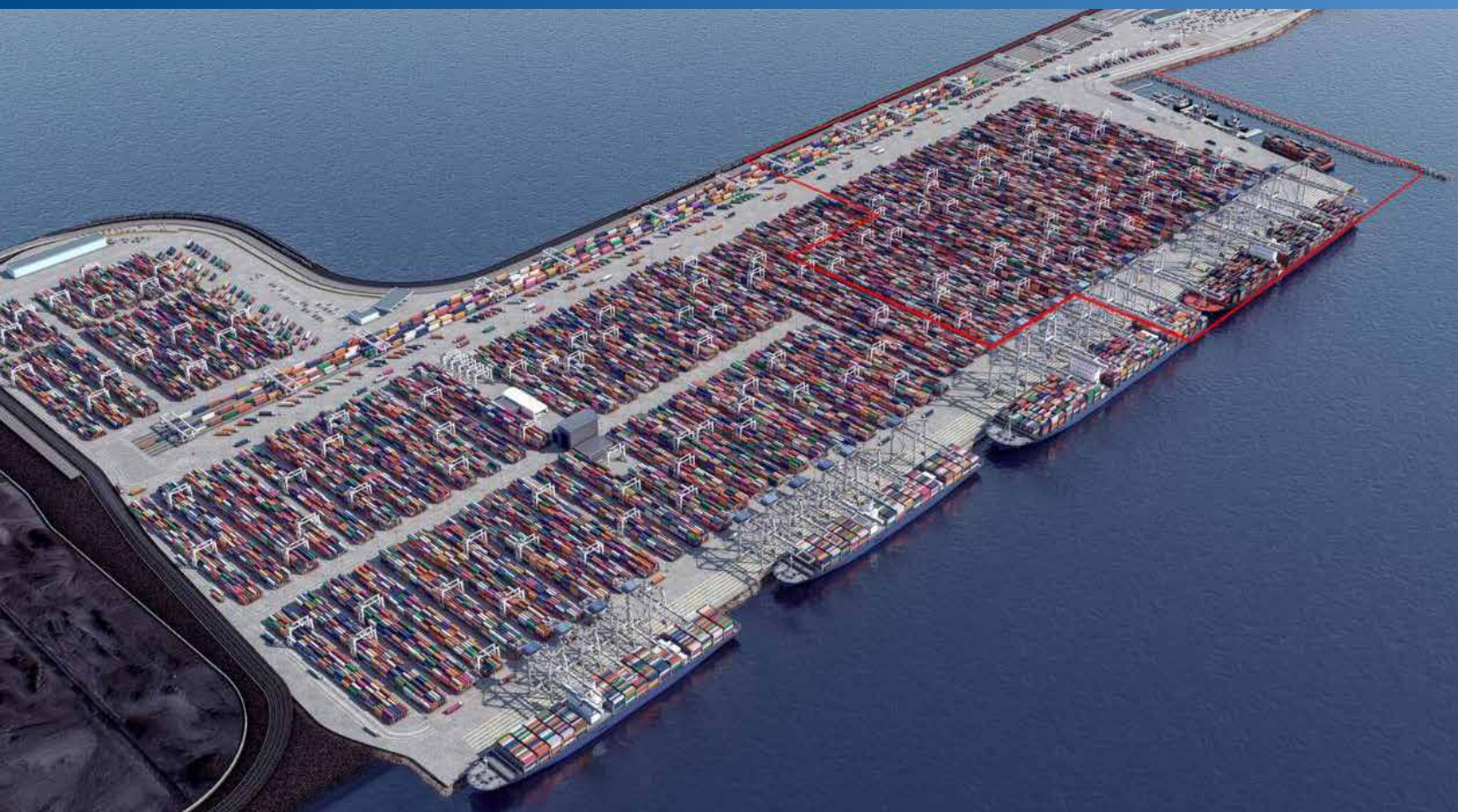


GLOBAL CONTAINER TERMINALS DELTAPORT EXPANSION FOURTH BERTH PROJECT (DP4)



Preliminary Project Enquiry

FEBRUARY 5, 2019



Submitted by GCT with expert input provided from its advisors:



Table of Contents

1	INTRODUCTION	2
2	PRIMARY CONTACT INFORMATION	3
3	PROJECT LOCATION	4
4	ABOUT GLOBAL CONTAINER TERMINALS (GCT)	6
5	ABOUT DELTAPORT EXPANSION, FOURTH BERTH PROJECT (DP4)	7
5.1	Project Context and Summary	7
5.2	Project Rationale	8
5.3	Project Description	12
5.4	Approximate Design Specifications	15
5.5	Project Schedule	16
5.5.1	Environmental Approvals Schedule	16
5.5.2	Construction Schedule	17
5.6	Regulatory Engagement, Permits and Approvals	17
5.7	Environmental Mitigation	18
5.8	Indigenous Engagement	20
5.9	Public, Stakeholder and Community Engagement	21
6	CLOSURE	22
	ACRONYMS AND ABBREVIATIONS	22
	SYMBOLS AND UNITS OF MEASURE	23
	SOURCES OF STUDIES	23

1 Introduction

GCT Canada Limited Partnership (GCT), part of GCT Global Container Terminals Inc., is pleased to submit this document, which has been prepared following a pre-preliminary project enquiry meeting and as a requirement of the Vancouver Fraser Port Authority's (VFPA) Project and Environmental Review Process (PER) for the proposed expansion of its GCT Deltaport container facilities. GCT operates Deltaport container terminal (GCT Deltaport), which is located at Roberts Bank in the City of Delta, British Columbia (B.C.), on lands under lease from the VFPA.

GCT Deltaport first opened in 1997 as a two-berth container terminal operating on Pod 4 at the site. Increased volume subsequently necessitated expansion to Pod 3 in 2003, and development of the GCT Deltaport Third Berth (DP3) on Pod 5 in 2010. The existing facility consists of a three-berth, 85-hectare (ha) site and is today operating at capacity with an annual capacity of 1.8 million Twenty-Foot-Equivalent Units (TEUs). The current capacity is being expanded to 2.4 million TEUs upon completion of the Intermodal Yard Reconfiguration Project as part of the *Deltaport Terminal, Road and Rail Improvement Project* (DTRRIP). Volume to fill this added capacity is expected to be realized by 2022. Following eight years of construction and environmental monitoring of the DP3 project, it has been demonstrated that development in the inter-causeway area can be undertaken in an environmentally successful manner.¹

Today, GCT plays a critical role in meeting Canada's container traffic needs in a highly competitive marketplace, through its strategic, efficient and continued deployment of capital, expertise and operational resources.

Given its track record of viable and responsible expansion, GCT proposes to further expand the capacity at GCT Deltaport through an additional two million TEUs. GCT will do this by moving forward with the GCT Deltaport Expansion, Fourth Berth Project (DP4) on Pod 6 (the Project).

The proposed GCT Deltaport expansion is a response to VFPA's forecasts and independent forecasts² prepared for the VFPA and GCT of long-term growth in container terminal demand and the requirement for incremental growth in the capacity of North American west coast terminals. The proposed expansion considers VFPA's land and strategic planning and is guided by the Container Capacity Improvement Program³ imperative of ensuring that appropriate container terminal capacity is available at the right time to meet Canada's trade needs, as well as the needs of the nation's trading partners.

The proposed expansion of GCT Deltaport will help the Vancouver Gateway and Canada maintain their leading position at the forefront of international trade and as a major contributor to the national economy.

The proposed expansion also responds to the change in the type and volume of trade of containerized goods shipped through Canada's west coast. Global vessel ownership is consolidating, spurring investment into larger vessels, rationalizing routes and, with fewer and larger ship-owning entities, improving the

¹ Working together with the VFPA, GCT implemented the Adaptive Management Strategy (AMS) for DP3.

² GCT retained Black Quay Consulting to provide independent expert advice related to the analysis of container capacity on the west coast of Canada. This advice is based on a preliminary review and analysis of existing reports and historical trade forecasts.

³ <https://www.portvancouver.com/development-and-permits/development/container-capacity-improvement-program/>

position of vessel owners to negotiate rates and terms with terminal operators. Concurrently, demand for container terminal services and facilities are forecast to grow, especially where the largest vessels may be accommodated. In 2018, Canada’s existing west coast container terminals capacity totaled 5.335 million TEUs split between Vancouver and Prince Rupert. With a combination of improvements to utilization, efficiencies and/or expansion of existing facilities, based on independent analysis commissioned by GCT, the west coast of Canada is positioned to meet growth demand until approximately 2029/30. Thereafter, additional capacity will be necessary, including the addition of Deltaport Expansion, Fourth Berth Project (DP4) at GCT Deltaport which would allow the servicing of larger vessels and the fullest optimization of the entire port complex. The expansion is essential for making sure the Port meets market demand and container capacity demand growth forecasts. The expansion, subject to relevant review processes and consultations with Indigenous communities, is also positioned to obtain all necessary approvals and authorizations.

As outlined in the PER process guideline documentation, a Preliminary Project Enquiry (PPE) document is required to be submitted to VFPA to formally trigger the PER process. This PPE document, prepared based on expert advice provided to GCT and engagement with VFPA officials and the Tsawwassen First Nation (TFN), contains contact information, Project location, and Project summary details, including a summary rationale. This document confirms the general feasibility of the proposed Project from a design and commercial perspective and outlines a reference concept upon which further design and study works may be undertaken leading toward an Application Submission as part of the PER process.

2 Primary Contact Information

PROJECT	
Project Title:	GCT Deltaport Expansion, Fourth Berth Project (DP4)
Company Name:	GCT Canada Limited Partnership
Address:	1285 Franklin Street, Vancouver, BC, Canada V6A 1J9
PRIMARY CONTACT	
Name:	Mike McLellan, Vice President, Project Development
Company and Position:	GCT Canada Limited Partnership
Address:	Suite 610, The Landing, 375 Water Street, Vancouver, BC, Canada
Phone:	604 267 5195
Email:	mmclellan@globalterminals.com
SECONDARY CONTACT	
Name:	Marko Dekovic, Vice President, Public Affairs
Company and Position:	GCT Canada Limited Partnership
Address:	Suite 610, The Landing, 375 Water Street, Vancouver, BC, Canada
Phone:	604 267 5276
Email:	mdekovic@globalterminals.com

3 Project Location

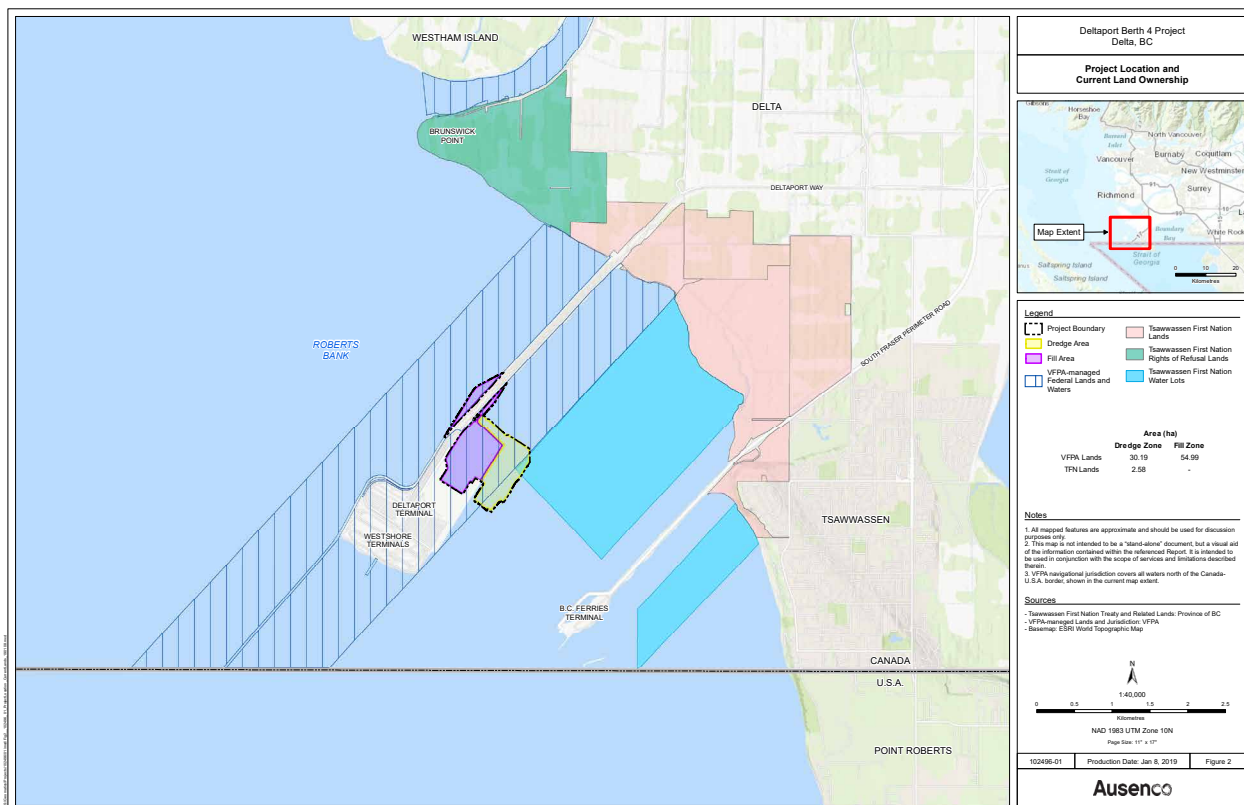
The proposed Project is located at Roberts Bank, in the City of Delta, British Columbia, between the Roberts Bank Way and Tsawwassen Ferry Terminal causeways. The main portion of the Roberts Bank Wildlife Management Area (WMA) lies to the north, and a smaller section of the WMA is situated immediately to the south. Most of the Project is proposed to be constructed in intertidal and subtidal marine waters on the southside of the existing GCT Deltaport facility shown in Figure 1. The proposed Project is contiguous to the existing and operating GCT Deltaport facilities. As such, location represents a strategic factor not only in design, but in the viability of the operations. Through expansion, GCT Deltaport’s existing combined facilities and economies of scale are improved. This is a critical factor that will ensure the Port maintains its competitive position in relation to other west coast, particularly US port operators.

In comparison to other potential development options at Roberts Bank, the location of the proposed Project, according to preliminary reviews and engagement with local stakeholders contributes to a smaller adverse environmental effect. The Project proposal considers traditional marine uses of Indigenous communities via effective utilization and maximization of a smaller overall footprint. This is expected to be a positive factor in environmental approvals and permitting, and in continuous engagement with Indigenous communities.



The proposed Project is situated within VFPA-managed federal lands and waters, TFN water lots, and VFPA navigational jurisdictions shown in Figure 2. The proposed Project is located to the south of the main part of the Roberts Bank WMA and immediately to the north of a smaller part of the Roberts Bank WMA located between Roberts Bank Way and the Tsawwassen Ferry Terminal.

FIGURE 2: LAND OWNERSHIP BOUNDARIES



Project dredging will extend past VFPA-controlled lands into VFPA navigational jurisdiction and Provincial seabed, while Project fill requirements will remain within TFN and VFPA-controlled lands.

4 About Global Container Terminals (GCT)

Majority Canadian-owned and operated with headquarters in Vancouver, GCT Canada has operated on the west coast of Canada since 1907. Under long-term leases, GCT is responsible for running both GCT Vanterm and GCT Deltaport. Beyond operating these facilities, GCT Canada has also played a major role in developing Canada's Pacific Gateway and is currently the largest maritime employer in Canada. Our two East Coast facilities, GCT Bayonne (formerly Global Terminal) and GCT New York (formerly New York Container Terminal) were established in 1972 and 1995, respectively.

Our two state-of-the-art west coast terminals provide customers and carriers with reliable and convenient access to all major Asia-Pacific trade lanes and are representative of GCT Canada's considerable involvement in the development and operation of Canada's Asia-Pacific Gateway.

GCT Canada is a majority Canadian-owned company, with three major pension fund investors which are Ontario Teachers' Pension Plan (OTPP), British Columbia Investment Management Corporation (BCI) and IFM Investors. With a combined portfolio value of \$361 billion, our shareholders are long-term, experienced infrastructure investors committed to GCT Canada and the overall growth and servicing of the sector.

All three of GCT's shareholders are signatories to the United Nations Principles for Responsible Investment (UN PRI). As signatories, OTPP, IFM, and BCI each adhere to responsible investing principles considering environmental, social, and governance factors in all its portfolio companies, as reflected in their investment and strong support in GCT. <https://www.unpri.org/>

In 2014, GCT joined Green Marine, a voluntary, environmental certification program for the North American Marine Industry. As a participant, GCT has individually certified its facilities with a commitment to strengthen the North American marine sector's environmental performance through continuous improvement, stronger relations with stakeholders, and increased overall awareness of the marine industry's activities and environmental benefits. Full certification of facilities came into effect in 2015 and remain in place today. In 2018, GCT Canada joined the VFPA-endorsed Climate Smart program, aimed at achieving reductions in Green House Gas emissions (GHG). As its terminals continue to expand and increase capacity, sustainability and environmentally-responsible practices remain a core focus, both locally and globally. GCT is committed to supporting and protecting the communities where the company operates and continuously evaluates initiatives that will contribute to sustainability.



Given GCT's long history and experience operating leading container terminals on Canada's west coast and in partnership with the VFPA, we have a unique perspective on delivering competitive facility capacity and services relevant to Asia-Pacific trade. This experience underpins the capability of GCT to forecast, design, permit, deliver, construct and operate facilities in either partnership with local port authorities or independently. For further information on GCT history, ownership, leadership team, operations please see www.globalterminals.com.

5 About Deltaport Expansion, Fourth Berth Project (DP4)

5.1 PROJECT CONTEXT AND SUMMARY

Vancouver is the preferred Canadian gateway for trade with Asia. The Port of Vancouver is Canada's largest port complex handling the most diversified range of cargo of any port in North America. The Port's growth has been facilitated through focused and coordinated government policies such as the Western Trade Corridors initiatives and the Asia-Pacific Gateway and Corridor initiative. Coupled with these initiatives are trade development programs and agreements secured by the federal government to facilitate Canada's trade. The provinces of British Columbia, Alberta, Saskatchewan and Manitoba rely on the Port for increased market access and to help them meet their trade and economic objectives. In direct and indirect terms, the Port is a major contributor to employment and the economy of Canada.

Private sector investment is a critical component to the Port's growth and competitiveness. Attracting investment into operations and infrastructure keeps the Vancouver Gateway ahead of its competitors and allows Canadian exporters and importers to gain greater access to international markets, new growth opportunities and to remain cost-competitive. By extension, this investment also contributes to employment and economic growth locally and across Canada.

As a key investor and the largest tenant of the Port, GCT anticipates the need for added future container capacity and has identified the expansion of Deltaport terminal as critical to meeting this growth. In general accordance with the 1960's original master plan for Roberts Bank, the proposed incremental expansion of the existing terminal through DP4 enables incremental development to deliver container capacity as part of a larger Port of Vancouver and west coast of Canada strategy whereby multiple participants, including the VFPA, work together to meet expanding global demand.

In summary, the proposed Project's benefits and attributes:

- Provide container terminal capacity to meet the future needs of Canadian trade, consistent with the VFPA long-term corporate strategy.
- Represent a cost-effective and timely way to address near-term container demand on the west coast.
- Utilize best available container handling technology.
- Invest in an area where there is precedence of successful and recent container development, from an operational and environmental perspective.
- Are financed by institutional investor capital, thus poses no financial risk to or demand upon the VFPA's financial capacity.
- Are proposed by an experienced terminal operator with a track-record in developing similar infrastructure at Roberts Bank.
- Include scalable delivery design that reflects changing industry trends and preserves optionality.
- Fall largely within the jurisdiction of the VFPA and is therefore subject to the VFPA's PER and permit approval process, including fill and dredging necessary to develop DP4.

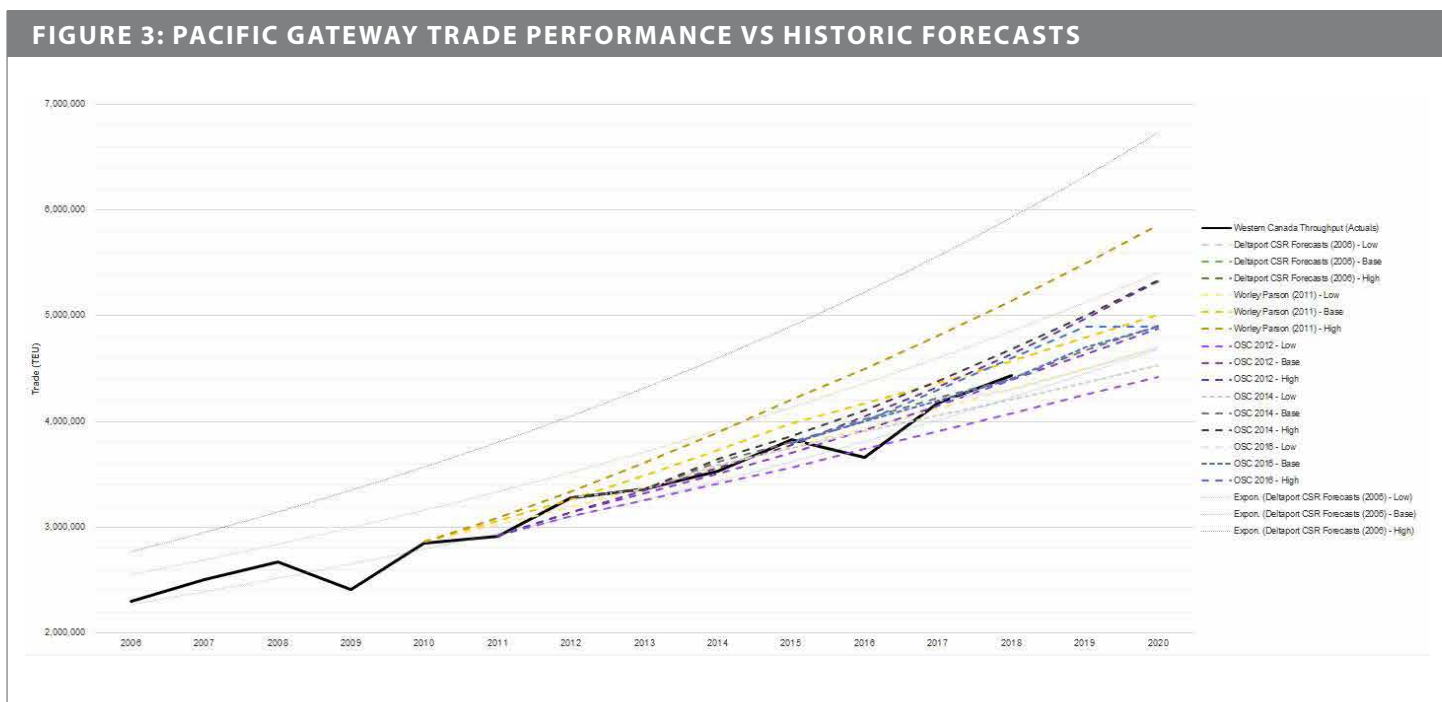
- Will follow a predictable review and assessment process, including deploying all necessary environmental mitigations, under the VFPA's PER, in conjunction with all relevant agencies.
- Leverage GCT Deltaport existing footprint and infrastructure and building upon strong working relations with labour, customers, railways, and beneficial cargo owners as well as employment and economic benefits shared with the surrounding Indigenous groups, communities, and stakeholders.

5.2 PROJECT RATIONALE

VFPA and GCT have a track record of collaborating to deliver needed, cost-effective capacity that has resulted in the growth of the discretionary container cargo market share for Vancouver. This has been instrumental in solidifying the Port's position as Canada's primary gateway to the Asia-Pacific. This collaboration has followed growth in container demand on Canada's west coast, with a Compounded Annual Growth Rate occurring at approximately five percent per year since 2008, according to published reports. This growth is stimulated by multiple factors. This includes economic growth in Asia, particularly China. It also includes the adoption by more shippers of containers as a preferred method of moving goods and commodities, steady economic growth in Canada and the U.S., and increased capture of US-destined discretionary cargo by Canadian terminal operators.

Independent analysis¹ commissioned by GCT under low-, medium- and high-trade-growth scenarios demonstrates that additional capacity requirements will be required on the West Coast of B.C. prior to 2050 under medium and high growth trade scenarios. Figures 3, 4, 5 and 6 outline the data used for analysis:

- Historical trade forecasts



¹ As prepared by BlackQuay

- Existing west coast capacity

FIGURE 4: EXISTING CAPACITY AT WEST COAST CANADA TERMINALS, 2018

Terminal	Operator	Capacity (Mill TEU/annum)	Information Source
Deltaport	GCT	1.8	Port of Vancouver website (portvancouver.com)
Centerm	DPW	0.9	Port of Vancouver website (portvancouver.com)
Vanterm	GCT	0.835	GCT Management
Fraser Surrey Docks	FSD	0.45	Port of Vancouver website (portvancouver.com)
Prince Rupert (Fairview)	DPW	1.35	Port of Prince Rupert website (rupertport.com) / VFPA RBT2 Project Rationale (robertsbankterminal2.com)

TOTAL 5.335

- Anticipated trade forecasts

FIGURE 5: FORECAST PACIFIC GATEWAY¹ TRADE TO 2050 IN MILLION TEU

	2018	2019	2020	2025	2030	2035	2040	2045	2050
Low	4.3	4.5	4.7	5.4	5.9	6.4	6.7	7	7.2
Medium	4.45	4.67	4.89	5.81	6.62	7.3	8	8.6	9.1
High	4.6	4.9	5.2	6.4	7.5	8.6	9.7	10.7	11.8

¹ The Pacific Gateway market comprises the Port of Vancouver and Port of Prince Rupert

- Anticipated capacity improvements

FIGURE 6: ANTICIPATED CAPACITY IMPROVEMENTS AT WEST COAST CANADA TERMINALS TO 2050, 2018

Terminal / Project	Capacity (million TEU/Yr.)	Year Online	Comments	Source
GCT DELTAPORT				
Active	0.6	2019	GCT Deltaport Intermodal Yard Expansion Project	Port of Vancouver website (portvancouver.com) / VFPA Container Traffic Forecast Study (OSC, 2016)
DP4 Project	2.0	TBC	Key component of this paper is to identify appropriate timing of DP4 delivery	GCT Management
DPW CENTERM				
Planned	0.6	2022	Assumed to be completion of Centerm Expansion Project	Port of Vancouver website (portvancouver.com) / VFPA Container Traffic Forecast Study (OSC, 2016)
GCT VANTERM				
Planned	0.217	2022	Assumed GCT Vanterm Phase 1	GCT Management
Proposed	1	2030	GCT Vanterm Phase 2.	GCT Management
VFPA ROBERTS BANK TERMINAL 2				
RBT2 Project	2.4	TBC		robertsbankterminal2.com / VFPA Container Traffic Forecast Study (OSC, 2016)
DPW FAIRVIEW (PRINCE RUPERT)				
Planned	0.25	2020	Assumed to be a gradual release of Phase 2a	VFPA RBT2 Project Rationale (robertsbankterminal2.com)
Planned	0.2	2022	Assumed to be completion of Phase 2B	VFPA RBT2 Project Rationale (robertsbankterminal2.com)
Planned	0.9	2025	Proposed by 2025	VFPA RBT2 Project Rationale (robertsbankterminal2.com)
TOTAL	8.167			

- Various growth scenarios

Given that low growth scenarios are not advisable for planning purposes, GCT is guided by medium-growth scenarios as the base case, which is the industry standard used for project planning. GCT is also guided by the accepted port planning principle of ensuring that maximum capacity utilization should remain at or below 85 percent.

As outlined in Figure 7, under a base-case-growth scenario, the analysis demonstrates a requirement for an additional, in-service capacity project at the scale of the proposed DP4 expansion by 2039. This assumes other planned and proposed capacity concepts are delivered in the Port of Prince Rupert and the Port of Vancouver's Burrard Inlet. In light of the scale of the proposed GCT Deltaport expansion and given the North American competitive dynamics, development of Deltaport expansion should occur in advance of further Burrard inlet expansion.

FIGURE 7: MEDIUM TRADE GROWTH CAPACITY WATERFALL CHART



The above demonstrates a scenario with Vanterm capacity being brought on by 2031. Given the North American competitive dynamics described herein, development of Deltaport expansion should occur in advance of Vanterm expansion.

In addition to meeting container demand growth over time, the DP4 Project is proposed in the context of changing competitive dynamics. Trends in container shipping are strengthening the case for investments that position terminal operators more effectively for inter-port competition. With the Panama Canal expansion, and the growing competition from Mexican west coast ports, competition is intensifying. Canadian and US west coast ports can expect to be challenged as the battleground for inland cargo is also reshaped. For west coast ports specifically, the US Central and Gulf regions alone account for nearly 40 percent of US container imports from Asia. These pressures are driving competition and pushing terminal operators to develop highly cost-competitive capacity in the face of multiple and varied competitors.

Furthermore, with the ocean carrier industry moving towards increased concentration into alliances and increased vessel size – which means container traffic arrives less frequently, but in greater quantities – intraport competition becomes less relevant. Ocean carriers and their cargo-owner customers have numerous terminal options on the west coast of North America to select from. The DP4 Project, seen in this light, represents, not just the most viable means of facility expansion at the Port, but the most competitive option given the strategic positioning of other North American terminals.

5.3 PROJECT DESCRIPTION

GCT Deltaport is an existing container terminal located on the Roberts Bank peninsula, located on Pods 3, 4, and 5, and is adjacent to the Westshore Coal Terminal, located on Pods 1 and 2. GCT Deltaport is Canada’s flagship terminal, and is the world’s largest and most efficient on-dock ship-to-rail discharge facility. This purpose-built terminal operates three berths with a contiguous length of 1,100 metres (3,609 feet).

In order to address above outlined gateway capacity needs, GCT is proposing to further expand the capacity of GCT Deltaport by an additional 2.0 million TEUs. The proposed Project will increase terminal capacity from its 2.4 million TEUs to 4.4 million TEUs increasing the terminal footprint by approximately 66 percent, from 85 hectares (ha) to 141 ha. This increase in terminal footprint will provide approximately 56 ha of terminal yard area, and an additional berth, balancing the terminal and resulting in an additional 2.0 million TEUs of capacity. The proposed Project has optionality to be constructed in two stages, and thus incrementally deliver capacity to market.

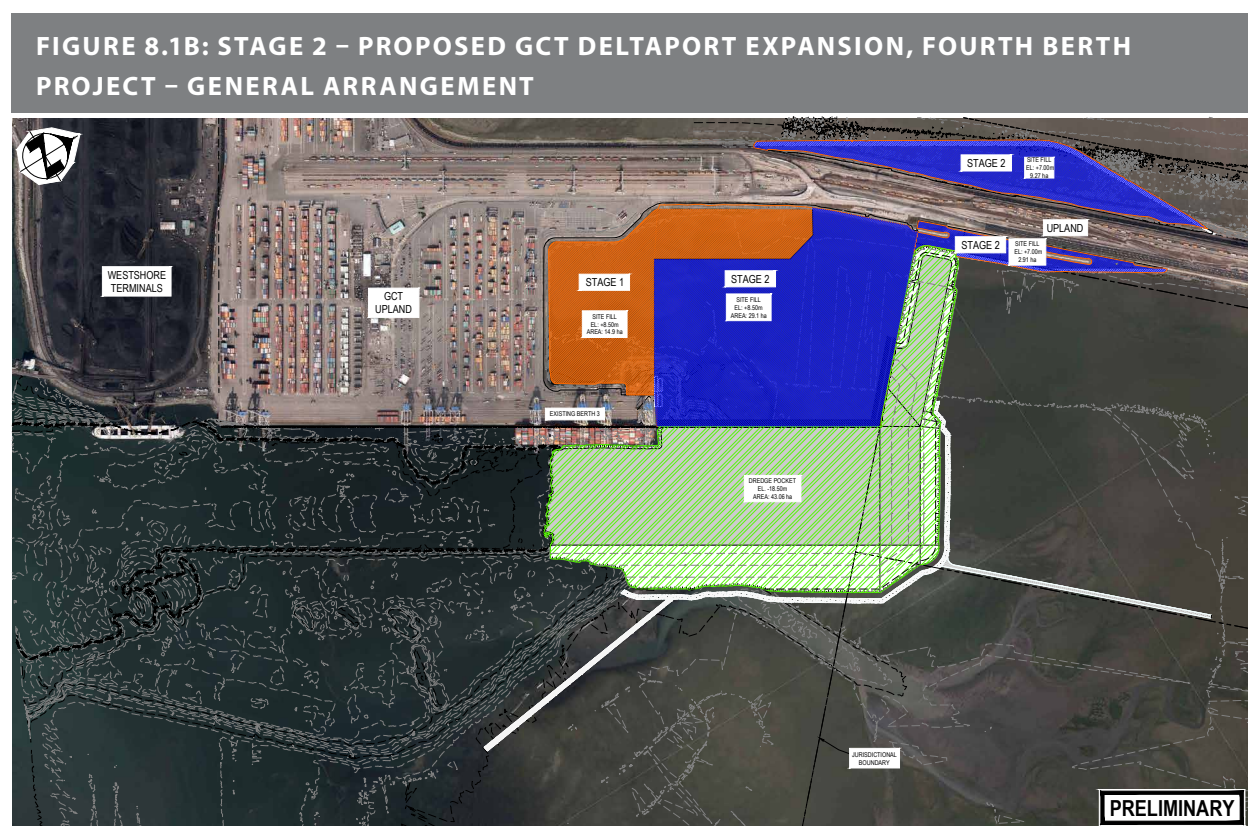
Stage One of the construction development is proposed to expand the Pod 5 area immediately west of the existing Berth 3, creating approximately 15 ha of land, along with additional container storage stacks and additional Container Handling Equipment (CHE). The existing Gate 3 area that services street trucks into Pod 5 will be relocated.

FIGURE 8.1A: STAGE 1 – PROPOSED GCT DELTAPORT EXPANSION, FOURTH BERTH PROJECT – GENERAL ARRANGEMENT



Stage Two will construct a new proposed land area - Pod 6, which will be created in the area west of the new fourth berth. Pod 6 will result in creating approximately 32 ha of land on the east side of Roberts Bank Way, along with additional container storage stacks. This stage of the Project will also include installation of additional CHE including ship-to-shore cranes.

The Stage Two construction would also create an approximately 9 ha expansion of the causeway on the west side of Roberts Bank Way to further expand the existing intermodal yard capacity to support the fourth berth. The expanded causeway will include the relocated administration building, associated truck gate, and car parking facilities. Combined, Stage One and Stage Two would increase the existing facility by approximately 56 ha total.



A new purpose-built short sea shipping berth is proposed to accommodate a barge vessel with an overall length of approximately 123 metres, and potential capacity of 1,044 TEUs. Having short sea shipping capability will mitigate some of the impacts associated with increased trucking by promoting movement of containers by barge and waterways. Furthermore, short sea shipping will be an opportunity for local business to invest and become part of Canada’s marine port industry. The existing tug basin will be relocated to be adjacent to the proposed new fishing boat marina that will be developed in collaboration with the TFN. The marina concept will include designated road access, floating dock facilities for approximately 12 crabbing and fishing boats, a boat ramp for trailer-launching smaller boats, and related car parking.

Geotechnical improvements will be undertaken at the area of the new development. It will consist of dredging existing material and replacing it with a rock mattress to provide a foundation for the new concrete caissons, as well as dredging to provide navigation depth for vessels. It is anticipated that some dredged material will be suitable for the Project land reclamation and some material will require disposal. The current development plan is based on historical geotechnical data from the DP3 expansion project built for operations in 2010. Further detailed design and a geotechnical field investigation is planned for 2019.

The proposed Project is not expected to result in any further adverse effects to the existing dendritic channels. By extending the existing crest protection structure prior to dredging, base lowering and head-cutting, tidal effects will be minimized. Additionally, the majority of the berthing pocket excavation will take place in deep water, well below the low tide line where peak velocities are low. Further detailed modelling of the geomorphological impacts will be carried out to allow for the design to mitigate adverse effects and possibly repair damage from previous development.

GCT will commit to undertake the formulation of a coastal geomorphology technical advisory group (TAG) consisting of national and international coastal geomorphology technical experts. TAG would review the crest protection structure and modelling designs to ensure that unwanted changes from the dendritic channel formation are avoided.

A new 1,290-metre-long rock berm structure is proposed to replace the existing crest protection structure. An additional 695-metre-long mitigation structure has been included to further reduce the evolution of dendritic channels by acting as a sill for 40 ha of tidal flats at Roberts Bank. The goal for installing this structure is to stop the expansion of the dendritic channels, minimize erosion and scour adjacent to new structures, and stabilize the area of the tidal flats (see Figure 8.1C).

FIGURE 8.1C: PROPOSED GCT DELTAPORT EXPANSION, FOURTH BERTH PROJECT – GENERAL ARRANGEMENT



5.4 APPROXIMATE DESIGN SPECIFICATIONS

Approximate design specifications and quantities, based on the design concept for the proposed Project (subject to change during detailed design), are presented below. All CHE is to be procured, fabricated, delivered, and installed separately by GCT. Design specifications include:

- Approximately 43 ha of the seabed will be dredged, resulting in approximately 6,075,000 cubic metres (m³) of material. It is estimated that approximately 1,840,000 m³ of this material will be reused as onshore fill.
- Approximately 56 ha of seabed will be filled (Stage one & Stage two combined), requiring approximately 5.35 million m³ of general fill.
- Approximately 56 ha of wick drains will be installed for geotechnical settlements. An additional 476,000 m³ of general fill is estimated to be required to accommodate long-term settlements.
- Container storage will be developed for 24 container storage stacks, 56 TEU long by eight containers wide by five containers high. The proposed development includes gantry runways for yard stacking cranes, pavements, and operational container fences.
- A 563-metre extension to the north end of the wharf structure will accommodate a fourth berth, built using concrete caissons. The caissons will require approximately 49,000 m³ of concrete, including the concrete required for the crane rails.
- A total of seven rail tracks will be installed as extensions to the existing GCT Deltaport intermodal yard improvements, resulting in approximately 720 metres of additional lead track.

- A new short sea shipping berth, approximately 150 metres long, will be built using a sheet pile wall at the north end of the new caissons, to the west. The total length of the wall is approximately 210 metres long. It will require approximately 6,300 square metres (m²) of sheet piling.
- Installation of underground electrical, data, water, and storm drain utilities will service the infrastructure identified above, including high-mast lighting including intention to expand existing berth’s shore power capability to berth 4.
- Installation of a total of 1,985 metres of crest protection mitigation structure will act as a sill for approximately 30 ha of tidal flats; 1,290 metres of this structure will replace the existing crest protection, while the remaining 695 metres of structure will be placed to minimize tidal effects on the existing dendritic channels.

5.5 PROJECT SCHEDULE

Referencing GCT’s previous experience delivering expansion projects at Roberts Bank collaboratively with the VFPA such as DP3, the anticipated development schedule for the Project is estimated at three to four years for environmental approvals (which includes study work and, if applicable, provincial and/or federal environmental assessments processes) and another four years for construction (Figure 9). The estimate takes into consideration water work restrictions associated with juvenile salmon and crab sensitive periods. The proposed development schedule allows for delivery of the Project on a timeline consistent with the base case growth scenario described earlier. The timing may vary and will ultimately be determined by regulatory process timelines and market conditions.



5.5.1 ENVIRONMENTAL APPROVALS SCHEDULE

The environmental approvals schedule for the DP4 expansion Project has been divided into three phases: Pre-PER, PER and if applicable, environmental assessment (EA) processes, and other permitting. These Pre-PER activities are expected over the following 12 months, respecting matters such as seasonality.

Activities anticipated during the Project's Pre-PER phase include the following:

- Preliminary Project Enquiry (PPE)
- Continued engagement with VFPA and Indigenous communities
- Receipt of Project requirements checklist from VFPA
- Consultation PER scoping, preparation, and planning
- Field work planning
- Initiation of habitat mapping field studies to capture 2019 seasonal windows
- Initiation of geotechnical investigation and TAG
- Determinations whether the project is a designated project under Canadian Environmental Assessment Act, 2012 (CEAA) (or the regulatory regime applicable at the time) and a reviewable project under BC Environmental Assessment Act (EAA)

Activities anticipated during the Project's PER phase include the following:

- Ongoing engagement with VFPA and other regulators (as needed) and Indigenous communities
- Completion of all fieldwork and environmental assessment studies
- Public consultation

During the Project's Permitting phase, other permitting requirements (outlined in Section 5.6) may be initiated. Planning for these permits may begin prior to VFPA issuing the PER permit however these permits will not be submitted until after the PER permit is in place.

5.5.2 CONSTRUCTION SCHEDULE

The construction schedule is estimated to take approximately four years. In 2018, GCT engaged engineering consultants to refine the proposed project to a single feasible concept. In 2019, the geotechnical field investigations are planned to support further advancement of engineering, construction cost and construction timeline to a more Front-End Engineering Design (FEED) level.

5.6 REGULATORY ENGAGEMENT, PERMITS AND APPROVALS

To date, GCT's engagements with the VFPA on this proposed Project have included:

- **January 2017** – meeting to share top line details about the DP4 project with VFPA's Planning, Engineering and Real Estate leaders
- **October 2017** – meeting to review jointly commissioned report by Hemmera – “Summary Review of Regulatory Considerations – East Causeway Roberts Bank” and outlined of next steps for a proponent
- **December 2017** – large meeting of GCT's and VFPA leadership teams providing a briefing of GCT's operations and planned expansions as well as rationale for advancement of DP4 project.

- **December 2018** – VFPA Board of Directors tour of GCT Deltaport and briefing on the proposed DP4 project
- **January 2019** – pre-preliminary project enquiry meeting with the VFPA Planning and Permitting leaders

Several permits, authorizations and/or approvals are anticipated to be required for the Project. The VFPA and other relevant federal and provincial regulatory agencies will be consulted to confirm the required permits. The changes over the past decade and the proposed changes to the regulatory frameworks, including to the Fisheries Act and environmental assessment processes, have been considered and accounted for in the preliminary Project planning. Based on expert advice, the proposed Project is feasible under present and any proposed regulatory frameworks.

Key permits and approvals that may be required based on the current legislative and regulatory framework include, but are not limited to:

- VFPA's PER permit.
- Fisheries Act Authorizations for any potential unavoidable residual serious harm to, and mortality of, fish associated with Project construction.
- *Canadian Environmental Protection Act*, 1999 for any potential disposal of dredged material.
- *Navigation Protection Act* approvals for any Project works proposed on navigable waters.
- *Species at Risk Act* (SARA), permit as the Project is located within critical habitat for the Southern Resident Killer Whale.
- British Columbia *Water Sustainability Act* approvals for any potential activities that occur in and around provincial freshwater watercourses/wetlands.
- Potential permits from TFN for works or activities on TFN lands including Environment Protection Development Permits and/or Heritage Conservation Permits.
- An amended VFPA project permit for development of Pod 6 surface works improvements.

5.7 ENVIRONMENTAL MITIGATION

As part of its “Global Commitment” to sustainability, GCT is dedicated to conducting operations in the most responsible manner possible. We believe it is our responsibility as a business and as good citizens. While we are a global company, we are committed to strengthening the local communities where we operate and enriching the lives of those who live there – many of whom are employees of GCT. Our many initiatives include buying and hiring locally, participating in charitable events, and protecting the surrounding environment and wildlife.

Our approach to environmental management goes beyond just meeting our legal obligations. We are continually challenging ourselves to achieve new and higher standards including by reducing fuel consumption and emissions, using resources wisely, and reducing our environmental footprint – all while maintaining our economic competitiveness.

With respect to the proposed Project, GCT will study potential environmental impacts and provide appropriate mitigations to either protect or offset at or beyond the impact level of the Project. In 2010, GCT completed a similar Project in collaboration with VFPA at Deltaport that increased capacity from 1.2m TEU to 1.8m TEU. The environmental assessment process conducted for the DP3 Project was robust and identified a variety of habitats at Roberts Bank that required mitigation and protection. Working together, the VFPA, regulators and GCT implemented the Adaptive Management Strategy. After eight years of monitoring by the Scientific Advisory Committee, the 2015 report concluded that “Roberts Bank has not suffered any significant negative impacts due to the construction of a third berth at Deltaport” (*Ron Ydenberg, Member of Scientific Advisory Committee*).

GCT is committed to working with Indigenous communities to establish protocols and practices that protect the coastal and marine environment. GCT will explore all feasible mitigation measures related to critical habitat and species-at-risk, including participation in government and industry initiatives to address the health of the Southern Resident Killer Whale (SRKW) population. As a trusted operator in Canada, GCT has direct working relations with its shipping customers and local Indigenous communities, and will work with them where this contributes to the protection of the marine environment. For example, having short sea shipping capability will mitigate some of the impacts associated with increased trucking by promoting movement of containers by barge and waterways.

GCT’s expert advisors have developed a habitat offsetting approach that includes identification of potential locations and actions for habitat offsetting that will require further stakeholder engagement to develop and implement. Based on preliminary studies and review of the regulatory environment, GCT understands that the habitat evaluation and offsetting requirements are dynamic in B.C. and may still be subject to further regulatory changes. GCT is preparing a regulatory strategy that can adapt in this changing environment and will allow the Project to be permitted successfully.

Emphasis will be placed on first avoiding any environmental impacts. If an impact is unavoidable, then any action will be mitigated to the extent practical. GCT agrees that replacement of lost habitat is critical and will work with environmental experts and local stewardship groups to ensure that any Project impacts are minimal. The marine and terrestrial environments in Delta are widely acknowledged for having rich ecological significance that include not just marine mammals and fish, but also are a significant location for migratory birds. The area spans the migratory Pacific Flyway and to that end, GCT is committed to working with community stewardship groups so that best practices can be applied. The link between shorebirds and biofilm is also an important ecological consideration and again, GCT will utilize the most recent and credible research to establish best practices alongside community partners.

Selection of mitigation measures will be informed by the following:

- Analysis of potential Project-related effects requiring mitigation
- Guidance from a coastal geomorphology Technical Advisory Group
- Review of mitigation measures (including best management practices) and follow-up programs undertaken for past developments in B.C. and other marine projects in Canada and internationally, and effectiveness of those mitigations

- Regulator (including guidance material from the VFPA), public, and Indigenous input
- Engagement and consultation with TFN through a proposed joint Environmental Management Committee
- Engagement and consultation with other Indigenous communities
- An evaluation of technical and economic feasibility.

Environmental mitigations may be applied to the following elements:

- Traditional or cultural resources (as determined by input from Indigenous communities)
- Air quality
- Noise and vibration
- Equipment and machinery management
- Erosion and sediment control
- Water management
- Soil and groundwater management
- Vegetation, wildlife, fish and fish habitat, and archaeological resources.

A construction environmental management plan will be developed for the proposed Project (with input from relevant regulatory agencies and local Indigenous communities) and will include references to other detailed management plans to be developed and implemented during construction and operations (e.g., emergency response plan, environmental monitoring plan, erosion and sediment control plan).

5.8 INDIGENOUS ENGAGEMENT

GCT is committed to continued relationship-building with Indigenous communities. As currently defined, the Project falls within or near the traditional territories, lands ratified by treaty, or other recognized areas of various groups. Given the long-standing working relationship between TFN and GCT and TFN proximity to the Project, we expect the TFN to be full and substantial participants in the Project consultation and development process. Recent communications with the TFN include on the DP4 concept:

- Ongoing engagement with TFN administration, since fall of 2016
- Presentations to Executive Council in October 2016 and follow up presentation in February 2017
- Tour of GCT Deltaport and discussions on proposed DP4 project in December 2018

GCT has an established relationship with the TFN, including a Memorandum of Understanding signed in 2010. GCT has initiated preliminary engagement with the TFN related to the Project through a series of face-to-face meetings, presentations, tours and information exchanges since 2016. GCT believes in early engagement and consultation with the TFN as part of the Project development process. As such, GCT plans to share with the TFN leadership a copy of this Preliminary Project Enquiry at the earliest possible opportunity, and engage with leadership about potential habitat offsetting initiatives and related opportunities.

As well the project falls within the traditional and/or consultative boundaries of a number of other Coastal Salish nations including in particular the Musqueam Indian Band who have inherent fishing rights, consistent with the Sparrow Supreme Court ruling. Members of other nations, such as the Tsleil-Waututh, continue to carry out traditional Indigenous harvesting of fish and marine life near the project area. In keeping with GCT's commitment to progressive Indigenous relations, consistent with current approaches of Indigenous rights and title, we expect to ensure fulsome, early stage consultation with impacted Indigenous communities in and near the project area.

More broadly, many Indigenous communities share concerns related to the impacts of marine shipping, including those related to the SRKW population. To this end, GCT is committed to technically and economically feasible mitigation measures where this addresses Indigenous concerns.

As required by the PER process, GCT will develop a fulsome Indigenous engagement and consultation plan. GCT is committed to working meaningfully with the Indigenous communities with an interest in the proposed Project.

5.9 PUBLIC, STAKEHOLDER AND COMMUNITY ENGAGEMENT

It is GCT's view that it will achieve long-term sustainability of an expanded terminal through careful design that reflects a modern and innovative approach to planning and constructing such an expansion. As a member of the Delta community, GCT will continue ongoing consultation and communications with the City of Delta, its neighbouring municipalities and its many engaged community interest organizations. GCT understands that the residents and stakeholders in the GCT community expect all Project communications to be transparent, open and responsive to community hopes and concerns. This approach means that GCT addresses questions and concerns in a manner that is contemporary and community-focused. Issues to contemplate will include construction management plans and also the longer-term consideration of community impacts like noise and light. GCT has been operating in Delta for more than 20 years and the company is focused on continuing to be a responsible neighbour by being considerate, flexible, and nimble in responding to community requests and concerns.

GCT will develop a scope and plan for Project communications, engagement and consultation in the lead-up to and as part of the PER and overall regulatory approvals process. Proposed activities may include seeking input and responding effectively to the public, stakeholders and community groups through methods such as:

- Face-to-face meetings
- On-line presence
- Open houses and telephone town halls
- Traditional means of notification such as print media, direct mail, website and emails
- Innovative online consultation and community engagement tools
- Newsletters

All of the above may be supplemented by digital media-driven Project communications as well as appropriate and robust mechanisms to record and respond to all input.

6 Closure

We look forward to working with VFPA in determining the regulatory process under which this proposed Project will be reviewed.

Acronyms and Abbreviations

ACRONYM / ABBREVIATION	DEFINITION
BC	British Columbia
BCI	British Columbia Investment Management Corporation
CHE	Container Handling Equipment
DP3	Deltaport Third Berth Project
DP4	Deltaport Fourth Berth Project
DPW	Dubai Ports World
DTRRIP	Deltaport Terminal, road and rail improvement Project
EA	Environmental assessment
FEED	Front End Engineering Design
FSD	Fraser Surrey Docks
GCT	GCT Canada Limited Partnership
GCT Deltaport	Deltaport container terminal
GHG	Green House Gas
OTPP	Ontario Teachers' Pension Plan
PER	Project and Environmental Review
PPE	Preliminary Project Enquiry
PRI	Principles of Responsible Investing
Project or DP4	GCT Deltaport Expansion, Fourth Berth Project
RBT2	Roberts Bank Terminal 2 Project
SRKW	Southern Resident Killer Whale
TAG	Technical Advisory Group
TFN	Tsawwassen First Nation
VFPA	Vancouver Fraser Port Authority
WMA	Wildlife Management Area

Symbols and Units of Measure

SYMBOL / UNIT OF MEASURE	DEFINITION
%	percent
ha	hectare
m	metre
m ²	square meter
m ³	cubic meter
TEU	twenty-foot equivalent unit

Sources of Studies

The various existing reports used to inform Black Quay analysis are as follows:

- Container Forecast Study – Port of Vancouver, OSC (2016).
- Potential Impact of a Failure to Develop RBT2 at VFPA, OSC (Nov 2017).
- Review of OSC’s Container Traffic Forecast Study – Port of Vancouver, InterVISTAS (Aug 2018).
- Roberts Bank Terminal 2 Container Vessel Call Forecast Study, Mercator (Nov 2018).
- GCT Canada vessel calls 2015-18, GCT.
- Management listing of planned capacity inputs on the West Coast of Canada, GCT, and confirmation that these match publicly available data.
- Historic Container Vessel Visitation Figures (sourced from VFPA website).
- Historic Trade Statistics (sourced from VFPA and Prince Rupert websites).
- Deltaport Third Berth Project: Comprehensive Study Report (CSR), July 5, 2006.
- Preliminary Container Traffic Projections for PMV, 2011 to 2030, WorleyParsons, May 27, 2011.
- PMV Container Forecasts, Ocean Shipping Consultants Report, 2012.
- Container Traffic Forecast Study, Ocean Shipping Consultants Report, 2014.
- Independent confirmation of publicly available capacity claims – various sources including VFPA Website and Port of Prince Rupert Website (refer to capacity section for full source details).