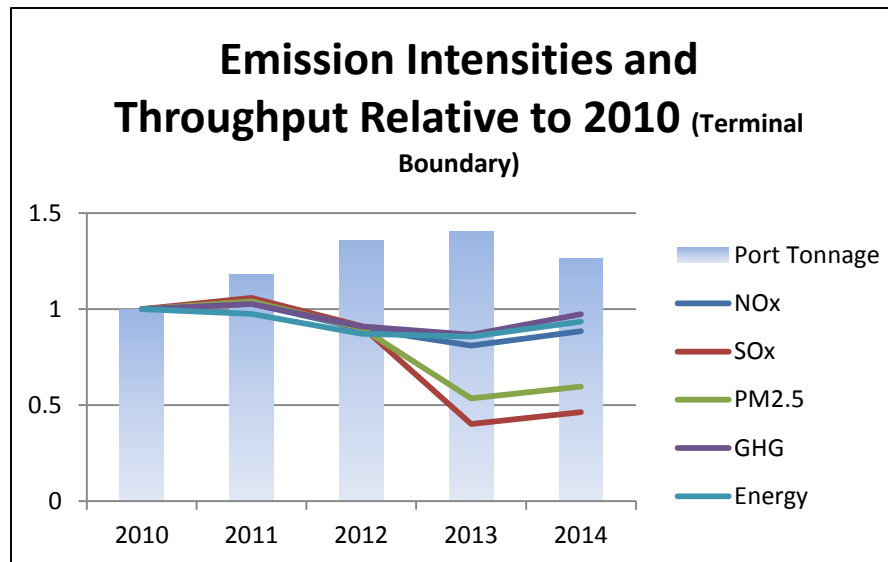
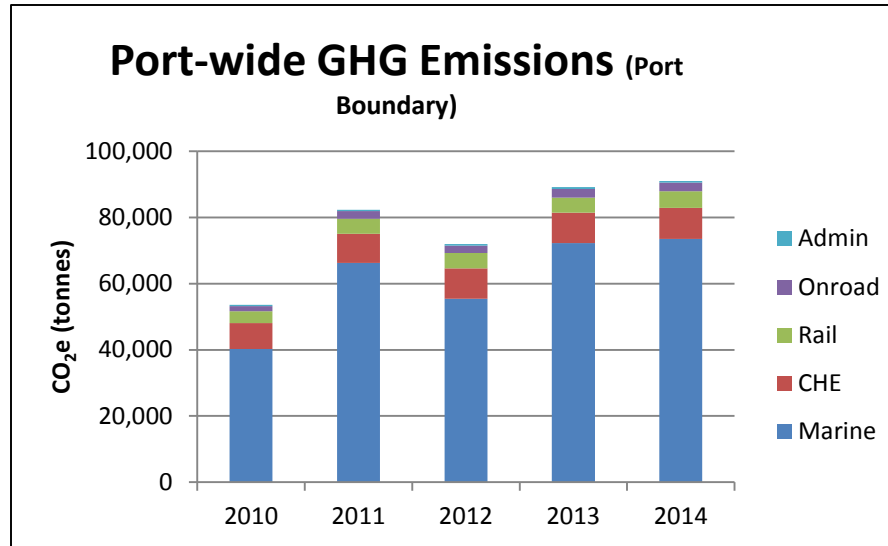
Port-wide VOCs (Port Boundary)



Port-wide PM_{2.5} (Port Boundary)

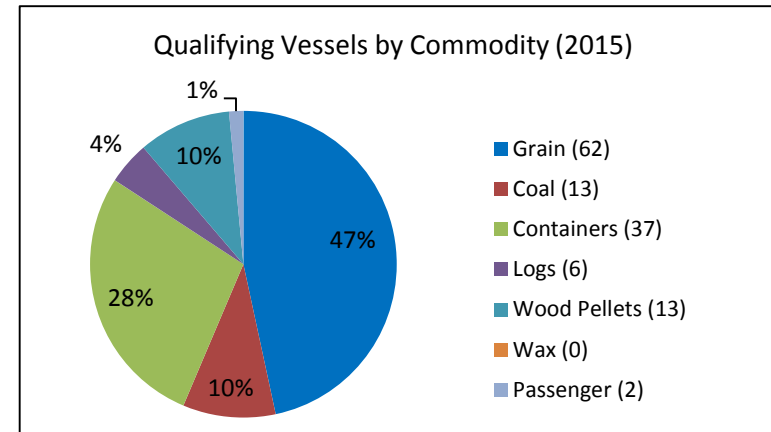
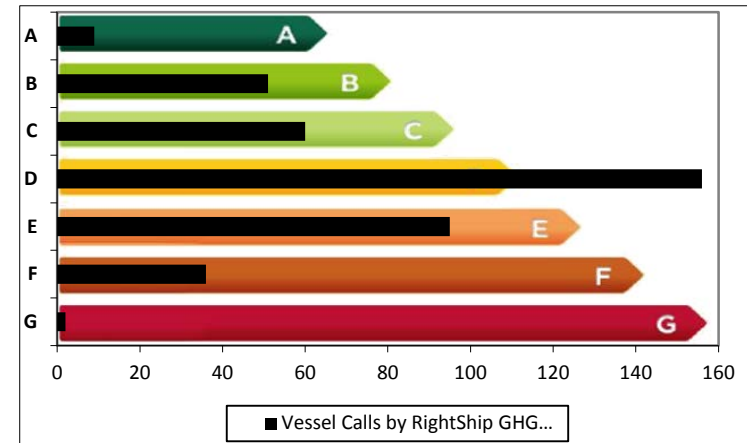


Emission Inventory Data



Green Wave Program

- Reduced harbour dues for vessels that have implemented emission reduction measures and/or other environmental practices to improve environmental performance
- Vessels qualify based on performance within one of the following organizations/initiatives:
 - Green Marine
 - RightShip
 - Environmental Ship Index
 - Green Award
 - Clean Shipping Index
 - Energy Efficiency Design Index
- 2015 - 133 vessels qualified, \$140K in discounts



Energy

Plan and implement measures to improve energy performance

- Shorepower
 - Commissioned at Fairview Terminal in 2014
 - Establishment of shore power rate with BC Hydro in 2015
- New Pump Station (90% savings)
- LED lighting (roadway and building)



Water Quality

Establish a long-term monitoring program for the port region and work to minimize impacts and improve water quality

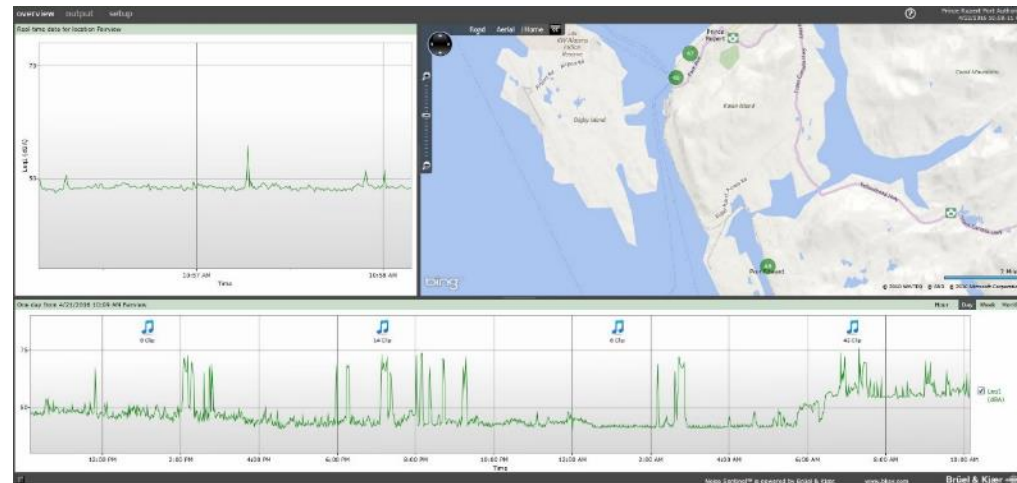
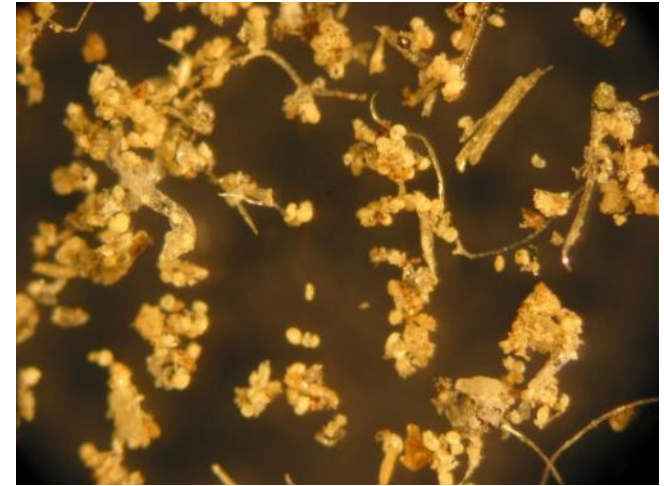
- Marine Environmental Water Quality Program
 - Established in 2013
 - 30 sites around the harbour
 - Collaboration between PRPA and four local proponents
- Storm water sampling and filters
- Commercial ship inspections



Noise / Dust

Understand and reduce impacts from port operations on the community

- Noise monitors with real-time dashboard available on port website
- Dustfall monitoring / sampling / analysis



Aquatic Invasive Species

Establish an early detection program for the harbour

- Program established in 2012
- Collaboration between PRPA, DFO, Northwest Community College and Smithsonian
- Platewatch Program
- Green Crab monitoring



Marine Mammal Program

Understand marine mammals in the region and minimize risk from port operations and development

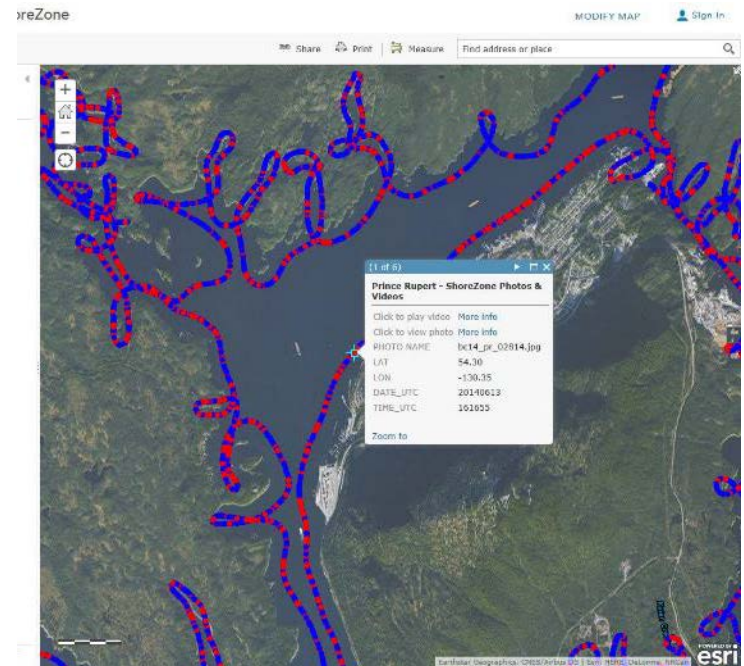
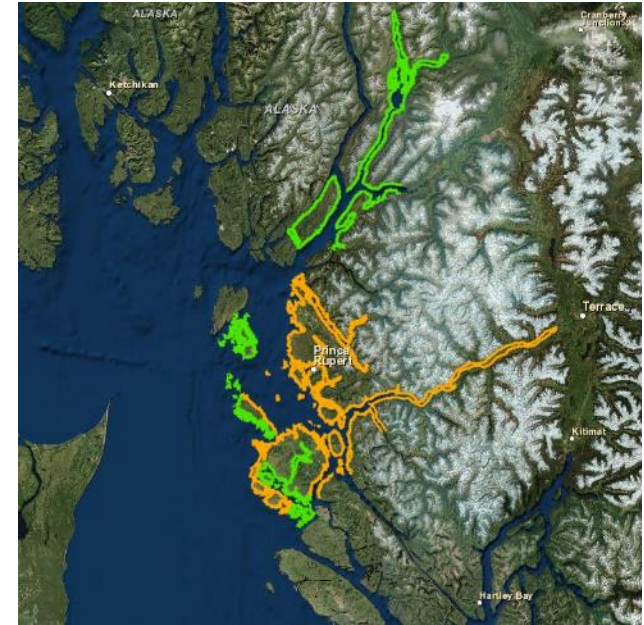
- Conducted routing study to understand whales and ship transit lanes
- Support sighting data collection
- Development of Mariners Guide with other partners
- First hydrophone deployed March 2016



ShoreZone Survey

Establish an understanding and inventory of shorelines and coast of the region

- Port led initiative with currently six partners
- Over 4000 km surveyed
- Photos and video available online
- Mapping of biological and physical features completed for 600 km
- Uses have included:
 - Project and environmental planning
 - Emergency preparedness and response
 - Traditional resources for First Nations





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Ocean Network Canada Partnership

Established a partnership with ONC to enhance operational excellence and increase collection of scientific data

- March 2016: ONC extended Smart Oceans BC network to north coast
- Codar and X-Band radar (surface currents and wave height)
- Early detection of earthquakes and tsunamis
- Water CTD
- Hydrophone



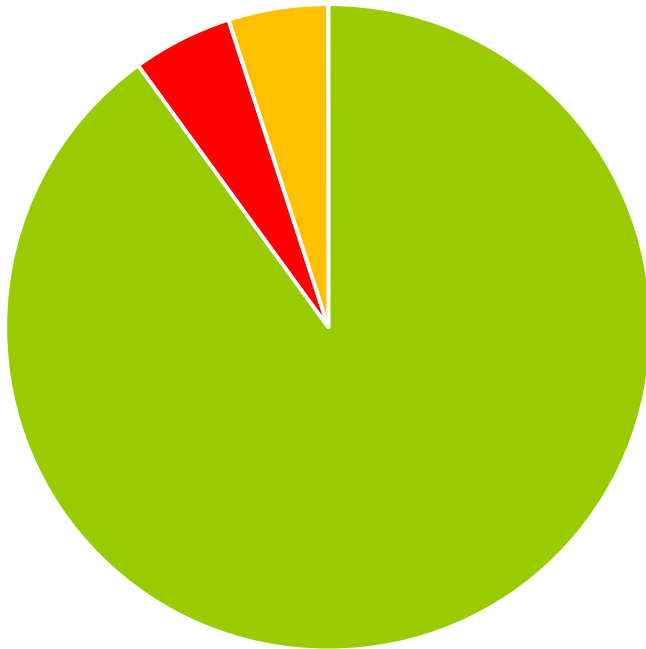
COMMUNITY AND LABOUR SUPPORT



- Port related developments have become the primary source of employment and economic activity in the region
- Strong community and labour support for expansion, with an exceptional working relationship

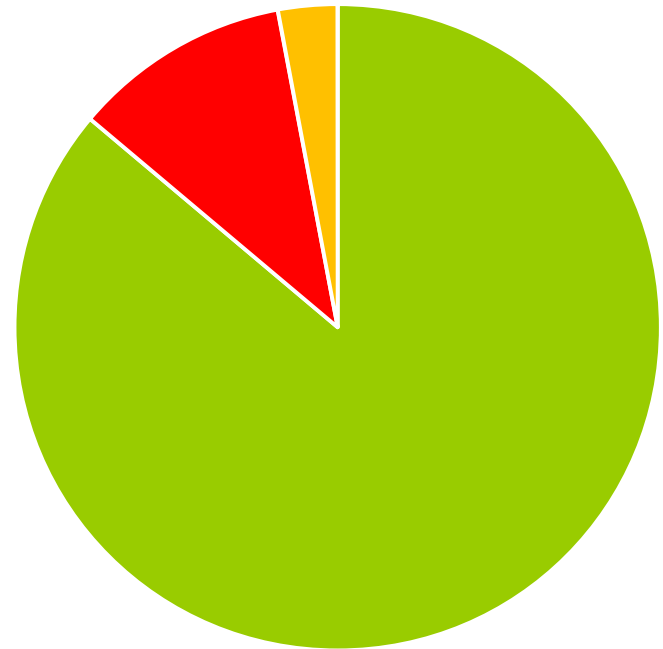
COMMUNITY AND LABOUR SUPPORT

90% Support for Current Port Activities



■ Support ■ Oppose ■ Undecided ■

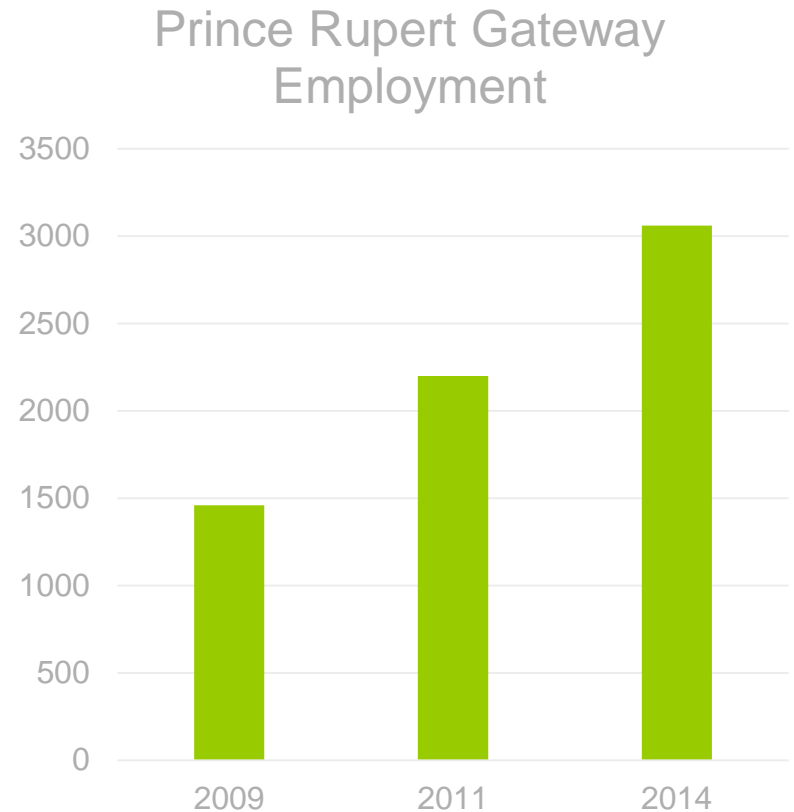
87% Support for Port Expansion



■ Support ■ Oppose ■ Undecided ■

REGIONAL GATEWAY EMPLOYMENT

- Employment related to Port activities has more than doubled since 2009
- More than 3000 direct jobs in marine services, terminals, rail, truck, logistics
- Gateway job growth has been broad based in community
- Approximately 35% of Prince Rupert-based jobs held by First Nations people



COMMITMENT TO FIRST NATIONS PARTNERS





COMMITMENT TO FIRST NATIONS

- Port of Prince Rupert is located within the traditional territory of the Tsimshian Nation
 - Metlakatla
 - Lax Kw'alaams
 - Gitxaala (Kitkatla)
 - Kitsumkalum
 - Kitselas
 - Gitga'at (Hartley Bay)
 - Klemtu
- 31% of population from aboriginal origin in Prince Rupert area (2011)
- PRPA respects the constitutional rights of local First Nations
 - Obligation to consult regarding port development, accommodate as required
 - Strong record of engagement and partnerships



COMMITMENT TO FIRST NATIONS

Project Leadership and Jobs

- \$97 million development of Ridley Island infrastructure
- 24 month construction period (2013-2014). Completed on time and on budget
- Sole source contracts awarded to First Nations' Joint Ventures
- Collectively employed over 100 people for duration of project
- Relevant business capacity building and skills training for local first nations members
- Experience applied to employment and supplier opportunities in future projects



COMMITMENT TO COMMUNITY

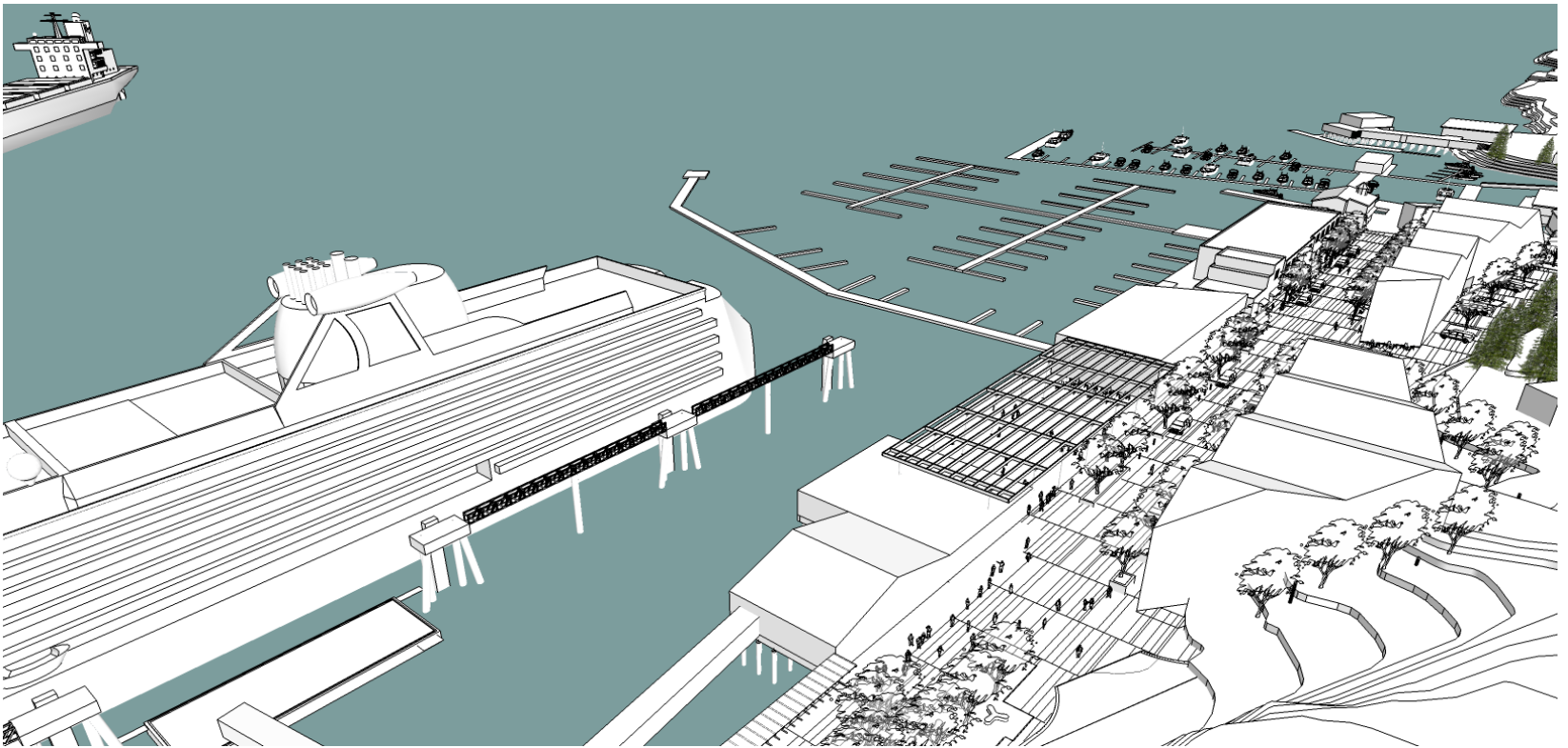
Inform, Engage, Invest

- Strong community and labour support for industry and expansion
- Building awareness & confidence in gateway economy, environmental stewardship, marine safety
- Public communication, dialogue and consultation commitments
- Establishment of the Community Information Forum
- Dedicated Community Investment Fund: \$2.5 million invested in past five years



COMMITMENT TO COMMUNITY

Investment in Public Waterfront Access



In Summary.....

- Develop strong master plan built on understanding opportunities and risks
- Commitment to operational and environmental excellence
- Strong leadership
- Continued engagement with First Nations, community and stakeholders
- Real collaboration and real partnerships

In Summary.....

