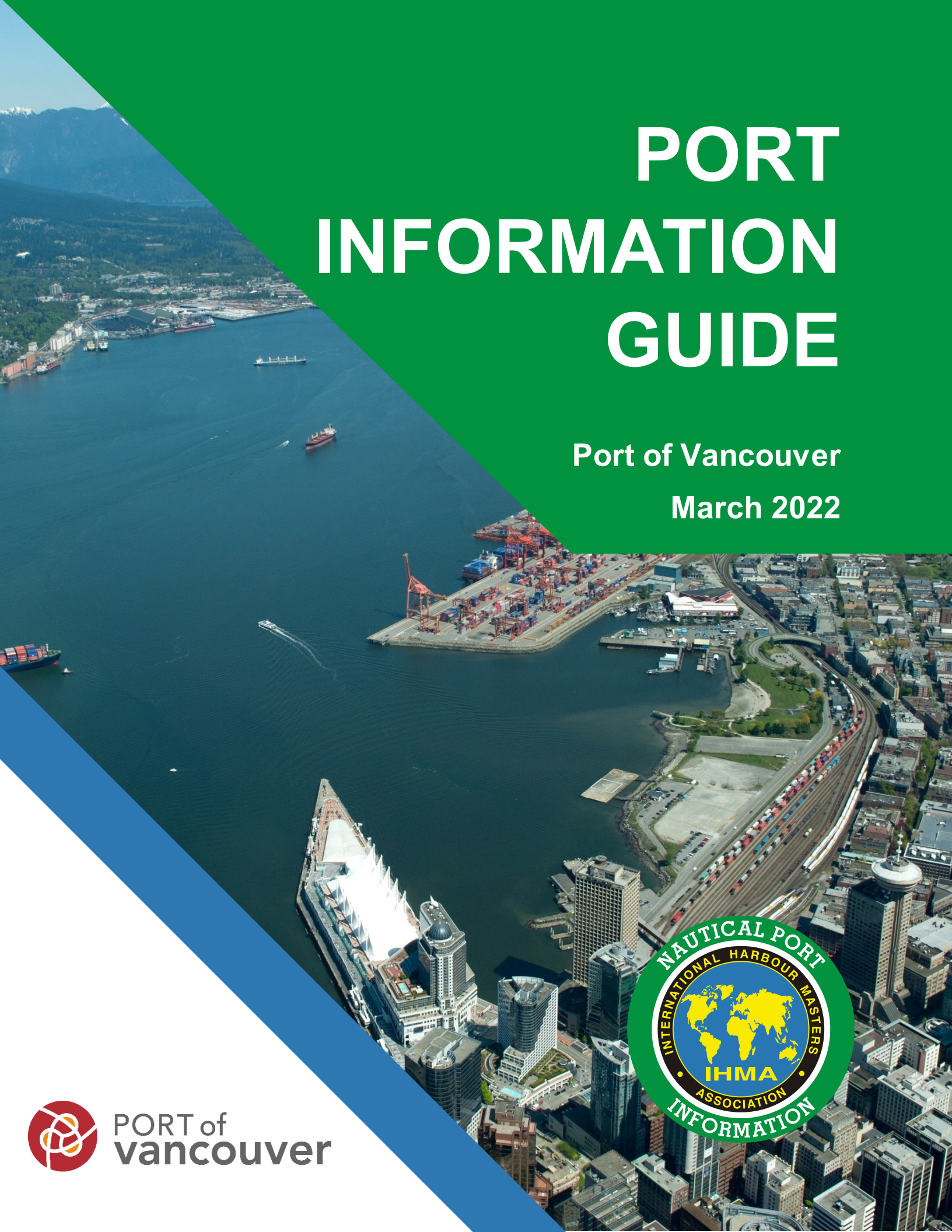
PORT INFORMATION GUIDE

Port of Vancouver

March 2022



PORT of vancouver

Roberts Bank

Burrard Inlet

Fraser River

Fraser River

Initiated by

In association with

Supported by

GENERAL INTRODUCTION

This guide has been written for masters of seagoing vessels, shipping lines, publishers of nautical information and any other party that needs nautical information.

LEGAL DISCLAIMER

The Vancouver Fraser Port Authority (the port authority) makes every effort to make and maintain the contents of this document as up-to-date, accessible, error-free and complete as possible; however, the correctness and completeness of these contents cannot be guaranteed. The port authority accepts no liability for the occurrences and/or consequences of errors, faults or incompleteness, or any other omission in connection with the information provided by this document. In case of any discrepancies or inconsistencies between this document and the applicable legislation, including port regulations, the latter will prevail. Any substantive change to port regulations, practices or procedures would be reflected in amendments to this manual as soon as practicable.

CONTACT PORT

The Vancouver Fraser Port Authority is a port authority established pursuant to the *Canada Marine Act*, S.C. 1998 C. 10 as amended.

CONTACT PERSON FOR PORT INFORMATION

24/7 Port Operations Centre +1 604 665 9086

WEBSITE OF THE PORT

portvancouver.com

WEBSITE OF THIS DOCUMENT

http://www.portvancouver.com/marine-operations/port-information-guide/

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RECORD OF CORRECTIONS

Date	Page	Correction subject	Source
2014-09-03	All	Initial publication	Port Authority
2015-08-25	All	Notice of Amendment – June 15,2015	Port Authority
2016-01-04	All	Notice of Amendment – Dec 3, 2015	Port Authority
2016-09-12	All	Notice of Amendment – Aug 12, 2016	Port Authority
2016-11-21	59-73	Table 3 and associated text	Port Authority
2017-09-08	All	Notice of Amendment – Sept 8, 2017	Port Authority
2018-02-05	All	Notice of Amendment – Feb 5, 2018	Port Authority
2018-12-18	All	Notice of Amendment – Dec 18, 2018	Port Authority
2019-03-18	All	Notice of Amendment – Mar 18, 2019	Port Authority
2020-05-15	All	Notice of Amendment – April 15, 2020	Port Authority
2020-12-31	All	Notice of Amendment – Nov 13, 2020	Port Authority
2021-05-07	All	Notice of Amendment – May 7, 2021	Port Authority
2022-03-01	All	Notice of Amendment – Nov 24, 2021	Port Authority

DEFINITIONS

Act	Means the *Canada Marine Act*, as amended from time to time.
Authority	Means the Vancouver Fraser Port Authority, established under the Act.
And/or	Means that either one of two things or both of them is possible
Barge	Means a vessel designed with no means of self-propulsion.
Bollard pull	Means the sustained useful pulling capability of the towing vessel.
Boom section	Means a boom measuring 20 metres in length by 20 metres in width enclosed by boom sticks.
Bunkering	The planning and actual safe transfer of bunker marine fuel from a bunker vessel to another vessel.
Bunkering checklist	The bunkering checklist as referred to in the latest edition of the International Safety Guide for Oil Tankers and Terminals (ISGOTT) and the International Association of Port and Harbours (IAPH) Clean Marine Fuels Working Group.
Cargo	In respect of a ship, means any goods towed by or loaded aboard a ship or aboard a ship under tow.
Clear Narrows	Means the transit of a vessel through a TCZ unimpeded by any other vessel.

Clear Transit Area	Means the transit of a vessel through a TCZ Clear Transit Area unimpeded by any other vessel.
Clearance	Means an authorization from MCTS for a vessel to enter, move within or depart from a TCZ subject to any conditions specified in these orders.
Critical habitat	The habitat that is necessary for the survival or recovery of a listed wildlife species that is identified as the species' critical habitat in the recovery strategy or in the action plan for the species.
Dangerous goods	Means any commodity that is identified in the International Maritime Dangerous Goods (IMDG) Code or the Transportation of Dangerous Goods Act and Regulations (TDG Regulations).
Daytime	Means the hours between dawn and dusk as defined by the morning and evening civil twilight, respectively.
Deep sea vessel	Means any vessel requiring a pilot or a vessel certified to navigate beyond the limits of a home trade voyage as defined in the *Canada Shipping Act*, *2001*.
First Narrows TCZ Holding Areas	Areas to which vessels, in agreement with MCTS, can hold themselves in readiness until conditions are such that a safe transit of TCZ-1 can be executed.
Floating property	Means any shed, shanty, boathouse or other structure that is located on the waters managed by the port authority and which is designed, used or capable of being used solely or partly for marine navigation.
Foreshore	Means the area managed by the port authority between the low water mark at low tide and the upper limit of wave wash at high tide otherwise known as the high water mark.
Freshet	The substantial rise in water level of a stream or river caused by melting snow in the spring.
Harbour master's office	Means the VFPA department that governs port practices and procedures and has responsibilities related to the safety of navigation and marine operations within the jurisdiction of VFPA.
Harbour patrol officer / Transport Canada enforcement officer	Means an individual who represents the port authority.
Inner (easterly) light	Means Light No. 385 as set forth in the Pacific Coast - List of Lights, Buoys and Fog Signals, as published by the Canadian Coast Guard.

ISGOTT	Means the International Safety Guide for Oil Tankers and Terminals, latest edition.
Jet skis	See, *Personal Watercraft.*
Light tug	Means a tug which is unencumbered by a vessel, barge, logs, or other means.
Log	Means any bolt, pole, pile, boom stick, swifter, rider, tree or other unmanufactured wood product.
Marine Communications and Traffic Services (MCTS)	Provides marine safety communications co-ordination with rescue resources and Joint Rescue Co-ordination (JRCC); vessel traffic services and waterway management, broadcast weather and safety information; sail plan services in addition to support for other government and marine agencies.
Master	Means the person in command and charge of a vessel. It does not include a licensed pilot, within the meaning of section 1.1 of the Canadian Pilotage Act, while the pilot is performing pilotage duties under that Act.
Moulded Breadth	Moulded breadth is the maximum breadth of the ship measured amidships to the moulded line of the frame in a ship with a metal shell and to the outer surface of the hull in a ship with a shell of any other material.
TCZ-2 Transit	Means a movement within the Second Narrows TCZ that includes passing under the Second Narrows Iron Workers Memorial Bridge and the Second Narrows Railway Bridge.
Outer (westerly) light	Means Light No. 381 as set forth in the Pacific Coast - List of Lights, Buoys and Fog Signals, as published by the Canadian Coast Guard.
Operations Centre	The primary contact (24 hours per day, 7 days per week) for all operations taking place within the areas managed by the port authority, also the primary contact for the Harbour Master.
Personal watercraft	Means a water-jet driven vessel with an enclosed hull and no cockpit and a maximum length of 4 metres that is designed to be used by one or more persons.
Piloted vessel	Means a vessel that is under the conduct of a Fraser River Pilot or an individual with a Pilotage Waiver in accordance with the Pacific Pilotage Authority Regulations.
Pleasure craft	Means any boat that you use only for pleasure activities like fishing, water sports and entertaining friends. It also includes a

	boat you use for subsistence hunting and fishing or for daily living (for example, in remote areas, going from one village to another).
Port	Means the navigable waters under the jurisdiction of a port authority and the real property and immovables that the port authority manages, holds or occupies as set out in the letters patent.
Port authority vessel	Means a vessel which represents the port authority.
Port facility	Per the Act, means a wharf, pier, breakwater, terminal, warehouse or other building or work that is located in, on or adjacent to, navigable waters that is used in connection with navigation or shipping, land incidental to its use and any land adjacent to navigable waters that is used in connection with navigation or shipping.
Recreational vessel	Means a vessel that has the primary role of recreation (i.e. not intended for commercial use or hire).
Second Narrows bridges	Means the Second Narrows Iron Workers Memorial Bridge and the Second Narrows Railway Bridge.
Second Narrows TCZ Holding Areas	Designated areas to which Tier 1 vessels subject to transit windows may be directed MCTS or in which Tier 2 vessels, including non-piloted tugs and barges, in agreement with MCTS can hold themselves in readiness until conditions are such that a safe transit of TCZ-2 can be executed.
Ship	Means every description of vessel, boat or craft designed, used or capable of being used solely or partly for marine navigation, whether self-propelled or not and without regard to the method of propulsion, and includes a sea-plane and a raft or boom of logs or lumber.
Ship's Beam	The widest part of the ship in the transverse athwartships direction.
Slack water	Means tidal currents generally not greater than 0.5 knots.
Summer Deadweight	Refers to the maximum assigned summer deadweight. In a case where a vessel holds multiple load lines, the maximum deadweight will be used for the purpose of procedures established herewith.
Tanker	Means a ship designed to carry liquid cargo in bulk, (including barges and articulated tugs

	and barges – ATB) when being used for this purpose.
Terminal	Means a place where deep sea vessels are berthed or moored for the purpose of loading or discharging cargo.
Terminal representative	Means a person designated by the terminal to take responsibility for an operation or duty.
Tier 1 vessel	Means any of the following vessels: • All piloted vessels and tug and barge combinations when piloted, regardless of tonnage; • All non-piloted tug and barge combinations with a barge of 10,000 tonnes or more carrying capacity; • All non-piloted vessels including barges and articulated tugs and barges (ATBs) when in product.
Tier 2 vessel	Means all other vessel traffic operating in the TCZ boundaries.
Tractor / ASD tug	Refers to a tug with either Z-drive (or azimuth thruster) or Azimuth Stern Drive (ASD) propulsion systems capable of generating all directional propulsions forces.
Traffic Control Zone (TCZ)	Areas established by the port authority for the purpose of promoting safe and efficient navigation or environmental protection in the waters of the port, with respect to ships or classes of ships.
Under keel clearance (UKC)	Means the depth of water between a vessel's keel and the waterway bottom.
Victoria MCTS	Means the Canadian Coast Guard's Marine Communications and Traffic Services Centre in Victoria, which provides vessel traffic services in Sector 1 (Roberts Bank), Sector 2 (Fraser River) and Sector 3 (Vancouver).
Vessel	see Ship
Vessel in heel	Refers to a gas carrier in the ballast condition, and with a small amount of cargo remaining on board, sufficient to keep the cargo tanks cooled.
Vessel in product	Refers to a tanker (including barges and articulated tugs and barges – ATBs) when carrying greater than 6,000 tonnes of liquids in bulk.

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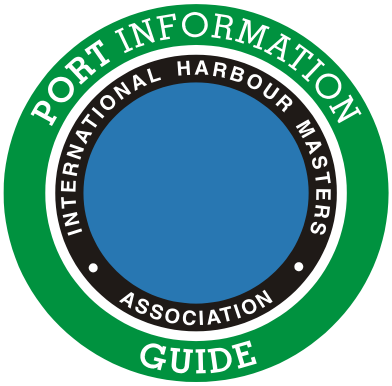
1 Foreword
Harbour Master



1.1 GENERAL

This document titled “Port Information Guide” was created pursuant to Section 56 of the *Canada Marine Act* and aligned with the standards of the International Harbour Masters Association. It contains a set of localized practices and procedures designed to promote safe and efficient navigation within the waters of the port and support efforts to protect the marine environment. The practices and procedures contained in the manual apply to all vessels in the port, including pleasure craft and recreational vessels, as well as other users of the port, including tenants, and may be amended from time to time by the port authority upon thirty days’ notice.

Further information pertaining to their application may be obtained by contacting the Operations Centre at +1 604 665 9086 or by email at harbour_master@portvancouver.com

1.2 PORT REPORT

The Port of Vancouver is Canada’s largest port and is operated by the Vancouver Fraser Port Authority. The port authority is committed to facilitating Canada’s trade objectives, ensuring goods are moved safely, while protecting the environment and considering local communities.

We invite you to explore our website to learn more about who we are and what we do. portvancouver.com

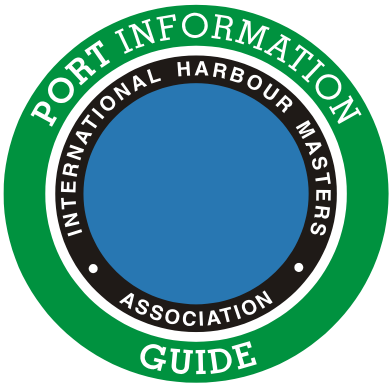
1.3 PORT PERFORMANCE

Find performance statistics for the Port of Vancouver here.

Image: Port Authority vessels

Image: 24/7 Operations Centre

2 Contact information and regulations



2.1 GENERAL

The Operations Centre is the primary point of contact for the port authority.

In case of fire, accident, dangerous situation or disturbance affecting safe and efficient navigation in the port or environmental protection of the waters of the port, the Operations Centre is available and equipped to take action. For further reporting requirements, see Part IV.

No vessel shall moor or anchor without approval of the port authority and then only at such places and in such a manner as directed.

Where the owner or person in charge of a vessel in the port is not available or refuses or neglects to obey any order to move the vessel, the port authority may, at the expense of the owner of the vessel:

- Take possession of and remove the vessel
- Use any means of force reasonably necessary to move the vessel
- Order tugs to move the vessel
- Moor or anchor the vessel at any place satisfactory to the port authority

2.2 CONTACT INFORMATION

OPERATIONS CENTRE

The Operations Centre is open 24 hours a day and 7 days a week, 365 days per year. The office can be contacted by calling +1 604 665 9086 or by email at harbour_master@portvancouver.com.

PORT AUTHORITY VESSELS

Port authority vessels are in operation seven days a week. Harbour patrol officers on board these vessels represent the port authority. The vessels may be contacted through the Operations Centre.

MARINE COMMUNICATION AND TRAFFIC SERVICES

Marine Communications and Traffic Services (MCTS) can communicate with, and monitor the movement of vessels in the port.

All vessels transiting the port with VHF radio capability, and not just those required to by the *Marine Communications and Vessel Traffic Services Zone Regulations*, should monitor the VHF channel used for MCTS communications in the respective area.

In the Vancouver Harbour limits MCTS uses VHF channel 12 for communications.

In the southern Vancouver Harbour limits (Iona to the international boundary not including the Fraser River) MCTS uses VHF channel 11 for communications.

In the Fraser River limits MCTS uses VHF channel 74 for communications.

Be aware that log loading operations at Timberland basin must be on stand-by and monitor VHF channel 08.

Periodic notices of actions required of vessels in the port will be distributed by MCTS as notices to shipping or on the continuous marine broadcast.

PACIFIC GATEWAY PORTAL

The pacific gateway portal is the port authority's customer and stakeholder portal. It is where port users can request services and access information. The services offered include:

- Marine event applications
- Dangerous goods permits
- Harbour dues applications
- Vessel service requests such as anchorage requests, engine immobilization or hold inspections.

For more information about vessel service requests, see Part II – Section 5.3.

To create an account visit the pacific gateway portal here.

2.3 RULES AND REGULATIONS

The rules and regulations in the port contribute to the safe, efficient, and environmentally responsible handling of shipping traffic. The Canadian rules and regulations that are in force in the port such as the *Canada Marine Act*, and the *Marine Transportation Security Regulations* (MTSR), as well as Practices and Procedures pursuant to Section 56 of the *Canada Marine Act* are aligned with international rules and standards as established by the International Maritime Organization (IMO). These include such rules and standards as the SOLAS convention as amended, and its supporting codes (e.g. the IMDG code and IBC code). These practices and procedures apply to all vessels within the port, and to all persons responsible for the planning, operation, conduct and safe navigation of such vessels.

The Canadian Coast Guard (CCG) Notices to mariners (NOTMAR) provide necessary information to update all charts and nautical publications. It will advise you of new initiatives, services and also some important announcements concerning the maritime community.

In accordance with the *Canada Marine Act* and the *Port Authorities Operations Regulations*, the port authority will direct any entry, departure, anchorage, berthing, and movement.

APPLICABLE REGULATIONS

- *Canada Marine Act* (S.C. 1998, c. 10)

- *Canada Shipping Act*, 2001 (2001, c. 26)
- *Canada Transportation Act* (S.C. 1996, c. 10)
- *Coasting Trade Act* (S.C. 1992, c. 31)
- *Marine Transportation Security Act* (S.C. 1994, c. 40)
- *Canada Customs Act* [R.S.C., 1985, c. 1 (2nd Supp.)]
- *Navigation Protection Act* (R.S.C., 1985, c. N-22)
- *Pilotage Act* (R.SC., 1985, c. P-14)
- *Transportation of Dangerous Goods Act*, 1992 (c. 34)
- *Marine Transportation Security Regulations* (MTSR)
- *Cargo, Fumigation and Tackle Regulations* (SOR/2007-128)
- *Port Authorities Management Regulations* (SOR/99-101)
- *Port Authorities Operations Regulations* (SOR/2000-55)
- *Collision Regulations* (C.R.C., c. 1416)
- *Transportation Safety Board Regulations*
- *Plant Protection Policy for Asian Gypsy Moth*
- *Pacific Pilotage Regulations (C.R.C., c. 1270)*

PORT TARIFF

Information regarding the port tariff can be found in the port authority's fee document here.

NORTH AMERICAN EMISSION CONTROL AREA (NA-ECA)

The North American Emission Control Area (NA-ECA) is a program to help limit emissions from ships by requiring vessels to burn fuel with a lower content of sulphur in waters up to 200 nautical miles from the coast of Canada. More information can be found here.

For information on the authority's EcoAction incentive program, see section 14.5

2.4 EXEMPTIONS AND PERMITS

The authority may grant exemptions to the practices and procedures on a case by case basis or in emergencies. Any request for exemptions must be made in writing to harbour_master@portvancouver.com

2.5 RECENT IMPORTANT AMENDMENTS TO LAW

No records at this time.

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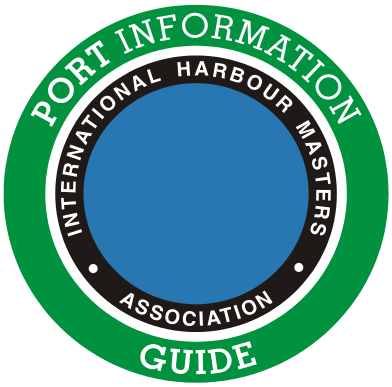
3 Arrival and Departure Checklists



3.1 GENERAL

Every vessel either in or seeking to enter the port is subject to the orders of the port authority in respect of its entry, departure, draught, berth, anchorage, location, speed, direction and means and method of movement, whether or not such orders are issued through or by MCTS.

For a quick reference of when and what to report please consult the checklists mentioned below.

3.2 ARRIVAL CHECKLISTS

All commercial vessels over 350 gross tonnes, and all pleasure craft over 500 gross tonnes (subject to compulsory pilotage) that are proceeding to an anchorage within the port, should give as much notice as possible of arrival and ETA by submitting an anchorage request here..

Ships calling at terminals within the port should refer to the Port Sections Guide for specific terminal information and arrival maneuvering instructions.

Other arrival requirements are outlined in the checklist below.

	Time	Report	How
1	ETA – 96 hours to Canadian waters	Pre-Arrival Information Report (PAIR), see 4.4 and 4.5	Master to TC
2	ETA – 48 hours Victoria Pilot Station	Dangerous Goods, see 4.8	Agent to VFPA
4	ETA – 48 hours Victoria Pilot Station	ETA to PPA, see 11.3	Agent to PPA
5	ETA – 24 hours to Victoria Pilot Station	Marine Cargo Report to CBSA, see 4.4	Agent to CBSA
6	When crossing mandatory Call-in-Points (CIP)	Name, CIP, ETA to next CIP	Master to MCTS
7	ETA – 1 hour Victoria Pilot Station	Initial call to Pilot on VHF 17	Master to Pilot
8	On arrival at Victoria Pilot Station	Call to VTS on VHF 11 see 11.2	Master to MCTS

3.3 DEPARTURE CHECKLISTS

Ships departing from any terminal in the port should refer to the Port Sections Guide for specific terminal information and departure maneuvering instructions.

	Time	Report	How
1	ETD – 12 hours	ETD for PPA, see 4.6	Master/Agent to PPA
2	ETD – 6 hours	ETD revisions to PPA, see 4.6	Master/Agent to PPA
3	15 minutes prior to departure	VTS VHF 74/12	Master to MCTS
4	On departure	VTS VHF 74/12, see 11.2	Master to MCTS

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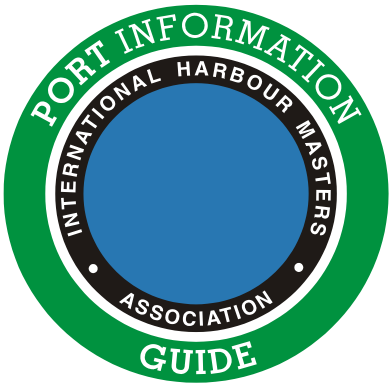
4 Notification



4.1 GENERAL

Masters of deep sea vessels arriving at, staying in or departing from the port are obliged to make previous notification on a variety of subjects as outlined in this section.

4.2 HEALTH

Advanced radio notification to a quarantine station applies only if a condition of health irregularity occurs onboard. Masters should acquaint themselves with Section 12 of the Quarantine Regulations. Vancouver and the surrounding cities and municipalities have full service hospitals and medical services.

Vessels with individuals suffering from a communicable disease, or have been in close contact with someone with a communicable disease, are obligated to inform the vessel agent prior to arrival in Canada, who in turn is obligated to inform a Canada Border Services Agency (CBSA) officer or a quarantine officer; the officer will then determine if there is a requirement for further assessment.

4.3 IMMIGRATION

Starting in December 2013, citizens from certain countries/territories will need to give biometrics (fingerprints and photograph) when they apply for a visa. Depending on citizenship, individuals that plan to travel through Canada without stopping or those who are visiting for 48 hours or less may require a transit visa. A transit visa may not be required if travel is from the United States. See the Transit without Visa Program or the China Transit Program for details.

CREW MEMBERS WHO WISH TO GO ASHORE

All crew members that have cleared customs through the Canada Border Services Agency are permitted to proceed ashore subject to Section 16.13

PASSENGERS

Any passengers onboard will be required to clear customs through CBSA at the same time as the rest of the crew.

Passengers may proceed ashore subject to the same restrictions as crew.

4.4 CUSTOMS

The Port of Vancouver is a port of entry and as such has customs facilities operated by Canada Border Services Agency. The Advance Commercial Information program requires marine carriers to electronically transmit the marine cargo report and supplementary cargo report (if applicable) to CBSA at least 24 hours prior to loading cargo at a foreign port. Recreational boaters can call 1-888-CAN-PASS (1-888-226-7277).

PRE-ARRIVAL INFORMATION REPORT (PAIR)

Note: Pursuant to the *Marine Transportation Security Regulations*, the following pre-arrival information requirement does not apply to fishing vessels, pleasure craft and government vessels.

The Master of a vessel listed below, engaged on a voyage from a port in one country to a port in another country, must ensure their vessel does not enter Canadian waters unless the Master submits their Pre-Arrival Information Report (PAIR) to Transport Canada MARSEC West at marsecw@tc.gc.ca before entering Canadian waters.

Vessels required to submit a PAIR to Transport Canada:

- More than 100 tons gross tonnage, other than a towing vessel;
- Carrying more than 12 passengers; or
- Is a towing vessel towing a barge astern or alongside or pushing ahead, if the barge is carrying certain dangerous cargoes.

CANADA'S MARITIME ZONES

Canada measures its territorial waters from baseline (low water line).

Canadian Territorial Sea consists of a belt of sea 12 nautical miles from the low-water line (baseline) along Canada's coast.

The contiguous zone of Canada consists of an area of sea from 12 nautical miles to an outer limit of 24 nautical miles from the low-water line (baseline). Federal law enforcement officials may prevent the entry of person(s) in the contiguous zone of Canada from entry into Canada if there is reasonable grounds to believe an offence may be committed.

The exclusive economic zone of Canada consists of an area of the sea beyond and adjacent to the territorial sea of Canada extending to 200 nautical miles from low-water line along Canada's coast.

Canada's maritime zones.

4.5 ETA

Who	What	To	How	When	Remarks
Master of vessels listed in 4.4	Pre-Arrival Information Report (PAIR)	Transport Canada	Email report marsecw@tc.gc.ca	96 hours prior to entering Canadian waters	Nil
Agent of vessels listed in 4.4	Dangerous Goods	VFPA/Transport Canada	Online Application	Prior to 48 hours from Victoria Pilot Station	Nil

A tanker transit notice must be submitted to the port authority here for all transits of tankers through the port, whether in product or empty.

4.6 ETD

The vessel agent and/or Master must give the port authority as much notice as possible with the intended sailing time and any revisions to the estimated time of departure.

Tankers must give a minimum of 24 hours' notice of the intended time of departure via a tanker transit request on the Pacific Gateway Portal.

4.7 SECURITY

All commercial vessels over 350 gross tonnes and all pleasure craft over 500 gross tonnes (subject to compulsory pilotage) that are proceeding to any terminal or anchorage within the port must be prepared to provide a copy of each of the following documents:

- International Ship Security Certificate (ISSC)
- Crew list
- Passenger list
- Attendance list

For further information see Section 10

4.8 DANGEROUS GOODS

Dangerous goods are products or substances regulated under the *Canada Shipping Act*, and the *Transport of Dangerous Goods Act* (TDG). Dangerous goods that are to be loaded, unloaded or remain on board a vessel (FROB) including barges, are to be handled in compliance with the above two acts.

MOVEMENT OF DANGEROUS GOODS

Prior to the movement of dangerous goods within the port, VFPA, along with other regulatory agencies, requires pre-notification of the movement of dangerous goods cargo. For an updated distribution list please contact the Operations Centre at +1 604 665 9086. The list can also be found on the Pacific Gateway Portal.

Applications for dangerous goods acceptance are submitted and processed online here.

Net Explosives Quantities (NEQ) for appropriate facilities, as established by Natural Resources Canada, are available on the Pacific Gateway Portal.

For further information, please contact the Operations Centre at +1 604 665 9086

CARGO FUMIGATION AND TACKLE REGULATION (CFTR) SECTIONS 114/115

Ammonium Nitrate and Ammonium Nitrate Based Fertilizer

114.

(1) No person shall load or unload

(a) ammonium nitrate; or
(b) more than 10 000 tonnes of ammonium nitrate based fertilizer.

(2) At least 24 hours before 150 tonnes or more of ammonium nitrate based fertilizer are to be loaded onto or unloaded from a vessel, its master shall notify the following of the intention to load or unload and the location where it will take place:

(a) the Department of Transport Marine Safety Office nearest to that location; and
(b) the harbour master at the port or, if there is no harbour master, the person responsible for the port.

(3) The notification shall confirm that the fertilizer is considered to be free from the hazard of self-sustaining decomposition when tested in accordance with section 4 of Appendix 2 to the BC Code.

(4) The harbour master at the port or, if there is no harbour master, the person responsible for the port at the location where loading or unloading ammonium nitrate based fertilizer will take place shall ensure that information in respect of fire prevention, emergency procedures, storage, cleanliness and separation from contaminants and other dangerous goods is available at the location.

Documentation

115.

(1) Every shipper of solid bulk cargo to be loaded onto a vessel in Canadian waters shall comply with

(a) regulation 2 of Chapter VI and regulation 10 of Chapter XII of SOLAS;
(b) section 4 of the BC Code; and
(c) the provisions, if any, with respect to that cargo that are set out in a schedule to Appendix 1 to the BC Code and that apply to the shipper.

(2) If the shipper does not provide a vessel's master with the documents required to comply with subsection (1), the vessel's authorized representative and its master shall refuse to carry the cargo.

(3) While solid bulk cargo is carried on a vessel, the vessel's master shall keep on board

(a) the documents required to comply with the provisions referred to in paragraphs (1)(a) to (c);
(b) the BC Code; and
(c) if the cargo is dangerous goods, the most recent version of the Medical First Aid Guide for Use in Accidents Involving Dangerous Goods (MFAG), published by the IMO.

(4) Despite subsection (3), if the cargo is carried on an unoccupied vessel that is under tow, the master of the towing vessel shall keep the documents on board the towing vessel.

(5) If the cargo is carried on an unoccupied vessel that is not under tow, the person in charge of the unoccupied vessel shall ensure that the documents are kept on it in a manner that will keep them clean and dry and readily accessible for inspection.

(6) The master of a vessel carrying solid bulk cargo other than dangerous goods shall keep on board a document, such as a detailed stowage plan, that lists the cargo by its bulk cargo shipping name and sets out its location.

IN THE EVENT OF AN EMERGENCY

Transport Canada operates the Canadian Transport Centre (CANUTEC) to assist emergency response personnel in handling dangerous goods emergencies. The centre is staffed by professional scientists specialized in emergency response, experienced in interpreting technical information and providing advice.

In the event of an emergency involving dangerous goods, call CANUTEC at +1 613 996 6666 or *666 on a cellular phone (no charge). http://www.tc.gc.ca/tdg.

Pacific Region:

- Transportation of Dangerous Goods Offices (TDG) - New Westminster, Transport Canada Centre, 225 – 625 Agnes Street, New Westminster, BC, V3M 5X4; +1 604 666 2955

- Transport Canada Marine Safety and Security - Compliance, Enforcement and Cargo Services, #400 – 800 Burrard Street, Vancouver, BC, V6Z 2J8; +1 604 666 4200.

4.9 WASTE

All waste removal must be coordinated through the vessel's agent including garbage, oily water/bilge fluids, grey water, black water, and hazardous material.

For further details please see Section 14.5 of this document.

4.10 IOPP

All vessels requiring an IOPP Certificate must ensure that a valid, in date copy is available upon the request of a harbour patrol officer, or other representative of the port authority.

4.11 MARINE MAMMAL CRITICAL HABITAT

Canada's west coast is home to populations of whales, porpoises, and dolphins (cetaceans). Marine mammals common to B.C.'s coast include northern and southern resident killer whales, humpback, fin, blue, and sei whales. Fisheries and Oceans Canada (DFO) published *Species at Risk Act* recovery strategies and action plans, which support a number of at-risk whale species in the region through the designation of critical habitat. Information can be found here.

We are mandated to conduct operations in a responsible and sustainable manner that safeguards and promotes continual protection of the environment. For these reasons, the port authority developed the Enhancing Cetacean Habitat and Observation (ECHO) Program in 2014. Information about the ECHO program can be found on our website.

Vessels navigating throughout the port are required to use caution and report any issues with marine mammals as per Section 6.2 of the Port Information Guide.

Image: Southern resident killer whale critical habitat and shipping lanes. Navigate with care.

4.12 EXPLANATION OF REPORTING CODES

N/A

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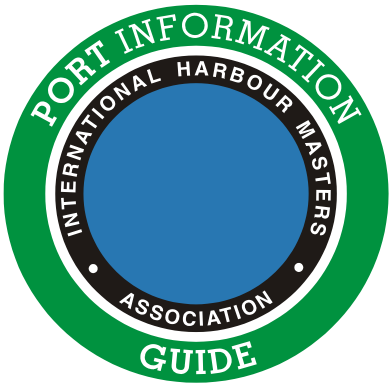
5 Documentation



5.1 GENERAL

The Vancouver Fraser Port Authority places importance on complying with rules and regulations. Therefore the vessel could be subject to inspection by Transport Canada (Port State Control), the Canadian Food Inspection Agency and the port authority. To ensure smooth operations, we advise vessels to keep the following documentation and certificates (or certified copies of certificates) available at all times.

5.2 REQUIRED DOCUMENTATION, TO BE AVAILABLE AT ALL TIMES

FOR GENERAL CARGO VESSEL/BULK CARRIER

- IOPP (International Oil Pollution Prevention Certificate)
- SOPEP (Ship Oil Pollution Emergency Plan)
- Garbage record book
- Oil record book Part I
- Document of Compliance (in respect to dangerous goods)
- Dangerous Goods Permit
- Documentation regarding fumigant used to fumigate bulk cargoes
- International Air Pollution Certificate
- Bunkering Receipt
- Ballast Water Management Transport Canada
- Updated Charts for the intended routes
- Notice to Shipmaster document
- Vessel Arrival Package (supplied by Agent)
- Ship Energy Efficiency Management Plan (SEEMP)
- Hull and prop maintenance logs
- International Sewage Pollution Prevention Certificate
- Ship Membership Agreement with Western Canada Marine Response Corporation
- Phytosanitary Certificate for Asian Gypsy Moth

FOR OIL/CHEMICAL/GAS CARRIER

- IOPP (International Oil Pollution Prevention Certificate)
- SOPEP (Ship Oil Pollution Emergency Plan)
- Garbage record book
- Oil record book Part I and II
- Certificate of Fitness chemical/gas, including product list
- Procedures and arrangements manual
- Cargo record book

- Material safety datasheet(s)
- Bill of lading
- Shipping document for bulk liquid cargoes
- Ship membership agreement with Western Canada Marine Response Corporation

Documentation Originals Required	Grain	Timber	Coal	Container	Passenger	Tanker
Valid ISSC certificate	X	X	X	X	X	X
Record of the last 10 ports of call	X	X	X	X	X	X
Record of safety drills	X	X	X	X	X	X
Ship Security Officer's (SSO) certificate of Proficiency as SSO	X	X	X	X	X	X
Certificate of class	X	X	X	X	X	X
Safety Management certificate	X	X	X	X	X	X
International load line certificate	X	X	X	X	X	X
Approved Grain loading manual – Healing Moments, Hydrostatic Particulars, Capacity Tables	X					
Approved Stability manual	X	X	X	X		
Document of Authorization to load grain – Approved by class	X					
Certificate by competent person issued within last four years certifying testing and marks on lashing and components		X		X		
Cargo securing manual (if not contained in Grain Loading manual)	X			X		
Code of Safe Practices for ships carrying Timber deck cargos		X				
Cargo, stability, and healing moments calculations on Canadian Forms	X					
Cargo securing manual		X		X		
Approved deck cargo Stowage and Lashing plan or Approved Drawings		X		X		
Ship's particulars	X	X	X	X	X	X
Crew List	X	X	X	X	X	X
Cargo, stability, draft, SF and BM, and Trim calculations	X	X	X			

Bunker receipts	X	X	X	X	X	X
Last PSC inspection report	X	X	X	X	X	X
Draft, Shearing forces and Bending Moments, Trim and local strength calculations	X	X	X			
Register of Cargo Gear for geared vessels	X	X	X	X		
International code for safe carriage of grain in bulk	X					

See also Chapter 15 – Port Inspections.

5.3 PACIFIC GATEWAY PORTAL

Some vessel operations require notification, and in some cases additional requirements, before the work can proceed. To notify the port authority and request permission for certain work, application must be made electronically through the Pacific Gateway Portal. To be able to access the service you must register here.

The following operations require a vessel service request:

- Anchoring
- Taking bunkers or fueling
- Cargo hold inspection
- Engine immobilization
- Hot work
- Lifeboat servicing
- Shifting along a berth without a pilot
- Tanker transits
- Pre-arrival scrubber declaration (minimum 24-hrs prior to arrival in port)
- Other service requests (including commercial diving operations)

For more information contact the Operations Centre at +1 604 665 9086

5.4 MARINE EVENTS

REQUIREMENTS FOR MARINE EVENTS

In all cases, the port authority will require that the organizers obtain comprehensive general liability insurance in an amount and coverage acceptable to VFPA. The Vancouver Fraser Port Authority is to be named as co-insured.

HOLDING A MARINE EVENT IN THE PORT

The port authority authorizes events held within the port and aims to facilitate the safe and orderly conduct of events.

For the purpose of this document a marine event includes, but is not limited to the following:

- Yacht or boat race
- Fireworks or performances
- Hang gliding or parascending
- Personal water craft
- Water ski or wakeboard
- Demonstration
- Swimming event
- Any sporting event
- Sail past
- Recreational event
- Sub-aqua meet
- Spiritual fish releases
- Filming over the water with an unmanned aerial vehicle (UAV) – See section 10.4

PROCEDURES FOR MARINE EVENTS

The following procedures will be used for all marine events held within the port including events held on property owned or administered by the port authority.

No person or vessel shall conduct or participate in a marine event, or in any other activity that is liable to interfere with navigation or operations within the port, except with the written permission of VFPA, which permission may be either general or specific as to place and time.

The port authority shall incur no liability in respect of any injury or loss of life or loss of or damage to property resulting from any activity conducted on land or water managed, owned or administered by the port authority regardless of whether or not the port authority has given permission for such activity.

Persons wishing to hold a marine event in the port must apply for and complete an “Application to hold a Marine Event in the Port” form. The form must be completed electronically on the Pacific Gateway Portal. For more information contact the Operations Centre at +1 604 665 9086.

The completed application form will be submitted for Harbour Master approval. Allow five working days for the application to be processed, any applications submitted less than five working days prior to the event must be followed up with a telephone call to the Operations Centre at +1 604 665 9086.

Organizers must obtain the approval in writing prior to the event. If approval is given, the organizers must abide by any requirements listed on the approved application form.

5.5 ON-WATER ADVERTISEMENT OR VISUAL DISPLAY

Displaying any form of advertisement or visual display (including placards, bills, signs or devices) within the navigation jurisdiction of the port, and in waterfront or upland areas managed by the port authority, is prohibited unless prior written approval has been obtained from the port authority.

5.6 DREDGING

Construction and dredging operations are prohibited within the port and in waterfront and upland areas managed by the authority, unless prior written approval has been obtained.

Applications for construction and dredging operations must be submitted to the port authority and approval received prior to commencement of such operations. Application forms may be obtained by contacting the port authority or may be downloaded through the website.

Tenants are to apply for written authorization to carry out any maintenance dredging prior to commencement of the activity.

More information can be found here.

5.7 CONSTRUCTION, WORKS OR DEVELOPMENT

Any proposals for construction, works, demolition or development may require a project review. Authority staff are available to answer questions and provide application guidelines. For more information visit our website.

Any proposals for construction, works, demolition or development may also require approval from Transport Canada Navigation Protection Program under the *Navigation Protection Act*. For more information visit their website.

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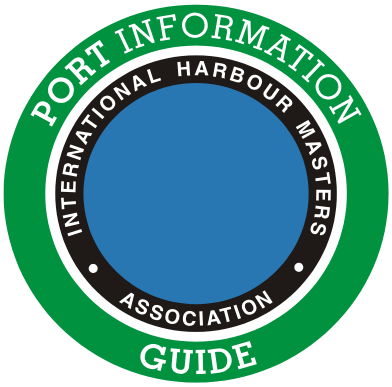
6 Reporting


PORT INFORMATION
INTERNATIONAL HARBOUR MASTERS
ASSOCIATION
GUIDE

6.1 GENERAL

Masters of vessels in the port are obliged to report and/or request permission for a number of issues/events. This section outlines those requirements.

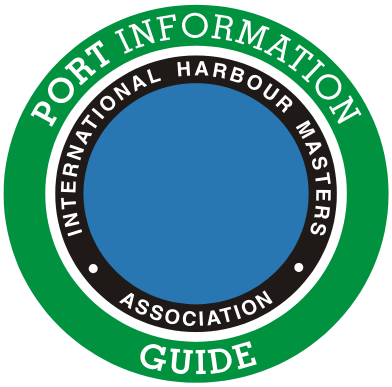
6.2 ISSUES TO BE REPORTED

Issues / Events To Be Reported	Section	To	Via	How
Navigational hazards, logs, deadheads, oil or similar pollution	9	MCTS/VFPA	VHF 12/74 (MCTS)/Telephone	Verbal
Bunkering	14.7	VFPA	PGP / telephone	Service request
Repairs / immobilizing engine	5.3	VFPA	PGP	Service request
Hot work	5.3	VFPA	PGP	Service request
Lowering boats and rafts	14.2	MCTS/VFPA	PGP / VHF 12/74	Verbal / service request
Under water inspections / diving	5.3	VFPA	PGP	Service request
Seagoing vessels with the intention to clean or wash cargo tanks	13.5	VFPA	E-mail	Vessel agent
Spills	9	MCTS/VFPA	VHF 12/74 / telephone	Verbal
Collisions / grounding	9	MCTS/VFPA	VHF 12/74 / telephone	Verbal
Losing anchors or chain	9	MCTS/VFPA	VHF 12/74 / telephone / email	Verbal or written
Anchoring in port	14.6	VFPA	PGP	Service request
Tanker transit	5.3	MCTS/VFPA	PGP	Service request
Any situation that may endanger the safety of shipping	9	MCTS/VFPA	VHF 12/74 / telephone / email	Verbal or written
Pre-arrival scrubber declaration	N/A	VFPA	PGP	Service request

VFPA Operations Centre +1 604 665 9086 harbour_master@portvancouver.com

MCTS Marine Communications & Traffic Services VHF 12 Call “Victoria Traffic” +1 250 363 6333.

7 Port Description



7.1 GENERAL

The Port of Vancouver is Canada's gateway for North American trade with Asia and other parts of the World. The port is comprised of different areas including Burrard Inlet, English Bay, the Fraser River and Roberts Bank.

As the third largest tonnage port in North America, we offer 27 major marine cargo terminals and three Class 1 railroads, providing a full range of facilities and services to the international shipping community.

The Port of Vancouver's deep-sea terminals offer extensive on-dock rail facilities. The port's freshwater facilities offer integrated services for the automobile and coastal forest industries, and for short-sea shipping. The Port of Vancouver serves as homeport for the Vancouver-Alaska cruise industry.

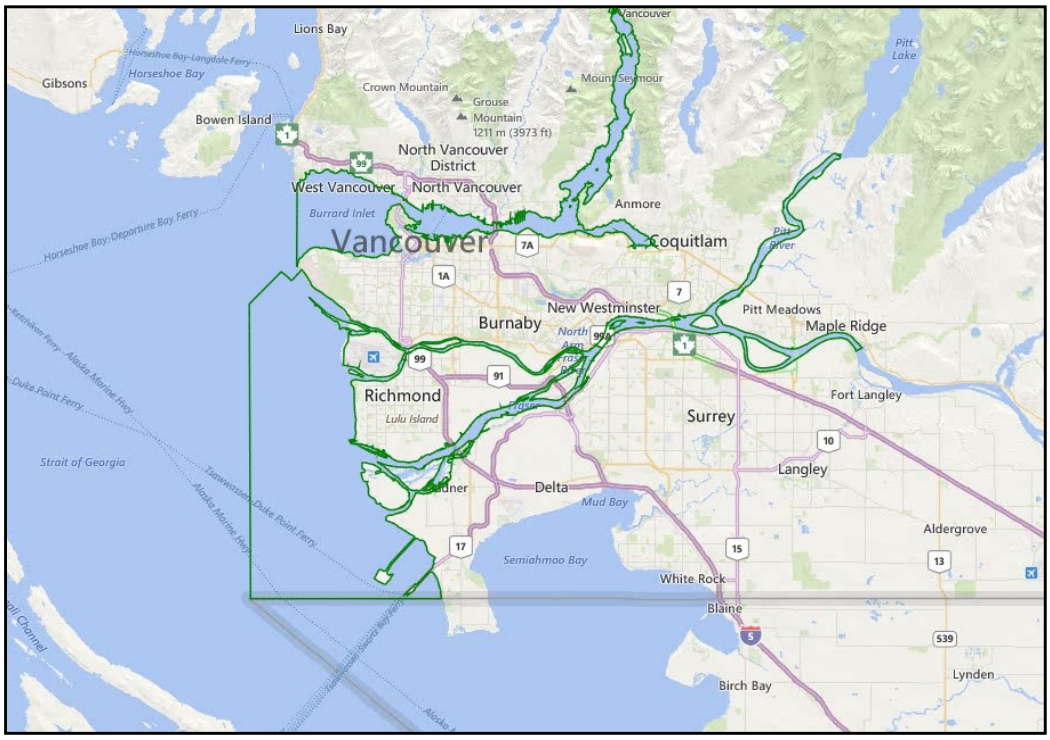
7.2 DEVELOPMENTS

For information on current projects and plans visit our website at portvancouver.com.

7.3 PORT LOCATION

The Port of Vancouver is located on Canada's west coast in the Province of British Columbia. The Vancouver Fraser Port Authority manages over 16,000 hectares of water, over 1,000 hectares of land and approximately 350 kilometers of shoreline. The port authority's navigation jurisdiction extends from Point Roberts at the Canada/U.S. border through Burrard Inlet to Port Moody and Indian Arm, and from the mouth of the Fraser River, eastward to the Fraser Valley, north along the Pitt River to Pitt Lake, and includes the north and middle arms of the Fraser River.

7.4 PORT LIMITS



7.5 LOAD LINES

Load Line Regulations (SOR/2007-99) fall under the *Canada Shipping Act*, 2001.

7.6 MAXIMUM SIZE VESSELS

The port has many areas with no restriction to vessel size. Some areas do have limitations to either beam, draught, length or air draft. For more information about specific vessels please contact the Operations Centre at +1 604 665 9086

7.7 TIME ZONE

The port is located within the Pacific Time zone and observes daylight savings time from March until November. Specific dates and times of the daylight savings change can be found online here.

Pacific Standard Time (PST) is GMT/UTC -8h and Pacific Daylight Time (PDT) is GMT/UTC- 7h during daylight savings.

7.8 LOCAL HOLIDAYS

There are five nationwide and five provincial holidays in British Columbia plus Easter Monday and Boxing Day, both of which are bank holidays and commemorated by federal employees. The five nationwide holidays are New Year's Day (January 1), Good Friday (Friday before Easter Sunday), Canada Day (July 1), Labour Day (First Monday in September), and Christmas Day (December 25). The five provincial holidays are Family day (2nd Monday in February), Victoria Day (Monday before May 25), British Columbia Day (Monday after the 1st Sunday of August), Thanksgiving (second Monday in October) and Remembrance Day (November 11).

7.9 WORKING HOURS

The Operations Centre, MCTS and many other port services are in operation 24 hours a day and seven days a week. The office hours of the port authority are 08:00 – 17:00

7.10 TRAFFIC

Vessel traffic within the port is varied and the vessel types that can be expected to be encountered range from deep sea cargo vessels and large cruise ships to pleasure craft including vessels under oars. Other common traffic within the port includes tugs, fishing vessels, water taxis, barges, coastal vessels and ferries, evening cruise and tour vessels and sailboats.

7.11 CARGO

As the most diversified port in North America, the Vancouver Fraser Port Authority operates across five business sectors: automobiles, breakbulk, bulk, container and cruise. The port facilitates trade with more than 160 world economies.

7.12 CHARTS AND BOOKS

CHARTS

All vessels in Canadian waters must carry and use nautical charts and related publications pursuant to the *Canada Shipping Act*, 2001, *Charts and Nautical Publications Regulations*, that are issued by, or on the authority of, the *Canadian Hydrographic Service*. Paper charts meet the requirements of the chart carriage regulations; however, digital charts only meet the requirements of the regulations under certain circumstances. CHS Electronic Navigational Charts (ENCs) meet the requirements provided they are used with an electronic chart display and information system (ECDIS). Raster charts meet the requirements only if paper charts are carried and used as a backup.

Most paper charts can be purchased locally in Vancouver and some are available to download online.

CHS Charts

BOOKS

- Canadian Tide and Current Tables
- Chart 1, 2012: Symbols, Abbreviations and Terms
- Sailing Directions
- Canadian Aids to Navigation System
- List of Lights, Buoys and Fog Signals
- Notices to Mariners – Current Monthly Editions
- Notices to Mariners – Annual Edition
- Radio Aids Marine Navigation (RAMN) 2013

7.13 SHIPPING ANNOUNCEMENTS FOR THE PORT AREA

NAVIGATION WARNINGS

The Canadian Coast Guard (CCG) issues navigation warnings (NAVWARN) to inform mariners about navigation hazards and share other important information. Verbal NAVWARN alerts are broadcasted by radio by the Marine Communications and Traffic Services Centre (MCTS). Written NAVWARN alerts are issued when the hazardous location is beyond broadcast range or when the information remains in effect for an extended period of time.

NOTICES TO MARINERS

The Notices to Mariners (NOTMAR), published jointly by CCG and CHS, provides necessary information to update all charts and nautical publications (such as *Sailing Directions, List of Lights, annual edition of Notices to Mariners,* and *Radio Aids to Marine Navigation*). Also issued is information pertaining to regulations and procedures governing vessels entry to and transit of Canadian waters.

7.14 PILOT STATIONS

The pilot boarding station located near Victoria is also called Brotchie ledge and is located at 48 22’ 30" north 123 23' 30” west.

At the entrance to the Fraser River South Arm (Sandheads) is another boarding station where the Fraser River pilots will board before guiding a vessel up the river.

7.15 PORT INFRASTRUCTURE

See the, Port Sections Guide.

7.16 PORT ACCOMMODATION AND BERTHS

See the, Port Sections Guide.

7.17 WEATHER AND TIDAL INFORMATION

Weather and tidal information and forecasts can be found online at Environment Canada and Department of Fisheries and Oceans.

https://weather.gc.ca/marine/region_e.html?mapID=02

http://www.waterlevels.gc.ca/eng/station?sid=7735

7.18 WEBCAMS

The port authority has cameras in several areas around the port's jurisdiction to help monitor operations and security. Some of these cameras are web based and available to the public via our website at portvancouver.com.

7.19 ENCOUNTERS WITH MARINE MAMMALS

Killer whales in the Pacific Ocean

As of July 2018, the Government of Canada amended the *Marine Mammal Regulations* to require that all vessels stay at least 100 metres away from most whales, porpoises, and dolphins, and at least 200 metres away from killer whales in the Pacific Ocean off the coast of British Columbia. In past years, annual seasonal measures have required vessels to stay 400 metres away from all killer whales in southern B.C. coastal waters between Campbell River and just north of Ucluelet between June 1 – November 30. To reduce underwater noise, vessels are also asked to turn off their echo sounders and turn engines to neutral idle, if safe to do so, when a whale is within 400 metres. Additionally, the regulations stipulate mandatory (and immediate) reporting of all vessel contact with marine mammals using the DFO's incident report hotline. Anyone in contravention of the regulations can be charged with an offence under the *Fisheries Act*.

Contact DFO's B.C. Marine Mammal Response Network Incident Reporting Hotline if your vessel strikes a whale, or if you observe a marine mammal in distress or entangled (1.800.465.4336 or VHF Channel 16).

If you see a marine mammal, please call the B.C. Cetacean Sightings Network (1.866.I.SAW.ONE or 1.866.472.9663) or submit your sighting through the WhaleReport App (available on iOS and Android devices). Make sure you note important details and characteristics that might help with identification and location:

- Date, time, and location (latitude/longitude) of animal
- Type of animal (species if possible)

- Sighting distance
- Behaviours of the animal observed (and your degree of confidence in the identification)
- Number of individuals
- If possible, from a safe location and abiding by the *Marine Mammal Regulations*, please provide photographs and video of the animal, especially close-ups of the tail, flukes and flippers

The WhaleReport Alert System (WRAS) is a mobile and desktop-based program that alerts commercial mariners to the presence of whales so that they may take mitigation measures—such as slowing down or diverting course—to reduce the risk of disturbance and collision. If you belong to a professional marine organization and are a pilot or member of the bridge crew of a ship, please contact the WRAS Project Manager at WRAS@ocean.org to request access to the WhaleReport Alert System.

Issues / Events To Be Reported	Section	To	Via	How
Whale, dolphin or porpoise sighting	14.5	BC Cetacean Sightings Network and Fisheries and Oceans Canada	WhaleReport App, call 1.866.I SAW ONE (1.866.472.9663) Report a whale sighting here	Call, email or online form.
Marine Mammal found dead or in distress	14.5	BC Marine Mammal Response Network	Telephone: 1.800.465.4336	Verbal

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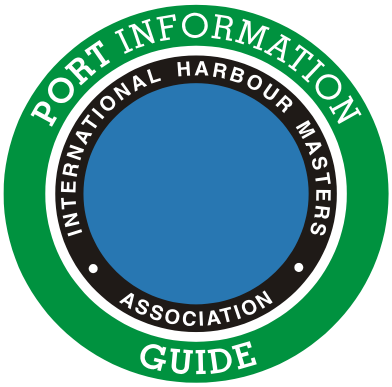
8 Port Navigation



8.1 GENERAL

This section deals with navigation within the port. The practices and procedures in this section aim to ensure the safe and effective movement of cargo and vessels through the gateway.

8.2 SPEED

No vessel, while in the port, shall move at such a rate of speed as to interfere with safe and efficient navigation in the waters of the port including, without limitation, interference with other vessels, or to wharves, structures or works. Vessels, when passing dredges, pile drivers, works, tugs, fishing vessels and pleasure craft within the limits of the port, must reduce speed sufficiently to prevent danger or injury by bow wave or wash to such craft or works and persons employed on or in connection with such craft or works.

Where necessary, a velocity relating to safe speed may be defined by the port authority and posted.

Every vessel or ship in the port must at all times:

- Move at a safe speed so that proper and effective action can be taken to avoid collision and stop within a distance appropriate to the prevailing circumstances and conditions
- Be cautious of towing, log loading, bunkering, diving operations and all other vessels. Notices to Shipping and Notices to Mariners will identify works in progress. Vessels are to proceed past these works at the minimum speed at which they can be kept on course
- Approach areas of known or suspected marine wildlife activity with caution and follow the 'be whale wise' guidelines found here
- Ensure the wake and wash from a vessel or ship does not impose a risk to the safety of life or damage to property

Vessels navigating in the followings areas are required to adhere to established speed limits as described below.

Coal Harbour: All vessels, excluding the Seabus, must navigate at a safe speed not to exceed five knots through the water. The Coal Harbour speed restriction zone is bounded by a line drawn from Prospect Point to Burnaby Shoal to Canada Place to Centerm and all areas west to the head of Coal Harbour (area shown in the image below).

First Narrows Traffic Control Zone (TCZ-1): Tier 1 vessels must transit or manoeuvre within TCZ-1 at a safe speed, not to exceed 10 knots through the water when running free, seven knots through the water when tethered, except when safety of navigation requires otherwise. Tier 2 vessels within TCZ-1 must transit or manoeuvre at a safe speed, not to exceed 15 knots through the water. The TCZ-1 area is defined in section 8.12 (area shown in the image below).

Image: Speed restrictions in Coal Harbour and First Narrows Traffic Control Zone

Indian Arm – south: All vessels must navigate at a safe speed not to exceed five knots through the water. The Indian Arm – South speed restriction zone is bounded to the north by a line extending from Jug Island west to the mainland at the northern entrance of Deep Cove, and to the south by a line extending east / west from the southern tip of Boulder Island (area shown in the image below).

Bedwell Bay: All vessels must navigate at a safe speed not to exceed five knots. The Bedwell Bay speed restriction zone is bounded by a line, which follows the overhead power lines (area shown in the image below).

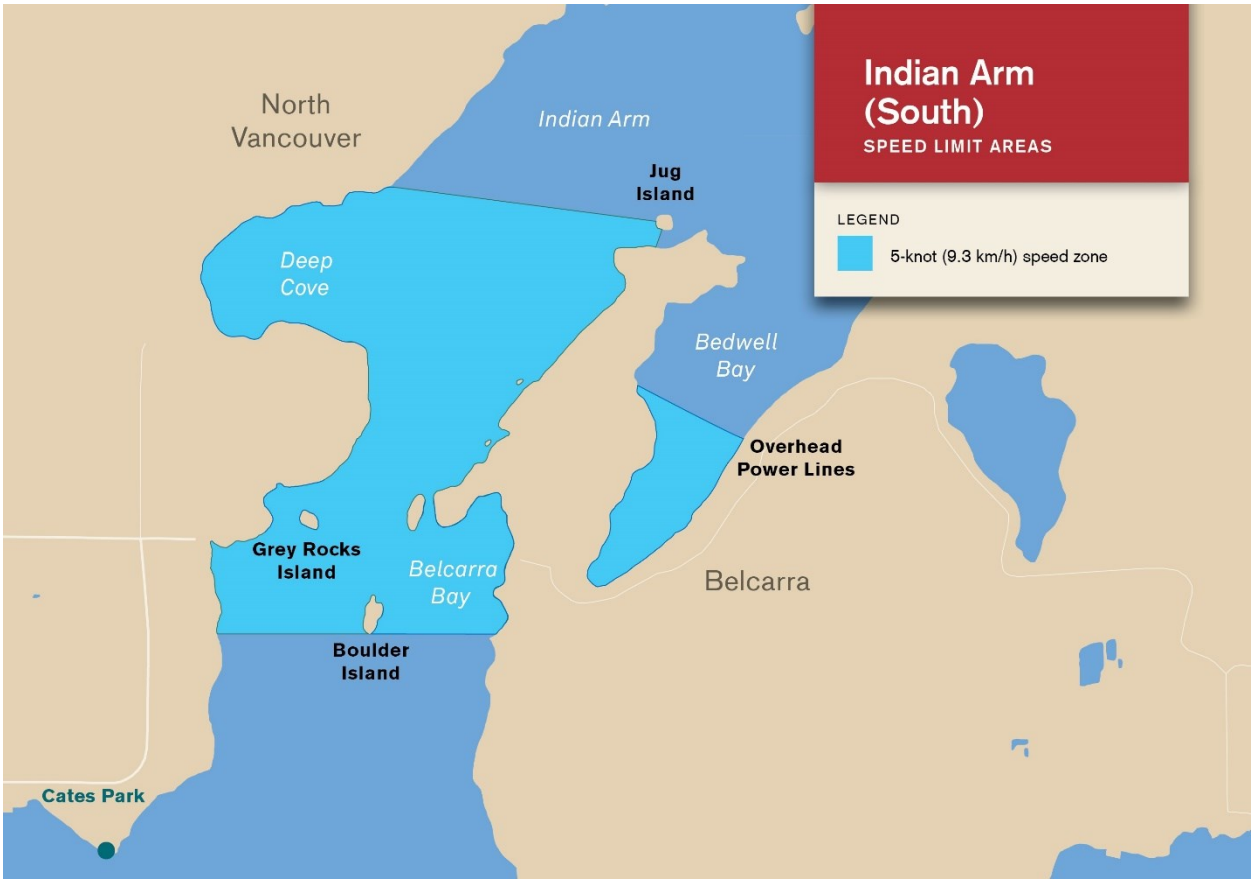


Image: Speed restrictions in Indian Arm – South

Indian Arm – north: All vessels must navigate at a safe speed not to exceed five knots. The Indian Arm – north speed restriction zone is bounded by a line extending east / west from the southern tip of Croker Island to the northern most navigable waters in Indian Arm. (area shown in the image below).

Image: Speed restrictions in Indian Arm - North

Port Moody Inlet & Rocky Point: All vessels must navigate at a safe speed not to exceed ten knots, and at a safe speed not to exceed five knots within 300 metres of the Rocky Point boat launch. Port Moody Inlet speed restriction zone is bounded by the west from a line drawn from the utility dock at Pacific Coast Terminals due to north to the opposite, and northern shoreline (area shown in the image below).

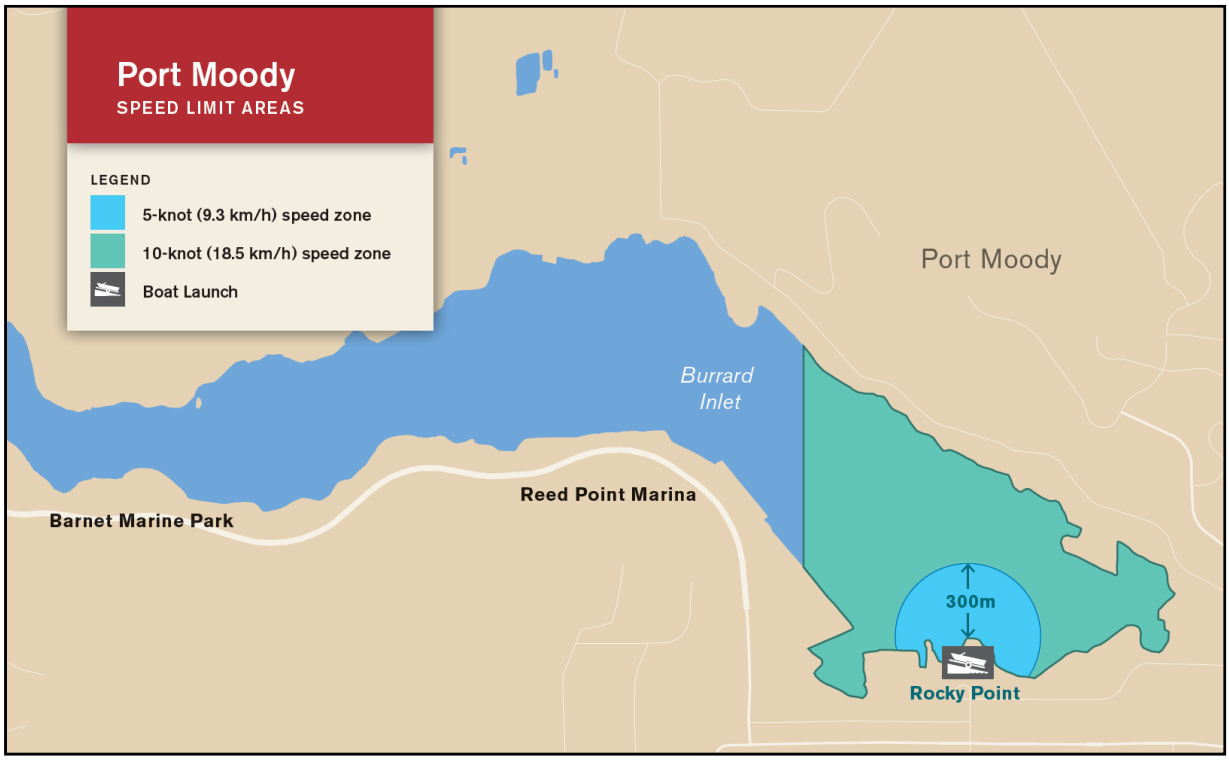


Image: Speed restrictions in Port Moody Inlet

8.3 UKC

The figures in the table below related to under keel clearance (UKC) are recommendations for masters to use as a safety guideline. A local pilot may require adjusted UKC as deemed appropriate given the vessel and prevailing circumstances.

Control Area	UKC requirement rising tide	UKC requirement falling tide	UKC requirement slack tide
Roberts Bank	5%	10%	10%
Burrard Inlet (manoeuvring)	5%	10%	10%
Burrard Inlet (transiting)	10%	10%	10%
First Narrows	10%	10%	10%
Second Narrows	10%	10%	10%
Fraser River (< 250m LOA)	90 cm	90 cm	90 cm
Sandheads (< 250m LOA)	1.4 m	1.4 m	1.4 m
Fraser River (> 250m LOA)	1.4 m	1.4 m	1.4 m
Sandheads (> 250m LOA)	1.9 m	1.9 m	1.9 m
Alongside a berth	5%	5%	5%

Table: UKC requirements within VFPA jurisdiction

8.4 RIGHT OF WAY

The *Collision Regulations* apply in the port.

Vessels less than 20 metres and fishing vessels must not impede the passage of larger vessels within a narrow channel, as stated in Rule 9 of the *Collision Regulations*, or hamper the movements of deep sea vessels attempting to manoeuvre on or off a berth.

8.5 SPACING OF VESSELS

See, Port Sections Guide.

8.6 PASSING ARRANGEMENTS

Passing arrangements will normally be made by radio and in accordance with the *Collision Regulations*.

8.7 RESTRICTIONS

Restrictions on navigation do apply in certain areas of the port and the subsequent portions of section 8 address those restrictions by area.

8.8 INWARD BOUND VESSELS

LOAD VERIFICATION OF SHIPS' BOLLARDS USED FOR TUG ESCORT OPERATIONS

Ships' bollards used for tethered tug escort operations in the Second Narrows Traffic Control Zone (TCZ-2) must be verified under load prior to transiting the TCZ-2 inbound. If the inbound ship requires a tethered tug escort though First Narrows, the load verification can be carried out in English Bay. If not, it can be carried out prior to passing Terminal Dock light once the tugs are tethered in Vancouver Harbour. The pilot(s) will advise the ship's captain of the following procedure:

a) The safe working load (SWL), location and condition of the bollards to be used for the tethered tug operation will be verified by the master and pilot.

b) The pilots' expectations on which bollards are to be used and the method of securing the tugs' line will be communicated with the master and crew

c) For the purposes of the load verification, the escort tug must be rated for 65 tonnes bollard pull or higher, provided that the SWL of the bollard exceeds the forces that can be created by the tug.

d) Technical information for the bollard(s) and any operational restrictions will be shared with the tug master on the agreed marine VHF channel.

e) The ship's master must ensure that all deck personnel are well clear of the area when the bollard load verification is performed.

f) Once the tug is secured to the bollard, the pilot will reconfirm that the deck of the ship is clear of all personnel, and then inform the tug master to perform the bollard load verification at full astern propulsion.

g) The speed of the vessel through the water must be five knots or less at the time of the procedure to ensure the safety of the tug and its crew. If cavitation is an issue for the tug, the ship's speed shall be reduced further to conduct the load verification.

h) The tug will pull back at full astern propulsion for at least 30 seconds and the line load indicated (highest and sustained) on the tug's gauge will be shared with the pilot.

For further information on this procedure Please contact the Pacific Pilotage Authority at marineops@ppa.gc.ca.

For other requirements for inbound vessels see the applicable portion of Section 8, for the area of the port the vessel is calling or transiting.

8.9 OUTWARD BOUND VESSELS

See the applicable portion of Section 8, for the area of the port the vessel is calling or transiting.

8.10 SHIFTING VESSELS

SHIFTING BETWEEN BERTHS, OR BETWEEN A BERTH AND ANCHORAGE

Except to prevent imminent hazard to the vessel or its crew, no vessel which is subject to the *Pilotage Act* will reposition itself within the port without having a pilot onboard.

SHIFTING ALONG A BERTH

Vessels may shift along a berth with a pilot and tugs without restriction.

If a vessel wants to shift along a berth without a pilot and tugs, approval from the port authority and clearance from MCTS is required. To gain port authority approval, a vessel service request must be submitted and the following conditions must be met:

- A terminal operator's representative must call MCTS (250.363.6333) both 60 minutes and 15 minutes prior to each planned shift and be in receipt of vessel traffic information prior to executing the shift
- The ship's master must notify and receive clearance from MCTS via very high frequency (VHF) at the commencement of any shift. The master must also notify MCTS again once the shift is complete
- The berth is free from encumbrances (e.g., cranes, gangways)
- The master is on the bridge and in charge
- Main engines are on standby and ready for immediate use
- Sufficient number of trained dockside personnel are available during the shift for safe and effective response
- There are two headlines, two stern lines and one spring on each end under tension at all times
- The appropriate VHF channel is monitored throughout the shift (channel 12 – Vancouver Harbour, channel 11 – Roberts Bank, channel 74 – Fraser River).

At the following terminals, the maximum distance a vessel may shift without a pilot and tugs is 30 metres: Vancouver Wharves, Cascadia, Lynnterm, and Univar.

In situations where a vessel expects to carry out multiple shifts along a berth without a pilot and tugs and all conditions above are met for each shift, the port authority may grant approval for multiple shifts with one service request for a period of up to one day. A new service request must be submitted for each shift(s) occurring the next day starting at 0700.

WEATHER RESTRICTIONS

In certain circumstances due to weather conditions, tide, current, distance of shift, characteristics of vessel or where main engines are to be utilized, the authority may require tugs and/or a pilot to be used. However, nothing in these procedures relieves the master of the vessel from his obligations for safety, following additional precautions as would be required by the normal practice of seamen or from employing a pilot and tug(s) if he so requires. These procedures are to be considered the minimum requirements for shifting.

8.11 BURRARD INLET AND ROBERT BANKS SOUNDINGS & SURVEY REQUIREMENTS

Burrard Inlet and Roberts Bank berth soundings
Vancouver Fraser Port Authority (VFPA) maintains an up-to-date database of hydrographic survey data throughout its jurisdiction. The survey data is used to monitor navigation channels, deep-sea berths and approaches to terminals. Berth soundings can be located here.

Survey requirements
Requirements for terminal surveys can be found here.

8.12 DOCKING

The port authority manages the conduct of vessels berthing in the port. All vessels alongside a berth must maintain a continuous deck watch at all times. The officer in charge of the watch must follow the requirements contained in the STCW Code, as amended, as well as be guided accordingly by these practices and procedures.

In maintaining such a watch, the officer in charge must ensure that:

- The latest tidal and weather conditions are available
- A listening watch on VHF 16/12, 16/11 or 16/74 is maintained for the duration of the vessel's call
- The vessel's mooring lines are checked on a regular basis and adjusted accordingly
- MCTS must be notified for any shifting of the vessel, engine immobilizations, lowering of any boats into the water, or any other work that may affect other vessels in the area
- The officer is aware of all loading or discharging operations being carried out, as well as any vessel discharges
- Vessel traffic in the area is monitored.

In addition, vessels berthed at Vancouver Wharves, Cascadia, Lynnterm, Univar or Fibreco terminals must keep all of their mooring lines tight at all times. A regular check of all mooring lines must be carried out to ensure lines are not slack.

Vessels at Vanterm berth 4 must vacate the berth when another vessel is docking or un-docking at berth 5 or 6 upon the request from the Pilotage Authority, the BC Coast Pilots, the terminal operator or the port authority.

OVERHANG

Vessels may overhang a berth by a distance of up to 20 percent of the length overall (LOA) of the vessel for vessels up to 200 metres LOA, and up to 40 metres for vessels over 200 metres LOA. This applies if the mooring arrangement on the vessel and the mooring arrangement on the berth allow for an overhang, in the opinion of the master and pilot.

Exceptions to this rule, for specific terminals, may be found in the Port Sections Guide.

Any vessel requiring an overhang in excess of these must contact the Operations Centre at least 48 hours in advance of berthing or shifting to the proposed overhang for Harbour Master approval.

When assessing a request for a vessel to overhang in excess of the limits above, the interests of the terminal operator must be considered. However, additional requirements may be imposed on the vessel, including the use of tugs, and additional mooring lines. The requirements will include that the vessel:

- Not obstruct the passage of any other vessel
- Properly illuminates the overhang from sunset to sunrise
- Does not pose a potential danger to the port, with regard to the prevailing weather conditions, tide or current
- Does not impact adjacent berths or facilities.

If a berth or terminal is specifically designed to allow for an overhang in excess of the limits above, a request may be submitted for a review of the mooring arrangement with respect to the design of the berth. The port authority may authorize an exemption from the limits above or require different conditions for overhang specific to that design.

BERTHING OF NON-CRUISE VESSELS AT CANADA PLACE

The following marine conditions apply to this berth arrangement:

- The opening and closing of hatch covers should be kept to a minimum and can only take place between the hours of 0800 – 1800
- Any activity that creates excessive noise for building tenants may be prohibited, particularly after 1800 hours
- Every effort is to be made to minimize funnel emissions in order to avoid intakes into the building air conditioning system
- No maintenance or repair activities are to take place without specific approval from the authority
- Radar units should remain in standby mode and not transmit while alongside at Canada Place.

Additional security measures will be required to berth at Canada Place. The Operations Centre will provide detailed requirements following the assessment of your request.

8.13 ENGLISH BAY ROUTING SYSTEM PROCEDURES (EBRS)

GUIDE TO CONTENT

EBRS Introduction

EBRS Application

EBRS Navigation Envelope (Clearances)

- a) Vertical Clearances
- b) Horizontal Clearances

EBRS Communications

- a) Marine Communications and Traffic Services (MCTS)

EBRS Restrictions

- a) Transit Restrictions
- b) Clear Lane Restrictions

EBRS Vessel Traffic Procedures

- a) Order of Transit

EBRS INTRODUCTION

The English Bay Routing System (EBRS) comprises an area located between the terminus of the Vancouver and Approaches Traffic Separation Scheme and the First Narrows Traffic Control Zone (TCZ-1), specifically between coordinates:

- A line drawn north to south at Point Atkinson within the coordinates 49°19' 20" N & 123°15' 53" W, to the north and 49°18'19" N & 123°15'52" W to the south
- And line drawn north to south from coordinates 49°19'17" N & 123°09'32" W, to the north and 49°19'01" N and 123°09'32" W to the south

For the purpose of these procedures, the EBRS is comprised of three areas:

- The southern lane for vessel traffic transiting in an eastbound direction, abeam Pt. Atkinson to QB buoy;
- The northern lane for vessel traffic transiting in a westbound direction, abeam QB buoy to Pt. Atkinson;
- The EBRS transition area for vessel traffic entering or exiting either the northern or southern EBRS lane, from abeam the QB buoy to the western boundary of TCZ-1.

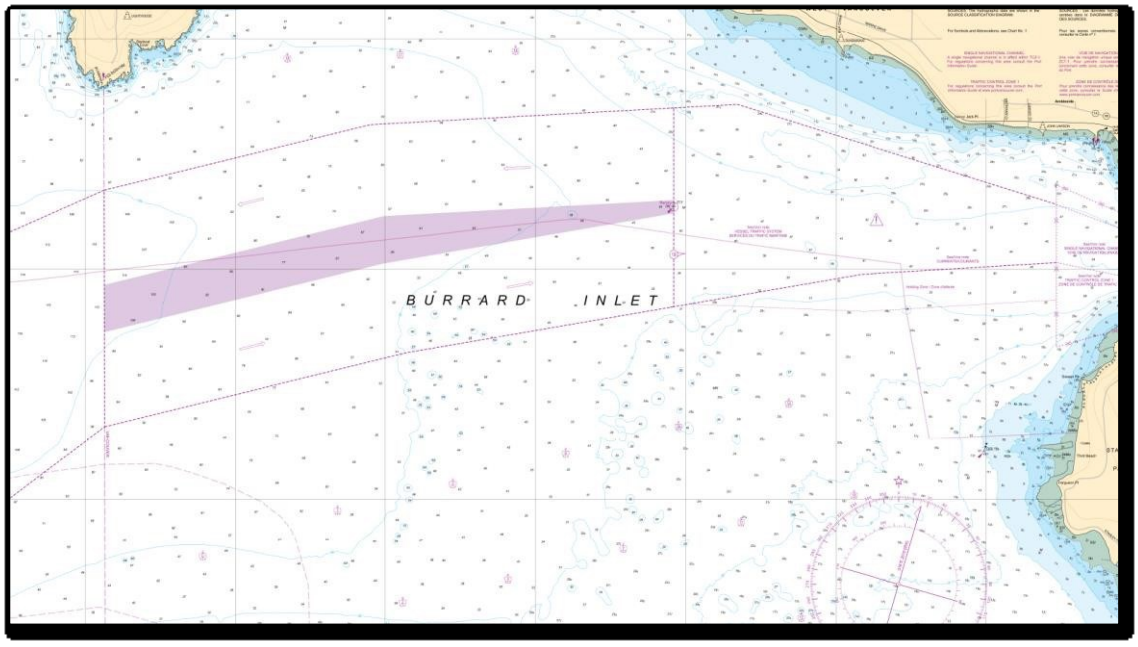


Image: English Bay Routing System as charted on CHS chart #3496

The Vancouver Fraser Port Authority (port authority) has established the EBRS and has developed these associated procedures. The purpose of the EBRS procedures is to facilitate the safe navigation and efficient movement of vessels in this area of the port, and they form an integral part of the port authority regulations outlined in this Port Information Guide.

EBRS APPLICATION

Rule 10 of the Collision Regulations applies to all ships navigating in or near a routing system, including the EBRS. The EBRS is a compulsory routing system and is modified by the

provisions that fall under the heading "Canadian Modifications" to Rule 10 of the Collision Regulations as follows:

- In Canadian waters and fishing zones, a vessel engaged in fishing may fish in any direction in or near a traffic separation scheme, but shall not impede the passage of any vessel following a traffic lane.
- Every power-driven vessel of more than 20 metres in length is required to use the route within a traffic separation scheme or routing system by which it can safety proceed to its destination.
- Conditional exemptions are also made for special purpose vessels.

The Harbour Master, as designated by the port authority, has overall authority in interpreting and overseeing the implementation of these procedures. In doing so, the Harbour Master consults on issues of safety with a number of stakeholders including pilots, other statutory agencies and industry experts, as required.

NAVIGATION ENVELOPE (CLEARANCES)

All vessels having a length overall (LOA) of 366m and above and/or a moulded breadth of 51.25m and above are restricted from entering Burrard Inlet via TCZ-1 without the prior approval of the port authority, per section 8.13 of this Port Information Guide.

Vessels using the EBRS intending to enter Burrard Inlet via the TCZ-1 must refer to the procedures and clearances prescribed in section 8.13 of this Port Information Guide.

a) Vertical Clearances

No overhead structures or objects within the EBRS. Refer to TCZ-1 for further information related to vessels entering Burrard Inlet.

b) Horizontal Clearances

The width of both the eastbound (inbound) or westbound (outbound) lane of the navigation channel is 4 cables (741 metres) on either side of the separation zone from Point Atkinson to the QB buoy. From the QB buoy east to the TCZ-1 boundary, the EBRS narrows from 4 cables to 2.5 cables (463 metres).

EBRS COMMUNICATIONS

a) Marine Communications and Traffic Services (MCTS)

Communication with vessels transiting, intending to transit or maneuvering within EBRS is provided, on behalf of the port authority, by the Canadian Coast Guard Marine Communications and Traffic Services (MCTS).

As described in the most recent version of the Radio Aids to Marine Navigation, the Dundarave calling in point for eastbound (inbound) traffic only is located 2 nautical miles west of Lions Gate Bridge.

In the event of an interruption to communications between a EBRS vessel and MCTS whereby MCTS has not provided the vessel with traffic information prior to undertaking a EBRS transit, pilots will assess the movement of other traffic having the potential to impede such transit in making a determination as to whether it is safe to continue. A decision on such determination will be conveyed to the port authority Operations Centre.

EBRS RESTRICTIONS

a) Transit Restrictions

Piloted vessels found by BCCP to have unacceptable maneuvering characteristics may be refused permission to transit EBRS or be subject to special restrictions.

A vessel having a defect in the hull, main propulsion machinery, steering system or other communication or navigation system that is detrimental to safe navigation, requires the prior approval of both Transport Canada and the port authority to transit EBRS.

b) Clear Lane Restrictions

The term "Clear Lane" is defined as the transit of a vessel through areas of the EBRS unimpeded by any other vessel.

MCTS will declare a "Clear Lane" on VHF Channels 12 and 16 by means of a Securité call to ensure unimpeded transit of restricted vessels, specifically:

- An Ultra Large Cruise Ship or Ultra large Container Ship or any other vessel with an air draft greater than specified for the vessel moulded breadth in Appendix A, and which therefore has a significantly restricted tidal window and which has port authority approval to transit TCZ-1;
- A vessel with a draft of 13.6m or greater, upon request by Master or Pilot;
- A vessel, which for safety considerations requires a clear passage through TCZ-1 upon request of the Master or pilot;
- Other vessels with special transit requirements that require the approval of the port authority.

Restricted vessel traffic requiring a "Clear Lane", eastbound into Vancouver harbour shall be unimpeded when in the southern lane (from Pt. Atkinson to QB buoy) and when in the EBRS transition area (from QB to TCZ-1).

Restricted vessel traffic requiring a "Clear Lane", westbound from Vancouver harbour shall be unimpeded when in the EBRS transition area (from TCZ-1 to QB buoy).

MCTS may direct other vessels which would otherwise be required to use the EBRS, to a suitable holding area agreed to by the Master outside of the EBRS traffic lanes, to allow a vessel requiring to a "Clear Lane" to overtake at a safe distance, until conditions are such that a clear transit of the EBRS can be safely executed.

Suitable holding areas include:

- For eastbound (inbound) traffic, the open area immediately to the south of the southern boundary of the EBRS;

- For westbound (outbound) traffic, the open area immediately to the north the northern boundary of the EBRS.

Light tugs and other highly maneuverable small vessels may, on request, be granted a compliance exemption by MCTS, provided a ship-to-ship agreement has been reached with the vessel for which a clear lane has been declared.

All other vessels must observe the “Clear Lane” declaration for EBRS and must not interfere in any way with the passage of a vessel for which a “Clear Lane” has been declared.

EBRS holding areas: are defined as areas to which vessels, in agreement with MCTS, can hold themselves in readiness, to allow to be overtaken by vessels requiring a “Clear Lane”, until conditions are such that a safe transit of EBRS can be executed.

EBRS VESSEL TRAFFIC PROCEDURES

a) Order of Transit

Vessels using the southern lane of the EBRS intending to transit TCZ-1 eastbound into Vancouver harbour, are subject to the order of transit priority established in the TCZ-1 procedures, specifically:

- First priority will be a vessel air draft tidal height window or tidal stream (current) window is closing, this includes east bound vessels scheduled for a restricted transit window transit of TCZ-2;
- Second priority will be a tanker in product of LOA 185m or greater and/or 40,000 tonnes SDWT in product;
- Third priority will be a cruise ship without air draft restriction.

8.14 FIRST NARROWS TCZ PROCEDURES (TCZ-1)

GUIDE TO CONTENT

TCZ-1 INTRODUCTION

The First Narrows Traffic Control Zone (TCZ-1) comprises an area enclosed:

- To the northwest by a line drawn from the north pier of the Lions Gate Bridge through Capilano Light, intersecting a line drawn due north from Ferguson Point at position 49°19’22”N & 123°09’32”W;
- To the southwest by a line drawn from Prospect Point, along the Stanley Park seawall, intersecting a line drawn due north from Ferguson Point at position 49°18’40”N & 123°09’32”W;
- To the east by a line drawn from Brockton Point off Stanley Park to Burnaby Shoal, then north to the eastern edge of Fibreco Dock.

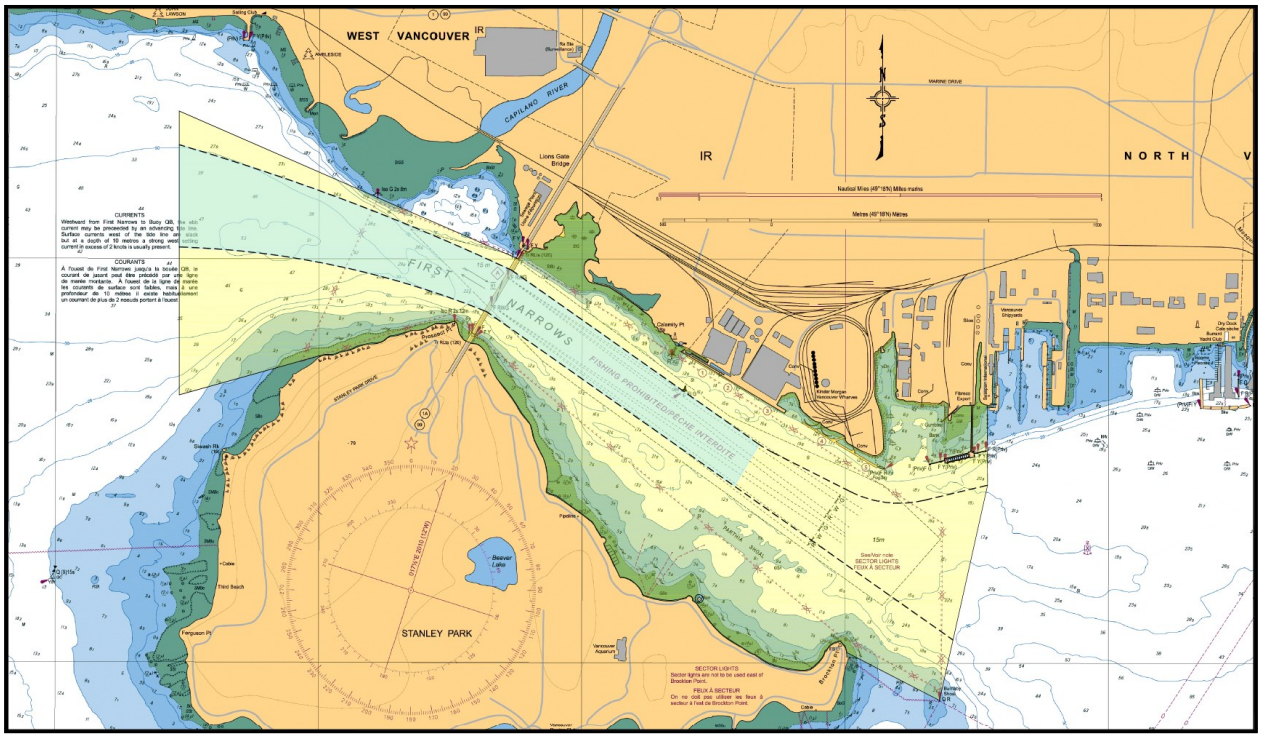


Image: TCZ-1 Boundaries

For enhanced vessel safety, a single lane navigation channel is in effect within TCZ-1 for 0.75 nautical miles both east and west of the First Narrows Lions Gate Bridge (highlighted in green above between the dashed black lines).

The Vancouver Fraser Port Authority (port authority) has established TCZ-1 and has developed these associated procedures in consultation with the Pacific Pilotage Authority (PPA), the BC Coast Pilots (BCCP) and the broader marine industry. The purpose of the TCZ-1 procedures is to facilitate the safe navigation and efficient movement of vessels in this area of the port, and they form an integral part of the port authority regulations outlined in this Port Information Guide.

TCZ-1 APPLICATION

The TCZ-1 procedures apply to all marine traffic in the TCZ-1, except designated port authority vessels and vessels that are engaged in law enforcement and security, search and rescue or other emergency response vessels.

The TCZ-1 Procedures do not relieve the Master from compliance with the *Canada Shipping Act, 2001* or other regulations, requirements or standards in respect of vessels operating in Canadian ports.

These procedures may be varied by the port authority in the event of an emergency that causes (or is likely to cause) loss of life, personal injury, serious environmental pollution or contributes to unsafe navigation in the port.

The Harbour Master, as designated by the port authority, has overall authority in interpreting and overseeing the implementation of these procedures. In doing so, the Harbour Master consults on issues of safety with a number of stakeholders including pilots, other statutory agencies and industry experts, as required.

The TCZ-1 Procedures supersede the *Department of Fisheries and Oceans Canada* Pacific Fishery Management Regulations in the area of Sub-Area 28-9 which overlaps the TCZ-1 area.

As per port authority Port Information Guide standard definitions, all references to "In product" refers to a tanker (including barges and articulated tugs and barges – ATBs) when carrying greater than 6,000 tonnes of liquids in bulk.

TCZ-1 NAVIGATION ENVELOPE (CLEARANCES)

All vessels having a length overall (LOA) of 366m and above and/or a moulded breadth of 51.25m and above are restricted from entering Burrard Inlet without the prior approval of the port authority. Reference should also be made to *Table 1: First Narrows TCZ (TCZ-1) transit procedures deep sea vessels – Summary matrix.*

The pilot in conjunction with the master should evaluate all clearance conditions mentioned in this section prior to the transit of TCZ-1 in conjunction with the port authority matrix *"First Narrows – Minimum channel depths and maximum vessel air drafts based on TCZ-1 moulded breadth factor for channel width."* found in Appendix A.

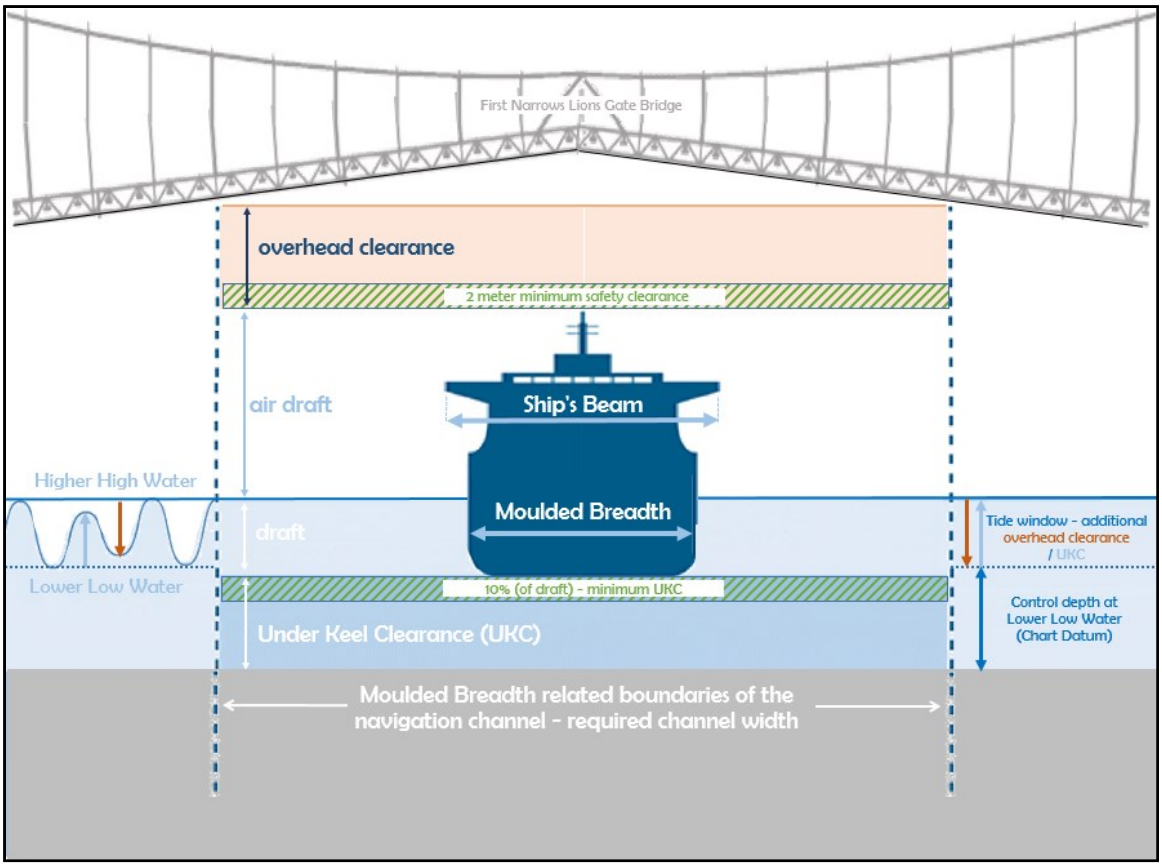


Image: TCZ-1 Navigation Envelope

a) Vertical Clearances

Vertical clearances are given as distances measured from higher high water, large tide datum (+5m) to the lowest member of the bridge structure, in way of the navigation channel.

Due to the curvature of the First Narrows Lions Gate Bridge, the maximum air draft for transit of TCZ-1 is subject to the moulded breadth of the vessel, actual tidal height, air temperature, bridge traffic load and the requirement for a minimum safe overhead clearance of 2m. Reference should be made to Appendix A, *First Narrows – Minimum channel depths and maximum vessel air drafts based on TCZ-1 moulded breadth factor for channel width*.

Vessels that exceed the maximum vessel air draft at higher high water may be able to transit subject to tidal windows. Lower tides will increase the maximum allowable air draft but will correspondingly decrease the available depth. The maximum tidal range is 5m.

Vessels with an air draft in excess of the maximum air draft allowed for transiting TCZ-1, which require tidal windows as listed above, must obtain port authority and PPA approvals to transit TCZ-1. The maximum air draft of the ship or floating equipment needs to be reported at least 24 hours in advance of transit to the port authority Operations Centre (harbour_master@portvancouver.com) and PPA (marineops@ppa.gc.ca).

The air draft must be verified by a qualified and independent local survey company within port authority jurisdiction prior to transit. The detailed results of this air draft survey must be provided to both the port authority and PPA. Thereafter, the verified vessel's draft/air draft must be maintained until completion of the transit.

Upon receipt by the port authority of the air draft survey, the port authority will review the transit request and determine if the vessel is approved to transit the TCZ-1 with tide restriction.

Upon receipt of the air draft survey by PPA, PPA will liaise with the BCCP to verify actual transit times based on current windows, tide height, vessel draft, air draft and other planned TCZ-1 vessel traffic. PPA/BCCP will validate the transit request and indicate to the dispatched pilot that the air draft has been verified.

Transit windows are calculated using the static air draft i.e. the air draft of the vessel when not moving through the water.

For air draft considerations, the center of the bridge is also the center of the navigation channel.

At the discretion of the port authority and the PPA, cruise vessels may be exempt from the requirement to conduct an air draft survey prior to transit.

b) Horizontal Clearances

The width of the navigable channel is 222m, which is based on the distance between the First Narrows Lions Gate Bridge pier on the south side of the channel and the contour of the seabed on the north side of the channel.

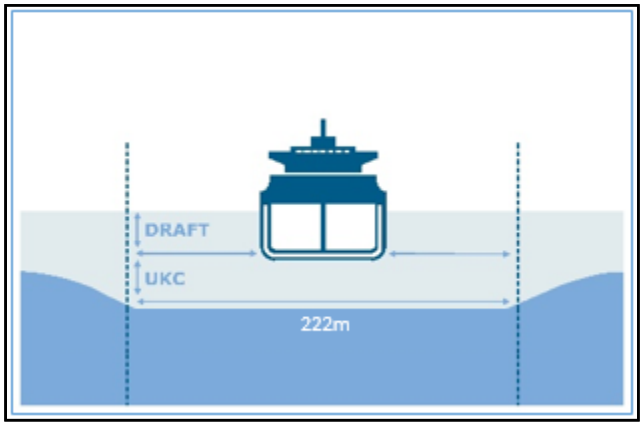


Image: TCZ-1 Horizontal Clearances

The minimum channel width required for transiting TCZ-1, based upon international design standards, is 3.7 times the vessel's moulded breadth. The maximum allowable moulded breadth with the navigation channel design is therefore 60m.

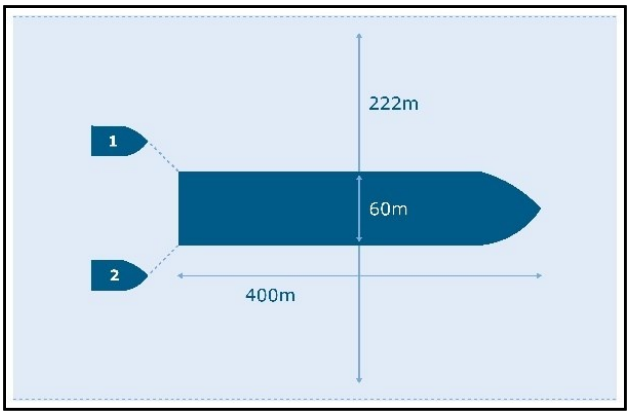


Image: TCZ-1 Design Vessel

c) Under Keel Clearances (UKC)

The control depth of the navigation channel is 15m at chart datum (0.0m tide).

A minimum UKC of 10% of the static draft is required across the profile of, and up to the boundaries of, the navigation channel.

The maximum unrestricted draft for transit is 13.6m at chart datum (0.0m tide).

Vessels with a draft in excess of 13.6m may transit subject to tidal windows. Tidal assist will increase the maximum allowable draft but will correspondingly decrease the available air draft.

Transit windows are calculated using the static draft, i.e. the draft of the vessel when not moving through the water.

TCZ-1 COMMUNICATIONS

a) Marine Communications and Traffic Services (MCTS)

Communication with vessels transiting, intending to transit or manoeuvring within TCZ-1 is provided, on behalf of the port authority, by the Canadian Coast Guard Marine Communications and Traffic Services (MCTS).

Whenever possible, MCTS will provide a vessel with information on all known traffic intending to transit TCZ-1 at least 20 minutes prior to the vessel entering TCZ-1, or before the vessel departs an inner harbor terminal or anchorage. MCTS will also, at this time, advise of any specific orders regarding the TCZ-1 transit, which may have been issued by the port authority.

Where vessels are required to wait pending the transit of another vessel, they will, whenever possible, be so advised by MCTS prior to leaving berth, weighing anchor, or entering TCZ-1 from either direction.

In the event of an interruption to communications between a TCZ-1 vessel and MCTS whereby MCTS has not provided the vessel with traffic information prior to undertaking a TCZ-1 transit,

pilots will assess the movement of other traffic having the potential to impede such transit in making a determination as to whether it is safe to continue. A decision on such determination will be conveyed to the port authority Operations Centre.

Vessels at berth within TCZ-1 when required to wharp alongside to facilitate cargo operations must inform both the port authority Operations Centre and MCTS at least one hour in advance. Due safety considerations must be taken to a vessel's displacement and the prevailing tidal strength when planning a shift of a ship alongside. See, port authority Port Information Guide Section 8.10 for detailed procedural requirements.

Bunkering operations, including delivery of lubricating oils, at berths within TCZ-1 are subject to port authority approval whether delivery is to the offshore side of the vessel by barge or from the dock.

Bunkering notifications:

- The bunker supplier or barge operator is responsible for notification to MCTS prior to and upon completion of bunkering operations by barge.
- The vessel is responsible for notification to MCTS prior to and upon completion of bunkering operations from the dock.

Tier 2 vessels designed to carry 12 or more passengers for commercial purposes (i.e. ferry, charter or tour vessel), must be in receipt of clearance from Marine Communications and Traffic Services (MCTS) at least 15 minutes prior to entering TCZ-1.

TCZ-1 RESTRICTIONS

For the purposes of the TCZ-1 regulations, the following definitions apply:

Tier 1 vessel: *Means any vessel which falls under the following categories:*

- *All piloted vessels and tug and barge combinations when piloted, regardless of tonnage;*
- *All non-piloted tug and barge combinations with a barge of 10,000 tonnes or more carrying capacity;*
- *All non-piloted vessels including barges and articulated tugs and barges (ATBs) when in product.*

Tier 2 vessel: *Means all other vessel traffic operating in the TCZ-1 boundaries.*

a) Transit Windows

A TCZ-1 transit: *is defined as a movement within TCZ-1 that includes passing under the First Narrows Lions Gate Bridge.*

Transit windows are established for vessels restricted by draft or air draft and delineate the level of tidal assist that will allow for a safe transit of TCZ-1. Reference should be made to Appendix A.

Vessels with an air draft in excess of the maximum air draft allowed for transiting TCZ-1, which require tidal windows as listed above, must obtain port authority and PPA approvals to transit

TCZ-1. The maximum air draft of the ship or floating equipment needs to be reported at least 24 hours in advance of transit to the port authority Operations Centre (harbour_master@portvancouver.com) and PPA (marineops@ppa.gc.ca).

Predicted transit windows for vessels restricted by air draft can be provided by the port authority on request to the port authority Operations Centre well in advance of the actual transit.

For planning purposes only, agents can use the Coast Tidal Windows on-line tool available on the PPA's website.

All available navigational information, including that gained from Portable Pilotage Units along with available real time tide and current information, should be used in conjunction with predicted transit windows to improve the safety and efficiency of TCZ-1 operations.

b) Transit Restrictions

Reference is to be made to the section "TCZ-1 Navigation Envelope (Clearances)" with respect to the maximum size of vessel that may transit TCZ-1 without the prior approval of the port authority.

Tier 2 vessels must transit or move within TCZ-1 only when safe to do so and must take into account all factors influencing safety of navigation including traffic, tides, tidal current, weather conditions and their knowledge of TCZ-1.

The following specific transit restrictions and requirements apply:

- The maximum length overall (LOA) of vessels that can transit TCZ-1 is 400m, irrespective of tidal conditions, current, draft, air draft or mitigation measures.
- All vessels having a draft of 13.6m or more require tidal assist to maintain a minimum 10% under keel clearance as measured in static condition.
- The maximum air draft allowed for transiting TCZ-1 without port authority approval is based on a minimum safe overhead clearance of 2m.
- Should the predicted air draft at the time of an TCZ-1 transit exceed the maximum listed in Appendix A for the vessel moulded breadth, the authority may approve the transit based on calculation of a tidal window that allows for an overhead clearance of minimum 2m and may require verification of the air draft by a qualified and independent local survey company within port authority jurisdiction, prior to transit. Reference in all cases should be made to Appendix A *First Narrows – Minimum channel depths and maximum vessel air drafts based on TCZ-1 moulded breadth factor for channel width*.
- Non-piloted tug and barge combinations with a barge of 15,000 tonnes or more carrying capacity are restricted from transiting TCZ-1 without the prior approval of the port authority.

Loaded tankers must be trimmed to an even keel or trimmed by the stern and must not be trimmed by the head.

Vessels found by BCCP to have unacceptable maneuvering characteristics may be refused permission to transit TCZ-1 or be subject to special restrictions.

A vessel having a defect in the hull, main propulsion machinery, steering system or other communication or navigation system that is detrimental to safe navigation, requires the prior approval of both Transport Canada and the port authority to transit TCZ-1.

c) Clear Narrows Restrictions

The term "Clear Narrows" is defined as the transit of a vessel through TCZ-1 unimpeded by any other vessel.

MCTS will declare a "Clear Narrows" on VHF Channels 12 and 16 by means of a Securité call to ensure unimpeded transit of restricted vessels, examples being but not limited to:

- Tankers in product
- Barges and ATBs in product
- A vessel with a draft of 13.6m or greater, upon request by Pilot
- A vessel with an air draft greater than specified for the vessel moulded breadth in Appendix A, and which has received port authority approval to transit TCZ-1
- Other vessels with special transit requirements that require the approval of the port authority
- A vessel, which for safety considerations requires a clear passage through TCZ-1 upon request of the Master or pilot

MCTS or designated port authority, law enforcement or search and rescue vessels may direct other vessels to a suitable holding area until conditions are such that a transit of TCZ-1 can be safely executed.

Light tugs and other highly maneuverable small vessels may, on request, be granted a compliance exemption by MCTS, provided a ship-to-ship agreement has been reached with the vessel for which a clear narrows has been declared.

All other vessels must observe the Clear Narrows declaration for TCZ-1 and must not interfere in any way with the passage of a vessel for which a Clear Narrows has been declared.

Vessels delayed in transit due to other traffic must remain clear of TCZ-1 until conditions are such that a transit can be safely executed.

First Narrows TCZ Holding Areas: *are defined as areas to which vessels, in agreement with MCTS, can hold themselves in readiness until conditions are such that a safe transit of TCZ-1 can be executed.*

d) Speed Restrictions

Tier 1 vessels must transit or manoeuvre within TCZ-1 at a safe speed, not to exceed 9 knots through the water when running free, seven knots through the water when tethered, except when safety of navigation requires otherwise.

Tier 2 vessels within TCZ-1 must transit or manoeuvre at a safe speed, not to exceed 15 knots through the water.

Due consideration must be taken to the safety of vessels alongside, and potential interaction between vessels, when passing terminals within TCZ-1.

e) Visibility Restrictions

All Tier 1 vessels, including tugs and barges, may request the declaration by MCTS of a Clear Narrows during a TCZ-1 transit when restricted visibility of one mile or less is expected.

Nothing in this section should be construed to require the Master of a vessel to execute a transit in reduced visibility or hinder the decision of a Master and pilot to proceed with a transit in restricted visibility following an assessment of prevailing traffic conditions.

f) Wind Restrictions

There are no standing wind restrictions for TCZ-1. However, when wind warnings are in effect, the master and/or pilot will take into consideration such factors as light vessel draft and/or high freeboard, when planning the transit.

The impact of wind on Tier 1 vessels is normally limited to high-sided vessels such as cruise ships, container ships and car carriers.

TCZ-1 VESSEL TRAFFIC PROCEDURES

a) Order of Transit

Tier 1 vessels have priority over Tier 2 vessels within TCZ-1. In principle, taking account of both safety and efficiency, the following order of transit applies to vessels transiting TCZ-1:

- First priority will be a vessel whose draft or air draft tidal window is closing, including east bound vessels scheduled for a restricted transit window transit of TCZ-2.
- Second priority will be a tanker in product of LOA 185m or greater and/or 40,000 tonnes SDWT in product.
- Third priority will be a cruise ship.

For operational reasons, the order of transit may be amended with the mutual agreement of all vessels transiting, berthing or departing a berth within TCZ-1. Any such amendment must be advised to MCTS.

Priority consideration may also be given to an inbound vessel having labour standing by but subject to the overall efficiency of traffic movement.

A vessel proceeding to, departing from or shifting alongside a berth within TCZ-1 must give way to, and not interfere with, the movement of Tier 1 vessels in transit.

Unless otherwise agreed prior to entering the jurisdiction of the port authority, when one or more inbound cruise ships are scheduled to arrive at the First Narrows TCZ-1 simultaneously, the

order of transit will be as follows:

- First transit – a vessel proceeding to berth at Canada Place East
- Second transit – a vessel proceeding to berth at Canada Place West
- Third transit - a vessel proceeding to berth at Canada Place North

b) Overtaking and Safe Distance Between Vessels Regulations

A Tier 2 vessel may overtake another Tier 2 vessel within the geographical boundary of TCZ-1, always provided that a safe speed is not exceeded in doing so.

Irrespective of the declaration of a Clear Narrows, Tier 1 vessels in transit are not permitted to meet or overtake each other within 0.75 nautical miles either side of First Narrows Lions Gate Bridge.

Tier 1 vessels transiting in the same direction must maintain a safe separation of three cables (0.3 nautical miles) or more distance between them.

c) Tier 2 Vessel Regulations including Pleasure Craft

All Tier 2 vessels including pleasure craft and sailing vessels when transiting TCZ-1 must be under adequate mechanical power.

Tier 2 vessels must not cross ahead of or otherwise impede Tier 1 vessels within TCZ-1 and, unless otherwise authorized by MCTS, must stay to the side of the navigation channel to give Tier 1 vessels as unobstructed a passage as is practicable, consistent with good seamanship.

For safety reasons, vessels engaged in fishing (including crab-by-trap), personal watercraft such as jet skis, row boats, canoes and vessels, sailing or proceeding without mechanical power, are not permitted within TCZ-1. Fishing, sailing and other non-powered recreational activity is permitted only in designated areas outside of the boundaries of TCZ-1 west of First Narrows Lions Gate Bridge.

For MCTS reporting requirements for Tier 2 vessels, see TCZ-1 Communications, Marine Communications and Traffic Services (MCTS).

d) Towing Regulations

A vessel engaged in towing operations within TCZ-1, must limit the length of her towline to the least length that is safe and practical, taking account of weather, current and traffic conditions at time of transit but in any event must not exceed 80m. Such towline may not be lengthened until both vessels are completely clear of the bridge piers.

Tugs engaged in towing or pushing barges, whether in ballast or in product, must be of adequate power.

For the purposes of TCZ-1, piloted ATB's are subject to the requirements of a tanker of equal size.

The overall width of log booms within TCZ-1 must not exceed two boom sections (maximum 40m) wide, and the overall length of log booms within TCZ-1 must not exceed 20 boom sections (maximum 400m) long.

When transiting TCZ-1 with more than 10 boom sections overall length (maximum 200m), the Master or person in charge of a log boom must engage, in addition to tugs required in the towing operation, one or more tugs of adequate power in order to:

- Remain close inshore off the main channel.
- Be capable of maintaining such boom sections in an appropriate holding area.

Unless cleared by MCTS, eastbound tugs with tows bound for the Seaspan facility and the Navy Buoy barge tie-up area must cross the channel east of Burnaby Shoal.

TCZ-1 PILOTAGE REQUIREMENTS

Pilotage requirements within port authority jurisdiction are governed by the *Pacific Pilotage Regulations*, Section 9 (Ships Subject to Compulsory Pilotage) and 10 (Waiver of Compulsory Pilotage). In addition to the pilotage requirements established under Section 9 and Section 10 of the *Pacific Pilotage Regulations*, the following pilotage requirements apply to vessels operating in TCZ-1:

- Tankers of 40,000 tonnes SDWT and above in product require two pilots for a TCZ-1 transit. Both pilots must remain on the bridge throughout the transit.
- All other piloted vessels, including vessels shifting to or from a berth or anchorage east of the First Narrows Lions Gate Bridge, require one pilot.
- When a tethered escort tug is required for a TCZ-1 transit, the vessel or agent is required to supply the Mooring and Towing Arrangement of the vessel with the Safe Working Load (SWL) of the fairleads to PPA dispatch when ordering a pilot.

Refer also to Pacific Pilotage Authority pilot ordering requirements.

TCZ-1 VESSEL ASSIST TUG REQUIREMENTS

Tier 1 vessels when transiting TCZ-1, must comply with the standards for tug requirements included in Table 1: *First Narrows TCZ (TCZ-1) transit procedures deep sea vessels – Summary matrix* which details the number of tugs and bollard pull requirements. In addition:

- All vessel assist tugs employed on piloted Tier 1 vessels transiting TCZ-1 must be tethered tractor/ASD tugs.
- Vessel assist tugs capable of generating more than 40 tonnes of bollard pull must have an operational tension meter that the tug operator can easily read from the conning position.
- All vessels which require tethered tugs for a TCZ-1 transit must have them tethered prior to entering TCZ-1 and must remain tethered until clear of TCZ-1 unless, for operational reasons, they are required to remain tethered beyond TCZ-1.

- Tankers of LOA of 185m and above in product and/or 40,000 tonnes SDWT and above in product require a minimum of two tugs that, when inbound must be tethered prior to transiting TCZ-1 and when outbound must remain tethered until clear (west) of TCZ-1.

Highly maneuverable craft may be exempted from these requirements at the discretion of the port authority in consultation with the PPA and BC Coast Pilots.

For escort and tethered tug requirements related to tankers of 40,000 SDWT and above in product outside of port authority jurisdiction, reference should also be made to the relevant Pacific Pilotage Authority Notices to Industry.

TABLE 1: FIRST NARROWS TCZ (TCZ-1) TRANSIT PROCEDURES DEEP SEA VESSELS – SUMMARY MATRIX

Bulk Carriers

LOA 250 – 310m				
Draft (m)	Transit Direction	Tide	Current (knots)	Tugs/ Bollard Pull
≤12.5m	Inbound	Flood	>2	1 x 50T
		Ebb	-	-
	Outbound	Flood	For first 2 hours after flood or >2	1 x 50T
		Ebb	-	-
>12.5m	Inbound	Flood	>2	2 x 50T
		Ebb	>2	1 x 50T
	Outbound	Flood + Ebb	>2	1 x 50T

Outbound bulk carriers having LOA 225 – 250m and draft of >12.5m, when sailing on a flood tide, may also retain an adequate tractor/ASD tug at Master/Pilot discretion.

Container Ships

LOA 340 – 350m and moulded breadth >42m				
Draft (m)	Transit Direction	Tide	Current (knots)	Tugs/ Bollard Pull
≤13.6m	Inbound	Flood	>2	1 x 50T
>13.6m	Inbound/Outbound	Flood + Ebb	>2	1 x 50T

LOA 350 – 360m				
Draft (m)	Transit Direction	Tide	Current (knots)	Tugs / Bollard Pull
All conditions	Inbound/Outbound	Flood + Ebb	>2	1 x 50T

LOA > 360m				
Draft (m)	Transit Direction	Tide	Current (knots)	Tugs / Bollard Pull
All conditions	Inbound/Outbound	Flood + Ebb	All conditions	2 x 50T

Tankers in product

LOA less than 185m and/or less than 40,000 SDWT				
Vessel draft	**No. of tugs**	**Bollard pull tonnes (total)**	**No. of tugs**	**Bollard pull tonnes (total)**
	Bow		Stern	
No tug requirements				

LOA 185m – 199.9m and moulded breadth less than 35m and/or over 40,000 SDWT				
Vessel draft	**No. of tugs**	**Bollard pull tonnes (total)**	**No. of tugs**	**Bollard pull tonnes (total)**
	Bow		Stern	
≤8m	1	20	1	30
>8m ≤10m	1	30	1	40
>10m	1	30	1	50

LOA 200m – 229.9m and moulded breadth less than 35m				
Vessel draft	**No. of tugs**	**Bollard pull tonnes (total)**	**No. of tugs**	**Bollard pull tonnes (total)**
	Bow		Stern	
≤8m	1	30	1	50
>8m ≤10m	1 or 2	60	1 or 2	65
>10m ≤12m	1 or 2	60	1 or 2	65
>12m	1 or 2	60	1 or 2	65

LOA 230m – 250m and moulded breadth less than 45m				
Vessel draft	**No. of tugs**	**Bollard pull tonnes (total)**	**No. of tugs**	**Bollard pull tonnes (total)**
	Bow			Stern
All drafts	1 or 2	60	1 or 2	65

For all other vessels, in particular high sided vessels, such as cruise ships and car carriers, additional mitigation of risk due to weather and/or tidal conditions may apply on a case by case basis.

Tankers may also be subject to additional risk mitigation on a case by case basis due to maneuvering characteristics, weather and/or tidal conditions.

Vessels over LOA 250m and/or moulded breadth 45m require approval for transit from the port authority in consultation with the PPA and BCCP.

The tug matrix requirements are based on static bollard pull capacity and assume that vessels have the ability to operate the main engine at full ahead and there are no other mechanical issues involved.

8.15 SECOND NARROWS TCZ PROCEDURES (TCZ-2)

GUIDE TO CONTENT

TCZ-2 INTRODUCTION

The Second Narrows Traffic Control Zone (TCZ-2) comprises an area enclosed:

- To the West by a line drawn north from the Terminal Dock light (one mile west of the Second Narrows Iron Workers Memorial Bridge on the south shore of Burrard Inlet) to the North Vancouver shoreline at Neptune terminal on the north shore of Burrard Inlet.
- To the East by a line drawn north from Berry Point Light (approximately 1.5 miles east of the Second Narrows Railway Bridge on the south shore of the inlet) and the intersection of a line drawn from the south east corner of the “Canexus” (Chemtrade Electrochem Terminal) dock to the “West Nexun” Navigational marker through the “LL410” navigational marker.

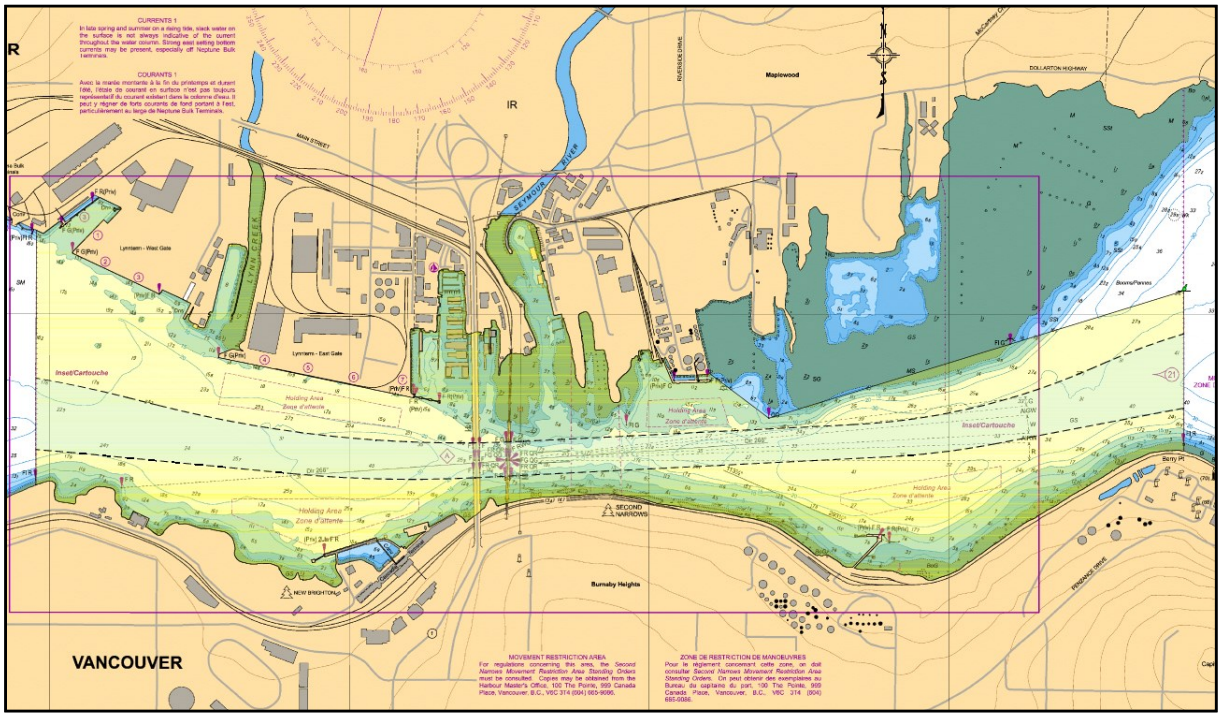


Image: TCZ-2 Boundaries

For enhanced vessel safety, a single lane navigation channel is in effect within TCZ-2 (highlighted in green above between the dashed black lines).

The Vancouver Fraser Port Authority (port authority) has established TCZ-2 and has developed these associated procedures in consultation with the Pacific Pilotage Authority (PPA), the BC Coast Pilots (BCCP) and the broader marine industry. The purpose of the TCZ-2 procedures is to facilitate the safe navigation and efficient movement of vessels in this area of the port, and they form an integral part of the port authority regulations outlined in this Port Information Guide.

TCZ-2 APPLICATION

The TCZ-2 Procedures apply to all marine traffic in TCZ-2, except designated port authority patrol vessels and vessels that are engaged in law enforcement and security, search and rescue or other emergency response vessels.

The TCZ-2 Procedures do not relieve the Master from compliance with the *Canada Shipping Act 2001* or other regulations, requirements or standards in respect of vessels operating in Canadian ports.

Further, these procedures do not lessen in any way the responsibility of the Master for the safe navigation, prudent maneuvering of the vessel and preparation for unforeseen circumstances affecting the normal operation of the Second Narrows Rail Bridge.

These procedures may be varied by the port authority in the event of an emergency which causes (or is likely to cause) loss of life, personal injury, serious environmental pollution or contributes to unsafe navigation in the port.

The Harbour Master, as designated by the port authority, has overall authority in interpreting and overseeing the implementation of these procedures. In doing so, the Harbour Master consults on issues of safety with a number of stakeholders including pilots, other statutory agencies and industry experts, as required.

The TCZ-2 Procedures supersede the *Department of Fisheries and Oceans Canada* Pacific Fishery Management Regulations in the area of Sub-Area 28-11 which overlaps the TCZ-2 area.

TCZ-2 NAVIGATION ENVELOPE (CLEARANCES)

The pilot in conjunction with the master should evaluate all clearance conditions mentioned in this section prior to the transit of TCZ-2 in conjunction with the port authority matrix *"Second Narrows - Minimum channel depths and maximum vessel air drafts based on TCZ-2 moulded breadth factor for channel width"* found in Appendix B.

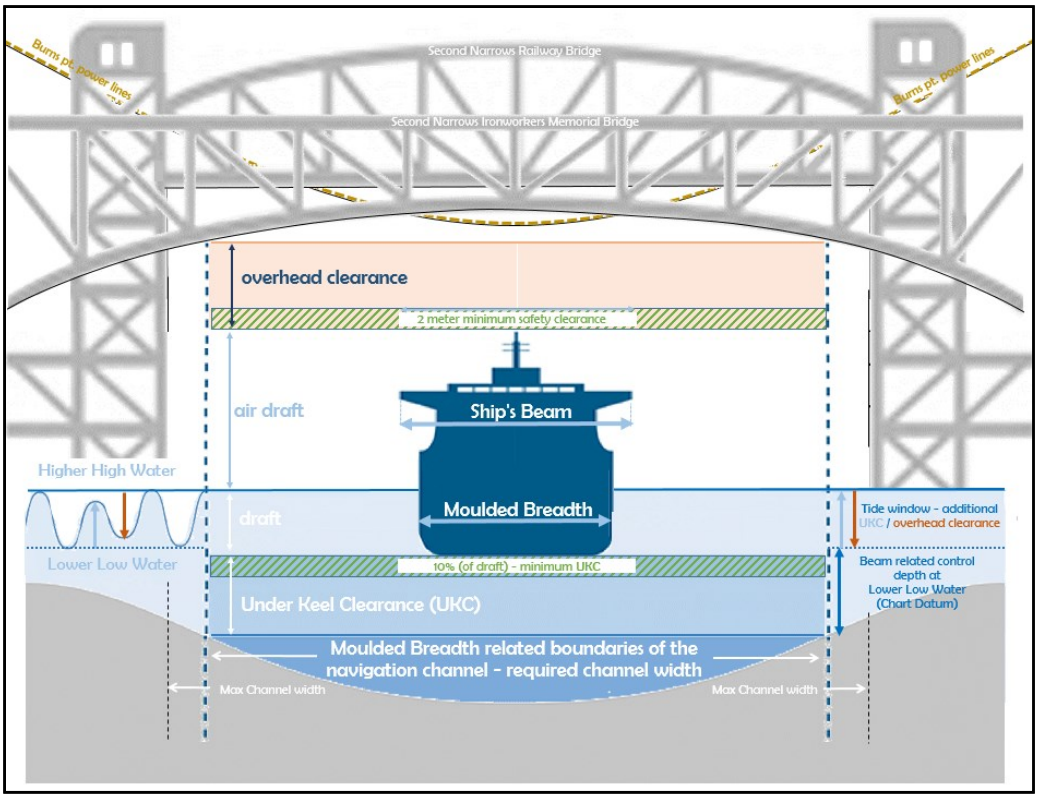


Image: TCZ-2 Navigation Envelope

a) Vertical Clearances

Vertical clearances are given as distances measured from higher high water, large tide datum (5.0 m) to the lowest point of the power lines or the lowest member of the bridge structure, in way of the navigation channel.

Due to the curvature of the Second Narrows Ironworkers Memorial Bridge, the maximum air draft for transit of TCZ-2 is subject to the moulded breadth of the vessel, actual tidal height and the requirement for a minimum safe overhead clearance of 2m. Refer to Appendix B.

- Vessels with a moulded breadth of 27m and less have a maximum unrestricted air draft of 42.7m.
- Vessels with a moulded breadth of 27.1m – 36m have a maximum unrestricted air draft of 42.38m.
- Vessels with a moulded breadth of 36.1m – 45m have a maximum unrestricted air draft of 41.82m.
- Vessels with a moulded breadth of 45.1m – 48m have a maximum unrestricted air draft of 40.95m.

NOTE: If the transit continues into Port Moody Arm past a line drawn due north from Gosse Point to Admiralty Point (East of Barnet Marine Park), the maximum air draft allowed for transiting TCZ-2 without port authority approval is 42.0m at a maximum vessel moulded breadth of 36m and is based on the height (44m) of the Burns Point Power lines above the navigation channel.

Vessels that exceed the maximum vessel air draft at higher high water may be able to transit subject to tidal windows. Lower tides will increase the maximum allowable air draft but will correspondingly decrease the available depth. The maximum tidal range is 5.0 m.

Vessels with an air draft in excess of the maximum air draft allowed for transiting TCZ-2, which require tidal windows as listed above, must obtain port authority and PPA approvals to transit TCZ-2. The maximum air draft of the ship or floating equipment needs to be reported at least 24 hours in advance of transit to the port authority Operations Centre (harbour_master@portvancouver.com) and PPA (marineops@ppa.gc.ca).

The air draft must be verified by a qualified and independent local survey company within port authority jurisdiction prior to transit. The detailed results of this air draft survey must be provided to both the port authority and PPA. Thereafter, the verified vessel's draft/air draft must be maintained until completion of the transit.

Upon receipt by the port authority of the air draft survey, the port authority will review the transit request and determine if the vessel is approved to transit the TCZ-2 with tide restriction.

Upon receipt of the air draft survey by PPA, PPA will liaise with the BCCP to verify actual transit times based on current windows, tide height, vessel draft, air draft and other planned TCZ-2 vessel traffic. PPA/BCCP will validate the transit request and indicate to the dispatched pilot that the air draft has been verified.

Transit windows are calculated using the static air draft i.e. the air draft of the vessel when not moving through the water.

For air draft consideration, the center of the overhead obstruction (bridge or power lines) is also the center of the navigation channel.

The vertical span clearances of the Second Narrows Rail Bridge are:

- Lift span fully raised (open position) 46m above Higher High Water.
- Lift span at lowest level (closed position) 10.8m above Higher High Water.
- First fixed span immediately south of the south tower 10.8m above Higher High Water.

b) Horizontal Clearances

The width of the navigable channel is 137m which is based on the distance between the Second Narrows Railway Bridge piers on the north and south side of the channel.

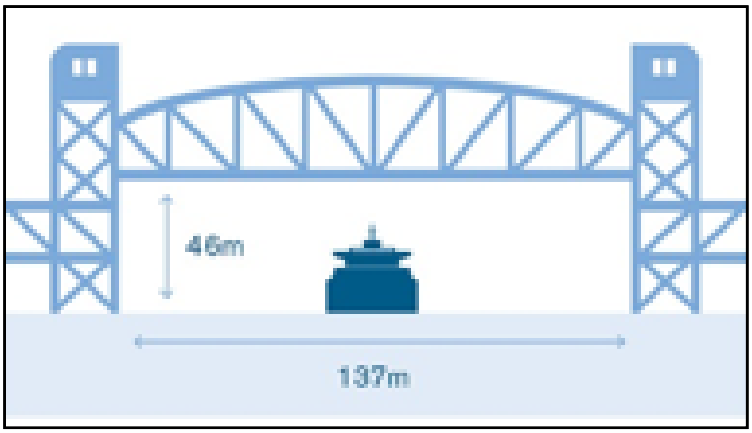


Image: Second Narrows Railway Bridge maximum channel width and maximum vertical clearance.

The minimum channel width required for transiting TCZ-2 with tug assist is 2.85 times the vessel moulded breadth. The maximum allowable moulded breadth with the navigation channel design is therefore 48.1m.

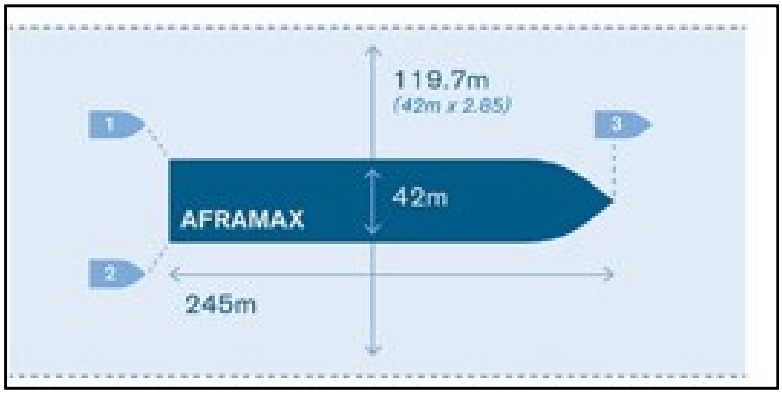


Image: Example of the horizontal channel boundary for a 42m moulded breadth vessel.

c) Under Keel Clearances

The control depth of the navigation channel at chart datum (0.0m tide) depends on the moulded breadth of the vessel and the required width of the navigation channel. Reference should be made to Appendix B Second Narrows – Minimum channel depths and maximum vessel air drafts based on TCZ-2 moulded breadth factor for channel width.

A minimum UKC of 10% of the static draft is required across the profile of, and up to the boundaries of, the navigation channel.

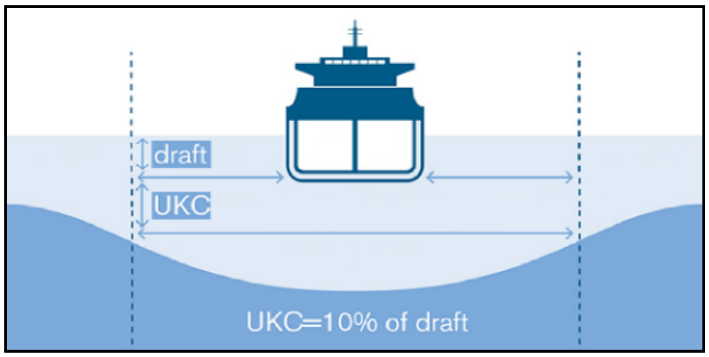


Image: Example of Under-Keel Clearance (UKC) requirement.

The draft available for transiting TCZ-2 is limited by the underwater contour of the Navigation Channel between the Second Narrows Railway Bridge and Berry Point.

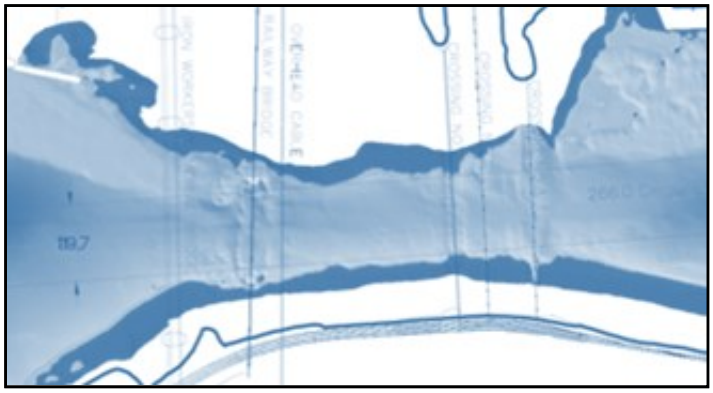


Image: Plan view of the horizontal channel boundary for a 42m moulded breadth vessel.

The maximum moulded breadth allowed for transiting TCZ-2 is 48.1m, which corresponds to a channel width of 137m. The maximum depth of a 137m wide channel through TCZ-2 is 8.7m, which at 10% UKC equals a maximum vessel draft of 7.9m at chart datum (Lower Low Water).

Vessels with a draft in excess of the maximum established in Appendix B may transit subject to tidal windows. Tidal assist will increase the maximum allowable draft but will correspondingly decrease the available air draft.

Transit windows are calculated using the static draft, i.e. the draft of the vessel when it is not moving through the water,

For loaded tankers, the maximum allowable draft is currently 13.5m.

TCZ-2 COMMUNICATIONS

a) Marine Communications and Traffic Services (MCTS)

Communication with vessels transiting, intending to transit or manoeuvring within TCZ-2 is provided, on behalf of the port authority, by the Canadian Coast Guard Marine Communications and Traffic Services (MCTS).

MCTS provides clearance to enter, move within or depart from TCZ-2 subject to conditions specified in these procedures.

When a clearance is given to a vessel to transit TCZ-2, MCTS will provide a vessel with information on all known traffic intending to transit TCZ-2 on the same slack water period at least 20 minutes prior to the vessel entering TCZ-2, or before the vessel departs an inner harbor terminal or anchorage. MCTS will also, at this time, advise of any specific orders regarding the transit, which may have been issued by the port authority.

Where vessels are required to wait pending the transit of another vessel, they will, whenever possible, be so advised by MCTS prior to leaving berth, weighing anchor, or entering TCZ-2 from either direction.

In the event of an interruption to communications between a TCZ-2 vessel and MCTS whereby MCTS has not provided the vessel with formal clearance to undertake a TCZ-2 transit, pilots will assess the movement of other traffic having the potential to impede such transit in making a determination as to whether it is safe to continue. A decision on such determination will also be conveyed to the port authority patrol boat on station or directly to the port authority Operations Centre.

Tier 2 vessels designed to carry 12 or more passengers for commercial purposes (i.e. ferry, charter or tour vessel), must be in receipt of clearance from Marine Communications and Traffic Services (MCTS) at least 15 minutes prior to entering TCZ-2.

b) Second Narrows Rail Bridge Communications

The duty Second Narrows Rail Bridge operator, on receipt of a TCZ-2 vessel's ETA, when possible, will make the Rail Bridge available with the lift span elevated 30 minutes prior to the ETA.

All TCZ-2 vessels requiring the Second Narrows Rail Bridge lift span be raised, when possible, will establish communication on VHF Channel 12 with the Rail Bridge operator, at least 1.5 hours prior to the TCZ-2 scheduled transit time indicating their intention to request for the lift span to be raised. Same must be reconfirmed 30 minutes prior to transit.

Tugs and barges making local harbor moves involving a TCZ-2 transit, when possible, will provide at least 30 minutes notice to the Rail Bridge operator if such a move requires the lift span to be raised. Vessels so designed, when possible, will lower their mast for a TCZ-2 transit where such action will eliminate the need for the lift span to be raised.

Communication between TCZ-2 vessels and the Second Narrows Rail Bridge operator will include:

- A statement of intentions, prior to departing from a Vancouver Harbour location or upon entering English Bay, when underway
- ETA at the Second Narrows Rail Bridge
- Confirmation of such ETA upon reaching the boundary of the Second Narrows TCZ

When the vessel's request has been received, the Second Narrows Rail Bridge operator will be required to:

- Verbally confirm understanding on VHF Channel 12
- Display one flashing red light on that side of the lift span facing the approaching vessel which indicates that the lift span is in the process of being raised or lowered to the required position for every piloted vessel unless advised otherwise.
- Display one flashing green light on that side of the lift span facing the approaching vessel which indicates that the lift span has been raised to the requested height.
- Display a sector light for westbound TCZ vessels that require the lift span in the fully raised position.

Vessels must not approach the Second Narrows Rail Bridge when the following signals are displayed:

- Two flashing red lights on that side of the lift span facing the approaching vessel which indicates that the vessel is to stop at once or, if necessary, go astern; or
- A vertical row of four fixed white lights on the center of the main lift span which indicates that another vessel is approaching from the opposite direction.

TCZ-2 RESTRICTIONS

For the purposes of the TCZ-2 regulations, the following definitions apply:

Tier 1 vessel: Means any of the following vessels:

- All piloted vessels and tug and barge combinations when piloted, regardless of tonnage.
- All non-piloted tug and barge combinations with a barge of 10,000 tonnes or more carrying capacity.
- All non-piloted vessels including barges and articulated tugs and barges (ATBs) when in product.

Tier 2 vessel*:* Means all other vessel traffic operating in the TCZ-2 boundaries.

a) Transit Windows

A TCZ-2 transit: *is defined as a movement within TCZ-2 that includes passing under the Second Narrows Iron Workers Memorial Bridge and the Second Narrows Railway Bridge.*

Transit windows are established on either side of high and low water slack tides and are based on predicted slack water or stemming a predicted limiting current of one or two knots. Reference should be made to *Table 1: Second Narrows TCZ (TCZ-2) transit procedures deep sea vessels – Summary matrix*.

All Tier 1 vessels are subject to observing TCZ-2 transit windows for the portion of the transit that involves passing under the Second Narrows Iron Workers Memorial Bridge and the Second Narrows Railway Bridge.

Predicted transit windows for vessels restricted by air draft can be provided by VPFA on request to port authority Operations Centre well in advance of the actual transit.

For planning purposes only, agents can use the Coast Tidal Windows on-line tool available on the PPA's website.

All available navigational information, including that gained from Portable Pilotage Units along with real time tide and current information, should be used in conjunction with predicted transit windows to improve the safety and efficiency of TCZ-2 operations.

b) Transit Restrictions

Reference should be made to the section "TCZ-2 Navigation Envelope (Clearances)" with respect to the maximum size of vessel that may transit TCZ-2 without the prior approval of port authority.

Tier 2 vessels must transit or move within TCZ-2 only when safe to do so and must take into account all factors influencing safety of navigation including traffic, tides, tidal current, weather conditions and their knowledge of TCZ-2.

All piloted vessels are required to remain at a safe distance from the Second Narrows Rail Bridge until the lift span is in a fully raised position. Non-piloted vessels must also wait for the flashing green light signal before proceeding.

The following specific transit restrictions and requirements apply:

- Vessels with length overall (LOA) of 250m and above and/or a moulded breadth or 45m and above are restricted from transiting TCZ-2 without the prior approval of the port authority.
- Vessels with Length Overall (LOA) of 230m and above and/or a moulded breadth of 35m and above are subject to daylight passage of TCZ-2.
- Tankers greater than LOA 185m and/or 40,000 Summer Deadweight (SDWT) and above are restricted to daylight transit of TCZ-2 when in product.
- The maximum air draft allowed for transiting TCZ-2 without port authority approval is based on a minimum safe overhead clearance of 2m.
- Should the predicted air draft at the time of a TCZ-2 transit exceed the maximum listed in Appendix B for the vessel moulded breadth, the authority may approve the transit

based on calculation of an overhead clearance of minimum 2m or require verification of the air draft by a competent local surveyor and conducted within the port authority jurisdiction, prior to transit. Reference in all cases should be made to Appendix B *Second Narrows – Minimum channel depths and maximum vessel air drafts based on TCZ-2 moulded breadth factor for channel width*.

- Tug and barge combinations specifically designed for pushing and tractor tugs towing alongside with a barge of 15,000 tonnes or more carrying capacity are restricted from TCZ-2 without the prior approval of the port authority.
- Tug and barge combinations specifically designed for pushing and tractor tugs towing alongside with a barge of 10,000 tonnes or more carrying capacity are subject to TCZ-2 transit windows.
- Tug and barge combinations designed for pushing and tractor tugs towing alongside, may transit with a barge of less than 10,000 tonnes carrying capacity, regardless of current direction, when not employing a pilot. However, such vessels are required to source local (Canadian Hydrographic Service or the port authority) tidal data to ensure accuracy and comply with the requirements set out in Table 3 *Second Narrow TCZ (TCZ-2) tugs and barges including ATBs when not piloted – Summary Matrix.*

Loaded tankers must be trimmed to an even keel or by the stern and must not be trimmed by the head.

Vessels found by the BC Coast Pilots to have unacceptable maneuvering characteristics may be refused permission to transit TCZ-2 or be subject to special restrictions.

A vessel having a defect in the hull, main propulsion machinery, steering system or other communication or navigation system that is detrimental to safe navigation, requires the prior approval of both Transport Canada and the port authority to transit TCZ-2.

c) Clear Narrows Restrictions

The term “Clear Narrows” is defined as the transit of a vessel through TCZ-2 unimpeded by any other vessel

MCTS will declare a “Clear Narrows” on VHF Channels 12 and 16 by means of a Securité call to ensure unimpeded transit of restricted vessels, examples being but not limited to:

- A vessel with LOA 230m and above and/or a moulded breadth of 35m or above.
- A Tier 1 vessel (tanker) in product.
- A vessel with an air draft greater than specified for the vessel moulded breadth in Appendix B, and which has received the port authority approval to transit TCZ-2.
- Other vessels with special transit requirements that require the approval of the port authority.
- A vessel, which for safety considerations requires a clear passage through TCZ-2 upon request of the Master or pilot.

MCTS or designated port authority, law enforcement or search and rescue vessels may direct other vessels to a suitable holding area until conditions are such that a transit of TCZ-1 can be safely executed.

Light tugs and other highly maneuverable small vessels may, on request, be granted a compliance exemption by MCTS, provided a ship-to-ship agreement has been reached with vessel for which a clear narrows has been declared.

All other vessels must observe the Clear Narrows declaration for TCZ-2 and must not interfere in any way with the passage of a vessel for which a Clear Narrows has been declared.

Vessels delayed in transit due to other traffic must remain clear of TCZ-2 until conditions are such that a transit can be safely executed.

Second Narrows TCZ Holding Areas: *are defined as designated areas to which Tier 1 vessels subject to transit windows may be directed by MCTS or in which Tier 2 vessels, including non-piloted tugs and barges, in agreement with MCTS can hold themselves in readiness until conditions are such that a safe transit of TCZ-2 can be executed.*

d) Speed Restrictions

Tier 1 vessels must transit or manoeuvre within TCZ-2 at a safe speed not to exceed six knots through the water, except when safety of navigation requires otherwise.

Tier 2 vessels within TCZ-2 must proceed at a safe speed which will allow them to properly respond to the prevailing circumstances and conditions.

e) Visibility Restrictions

Reduced visibility limits the ability to see aids to navigation and other vessels or landmarks. These procedures outline safety requirements to be followed when transiting TCZ-2 during periods of reduced visibility.

The following vessels are subject to visibility restrictions:

- All piloted vessels and tug and barge combinations when piloted, regardless of tonnage.
- All non-piloted tug and barge combinations specifically designed for pushing and tractor tugs towing alongside with a barge of 10,000 tonnes or more carrying capacity.
- All non-piloted vessels including barges and articulated tugs and barges (ATBs) when in product.

When intending to transit TCZ-2, the above vessels and tug and barge combinations must observe the bridges clearly before reaching Terminal Dock when eastbound and before reaching Berry Point when westbound. The same requirement applies prior to departure from a terminal within TCZ-2 to make a TCZ-2 transit.

Pusher tug-barge combinations or tractor tugs towing alongside of less than 10,000 tonnes carrying capacity, whether in product or in ballast, may only transit during conditions of restricted visibility subject to the following conditions:

- An additional tug is employed to assist with the transit.

- Each tug's shipboard navigation equipment includes a type approved and fully operational electronic chart display and radar.
- The transit is restricted to a reduced TCZ-2 transit window limited to one knot current in either direction.

The vessel operator must provide to the port authority in advance the relevant documentation, which demonstrates to the satisfaction of the port authority that adequate internal safety management systems are in place for a safe transit of TCZ-2 and the degree of local knowledge.

Nothing in this section should be construed to require the master of a vessel to execute a transit in reduced visibility.

Refer to Table 3: *Second Narrows TCZ (TCZ-2) Tugs and barges including ATBs when not piloted – Summary matrix.*

f) Wind Restrictions

There are no standing wind restrictions for TCZ-2. However, when wind warnings are in effect, the master and/or pilot must take into consideration such factors as light vessel draft and/or high freeboard, when planning the transit.

TCZ-2 VESSEL TRAFFIC PROCEDURES

a) Order of Transit

For operational reasons, the order of transit may be amended with the mutual agreement of all vessels transiting, berthing or departing a berth within TCZ-2. Such amendment must be advised to MCTS.

Tier 1 vessels have priority over Tier 2 vessels within TCZ-2. In principle, taking into account of both safety and efficiency, the following order of priority applies to vessels transiting TCZ-2:

- First priority is a loaded tanker of LOA 230m and above and/or a moulded breadth of 35m and above;
- Second priority is a vessel whose window is closing which will have priority over a vessel transiting in the other direction;
- Third priority is deeper draft vessels over other transits in the same direction.

Priority consideration may also be given to an inbound vessel having labor standing by but subject to the overall efficiency of traffic movement.

A vessel proceeding to, departing from or shifting alongside berths within TCZ-2 must give way to, and not interfere with, the movement of Tier 1 vessels in transit.

b) Overtaking and Safe Distance between Vessels Regulations

A Tier 2 vessel may overtake another Tier 2 vessel that is proceeding at a speed of less than six knots within the geographical boundary of TCZ-2 provided that a safe speed is not exceeded in doing so. Such overtaking must not occur within two cables of either side of the Second Narrows bridges.

Tier 2 vessels must not overtake TCZ-2 vessels within the geographical boundary of the Second Narrows TCZ.

A Tier 1 vessel must not commence its transit until a Tier 1 vessel transiting in the opposite direction has completed its transit.

Tier 1 vessels transiting in the same direction must maintain a safe separation of three cables (0.3 nautical miles) or more distance between them.

c) Tier 2 Vessel Regulations including Pleasure Craft

All Tier 2 vessels including pleasure craft and sailing vessels when transiting TCZ-2 must be under adequate mechanical power.

Tier 2 vessels must not cross ahead of or otherwise impede TCZ-2 vessels within TCZ-2 and must stay to the side of the navigation channel to give TCZ-2 vessels as unobstructed a passage as is practicable, consistent with good seamanship.

For the safety reasons, vessels engaged in fishing, personal watercraft such as jet skis, row boats, canoes and vessels sailing or proceeding without mechanical power are not permitted within TCZ-2. Fishing, sailing and other non-powered recreational activity is permitted only in designated areas outside of the boundaries of TCZ-2 east of Second Narrows Rail Bridge.

For MCTS reporting requirements for Tier 2 vessels, see TCZ-2 Communications, Marine Communications and Traffic Services (MCTS).

d) Towing Regulations

- A vessel engaged in towing operations within TCZ-2, must limit the length of her towline, measured from the stern of the towing vessel to the nearest portion of the vessel being towed, to not more than 60m. Such towline may not be lengthened until both vessels are completely clear of the bridge piers.
- Tugs engaged in towing or pushing barges, whether in ballast or in product, must be of adequate power and comply with the assist tug requirements set out in *Table 3: Second Narrows TCZ (TCZ-2) Tugs and barges including ATBs when not piloted – Summary matrix.*
- For the purposes of TCZ-2, piloted ATB's are subject to the requirements of a tanker of equal size.
- The overall width of log booms within TCZ-2 must not exceed two boom sections (maximum 40m) wide, and the overall length of log booms within TCZ-2 must not exceed 20 boom sections (maximum 400m) long.

When transiting TCZ-2 with more than 10 boom sections overall length (maximum 200m), the master or person in charge of a log boom must engage, in addition to tugs required in the towing operation, one or more tugs of adequate power in order to:

- Remain close inshore off the main channel;
- Be able to maintain such boom sections in the designated holding areas located on both sides of the Second Narrows bridges as shown on Canadian chart # 4964.

TCZ-2 PILOTAGE REQUIREMENTS

Pilotage requirements within the port authority jurisdiction are governed by the Pacific Pilotage Authority Regulations, Section 9 (Ships Subject to Compulsory Pilotage) and 10 (Waiver of Compulsory Pilotage). In addition to the pilotage requirements established under Section 9 and Section 10 of the *Pacific Pilotage Regulations*, the following pilotage requirements apply to vessels operating in TCZ-2:

- Tankers of 40,000 summer deadweight tonnage (SDWT) and above in product require two pilots for a TCZ-2 transit. Both pilots must remain on the bridge throughout the transit. Two new pilots will replace the two shifting pilots in English Bay or other agreed location;
- Vessels with LOA 230m and above and/or a moulded breadth of 35m and above require two pilots for a TCZ-2 transit;
- All other piloted vessels, including vessels shifting to or from a berth or anchorage east of the Second Narrows Iron Workers Memorial Bridge, require one pilot;
- The vessel or agent is required to supply the Mooring and Towing Arrangement of the vessel with the Safe Working Load (SWL) of the fairleads to PPA dispatch when ordering a pilot.

Refer to Pacific Pilotage Authority pilot ordering requirements.

TCZ-2 VESSEL ASSIST TUG REQUIREMENTS

TCZ-2 vessels when transiting TCZ-2, must comply with the standards for tug requirements included in Table 1 or Table 2 as appropriate, which detail the number of tugs and bollard pull requirements, reasonably spread between tug hulls. In addition:

- All vessel assist tugs employed on piloted TCZ-2 vessels transiting TCZ-2 must be tethered tractor/ASD tugs;
- Vessel assist tugs capable of generating more than 40 tonnes of bollard pull must have an operational tension meter that the tug operator can easily read from the conning position;
- All vessels which require tethered tugs for a TCZ-2 transit must have them tethered prior to entering TCZ-2 and must remain tethered until clear of the Second Narrows Bridges unless, for operational reasons, they are required to remain tethered beyond TCZ-2;

- Tankers of LOA of 185m and above in product and/or 40,000 tonnes SDWT and above in product require a minimum of two tugs that, when inbound must be tethered prior to transiting TCZ-1 and when outbound must remain tethered until clear (west) of TCZ-1. An interrupted passage between Second Narrows and First Narrows bridges, for whatever reason, does not reduce the minimum escort tug requirements for the transit.

Highly maneuverable craft may be exempted from these requirements at the discretion of the port authority in consultation with the Pacific Pilotage Authority and BC Coast Pilots.

For escort and tethered tug requirements related to tankers of 40,000 SDWT and above in product outside of the port authority jurisdiction, reference should also be made to the relevant Pacific Pilotage Authority Notices to Industry.

TABLE 1: SECOND NARROWS TCZ (TCZ-2) TRANSIT PROCEDURES DEEP SEA VESSELS - SUMMARY MATRIX

Tankers in product

Vessel type	Night time allowed	Tidal current opposing	Tidal current following	Tugs	Pilots	Tugs First Narrows
Tankers LOA <185m and/or < 40,000 SDWT	Yes	<1.0k	<0.5k	T	1	-
Tankers LOA > 185m	No	<1.0k	<0.5	T	1	-
Tankers > 40,000 SDWT	No	<1.0k	<0.5k	T	2	T

Tankers not in product and all other deep sea vessels

Vessel type	Night time allowed	Tidal current opposing	Tidal current following	Tugs	Pilots	Tugs First Narrows
LOA <230m and moulded breadth < 35m	Yes	<2.0k	<0.5k	T	1	-
LOA >230m or moulded breadth >35m	No	<1.0k	<0.5k	T	2	-

T = tethered tug required, see Table 2 below for further detail on requirements.

For escort and tethered tug requirements related to tankers of 40,000 SDWT in product outside of port authority jurisdiction, reference should be made to the relevant Pacific Pilotage Authority Notices to Industry.

TABLE 2: SECOND NARROWS TCZ (TCZ-2) DEEP SEA VESSEL - TUG AND BOLLARD PULL REQUIREMENTS MATRIX

LOA less than 200m and moulded breadth less than 35m

Vessel draft	No. of tugs	Bollard pull tonnes	No. of tugs	Bollard pull tonnes (Total)
	Bow		Stern	
<8m	1	20	1	30

>8m <10m	1	30	1	40
>10m	1	30	1	50

LOA 200m – 229.9m and moulded breadth less than 35m

Vessel draft	No. of tugs	Bollard pull tonnes	No. of tugs	Bollard pull tonnes (Total)
	Bow		Stern	
<8m	1	30	1	50
>8m <10m	1	60	1 or 2	65
>10m <12m	1 or 2	60	1 or 2	80
>12m	1 or 2	60	2	110

LOA 230m – 250m and moulded breadth less than 45m

Vessel draft	No. of tugs	Bollard pull tonnes	No. of tugs	Bollard pull tonnes (Total)
	Bow		Stern	
<10m	1 or 2	60	1 or 2	65
>10m <12m	1 or 2	60	1 or 2	80
>12m	1 or 2	60	2	110

- Vessels over LOA 250m and/or moulded breadth 45m require approval for transit from the Harbour Master in consultation with the Pacific Pilotage Authority and BC Coast pilots.
- The maximum allowable moulded breadth for a TCZ-2 transit is 48m due to the width of the channel at the Second Narrows Rail Bridge.
- A TCZ-2 transit of tankers with a LOA 250m and draught greater than 13.5m is subject to tug requirements and other aids to navigation system enhancement presently not in place at the Second Narrows TCZ-2.
- *When two tugs are employed, similar bollard pull figures will be used. e.g. 60BP & 50BP

TABLE 3: SECOND NARROW TCZ (TCZ-2) TUGS AND BARGES INCLUDING ATB'S WHEN NOT PILOTED – SUMMARY MATRIX

Barge capacity tonnes	**Night time allowed**	**Tidal current opposing*1**	**Tidal current following*1**	**Visibility restricted* 2**	**No. of assist tugs**	**Bollard pull (tonnes)**
<6,000	Yes	-	-	conditional	-	-
6,000> <10,000 not in product *3	Yes	-	-	conditional	1	20
6,000> <10,000 *3	Yes	<2.0k	<2.0k	conditional	1	20
10,000> <15,000	Yes	<2.0k	<2.0k	restricted	1 or 2	40

*1 - Tugs and barges including ATBs when piloted are subject to the transit rules at set out in Table 1.

*2 - Reference should be made to: TCZ-2 *Restrictions – e) Visibility Restrictions* for detailed requirements.

*3 - For the purposes of this table, barges carrying cargoes other than liquid bulk will be subject to the requirements for "in product" when loaded, and subject to the requirements for "not in product" when light.

Note: One pilot is required for any tug/barge combination if under pilotage and subject to transit windows.

8.16 EASTERN BURRARD INLET TCZ PROCEDURES (TCZ-3)

GUIDE TO CONTENT

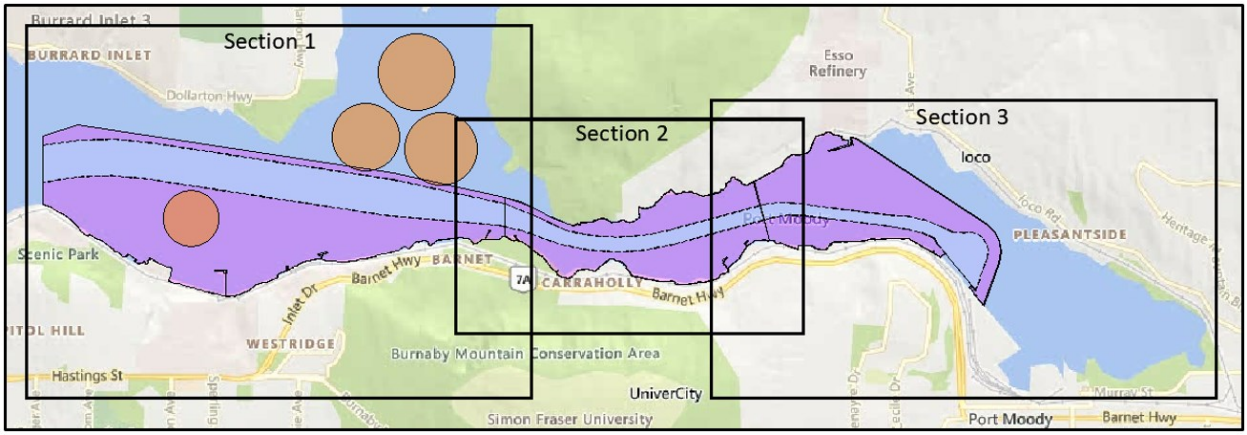
TCZ-3 INTRODUCTOIN

The area within VFPA jurisdiction referred to as Traffic Control Zone 3 (TCZ-3) comprises those waters south of Indian Arm and between the Eastern boundary of Traffic Control Zone 2 (TCZ-2) at Berry Point to the approaches to Pacific Coast terminals in Port Moody.

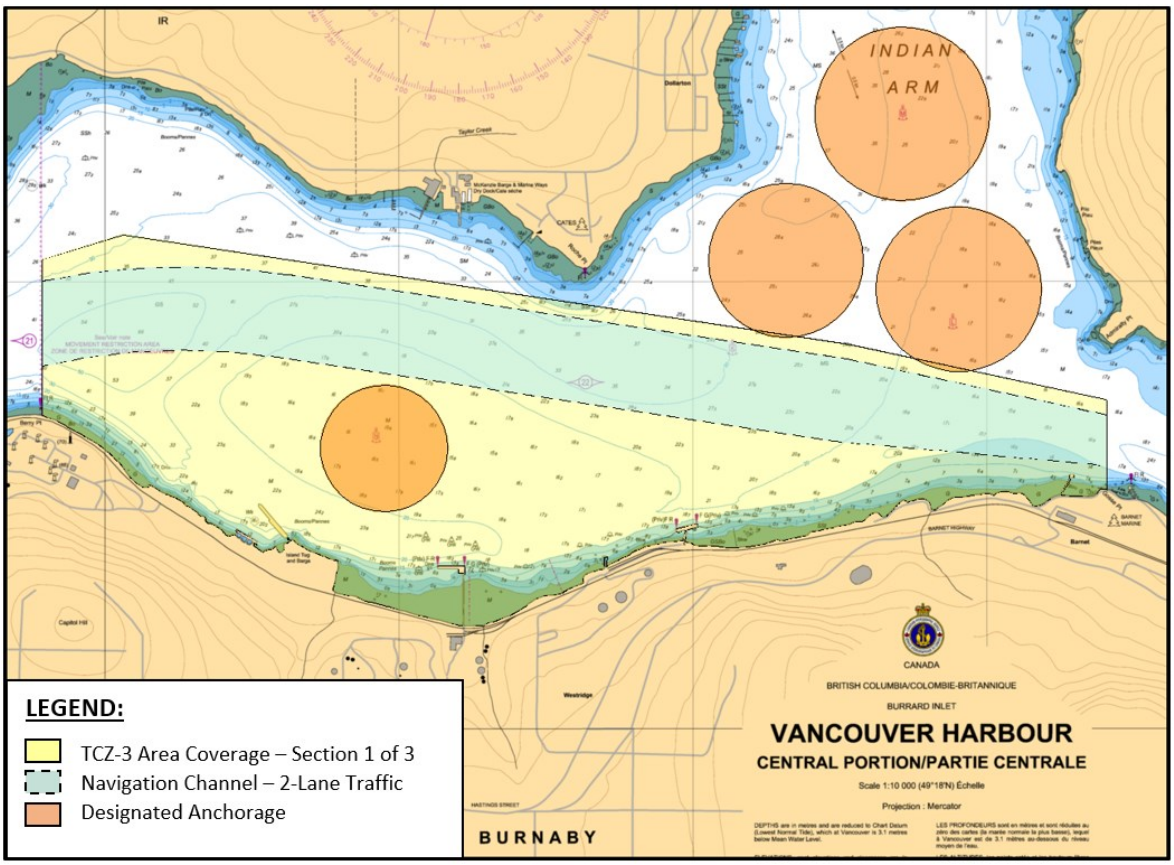
TCZ-3 is a 4.9 nautical miles navigation channel which includes three (3) sections.

The Vancouver Fraser Port Authority (VFPA) has established TCZ-3 and has developed these associated procedures in consultation with the Pacific Pilotage Authority, the BC Coast pilots and the broader marine industry. The purpose of TCZ-3 is to facilitate the safe navigation and efficient movement of vessels in this area of the port and thereby forms an integral part of VFPA regulations as outlined in this Port Information Guide.

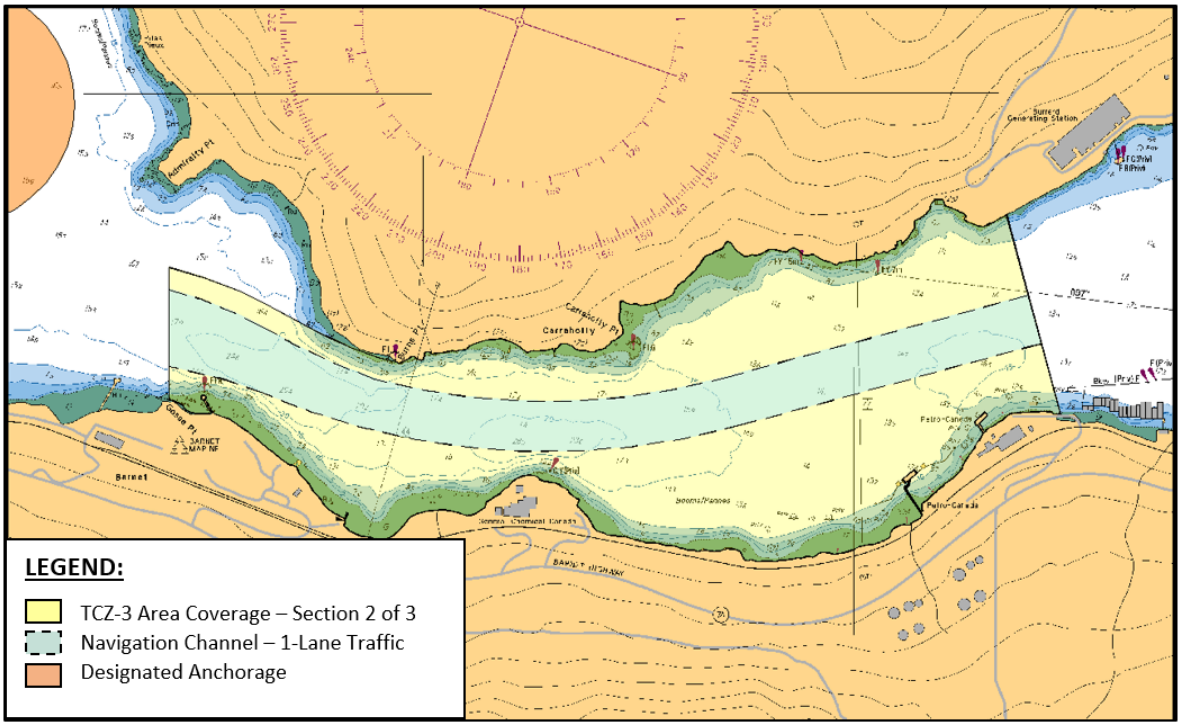
TCZ-3 is a shared waterway between deep sea traffic, domestic and coastal traffic, recreational and pleasure craft, along with vessels engaged in fishing. These regulations are therefore designed to facilitate the safe conduct of international and domestic trade while minimizing the impact on other users.



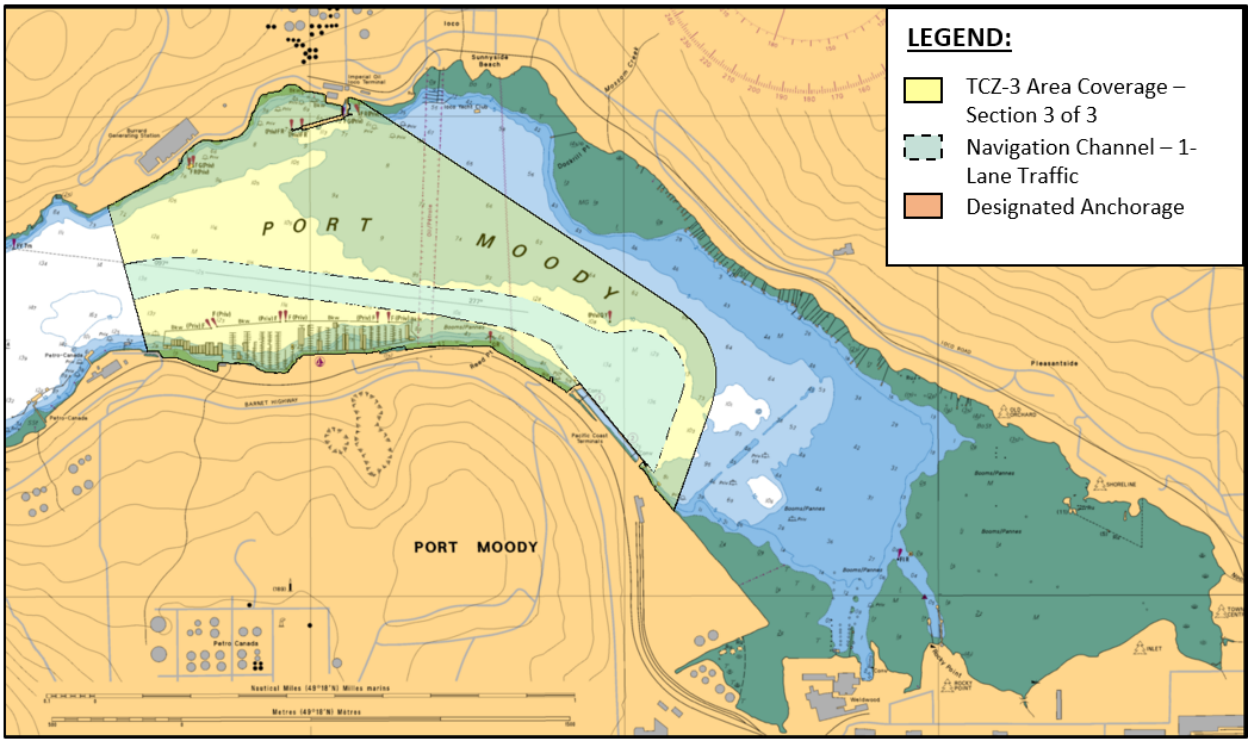
TCZ-3 Overview - Berry Point to Port Moody navigation channel



TCZ-3 Section 1 – Berry Point to Admiralty Point



TCZ-3 Section 2 – Admiralty Point to Reed Point Marina



TCZ-3 Section 3 – Reed Point Marina to Port Moody

TCZ-3 APPLICATION

The TCZ-3 procedures apply to all marine traffic in TCZ-3 except designated port authority patrol vessels and vessels that are engaged in law enforcement and security, search and rescue or other emergency response vessels.

The TCZ-3 procedures do not relieve the Master from compliance with the *Canada Shipping Act 2001* or other regulations, requirements or standards in respect of vessels operating in Canadian ports.

Further, these procedures do not lessen in any way the responsibility of the Master for safe navigation, prudent maneuvering of the vessel and preparation for unforeseen circumstances.

These procedures may be varied by the port authority in the event of an emergency which causes (or is likely to cause) loss of life, personal injury serious environmental pollution or contributes to unsafe navigation in the port.

The Harbour Master, as designated by the port authority, has overall authority in interpreting and overseeing the implementation of these procedures. In doing so, the Harbour Master consults on issues of safety with a number of stakeholders including pilots, other statutory agencies and industry experts as required.

TCZ-3 NAVIGATIONAL ENVELOPE (CLEARANCES)

All vessels having a length overall (LOA) greater than 250m and/or a moulded breadth greater than 48.1m are restricted from transiting TCZ-3 without the prior approval of the port authority.

The pilot in conjunction with the Master should evaluate all clearance conditions mentioned in this section prior to transit of TCZ-3.

a) Vertical Clearances

Vertical clearances marked on official charts are given as distances measured from higher high water. The maximum air draft allowed for transit of TCZ-3 is defined by the restrictions applied to TCZ-2. These restrictions equally apply to the overhead power cables between Admiralty Point and Reed Point Marina, namely a maximum air-draft without VFPA prior approval of 42m which allows for a 2m overhead clearance.

Vessels that exceed 42m height may be able to transit TCZ-3 subject to tidal windows. Lower tides will increase the maximum allowable air draft but will correspondingly decrease the available depth. The maximum tidal range is 5m. Vessels with an air draft in excess of the maximum air draft allowed for transiting TCZ-3, must obtain port authority and PPA approvals to transit. The maximum air draft of the ship or floating equipment needs to be reported at least 24 hours in advance of transit to the port authority Operations Centre (harbour_master@portvancouver.com) and PPA (marineops@ppa.gc.ca).

The air draft must be verified by a qualified and independent local survey company within port authority jurisdiction prior to transit. The detailed results of this air draft survey must be provided to both the port authority and PPA. Thereafter, the verified vessel's draft/air draft must be maintained until completion of the transit.

Upon receipt by the port authority of the air draft survey, the port authority will review the transit request and determine if the vessel is approved to transit the TCZ-2 with tide restriction.

Upon receipt of the air draft survey by PPA, PPA will liaise with the BCCP to verify actual transit times based on current windows, tide height, vessel draft, air draft and other planned TCZ-2 vessel traffic. PPA/BCCP will validate the transit request and indicate to the dispatched pilot that the air draft has been verified.

Transit windows are calculated using the static air draft i.e. the air draft of the vessel when not moving through the water.

b) Horizontal Clearances

The channel widths for each segment have been determined in accordance with the World Association for Waterborne Transport Infrastructure (PIANC) standards. The design calculations are based on the design vessel dimensions and local environmental conditions specific to each section (see Table 4: TCZ-3 Transit procedures deep sea vessels).

- TCZ-3 Section 1 between Berry Point and Admiralty Point includes a two-lane channel having a total width of 345m and a channel design beam factor of 7.8.
    - The channel in Section 1 is designed to allow for two-lane traffic when vessels transiting in both directions do not exceed a combined moulded breadth of 88m.
    - The maximum moulded breadth allowed for transiting Section 1 is 48.1m which is based on the width restriction in TCZ-2 at the CN Rail Bridge.
- TCZ-3 Section 2 between Admiralty Point and Reed Point Marina has a channel width of 141m and a channel design beam factor of 3.2. The maximum moulded breadth for transit of Section 2 is therefore 44m (44m beam x 3.2 beam factor = 141m channel width).
- TCZ-3 Section 3 between Reed Point Marina and Pacific Coast Terminals has a channel width of 104m and a channel design beam factor of 3.2. The maximum moulded breadth for transit of Section 3 is therefore 32.5m (32.5m beam x 3.2 beam factor = 104m channel width).

Nothing in these regulations shall preclude Tier 1 vessels from the use of safe sea room outside of the navigation channel in the interests of good seamanship and to allow for access to terminals and anchorages as well as for staging priority of vessel transits.

c) Under Keel Clearances (UKC)

Under keel clearances are calculated using the static draft i.e. the draft of the vessel when it is not moving through the water. TCZ-3 under keel minimum allowable clearances are as follows:

Section 1

- The minimum under-keel clearance is 10% of vessel draft.
- The control depth in the navigation channel between Berry Point and Westridge Terminal is 17.8m (refer to TCZ-2 procedures for maximum allowable draft for transit of Second Narrows).
- The control depth in the navigation channel between Westridge Terminal and Admiralty Point is 14.0m.

Section 2

- The minimum under-keel clearance is 10% of vessel draft.
- The control depth in the navigation channel between Admiralty Point and Reed Point Marina is 14.1m

Section 3

- A minimum under-keel clearance of 10% or at least 1m when departing on a rising tide.
- Reed Point Marina to Pacific Coast Terminals has a controlling depth of 13m with a controlling depth in the adjacent turning basin of 12.9m.

TCZ-3 COMMUNICATIONS (MCTS)

Communication with vessels transiting, intending to transit or when maneuvering within TCZ-3 is provided, on behalf of VFPA, by the Canadian Coast Guard Marine Communications and Traffic Services (MCTS).

MCTS provides clearance to enter, move within or depart from TCZ-3 subject to conditions specified in these procedures. When clearance is given to a vessel to move within or transit TCZ-3, MCTS shall provide information of all known traffic movements within TCZ-3 or in transit to TCZ-3.

Where vessels are required to wait pending the transit or movement of another vessel, they shall be so advised prior to leaving berth, weighing anchor or entering TCZ-3.

Periodic notices requiring action or awareness by vessels within the port authority's jurisdiction will be broadcast by MCTS as navigation warnings, or on the continuous marine broadcast.

All vessels transiting TCZ-3, where required by MCTS Zones Regulations, are to monitor VHF Channels 16 (designated international safety channel) & 12.

In the event of an interruption to communications between a TCZ-3 vessel and MCTS whereby MCTS has not provided the vessel with formal clearance to undertake a TCZ-3 transit or movement, pilots shall assess the movement of other traffic having the potential to impede such

transit in making a determination as to whether it is safe to continue. A decision on such determination shall also be conveyed to the VFPA patrol boat on duty or directly to the VFPA Operations Centre.

TCZ-3 RESTRICTIONS

For the purposes of the TCZ-3 regulations, the following definitions shall apply:

Tier 1 vessel: Means any of the following vessels:

- All piloted vessels including tug and barge combinations when piloted, regardless of tonnage.
- All non-piloted tug and barge combinations with a barge of 10,000 tonnes or more carrying capacity.
- All non-piloted vessels including tug and barge combinations when in product.

Tier 2 vessel: Means all other vessel traffic operating within TCZ-3 boundaries including pleasure craft and sailing vessels under power, small fishing vessels and light tugs.

a) Transit Windows

A TCZ-3 transit is defined as a movement within TCZ-3 between Berry Point and the approaches to Pacific Coast terminals in Port Moody.

Predicted transit windows for vessels restricted by draft or air draft can be provided by VPFA on request to the Port Authority Operations Centre well in advance of the actual transit.

For planning purposes only, agents can use the Coast Tidal Windows on-line tool available on the Pacific Pilotage Authority website.

All available navigational information, including that gained from Portable Pilotage Units along with real time tide and current information, should be used in conjunction with predicted transit windows to improve the safety and efficiency of TCZ-3 operations.

b) Transit Restrictions

Tier 2 vessels shall transit or move within TCZ-3 only when safe to do so and must take into account all factors influencing safety of navigation including traffic movements, tides, tidal current, weather conditions and their knowledge of TCZ-3.

The following specific transit restrictions and requirements shall apply:

- Loaded tankers shall be trimmed to an even keel or by the stern and shall not be trimmed by the head.
- Vessels found by BC Coast Pilots to have unacceptable maneuvering characteristics may be subject to special restrictions including the tethering of additional tugs.

- A vessel having a defect in the hull, main propulsion machinery, steering system or other communication or navigation system that is detrimental to safe navigation, requires the prior approval of VFPA to transit or move within TCZ-3.

c) Clear Narrows Restrictions

The term "Clear Narrows" is defined as the transit of a vessel unimpeded by any other vessel.

MCTS will declare a "Clear Narrows" within TCZ-3 between Admiralty Point and Port Moody on VHF Channels 12 and 16 by means of a Securité call to ensure unimpeded transit of restricted vessels, examples being but not limited to:

- A Tier 1 vessel.
- Other vessels with special transit requirements that require the approval of the port authority.
- A vessel, which for safety considerations requires a clear passage through TCZ-3 upon request of the Master or pilot.

Light tugs are permitted to transit between Admiralty Point and Port Moody during the declaration of a Clear Narrows providing a ship-to-ship agreement has been reached with the vessel(s) for which a Clear Narrows has been issued.

All other vessels must observe the Clear Narrows declaration for TCZ-3 and must not interfere in any way with the passage of a vessel for which a Clear Narrows has been declared.

MCTS or designated Port Authority, Law Enforcement or Search and Rescue Vessels may direct other vessels to a suitable holding area until conditions are such that a transit of TCZ-3 can be safely executed.

d) Speed Restrictions

Unless otherwise required for the safety of navigation, a maximum speed of 6 knots through the water shall apply to all vessels, including tugs and barges, between Admiralty Point and Port Moody.

Other than as specified above, vessels shall proceed at a safe speed within TCZ-3 which will allow them to properly react according to the prevailing circumstances and conditions.

e) Visibility Restrictions

Reduced visibility limits the ability to see aids to navigation and other vessels or landmarks. During periods of reduced visibility, a vessel whose Master and Pilot determine that is safe to proceed shall do so at a safe speed as determined by *The International Regulations for Preventing of Collision at Sea 1972* (Rule 6)

Nothing in this section should be construed to require the Master of a vessel to execute a transit in reduced visibility or hinder the decision of a Master and pilot to proceed with a transit in restricted visibility following an assessment of prevailing traffic conditions.

f) Wind Restrictions

There are no standing wind restrictions for TCZ-3. However, when wind warnings are in effect, the Master and/or pilot shall take into consideration such factors as light vessel draft and/or high freeboard when planning the transit.

TCZ-3 VESSEL TRAFFIC PROCEDURES

a) Order of Transit

For operational reasons, the order of transit may be amended with the mutual agreement of all vessels transiting, berthing or departing a berth within TCZ-3. Such amendment must be advised to MCTS.

Tier 1 vessels have priority over Tier 2 vessels within TCZ-3. In principle, taking into account both safety and efficiency, the following order of priority applies to vessels transiting TCZ-3:

- First priority is a vessel whose TCZ-2 window is closing which will have priority over a vessel transiting in the other direction.
- Second priority is deeper draft vessels over other transits in the same direction.
- Westbound vessels shall have priority over eastbound vessels between Port Moody and Admiralty Point.

A vessel proceeding to, departing from, or shifting alongside berths within TCZ-3 must give way to, and not interfere with, the movement of Tier 1 vessels in transit.

b) Overtaking and Safe Distance Between Vessels Regulations

- Tier 2 vessels shall not overtake Tier 1 vessels within the navigable channel of TCZ-3 between Admiralty Point and Port Moody.
- Overtaking is permissible within the geographical boundary of TCZ-3 between Admiralty Point and Berry Point provided that a safe speed is not exceeded in doing so.
- Tier 1 vessels transiting in the same direction shall maintain a safe separation of three cables or more distance between them.

c) Tier 2 Vessel Regulations including Vessels Engaged in Fishing and Pleasure Craft

VFPA recognizes that TCZ-3 includes areas that are regularly frequented by pleasure craft, recreational vessels and sailing vessels and does not seek to unreasonably place restrictions on their use. However, as in any mixed-use waterway, safety is of paramount importance and good seamanship must be exercised as follows:

- All Tier 2 vessels whether underway, fishing or drifting within TCZ-3 must maintain complete control at all times and ensure vigilant situational awareness.
- Tier 2 vessels must not cross ahead of or otherwise impede Tier 1 vessels within TCZ-3.

- Tier 2 vessels shall stay to the side of the navigation channel to give Tier 1 vessels as unobstructed a passage as is practicable, consistent with good seamanship.
- Vessels engaged in fishing shall not hamper the safe navigation of any vessel, or tug and barge combination within TCZ-3.

d) Towing Regulations

Tugs engaged in towing or pushing barges within TCZ-3, whether in ballast or in product, must be of adequate power and comply with the assist tug requirements set out in Table 3: *TCZ-3 Tugs and barges including ATBs when not piloted – Summary Matrix*

- For the purposes of TCZ-3, piloted ATBs are subject to the requirements of a tanker of equal capacity.
- The overall width of log booms within TCZ-3 must not exceed two boom sections (maximum 40m) wide, and the overall length of log booms within TCZ-3 must not exceed 20 boom sections (maximum 400m) long.
- When transiting TCZ-3 with more than 10 boom sections overall length (maximum 200m), the master or person in charge of a log boom must engage, in addition to tugs required in the towing operation, one or more tugs of adequate power in order to remain close inshore of the navigation channel.

TCZ-3 PILOTAGE REQUIRMENTS

TCZ-3 falls under Compulsory Pilotage area as regulated by the Pilotage Act and its associated regulations. All vessels shall refer and follow Pacific Pilotage Authority's pilot ordering requirements.

TCZ-3 VESSEL ASSIST TUG REQUIRMENTS

Tier 1 vessels when transiting TCZ-3, must comply with the standards for tug requirements outlined in Table 1 or 2 as appropriate which summarize the bollard pull requirements and the configuration of the tug package, reasonably spread between tug hulls, for such vessels. In addition:

- All vessel assist tugs employed on a Tier 1 vessel transiting or moving within TCZ-3 must be tractor tugs or tugs designed for ship berthing of equivalent bollard pull. See Tables 1 at the foot of these regulations for tug assist requirements as applicable.
- The Master and Pilot shall jointly discuss and establish the tug(s) disposition and usage to assist the vessel.
- Tankers of LOA 185m and/or 40,000 SDWT and above in product require a minimum of two assist tugs.
- Vessel assist tugs capable of generating more than 40 tonnes of bollard pull shall have an operational tension meter that the tug operator can easily read from the conning position.
- An interrupted transit of TCZ-3, for whatever reason, shall not reduce the minimum escort requirements for the transit.

- Highly maneuverable craft may be exempted from these requirements at the discretion of VFPA in consultation with PPA and BCCP.

Table 1: TCZ-3 DEEP SEA VESSEL TUG AND BOLLARD PULL REQUIRMENTS – SUMMARY MATRIX

LOA less than 200m and beam less than 35m

Vessel draft	No. of tugs	Bollard pull tonnes	No. of tugs	Bollard pull tonnes (Total)
	Bow		Stern	
<8m	1	20	1	30
8m or > but <10m	1	30	1	30
10m or >	1	30	1	50

LOA 200m – 229.9m and beam less than 35m

Vessel draft	No. of tugs	Bollard pull tonnes	No. of tugs	Bollard pull tonnes (Total)
	Bow		Stern	
<8m	1	30	1	50
8m or > but <10m	1	60	1 or 2	65
10m or > but <12m	1 or 2	60	1 or 2	80
12m or >	1 0r 2	60	2	110

LOA 230m – 250m and beam less than 45m

Vessel draft	No. of tugs	Bollard pull tonnes	No. of tugs	Bollard pull tonnes (Total)
	Bow		Stern	
<10m	1 or 2	60	1 or 2	65
10m or > but <12m	1 or 2	60	1 or 2	80
12m or >	1 0r 2	60	2	110

- *When two tugs are employed, similar bollard pull figures will be used. e.g. 60BP & 50BP

TABLE 2: TCZ-3 TUG AND BARGES INCLUDING ATBS WHEN NOT PILOTED – SUMMARY MATRIX

Barge capacity tonnes	Minimum No. of assist tugs	Bollard pull tonnes	Barge fitted bowthruster min 500HP	Comments
<6,000	-	-	-	-
6,000 or > but <10,000	-	-	Yes	-
6,000 or > but <10,000	1	20	No	-
10,000 or > but <15,000	1	30	Yes	-
10,000 or > but <15,000	1 or 2	40	No	combined bp
15,000 or >	1 or 2	60	All cases	combined bp

TABLE 3: TCZ-3 TRANSIT PROCEDURES DEEP SEA VESSELS – SUMMARY MATRIX

Section	Channel Length & Width	Beam design factor to PIANC standards	Maximum LOA & Moulded Breadth	Controlling Depth	Maximum Air Draft	Comments
Section 1	2.4nm x 345m	7.8	LOA 250m Moulded breadth 44m for two lane traffic Moulded breadth 48.1m for one way traffic	14.0m below chart datum	No restriction	Two lane traffic with maximum combined moulded breadth 88m
Section 2	1.4nm x 141m	3.2	LOA 240m Moulded breadth 44m	14.1m below chart datum	42m above HHW allowing for 2m clearance under o/h cables	Clear Narrows applicable to Tier 1 vessels
Section 3	1.1nm x 104m	3.2	LOA 240m Moulded breadth 32.5m	13.0m below chart datum in main channel 12.9m below chart datum in turning basin	No restriction	Clear Narrows applicable to Tier 1 vessels

8.17 FRASER RIVER – TRAFFIC CONTROL ZONE PROCEDURES (TCZ-4)

GUIDE TO CONTENT

TCZ-4 INTRODUCTION

The Fraser River South Arm Traffic Control Zone (TCZ-4) comprises an area extending for a maximum of 61m either side of the charted deep-sea navigation channel or the shoreline, whichever is least, and enclosed:

- To the west by a line across the navigation channel one nautical mile southwest of Sand Heads Light
- To the east by a line drawn across the Fraser River at New Westminster Quay.

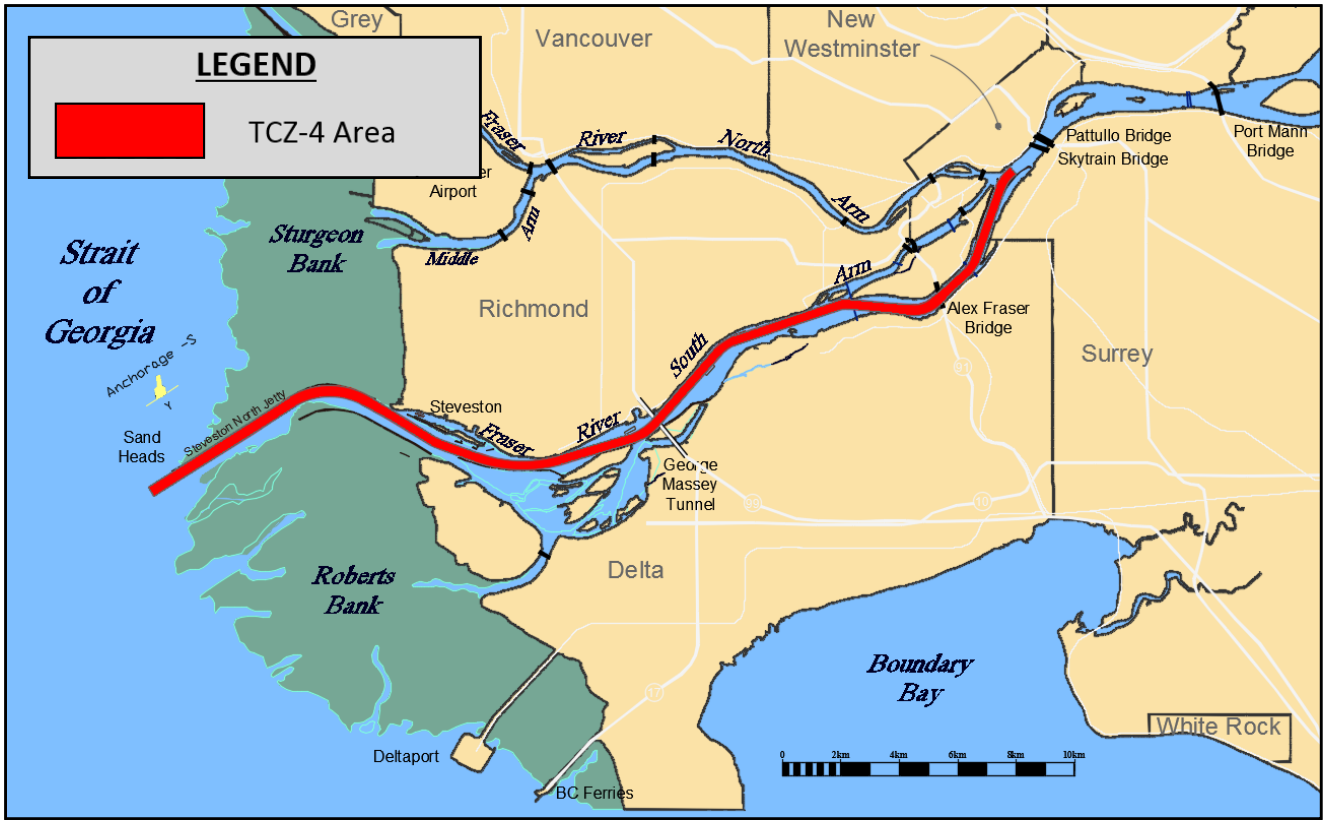


Image: TCZ-4 Overview

Fraser River deep sea vessel transit restrictions vary in accordance with River Sections 1-4, the geographical boundaries of which are illustrated below.

Section 1: One nautical mile west of Sand Heads to Garry Point
Section 2: Garry Point to Buoy S-23
Section 3: Buoy S-23 to Lafarge Cement Terminal
Section 4: Lafarge Cement Terminal to New Westminster Quay

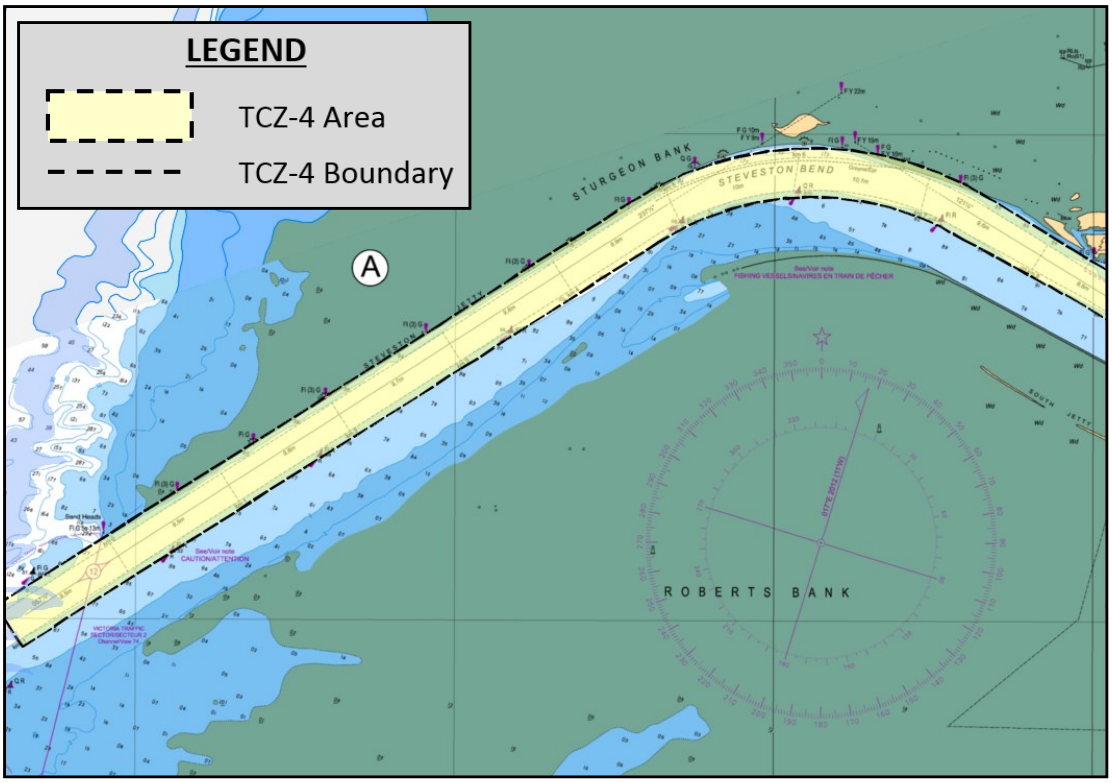


Image: TCZ-4 Section 1 – One nautical mile west of Sand Heads to Garry Point

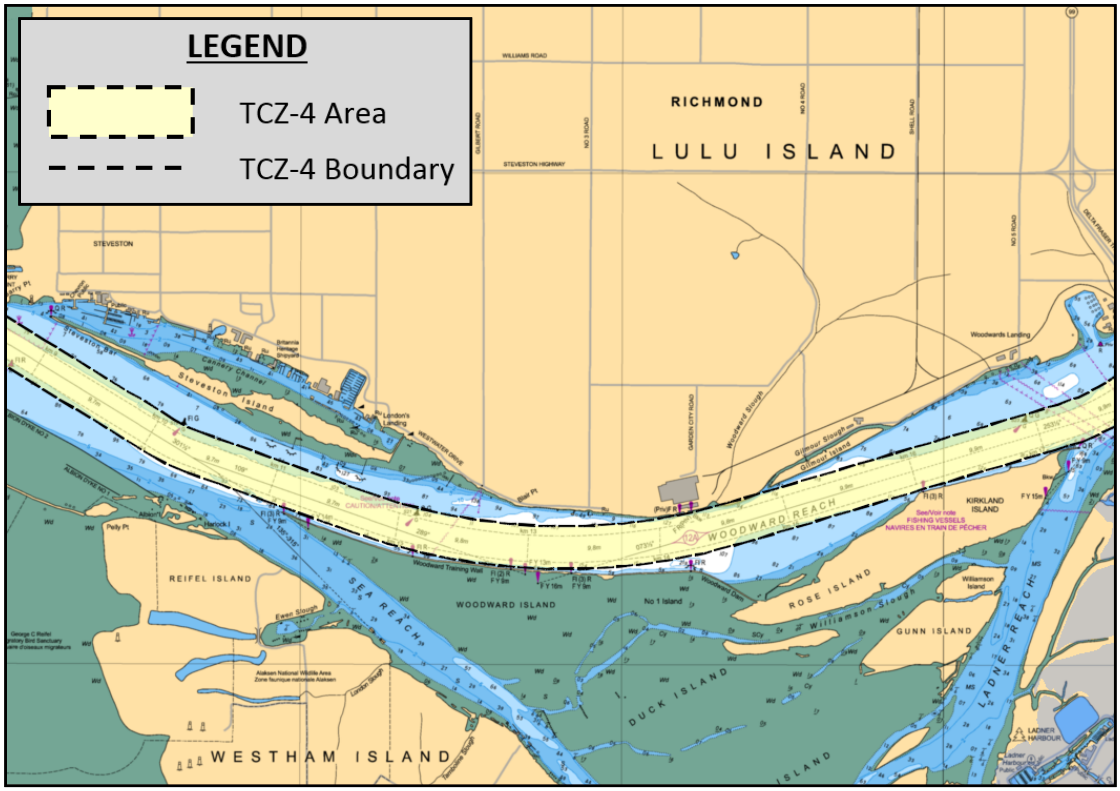


Image: TCZ-4 Section 2 - Garry Point to Buoy S-23

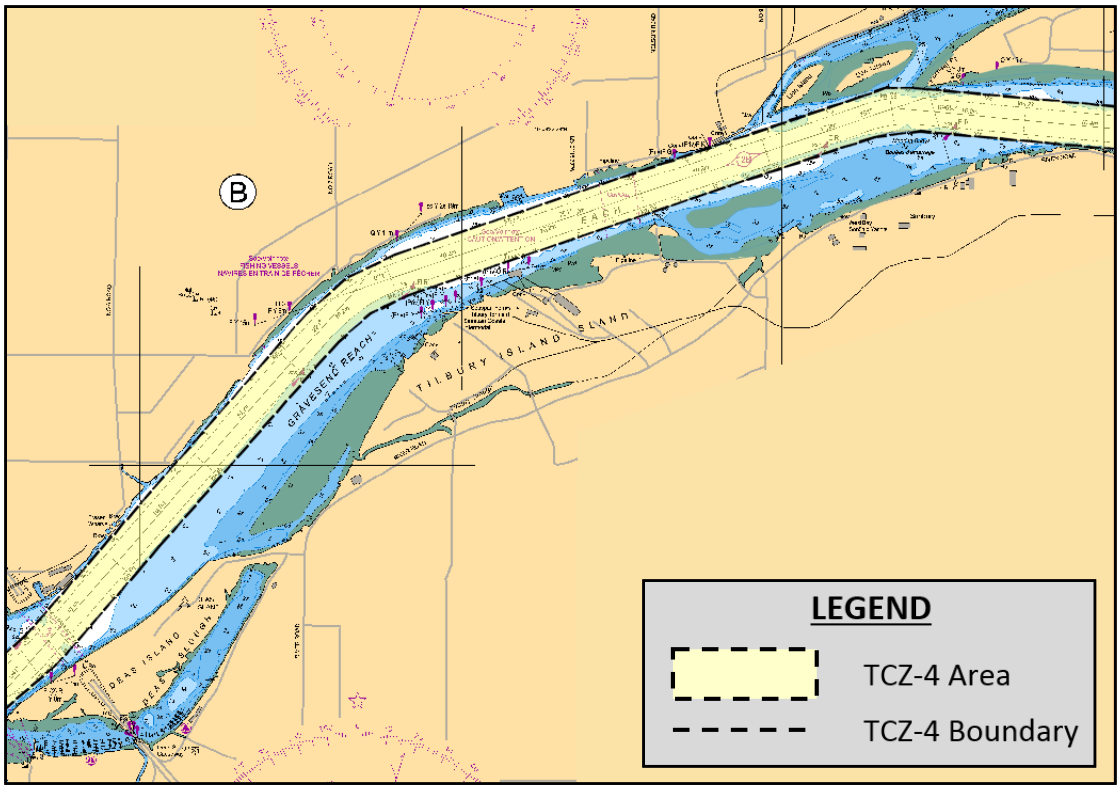


Image: TCZ-4 Section 3 - Buoy S-23 to Lafarge Cement Terminal

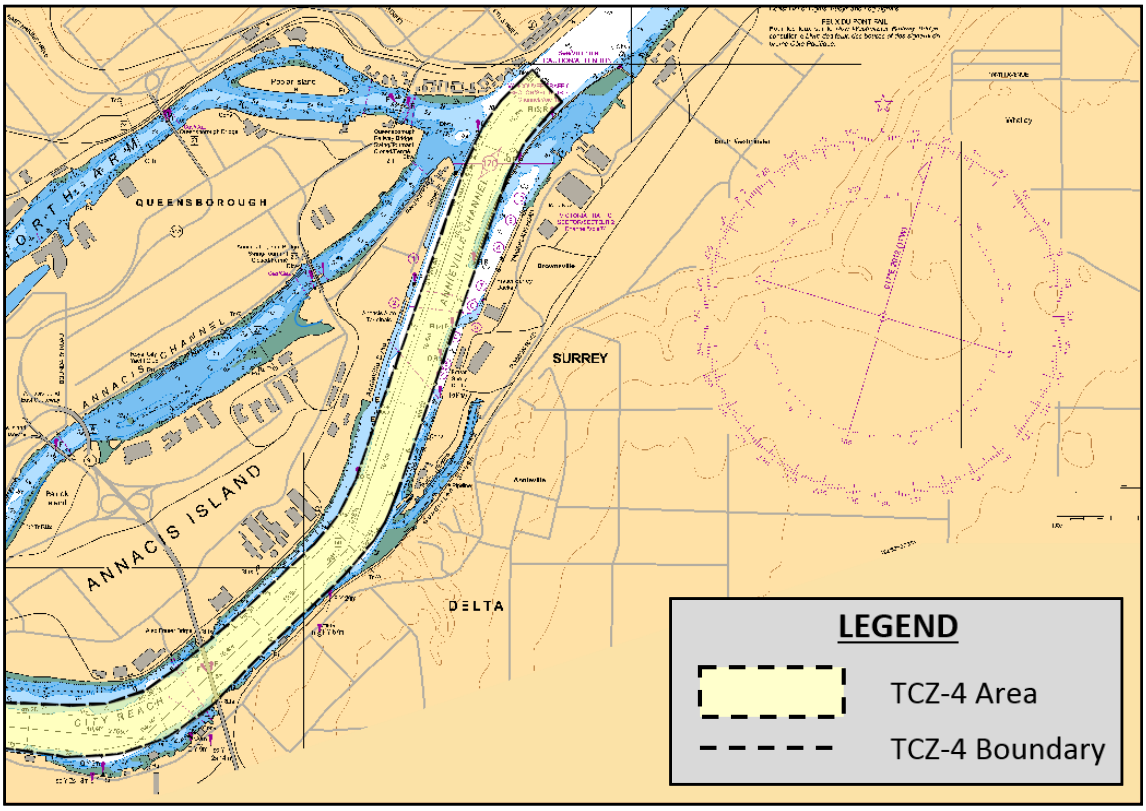


Image: TCZ-4 Section 4 - Lafarge Cement Terminal to New Westminster Quay

The Vancouver Fraser Port Authority (port authority) has established TCZ-4 and has developed these associated procedures in consultation with the Pacific Pilotage Authority (PPA), the Fraser River Pilots (FRP) and the broader marine industry. The purpose of the TCZ-4 procedures is to facilitate the safe navigation and efficient movement of vessels in this area of the port, and they form an integral part of the port authority's procedures outlined in this Port Information Guide.

TCZ-4 APPLICATION

The TCZ-4 procedures apply to all marine traffic in TCZ-4 except designated port authority patrol vessels and vessels that are engaged in law enforcement and security, search and rescue or other emergency response vessels.

The TCZ-4 Procedures do not relieve the Master from compliance with the *Canada Shipping Act, 2001* or other regulations, requirements or standards in respect of vessels operating in Canadian ports.

These procedures may be varied by the port authority in the event of an emergency which causes (or is likely to cause) loss of life, personal injury, serious environmental pollution or contributes to unsafe navigation in the port.

The Harbour Master, as designated by the port authority, has overall authority in interpreting and overseeing the implementation of these procedures. In doing so, the Harbour Master consults on issues of safety with a number of stakeholders including pilots, other statutory agencies and industry experts, as required.

As per the port authority's Port Information Guide standard definitions, all references to "In product" refer to a tanker (including barges and articulated tugs and barges – ATBs) when carrying greater than 6,000 tonnes of liquids in bulk.

TCZ-4 NAVIGATION ENVELOPE (CLEARANCES)

The TCZ-4 deep-sea shipping navigation channel is contained within the South Arm of the Fraser River and stretches from Sand Heads (km 0) to New Westminster (km 35).

The TCZ-4 navigation channel is maintained under the port authority's Fraser River Annual Maintenance Dredging Program which is designed to provide safe and unimpeded access to terminals in the Fraser River. The amount of dredging required varies from year to year. For the most part, this is dependent on river flow conditions during the Freshet. The duration and size of the Freshet is based on the Fraser Basin's snowpack and how quickly it melts.

The TCZ-4 navigation channel is designed and maintained to provide a transit draft of 11.5m, always subject to tidal assist and seasonal infill even on the day of the year with the least tidal aid, a deep-sea vessel will still have sufficient water under the keel for the entire shipping channel. The corresponding specification of water depths is known as the design grade.

The design grade levels for the channel are based on a two-hour upriver transit of a vessel with a maximum draft of 11.5m. The channel is regularly surveyed and dredged to remove infill. The

Fraser River Pilots are constantly provided with updated hydrographic and tidal information for the channel.

It should be noted that the tidal range at Sand Heads is greater than the tidal range at New Westminster and therefore provides less upriver tidal assist, as illustrated in the image below.

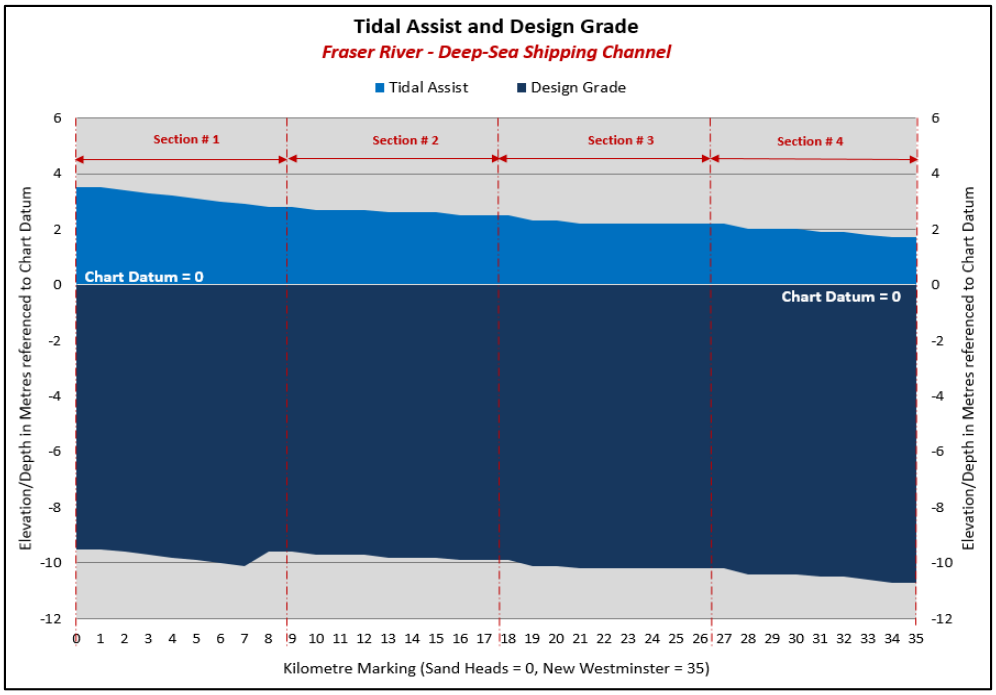


Image: TCZ-4 Tidal Assist and Design Grade

Based on The World Association for Waterborne Transport Infrastructure (PIANC) standards, the maximum size of vessel that can transit TCZ-4 on a two-way channel unrestricted basis is LOA 270m and moulded breadth 33m, other than pre-approved vessels.

Vessels can safely transit with length overall (LOA) greater than 270 m and moulded breadth 33.0m but must notify the port at least 48 hours in advance and may be subject to specific restrictions. Reference is to be made to *Table 1: Fraser River South Arm TCZ-4 Transit Procedures Deep Sea vessels – Summary Matrix.*

The maximum size of vessel that may transit the Fraser River South Arm (TCZ-4) is as follows:

- Maximum LOA 295m and a moulded breadth 33m
- Maximum LOA 250m and a moulded breadth 38m

Navigation Channel Constraints Summary Table:

LOA	*Moulded breadth*	*Channel Design*	*Notification required*
<270m	up to 33m	Two-way	No
>270m – <295m	up to 33m	Dynamic channel, see Table 1	Yes
<250m	>33m up to 38m	Dynamic channel, see Table 1	Yes

Vessels exceeding the limits described above may be able to transit TCZ-4 upon request to the port authority and approval may be granted on a case by case basis following consultation with the PPA and FRP. Such requests must be made well in advance.

The pilot in conjunction with the Master should evaluate all clearance conditions mentioned in this section prior to the transit of TCZ-4.

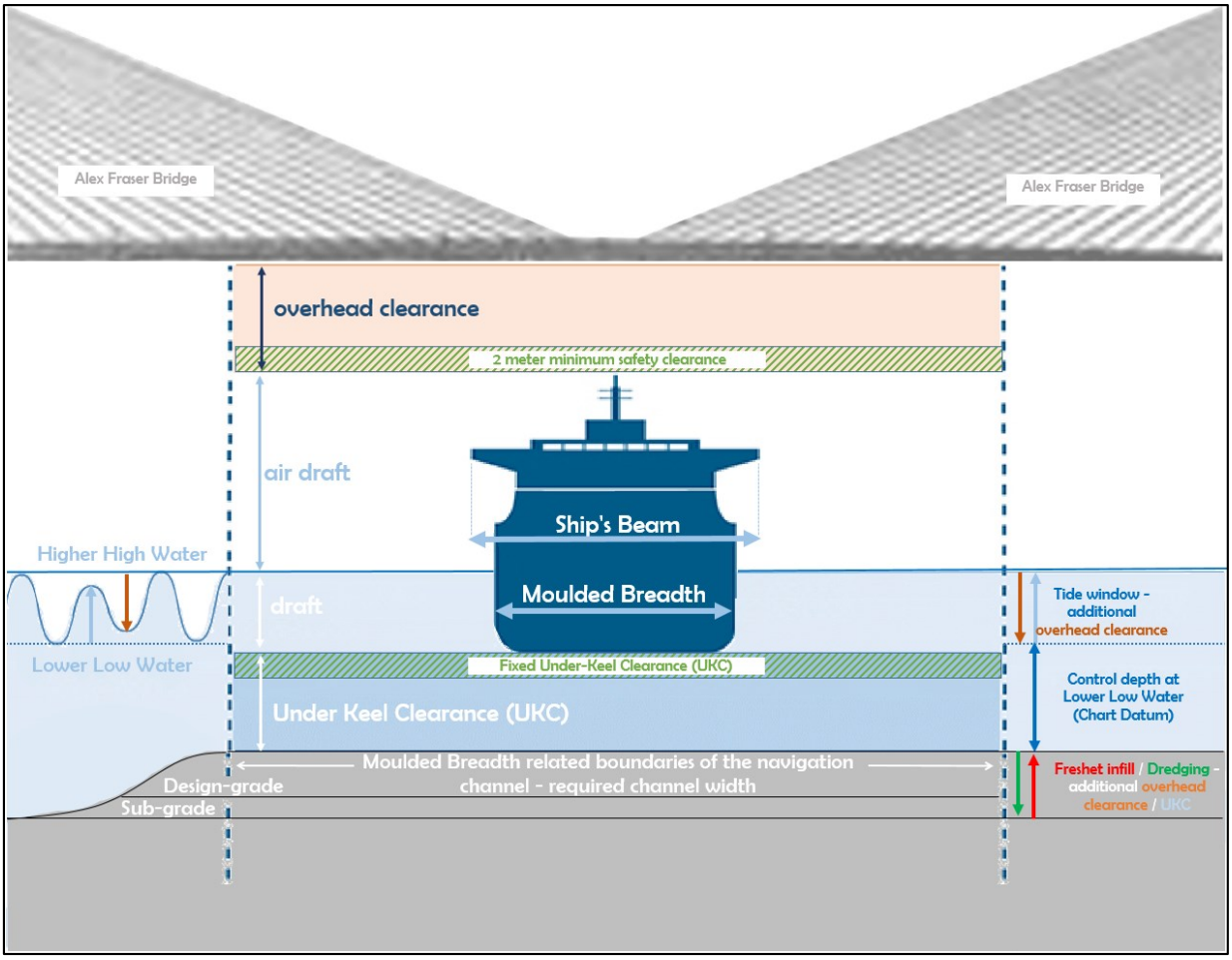


Image: TCZ-4 Navigation Envelope

a) Vertical Clearances

Vertical clearances in the Fraser River are given as distances measured from Higher High Water, large tide datum, to the lowest member of the bridge structure or the lowest point of overhead crossings, in way of the navigation channel. The following vertical restrictions apply:

- Section 1: No restriction
- Section 2: No restriction
- Section 3: No restriction

- Section 4: Vertical clearance 57m (maximum unrestricted air draft 55m + 2m overhead clearance) under Purfleet Point power lines, Alex Fraser Bridge and Gundersons Slough power lines. An additional clearance of 1m must be allowed during the Freshet season.

Whether using the navigation channel as a single lane or as a dynamic channel, the maximum air draft for transit of TCZ-4 is subject to actual water level and a requirement for a minimum safe overhead clearance of 2m. Reference should be made to *Table 1: Fraser River South Arm TCZ-4 Transit Procedures Deep Sea vessels – Summary Matrix.*

Vessels that exceed the maximum vessel air draft at Higher High Water may be able to transit but subject to tidal windows. Lower tides will increase the maximum allowable air draft but will correspondingly decrease the available depth. The maximum tidal range will depend on seasonal river conditions.

Vessels with an air draft in excess of the maximum air draft allowed for transiting TCZ-4 as listed above must obtain port authority and PPA approvals to transit TCZ-4. The maximum air draft of the ship or floating equipment needs to be reported at least 24 hours in advance to the port authority's Operations Centre (harbour_master@portvancouver.com) and PPA (marineops@ppa.gc.ca).

The air draft must be verified by a qualified and independent local survey company within port authority jurisdiction prior to transit. The detailed results of this air draft survey must be provided to both the port authority and PPA. Thereafter, the verified vessel's draft/air draft must be maintained until completion of the transit.

Upon receipt by the port authority of the air draft survey, the port authority will review the transit request and determine if the vessel is approved to transit the TCZ-4 with tide restriction.

Upon receipt of the air draft survey by PPA, PPA will liaise with the FRP to verify actual transit times based on current windows, tide height, vessel draft, air draft and other planned TCZ-4 vessel traffic. PPA/FRP will validate the transit request and indicate to the dispatched pilot that the air draft has been verified.

Transit windows are calculated using the static air draft i.e. the air draft of the vessel when not moving through the water.

b) Horizontal Clearances

The width of the navigable channel is between 200m and 260m which is based on the channel design for the particular section of the Fraser River.

- Section 1: Design navigation channel width 250m. After Steveston Bend the channel transitions from 250m to 200m;
- Section 2: Design navigation channel width 200m;
- Section 3: Design navigation channel width 200m;
- Section 4: Design navigation channel width 200m and 260m on Mungo's bend.

The TCZ-4 channel is designed to allow for two-way traffic from Sand Heads Pilot Station to Fraser Surrey Docks when vessels transiting in both directions do not exceed a combined moulded breadth of 66m.

Vessels can transit with a moulded breadth of up to 38m but are required to notify the port authority and the PPA at least 48 hours in advance if the moulded breadth exceeds 33m and may be subject to restrictions.

c) Under Keel Clearance (UKC)

Transit windows are calculated using the static draft, i.e. the draft of the vessel when it is not moving through the water.

The following fixed under keel clearances (UKC) established by FRP apply to respective River Sections and are based on Pilot experience. A Pilot may require an adjusted UKC as deemed appropriate given the specific vessel and prevailing conditions.

	LOA <250m	**LOA >250m**
Section 1	1.5m UKC	1.9m UKC
Section 2	0.9m UKC	1.4m UKC
Section 3	0.9m UKC	1.4m UKC
Section 4	0.9m UKC	1.4m UKC

UKC required for all vessels when berthing is 0.9m.

Deeper draft vessels, particularly during winter months, may be approved by the port authority and PPA on a case by case basis up to a draft of approximately 12m depending on water levels and the Fraser River Annual Maintenance Dredging Program. Requests for transit with a draft in excess of 11.5m are to be made as far in advance as possible.

TCZ-4 COMMUNICATIONS

a) Marine Communications and Traffic Services (MCTS)

Communication with vessels transiting, intending to transit or maneuvering within TCZ-4 is provided, on behalf of the port authority, by the Canadian Coast Guard Marine Communications and Traffic Services (MCTS).

All vessels navigating within TCZ-4 shall monitor VHF Channel 74.

Whenever possible, MCTS shall provide a vessel with information on all known traffic intending to transit TCZ-4 at least 15 minutes prior to entering TCZ-4, or earlier if the vessel is departing a Fraser River terminal. MCTS shall also at this time advise of any specific orders regarding the TCZ-4 transit, which may have been issued by the port authority.

Where vessels are required to wait, pending the transit of another vessel, they shall, whenever possible, be so advised by MCTS prior to leaving berth, weighing anchor, or entering TCZ-4.

Periodic notices requiring action or awareness by vessels within the port authority's jurisdiction will be broadcast by MCTS as notices to shipping, or on the continuous marine broadcast.

All vessels transiting TCZ-4, where required by MCTS Zones Regulations, are to monitor VHF Channels 16 (designated international safety channel) & 74 (MCTS).

The following procedure will be adhered to with regard to vessels constrained by their draft when transiting TCZ-4:

- A Fraser River Pilot will contact MCTS when dispatched to a vessel that is Deep Draft Restricted with the time that the vessel will commence transit;
- MCTS will initiate a Securite Broadcast on channel 74 two hours prior to the vessel entering the Fraser River at Sand Heads, or two hours prior to departure from a terminal;
- If traffic levels warrant, a simultaneous broadcast can also be made on channel 11. Otherwise, any inbound vessels affected by the transit may be contacted individually;
- A final Securite broadcast will be made when the pilot calls at Sand Heads inbound or when preparing to depart from a terminal.

In the event of an interruption to communications between vessel traffic and MCTS whereby MCTS has not provided the vessel with traffic information prior to undertaking an TCZ-4 transit, pilots shall assess the known movement of other traffic having the potential to impede such transit in making a determination as to whether it is safe to continue. A decision on such determination shall also be conveyed to the port authority's Operations Centre.

TCZ-4 RESTRICTIONS

For the purposes of the TCZ-4 regulations, the following definitions apply:

Tier 1 vessel: Means any of the following vessels:

- All piloted vessels and tug and barge combinations when piloted, regardless of tonnage.
- All non-piloted tug and barge combinations with a barge of 10,000 tonnes or more carrying capacity.
- All non-piloted vessels including barges and articulated tugs and barges (ATBs) when in product

Tier 2 vessel: Means all other vessel traffic operating in the TCZ-4 boundaries including fishing vessels, pleasure craft and sailing vessels.

a) Transit Windows

A TCZ-4 transit is defined as any movement within TCZ-4 other than a shift from one berth to another at the same terminal or a shift alongside.

Transit windows are established by FRP for all Tier 1 vessels piloted by Fraser River Pilots and are dependent on:

- Vessel LOA
- Vessel draft and/or air draft
- Current and tidal conditions
- Channel condition
- Assigned berth
- Docking port or starboard side alongside

Transit windows are designed to ensure the level of tidal assist that will allow for a safe transit of TCZ-4. Reference is to be made to *Table 1: Fraser River South Arm TCZ-4 Transit Procedures Deep Sea Vessels – Summary Matrix.*

All requests for transit windows must be made to FRP through PPA dispatch office at least 24 hours prior to an intended transit.

Masters and ships' agents must understand that regardless of vessel size, especially during the Freshet, channel conditions can vary due to infill, thereby impacting the available channel width and depth. These conditions may result in amendments to transit windows.

For planning purposes only, agents can use the Fraser River Tidal Windows on-line tool available on the PPA's website.

b) Transit Restrictions

Reference is to be made to the section "TCZ-4 Navigation Envelope (Clearances)" with respect to the maximum size of vessel that may transit TCZ-4 without prior notification to the port authority.

Tier 2 vessels must transit or move within TCZ-4 only when safe to do so and must take into account all factors influencing the safety of navigation including other marine traffic, tidal height, tidal current, weather conditions, and their level of knowledge of TCZ-4.

The International Regulations for Prevention of Collisions at Sea apply to all marine traffic on the Fraser River. Navigation in TCZ-4 is normally unencumbered, however during certain periods, generally between July and September, additional caution is required due to fishing boats and nets that could pose an obstruction to the navigation channel.

The following specific transit restrictions and requirements apply:

- Vessels having an LOA exceeding 270m or a moulded breadth exceeding 33m are restricted from transiting TCZ-4 without prior notification to the port authority other than pre-approved vessels. See *TCZ-4 Navigation Envelope (Clearances)* - Navigation Channel Constraints Summary Table.

- The maximum air draft allowed for transit of TCZ-4 River Sections 3 & 4 (see Figure 1) without port authority approval is based on a minimum safe overhead clearance of 2m and an additional 1m for a safe seasonal overhead clearance of 3m during the Freshet season.

- Should the predicted air draft at the time of a TCZ-4 transit exceed the maximum allowable, the port authority may approve the transit based on calculation of the minimum overhead clearance of 2m or require verification of the air draft by a qualified and independent local survey company within port authority jurisdiction prior to transit. Reference in all cases is to be made to Table 1: Fraser River South Arm TCZ-4 Transit Procedures Deep Sea Vessels – Summary Matrix.

- Non-piloted tug and barge combinations with a barge of 15,000 tonnes or more carrying capacity are restricted from transiting TCZ-4 without the prior approval of the port authority.

Loaded tankers must be trimmed to an even keel or by the stern and must not be trimmed by the head.

Vessels found by FRP to have unacceptable maneuvering characteristics may be refused permission to transit TCZ-4 or be subject to special restrictions.

A vessel having a defect in the hull, main propulsion machinery, steering system or other communication or navigation system that is detrimental to safe navigation, requires the prior approval of Transport Canada, the port authority and PPA to transit TCZ-4.

When transiting the Fraser River deep sea navigation channel, or portion thereof, all vessels constrained by their draft, as defined under Rule 3(h) of the Collision Regulations under the Canada Shipping Act, 2001 and whose transit window has been established for the navigation channel by FRP, may under the port authority's established regulations exhibit in addition to the lights prescribed for a power-driven vessel of its characteristics, where they can be best seen, three all-round red lights in a vertical line at night or a cylinder during the day.

Rule 3(h): The term "*vessel constrained by her draft"* means a power-driven vessel that, because of the vessel's draft in relation to the available depth and width of navigable water, is severely restricted in the vessel's ability to deviate from the course the vessel is following.

c) Clear Transit Areas

Clear Transit Areas apply to tankers in product, LNG carriers and hampered vessels as designated by the port authority. These vessels must be unimpeded by any other vessel in the designated Clear Transit Areas, as illustrated in the image below.

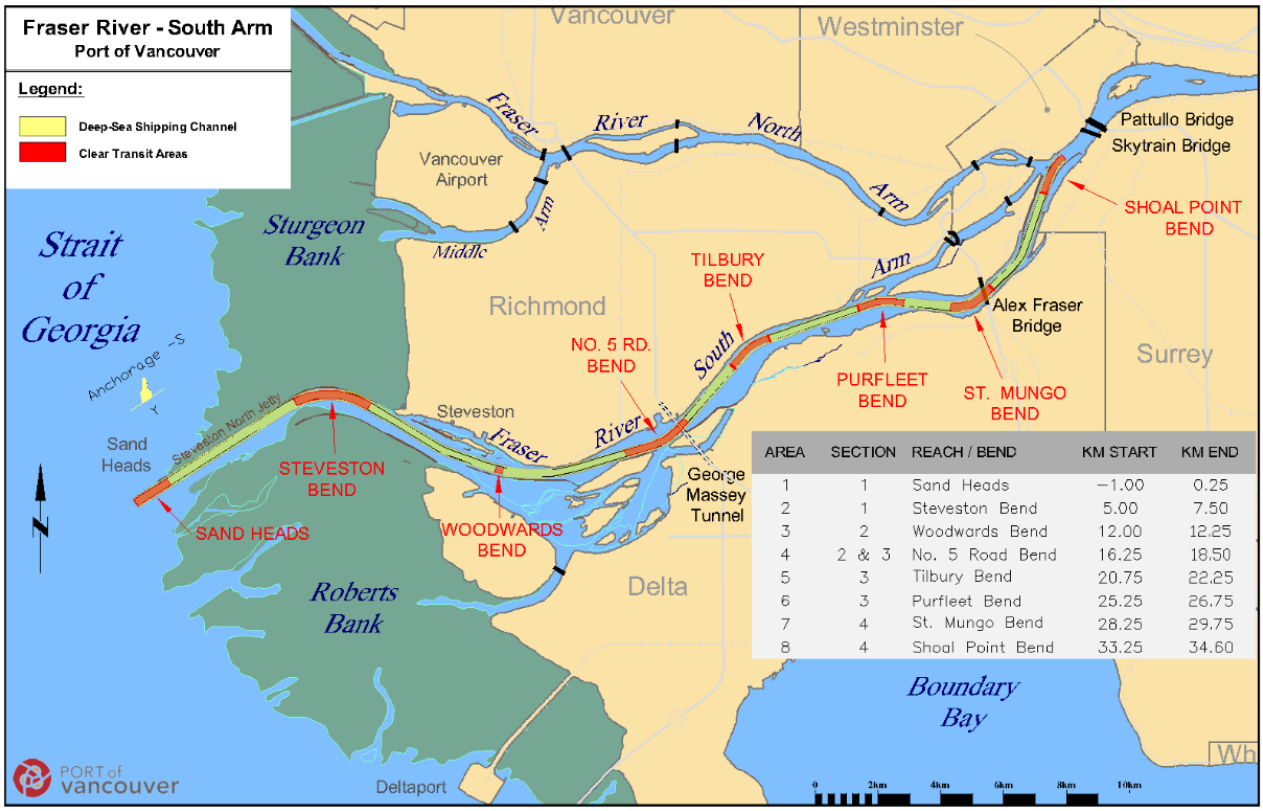


Image: TCZ-4 Clear Transit Areas

MCTS will declare a Clear Transit Areas notification on VHF Channels 16 and 74 by means of a Securite call at least 15 minutes in advance of a restricted vessel entering TCZ-4 to ensure unimpeded transit of such vessels, namely:

- All piloted tankers in product;
- All piloted LNG carriers, irrespective of cargo status;
- A vessel which for safety considerations requires Clear Transit Areas through TCZ-4 upon request of the Master or pilot.

Fraser River Pilots will repeat the notification that a Clear Transit Areas has been declared at standard MCTS call in points.

Light tugs, other highly maneuverable small vessels and active dredgers may, on request, be granted a compliance exemption by MCTS, provided a ship-to-ship agreement has been reached with the vessel for which a Clear Transit Areas declaration has been issued.

All other vessels must observe the Clear Transit Areas declaration for TCZ-4 and must not interfere in any way with the passage of a vessel for which the Clear Transit Areas have been declared.

Vessels delayed in transit due to other traffic must remain clear of the affected areas until conditions are such that a transit can be safely executed.

d) Speed Restrictions

All vessels must transit or manoeuvre within TCZ-4 at a safe speed which will allow them to properly respond to the prevailing circumstances and conditions.

Due consideration must be given to the safety of vessels alongside berths, and their potential interaction with a vessel in transit.

e) Visibility Restrictions

All Tier 1 vessels including tugs and barges may request the declaration by MCTS of Clear Transit Areas during a TCZ-4 transit when restricted visibility of one mile or less is expected.

When navigating in restricted visibility during a fishery opening, all vessels should take additional precautions. These may include a delay in transit until visibility improves or engaging an escort vessel to assist in ensuring the execution of safe navigation.

Nothing in this section is to be construed to require the Master or Pilot of a vessel to execute a transit in reduced visibility or hinder the decision of a Master and pilot to proceed with a transit in restricted visibility following an assessment of prevailing traffic conditions.

f) Wind Restrictions

It is recommended that Masters pay due attention to weather forecasts for the Southern Strait of Georgia when passage planning for a TCZ-4 transit.

The following wind restrictions apply:

Section 1: LOA >270m & LNG carriers, maximum 25 knots
Moulded breadth >33m, maximum 30 knots
Car carriers: LOA >220m and/or moulded breadth >33m, maximum 35 knots

Section 2: LOA >270m and LNG carriers, maximum 25 knots
Moulded breadth >33m, maximum 30 knots
Car carriers: LOA >220m and/or moulded breadth >33m, maximum 35 knots

Section 3: LOA >270m and LNG carriers, maximum 25 knots
Moulded breadth >33m, maximum 30 knots
Car carriers: LOA >220m and/or moulded breadth >33m, maximum 35 knots
Car carriers 25 knots on the moulded breadth for berthing

Section 4: LOA >270m, maximum 25 knots, 20 knots on the moulded breadth for berthing
Moulded breadth >33m, maximum 30 knots
Car Carriers: LOA >220m and/or moulded breadth >33m, maximum 35 knots
Car carriers 25 knots on the moulded breadth for berthing

The above wind speeds refer to sustained winds.

Subject to Master and Pilot discretion, when turning the vessel is not required and when sufficient tug power is available, it may be possible to depart berths in the river with stronger winds than stated above.

When high wind warnings are in effect, the Master and Pilot must also take into consideration such factors as light vessel draft and/or high freeboard, when planning a TCZ-4 transit.

TCZ-4 VESSEL TRAFFIC PROCEDURES

a) Order of Transit

Tier 1 vessels have priority over Tier 2 vessels within TCZ-4. In principle, the following order of transit priority applies:

- First priority is a deep-sea vessel whose tidal window is closing, which will have priority over other vessels transiting in either direction.
- Second priority is a tanker in product or an LNG carrier irrespective of cargo status.
- Third priority is a vessel of LOA >270m and/or moulded breadth >33m.

For operational reasons, the order of transit may be amended and managed with the mutual agreement of all pilots transiting, berthing or departing a berth within TCZ-4. Any such amendment must be advised to MCTS.

Priority consideration will be given to an inbound vessel having labor standing by but subject to the overall efficiency of traffic movement.

A vessel shifting at berth within TCZ-4 must give way to, and not interfere with the movement of Tier 1 vessels in transit.

b) Overtaking and Safe Distance Between Vessels

Tier 1 vessels in transit are not permitted to meet or overtake each other at the following locations (see figures 1 & 4):

Section 1: LOA >270m and moulded breadth >33m and tankers:
No meeting at Sand Heads or Steveston Bend.

Section 2: LOA >270m and moulded breadth >33m and tankers:
No meeting at Buoy S-21.

Section 3: LOA >270m and moulded breadth >33m and tankers
No meeting at Kirkland Bend (No.5 Road Bend), Tilbury Bend and Purfleet Bend.

Section 4: LOA >270m and moulded breadth >33m and tankers
No meeting at St. Mungo Bend (City Reach) and Shoal Point Bend.

Tier 1 vessels transiting in the same direction must maintain a safe separation of three cables (0.3 nautical miles) or more distance between them.

Tier 2 vessels must not interfere with Tier 1 vessels within the geographical boundary of TCZ-4.

A Tier 2 vessel may overtake another Tier 2 vessel within the geographical boundary of the TCZ-4 provided that a safe speed is not exceeded in doing so.

c) Tier 2 Vessel Regulations including Fishing and Pleasure Craft

All Tier 2 vessels including fishing vessels, pleasure craft and sailing vessels, when transiting TCZ-4 must be under adequate mechanical power.

Tier 2 vessels must not cross ahead of or otherwise impede Tier 1 vessels and must stay to the side of the navigation channel to give Tier 1 vessels as unobstructed a passage as is practicable, consistent with good seamanship.

A whistle signal of four short blasts is a request from a vessel in transit to fishing vessels in the vicinity to pick up their nets and clear the deep-sea navigation channel. For the safety of the fishing vessel(s), such a request must be complied with.

Tier 2 vessels not under adequate mechanical power, including but not limited to kayaks, canoes and SUP's, should operate outside of the boundaries of the TCZ-4. The boundaries of the TCZ-4 comprises an area extending for a maximum of 61 metres either side of the charted deep-sea channel or the shoreline, whichever is least. In areas where the TCZ-4 boundary extends to the shoreline, Tier 2 vessels not under adequate mechanical power, including but not limited to kayaks, canoes and SUP's, should operate as close to the shoreline as safe and practical.

Tier 2 vessels not under adequate mechanical power, including but not limited to kayaks, canoes and SUP's, may cross the TCZ-4 only if such crossing does not impede the passage of any other Tier 1 or Tier 2 vessel operating within the TCZ-4. If required to cross the TCZ-4, Tier 2 vessels should cross as nearly as practicable at right angles to the general direction of traffic flow, for safety purposes.

d) Towing Regulations

Tugs engaged in towing or pushing barges in TCZ-4, whether in ballast or in product must be of adequate power. In addition:

- For a vessel towing barges, the maximum length of tow, measured from the stern of the towing vessel to the stern of the last barge under tow, must normally be limited to a length of 300m.
- For a vessel pushing barges, the maximum length of push, measured from the bow of the lead barge being pushed to the bow of the pushing vessel, must also normally be limited to a length of 300m.
- In the event that the length of tow or push exceeds 300m, the towing or pushing vessel must advise MCTS at least 4 hours in advance of entering TCZ-4.
- The overall length of tow or push, including the towing or pushing vessel, must in all cases be limited to 340m.
- Log booms under tow should be no greater than one section in width. Owners or persons in charge of a vessel intending to transit the TCZ-4 with log tows wider than one boom section are to receive approval from the port authority prior to departure to arrange any special conditions needed to ensure safe passage of the tow and of other vessels transiting the TCZ-4 at the same time.
- Close VHF communication between tug Master and FRP is required to ensure that interaction with Tier 1 vessels takes place only where it is safe and pre-agreed to do so.

For the purposes of TCZ-4, piloted ATB's in product will be subject to the requirements of a tanker of equal size.

e) Anchoring Regulations

There are no designated anchorages within the TCZ-4 boundaries. However, Tier 1 vessels under pilotage may anchor within the TCZ-4 to hold position temporarily for the purpose of awaiting berth availability, or in case of emergency.

When anchoring within the TCZ-4 boundaries, the pilot must retain the conduct of the vessel at all times and engines must remain on standby. In addition:

- The vessel Master and Pilot will give due consideration to the prevailing conditions such as draft, tidal height, current direction and wind. To the extent possible, anchoring in close proximity to a bridge structure and/or submerged utility crossings must be avoided.
- The vessel Master and Pilot will consider the use of a standby tug should this be necessary to maintain position.
- Due consideration must be given to ensure there is adequate clearance for other marine traffic to safely pass an anchored vessel within the navigation channel.

For anchoring within the Fraser River outside of TCZ-4 boundaries, reference should be made to the port authority's Port Information Guide, Section 14.6 – Anchorage Procedures.

TCZ-4 PILOTAGE REQUIREMENTS

Pilotage requirements within the port authority's jurisdiction are governed by the *Pacific Pilotage Regulations*, Section 9 (Ships Subject to Compulsory Pilotage) and 10 (Waiver of Compulsory Pilotage). In addition to the pilotage requirements established under Section 9 and Section 10 of the *Pacific Pilotage Regulations*, the following pilotage requirements apply to vessels operating in TCZ-4:

- Tankers in product and LNG carriers, irrespective of cargo status, require two pilots for a TCZ-4 transit. Both pilots must remain on the bridge throughout the transit
- All tug and barge combinations in product with aviation fuel must be piloted.
- For the purposes of TCZ-4, piloted ATB's in product will be subject to the requirements of a tanker of equal size.
- Non-piloted tug and barge combinations with a barge of 15,000 tonnes or more carrying capacity are restricted from transiting TCZ-4 without the prior approval of the port authority.
- When a tethered escort tug is required for TCZ-4 transit, the vessel or agent is required to supply the Mooring and Towing Arrangement of a vessel with the Safe Working Load (SWL) of the fairleads to PPA dispatch when ordering a pilot.

Refer to Pacific Pilotage Authority pilot ordering requirements

TCZ-4 VESSEL ASSIST TUG REQUIREMENTS

Tier 1 vessels, when transiting TCZ-4, must comply with the following standards for tug requirements:

- All vessel assist tugs employed on piloted Tier 1 vessels transiting TCZ-4 must be tethered tractor/ASD tugs.
- Vessel assist tugs must attend inbound vessels at least one nautical mile down river from the intended berth.
- Vessel assist tugs must also attend inbound vessels having LOA >270m at least one nautical mile downriver from the Alex Fraser Bridge when actual or forecast winds of 25 knots, or greater, are being experienced or are expected.
- Tankers in product require a minimum of two tugs that, when inbound must be tethered prior to commencement of transit of TCZ-4 and when outbound must remain tethered until clear of TCZ-4.
- LNG Carriers require a minimum of three escort tugs that, when inbound must be tethered prior to commencement of transit of TCZ-4 and when outbound must remain tethered until clear of TCZ-4.
- All tug and barge combinations in product with aviation fuel must require an additional tethered escort tug in addition to the pusher or towing tug.
- Purpose built LNG barges and LNG bunkering vessels must be assessed by the port authority, the PPA and FRP for tug requirements on a case by case basis.
- Vessel assist tugs capable of generating more than 40 tonnes of bollard pull must have an operational tension meter that the tug operator can easily read from the conning position.

Tankers and LNG carriers when transiting TCZ-4, must also comply with the standards for tug requirements outlined in Table 2: Fraser River South Arm TCZ-4 Tankers and LNG Carriers – Tug and Bollard Pull Requirements Matrix which summarizes the bollard pull requirements and the configuration of the tug package, reasonably spread between tug hulls, for such vessels.

Highly maneuverable craft many be exempted from these requirements at the discretion of the port authority in consultation with PPA and FRP.

TABLE 1: FRASER RIVER TCZ-4 TRANSIT PROCEDURES DEEP SEA VESSELS – SUMMARY MATRIX

River Section	Maximum Vessel Air Draft	Channel Width	Under Keel Clearance	Wind	Comments
Section 1 One nautical mile west of Sand Heads to Garry Point (km -1 – 8)	No restriction	Design channel width 250m. After Steveston Bend the channel transitions from 250m to 200m	LOA <250m 1.5m LOA >250m 1.9m	LOA >270m & LNG carriers: max 25kts Moulded breadth >33m: max 30kts Car Carriers, LOA >220m and/or moulded breadth >33m: max 35kts	LOA >270m or moulded breadth >33m and tankers - no meeting at Sand Heads or on Steveston Bend
Section 2 Garry Point to Buoy S-23 (km 8 – 15)	No restriction	Design channel width 200m	LOA <250m 0.9m LOA >250m 1.4m	LOA >270m & LNG carriers: max 25Kts Moulded breadth >33m: max 30kts Car Carriers, LOA >220m and/or moulded breadth >33m: max 35kts	LOA >270m or moulded breadth >33m and tankers - no meeting at Buoy S-21
Section 3 Buoy S-23 to Lafarge Cement Terminal (km 15 – 26)	No restriction	Design channel width 200m	LOA <250m 0.9m LOA >250m 1.4m (berthing UKC reduced to 0.9m for all vessels)	LOA >270m & LNG carriers: max 25kts Moulded breadth >33m: max 30kts Car Carriers, LOA >220m and/or moulded breadth >33m: max 35kts – Car carriers: max 25kts on the beam for berthing	LOA >270m or moulded breadth >33m and tankers – no meeting at Kirkland Bend (No.5 Rd Bend), Tilbury Bend and Purfleet
Section 4 La Farge Cement Terminal to New Westminster Quay (km 26- 35)	Maximum unrestricted 55m with 2m overhead clearance under Purfleet Point power lines, Alex Fraser Bridge and Gunderson's Slough power lines	Design channel width 200m and 260m on Mungo Bend	LOA <250m 0.9m LOA >250m 1.4m (berthing UKC reduced to 0.9m for all vessels)	LOA >270m & LNG carriers: max 25kts Moulded breadth >33m: max 30kts Car Carriers, LOA >220m and/or moulded breadth >33m: max 35kts Car carriers: max 25kts on the beam for berthing	LOA >270m or moulded breadth >33m and tankers- no meeting at St. Mungo Bend (City Reach) and Shoal Point Bend

TABLE 2: FRASER RIVER TCZ-4 TANKERS AND LNG CARRIERS – TUG AND BOLLARD PULL REQUIREMENTS – SUMMARY MATRIX

Tankers				
In product				
Draft (m)	Transit Direction	Tide	Current (knots)	Tugs / Bollard Pull
All conditions	Inbound/Outbound	Flood + Ebb	All conditions	2 x 60T

LNG Carriers				
In product				
Draft (m)	Transit Direction	Tide	Current (knots)	Tugs / Bollard Pull
All conditions	Inbound/Outbound	Flood + Ebb	All conditions	3 x 60T

For further information related to specific berth details and docking procedures, please refer to relevant Terminal Data Sheets.

8.18 FRASER RIVER & PITT RIVER – ALL AREAS

GENERAL

The practices and procedures described in this section are applicable to the portions of the north, south, middle and main arms of the Fraser River and portions of the Pitt River that fall under the authority's navigational jurisdiction.

For all ships operating within the area defined as the Fraser River Traffic Control Zone (TCZ-4), see section 8.14 of this document, the Fraser River Traffic Control Zone (TCZ-4) practices and procedures supersede those described in this section.

The portions of the Fraser River and Pitt River that fall under the authority's navigational jurisdiction include, the main Arm, north Arm and middle Arm, defined as the waters extending from a line drawn SW of Point Grey (49 16'N, 123 16'W) and due south across the river delta's at longitude 123 19' 22" W (approx. 1 nautical mile west of Sandheads); to a line drawn across the river in a SW direction from the mouth of Kanaka Creek (49 12' N, 122 35' W) (Chart 3489); and to a line drawn in a SSW direction across the Pitt River at Grant Narrows (Chart 3062).

TRANSIT PROCEDURES

a) Navigating in the Vicinity of the Pattullo Bridge

Any vessel navigating the Fraser River between the quick flashing green light located on the downstream end of the Annieville pile wall and the quick flashing green light located on the Sapperton Dyke shall keep to the side of the main channel that lies to the port side of the vessel.

b) North Arm Scow Mooring and Log Transit Grounds

In order to promote safe and efficient navigation in the waters of the North Arm of the Fraser River, the scow mooring grounds shall only be used for the temporary moorage of scows and barges which are in transit through the port.

In order to promote the safe and efficient navigation of the North Arm of the Fraser River, the log transit grounds shall only be used for the temporary storage of boom sections that are in transit through the port. For further information, see Section 8.21 Log Operations, of this document.

c) Bridge Transit Procedures

See section 8.20 Bridge Transit Procedures of this document.

COMMUNICATIONS

a) Radio Watch

All vessels transiting the Fraser River where required by *Marine Communications and Traffic Services Zones Regulations*, are to monitor Channel 74 & 16 VHF, as should all other vessels as well.

b) Marine Communications and Traffic Services (MCTS)

Marine Communications and Traffic Services (MCTS) will pass instructions to vessels in the waters of the Fraser River on behalf of the authority, on VHF Channel 74.

Vessels receiving instructions from MCTS relating to the movement or operation of vessels, works, or services in the waters of the Port are to assume these are measures required by the authority and relate to safety or environmental protection. Periodic notices requiring action by vessels within port waters will be broadcast by MCTS as notices to shipping, or on the continuous marine broadcast.

VESSEL TRAFFIC

a) Impeding Commercial Traffic

Pleasure craft and personal water craft shall not impede the passage of large commercial vessels within the waters of the Fraser River.

b) Fishing

Navigation on the lower Fraser River is generally unencumbered; however, during certain periods, extra caution is required. This is true during the fishing season when many nets may be set across the channels. The *Collision Regulations* apply to all marine traffic on the Fraser River and appropriate whistle signals should be used.

On the rare occurrence that visibility on the Fraser River is reduced to less than a cable during a fishery opening, all vessels should take additional precautions before transiting the river. These may include delaying the transit until visibility improves or the fishery is completed, or it may include taking an escort tug to act as additional lookout and help with manoeuvers as appropriate.

c) Vessel Tug Requirements

The owner or person in charge of a vessel engaged in towing is to ensure the tow is securely fastened and under control while in transit in the Port and is to ensure that the vessel engaged in towing has sufficient power at all times to maintain full control over the movements of the tow.

TOWING AND BARGE TRAFFIC

a) General

The owner or person in charge of a vessel towing scows, barges, booms, or floating property shall ensure the tow is securely fastened and under control while in transit in the port.

The owner or person in charge of a vessel engaged in towing is to ensure that the tow vessel is not moored or stopped at a location where part of the tow lies under a bridge.

The owner or person in charge of a vessel towing booms or floating property in the Fraser River shall ensure that a distance of 500 metres is maintained between the vessel and the stern of any preceding tow.

The owner or person in charge of a vessel shall not overtake or attempt to overtake any part of a tow of another vessel within 500 meters of a swing span.

b) North Arm and Middle Arm

The owner or person in charge of a vessel towing scows or barges shall ensure that the vessel:

- if outbound, does not pay out its deep sea gear until the last scow or barge has proceeded downstream of the inner (easterly) light
- if inbound and using deep sea gear, close couples its towing gear before the last barge or scow has proceeded upstream of the inner (easterly) light.

A boom in tow in the waters between the outer (westerly) light and the inner (easterly) light shall not exceed five boom sections in width. Any incoming tow wider than two boom sections shall have sufficient assist tugs to ensure safe passage.

A boom in tow in the waters of the Middle Arm (Morey Channel) shall not exceed twelve boom sections in length or one boom section in width.

8.19 BRIDGE TRANSIT PROCEDURES

GENERAL PRACTICES

Be cautious of navigational hazards, potential collisions, and any special circumstances, including the limitations of the vessels, that may make a departure from the following practices necessary to avoid immediate danger. Early and clear communications between the vessel and bridge operator must be established. The master and bridge operator must establish a point beyond which the vessel will not proceed if prior confirmation that the bridge will open has not been received. The master must also have a predetermined point at which action must be taken if the bridge is not open. Communication can be established on either VHF channel 74 or by phone (see specific bridge sections for contact information). Once radiotelephone contact has been established with the bridge operator, a listening watch is to be maintained on VHF channel 74 until the vessel has cleared the bridge.

VESSEL ESCORTS

a) Tankers

The port authority patrol vessels will be available to clear traffic and provide escort services through First and Second Narrows during transit windows whenever possible.

b) Cruise Ships

During high traffic times escorts through First Narrows will be provided by the coordinated effort of the Vancouver Fraser Port Authority, Vancouver Police Department, and the Canadian Coast Guard.

c) Other Vessels

During high traffic times the port authority patrol vessels will be available to provide escorts through First Narrows whenever possible.

8.20 FRASER RIVER BRIDGE TRANSIT PROCEDURES

GUIDE TO CONTENT

1. INTRODUCTION

The Vancouver Fraser Port Authority has developed these procedures in consultation with Transport Canada, the Council of Marine Carriers, CN Rail, CP Rail and the Southern Railway of British Columbia (SRY). The purpose of the procedures is to facilitate the safe navigation and efficient movement of vessels in this area of the Port, and they form an integral part of the Port Authority's procedures outlined in the Port Information Guide.

Advance passage planning is essential when transiting bridges. Due regard is to be given to all dangers of navigation, potential collision, possible allision and any special circumstances, including wind, current or reduced visibility and the limitations of the vessels involved that may make a departure from the following practices or the deployment of additional assistance necessary to avoid immediate danger.

2. APPLICATION

Fraser River Bridge Transit Procedures (FRBTR) apply to all marine traffic in the Fraser River except designated Port Authority Patrol Vessels and vessels engaged in law enforcement and security, search and rescue or other emergency response vessels.

These Procedures do not relieve the Master from compliance with the *Canada Shipping Act, 2001* or other regulations, requirements or standards in respect of vessels operating in Canadian Ports.

The Port Authority may vary these procedures in an emergency, which causes or is likely to cause loss of life, personal injury, environmental pollution, or contributes to unsafe navigation in the Port.

Reference should be made to Canadian Coast Guard issued Navigation Warnings (NAVWARNS) and Notices to Mariners (NOTMARS) that may impact river navigation and bridge transits.

The Harbour Master, as designated by the Port Authority, has overall authority in interpreting and overseeing the implementation of these procedures. In doing so, the Harbour Master consults on safety issues with a number of stakeholders, including pilots, other statutory agencies and industry experts, as required.

3. COMMUNICATIONS

In all cases, early and clear communications between the vessel, Bridge Tender and other potential marine traffic must be established. Early communication (a minimum of 40 minutes prior to intended transit) should be established and maintained until the vessel has cleared the bridge. The primary working channel for the Fraser River is VHF channel 74, but VHF channel 16 and VHF channel 06 should also be routinely monitored for traffic.

4. POWER AND MANEUVERABILITY

Tugs engaged in towing or pushing barges, whether in ballast or in product, must be of adequate power and maneuverability, relative to the barge(s) being towed, with the ability to make a minimum headway of 3 knots over the ground.

5. OVERTAKING

The Master of a vessel undertaking a tow is not to overtake or attempt to overtake any part of a tow of another vessel within 500 metres of a swing span and shall at all times comply with obligations of an overtaking vessel as prescribed by The International Regulations for Preventing Collisions at Sea.

6. SHORT COUPLING OF TANDEM TOWS

A vessel towing 2 or more scows or barges shall not pass through the draw of a swing span bridge unless the scows or barges are short-coupled in such a manner as to prevent the scows or barges from sheering.

7. LOG TOWS

A vessel towing logs in excess of 20 boom sections (400 metres) must have an assist tug. Where unusual conditions, loads, or circumstances exist, the towing company or the Master of the vessel is to advise the relevant Bridge Tender before the transit of the compensatory measures to be taken during the transit.

8. WIND RESTRICTIONS

If sustained wind speeds exceed 25 knots, an assist tug should be used when transiting a bridge with an empty barge, and if sustained wind speeds exceed 30 knots, an assist tug shall be used for all rail bridge transits. Wind readings should be obtained by instruments onboard the transiting vessel.

9. RESTRICTED VISIBILITY

During periods of restricted visibility, a minimum visibility of 300 metres is required to transit the bridges referred to in Section 12 of these procedures.

A requirement for operation in restricted visibility shall be full compliance with Transport Canada Carriage Requirements for Shipborne Navigational Systems and Equipment:
https://laws-lois.justice.gc.ca/eng/regulations/SOR-2005-134/page-5.html sections 69-72

Nothing in this section should be construed to require the Master of a vessel to execute a bridge transit in reduced visibility.

10. PRE-DETERMINED ABORT POINT

In all cases, the Master shall have a pre-determined point at which a bridge transit will be delayed or aborted if weather, current or traffic conditions dictate that it is prudent to do so or if there is no confirmation that the bridge is open.

11. FRESHET CONDITIONS

Additional caution must be exercised during freshet conditions, which can result in overhead clearances being less than advertised on applicable CHS Chart. Freshet conditions can negatively impact navigation, generating a requirement for additional assist tug(s) or delay a bridge transit. Masters should also be aware of increased wood debris and the heightened risk of shoreline damage from a vessel's wake during the freshet months of May, June and July and adjust speed accordingly.

Freshet height and current predictions may be referenced on the following Environment Canada and Fisheries and Oceans Canada websites, respectively
https://wateroffice.ec.gc.ca/report/real_time_e.html?stn=08MF005
https://www2.pac.dfo-mpo.gc.ca/index-eng.html (Avadepth)

12. ADJUSTABLE MASTS

Vessels are encouraged to install adjustable masts whenever practical and to transit in a mast-down configuration whenever possible to ensure that openings of bridge spans are minimized.

13. BOLLARD PULL

Reference to bollard pull indicates verified and certified measurement by an independent qualified party.

14. VERTICAL HEIGHTS

Vertical heights referred to in this section are measured relative to Higher High Water. A minimum safe overhead clearance of 2 metres should be maintained at all times.

15. CONTROL DEPTHS

Stated indicative control depths are below chart datum based on VFPA survey data. VFPA does not maintain or guarantee the control depths referred to in this section, which may be subject to variance.

16. BRIDGES

16.1 Pitt River Railway Bridge

Owner/ Operator	Average Trains/ Day	Average Opening/ Day	Vertical Clearance			Channel Width/ Control Depth*	
			Open	Closed	Fixed Span	POCO Side	P. Meadows Side
CP Rail	45	15	42m	2m	4.7m	30m/ 6.1m	21m/ 3.3m
*See section 15 for control depths							

Communication

VHF channel 74
Bridge Tender: 604.941.0079
24-hour CP Rail emergency: 1.800.795.7851

The Master is to establish contact with the Bridge Tender 40 minutes in advance of the requirement for an opening and additionally provide a firm ETA at the bridge not less than 20 minutes in advance. Should conditions change the ETA, the Bridge Tender is to be immediately advised.
Information to be provided:

- Type of vessel
- Direction of transit
- ETA at bridge
- Estimated time to clear the passage

The requested time for opening will be relayed by the Bridge Tender, who will seek approval from the rail Operations Control Tower. Marine traffic takes precedent over rail traffic providing proper notice has been given.

Approximately 8 minutes are required to complete a swing once the bridge starts to open.

Should a situation arise that will not allow the bridge to open as per the above protocol, the Bridge Tender will advise the Master immediately, and the Master will take all necessary actions to adjust the ETA or abort the transit if possible.
Tug and barge traffic is restricted to the Port Coquitlam side of the channel. Transits should normally be targeted for slack water, but the timing may be adjusted if the Master feels the direction and velocity of the current deem it prudent to broaden the transit window.

In order to maintain the flow of West Coast Express commuter trains, marine traffic closures take place as follows, excluding statutory holidays:
Monday to Friday 0530 – 0800 and 1615 - 1930

During these periods, the bridge will typically remain closed; however, if feasible, make a partial swing for a light marine transit move on request, immediately after the passing of a commuter train provided that:

- The light marine transit move is immediately ready to pass
- The Bridge Tender is satisfied that there will be no delay to subsequent commuter trains

- In cases of emergency where an emergency is defined as one that threatens life, property or the environment

Extreme weather conditions (extreme fog, cold or heat, high winds, snow and ice) may affect operations.

16.2 New Westminster Rail Bridge

Owner/ Operator	Average Trains/ Day	Average Opening/ Day	Vertical Clearance			Channel Width/ Control Depth*	
			Open	Closed	Log Hole	New West Side	Surrey Side
Public Works/CN	33	20	No Restriction	6.7m	6.7m	51.2m/ 9.9m	48.8m/ 8.2m
*See section 15 for control depths							

Communication

VHF channel 74
Bridge Tender: 604.589.6612

The Master is to establish contact with the Bridge Tender 40 minutes in advance of the requirement for an opening and additionally, provide a firm ETA at the bridge not less than 20 minutes in advance. Should conditions change, the bridge operator is to be immediately advised.
Information to be provided:

- Type of vessel
- Direction of transit
- ETA at bridge
- Estimated time to clear passage

Approximately 7 minutes is required to complete a swing open or closed

Should a situation arise that will not allow the bridge to open as per the above protocol, the Bridge Tender will advise the Master immediately, and the Master will take all necessary actions to adjust the ETA or abort the transit if possible.

Peak rail utilization is 11:00 - 13:00 and 21:00 - 23:00 daily. A train can take up to 30 minutes to clear the bridge.

Under most conditions, it is customary for upriver traffic to transit the draw on the New Westminster side of the bridge and for downriver traffic to transit the draw on the Surrey side of the bridge. Where, for safety or practical reasons, vessels intend to transit the bridge counter to this procedure, the vessel is to make security broadcasts on VHF channel 74, advising other marine users of their intentions at least 1 hour in advance, repeated at least 30 minutes and 15 minutes in advance.

Tug Assistance – Barge Capacity

Barge Carrying Capacity	Loaded	Unloaded	Tug Assist Requirement
>4,500 MT	x		1 or Stem Current
>5,500 MT	x	x	1 or Stem Current
>6,500 MT	x	x	2 in all Cases

Tug Assistance - Moulded Beam or Width of the Load

Tug Description	Tug Assist Requirement	
	In Excess of 18.5m	In Excess of 22m
Single-Screw	1	2
Twin-Screw and Minimum 15MT Bollard Pull	0	1

Length of Tow

A vessel towing loaded barges in tandem is to have the barges close-coupled and, where the length of the tow measured from the stern of the tug to the stern of the second barge is in excess of 130 metres, is to use an assist tug when transiting on a following current.

The bridge is equipped with a laser air draft gauge with readings on request from the Bridge Tender on VHF channel 74.

The New Westminster Railway Bridge has an opening known locally as the "log hole" on the New Westminster side of the bridge, commonly used by commercial and recreational vessels that do not require a bridge opening. The air draft is slightly more in the log hole than the main span. Table above does not reflect this difference.

While CN Rail has not issued a specific directive, strong winds may occasionally delay a swing of the bridge should the Bridge Tender deem it prudent to do so.

16.3 Queensborough Rail Bridge

Owner/Operator	Average Trains/Day	Average Openings/Day	Vertical Clearance		Channel Width/ Control Depth*	
			Open	Closed	New West	Queensborough
Southern Rail of BC (SRY)	8-10	15	No Restriction	2.1m	29m/ 4.2m	30m/ 4.7m
*See section 15 for control depths						

Communication

VHF channel 74
Bridge Tender: 604.527.6344

The Master is to establish contact with the Bridge Tender 40 minutes in advance of the requirement for an opening and additionally, provide a firm ETA at the bridge not less than 20 minutes in advance. Should conditions change, the bridge operator is to be immediately advised.
Information to be provided:

- Type of vessel
- Direction of transit
- ETA at bridge
- Estimated time to clear passage

The bridge is normally left in the open position but attended by a Bridge Tender.

The bridge is unattended at the following times:
Monday to Friday, 0800 - 1600
Saturday 0800 - Sunday 0800

Bridge swing time is between 3 and 6 minutes to open or close

Should a situation arise that will not allow the bridge to open as per the above protocol, the Bridge Tender will advise the Master immediately and the Master will take all necessary actions to adjust the ETA or abort the transit if possible.

Under most conditions, both the upriver and downriver vessels will normally transit the draw on the Queensborough side of the bridge.

If maintenance work is underway requiring a bridge closure, a Bridge Tender will be present regardless of the schedule and issue a safety broadcast and VHF channel 74 and VHF channel 06 at least 1 hour in advance. The message will be repeated 2 times.

Tug Assistance – Barge Capacity

Barge Carrying Capacity	Loaded	Unloaded	Tug Assist Requirement
>4,500 MT	x		1 or Stem Current
>5,500 MT	x	x	1 or Stem Current
>6,500 MT	x	x	2 in all Cases

Tug Assistance - Moulded Beam or Width of the Load

Tug Description	Tug Assist Requirement	
	In Excess of 18.5m	In Excess of 22m
Single-Screw	1	2
Twin-Screw and Minimum 15MT Bollard Pull	0	1

Loaded barges maximum current

In all cases, loaded barges shall not transit the bridge when the velocity of the current exceeds 4 knots without employing an assist tug.

Length of tow

A vessel towing loaded barges in tandem is to have the barges close-coupled and, where the length of the tow measured from the stern of the tug to the stern of the second barge is in excess of 130 metres, is to use an assist tug when transiting on a following current. If, because of conflicting hull design or other determining factors, the barges cannot be properly close-coupled, they must be towed through one at a time.

16.4 CNR Bridge

Owner/Operator	Average Trains/Day	Average Openings/Day	Vertical Clearance		Channel Width/ Control Depth*	
			Open	Closed	Burnaby	Richmond
CN Rail	4	4	21m	6.6m	35m/ 5.7m	35m/ 6.8m
*See section 15 for control depths						

Communication

VHF channel 74
Bridge Tender: 604.589.6612
24-hour emergency: 1.800.795.7851

The bridge is operated remotely from the New Westminster Rail Bridge and is typically left open to allow the free flow of marine traffic. The Master is to establish contact with the Bridge Tender 40 minutes in advance of the requirement for an opening and additionally, provide a firm ETA at the bridge not less than 20 minutes in advance. Should conditions change, the Bridge Tender is to be immediately advised. Information to be provided:

- Type of vessel
- Direction of transit
- ETA at bridge
- Estimated time to clear passage

Should a situation arise that will not allow the bridge to open as per the above protocol, the Bridge Tender will advise the Master immediately and the Master will take all necessary actions to adjust the ETA or abort the transit if possible.

Tug Assistance – Barge Capacity

Barge Carrying Capacity	Loaded	Unloaded	Tug Assist Requirement
>4,500 MT	x		1 or Stem Current
>5,500 MT	x	x	1 or Stem Current
>6,500 MT	x	x	2 in all Cases

Tug Assistance - Moulded Beam or Width of the Load

Tug Description	Tug Assist Requirement	
	In Excess of 18.5m	In Excess of 22m
Single-Screw	1	2
Twin-Screw and Minimum 15MT Bollard Pull	0	1

Loaded barges should only be towed in tandem if the Master feels the current direction and velocity deem it prudent.

Length of Tow

A vessel towing loaded barges in tandem is to have the barges close-coupled and, where the length of the tow measured from the stern of the tug to the stern of the second barge is in excess of 130 metres, is to use an assist tug when transiting on a following current. If, because of conflicting hull design or other determining factors, the barges cannot be properly close-coupled, they must be towed through one at a time.

16.5 Annacis Island Swing Bridge

Owner/Operator	Average Trains/Day	Average Openings/Day	Vertical Clearance			Channel Width/ Control Depth*
			Open	Closed	Fixed Span	
BC MOTI	15-20	20	No Restriction	2.3m	2.3m	30m/ 3.7m
*See section 15 for control depths						

Communication

VHF channel 74
Bridge Tender: 604.521.0964

The Master is to establish contact with the Bridge Tender 40 minutes in advance of the requirement for an opening and additionally, provide a firm ETA at the bridge not less than 20 minutes in advance. Should conditions change, the Bridge Tender is to be immediately advised.
Information to be provided:

- Type of vessel
- Direction of transit
- ETA at bridge
- Estimated time to clear passage

The Bridge Tender needs approximately 15 minutes to open the span from receipt of the request; this includes contacting Southern Rail, preparing the bridge, and opening the span.

It takes approximately 6 minutes are required to complete a swing once the bridge starts to open or close.

Should a situation arise that will not allow the bridge to open as per the above protocol, the Bridge Tender will advise the Master immediately and the Master will take all necessary actions to adjust the ETA or abort the transit if possible.

Masters are to transit the bridge through the North (Queensborough side) opening.

A mechanical failure of the bridge is immediately apparent during the opening or closing sequence, but there are no alarms. In the event of a failure, the vessel, Mainroad Contracting, and MCTS, if necessary, will be contacted.

Heavy winds exceeding 40 kilometres per hour may affect operations. 30 minutes is required between openings to allow for cooling of the equipment.

16.6 Westham Island / Canoe Pass Bridge

Owner/Operator	Average Trains/Day	Average Openings/Day	Vertical Clearance		Channel Width/ Control Depth*	
			Open	Closed	Ladner	Westham Is.
Mainroad Contracting	N/A	6-10 primarily summer months	23m	1.6m	12m/ 5.3m	13m/ 5.2m
*See section 15 for control depths						

Communication

VHF channel 74
Bridge Tender: 604.946.0139

The Master is to establish contact with the Bridge Tender 40 minutes in advance of the requirement for an opening and additionally, provide a firm ETA at the bridge not less than 20 minutes in advance. Should conditions change, the bridge Tender is to be immediately advised.

Information to be provided:

- Type of vessel
- Direction of transit
- ETA at bridge
- Estimated time to clear passage

Between December 1 and March 31, the bridge is untended between 2200 and 0600. If the Master cannot contact the Bridge Tender during this time, the Master can contact the Annacis Swing Bridge Tender to assist with an opening procedure at 604.521.0964.

Approximately 3 minutes are required to complete a swing once the bridge starts to open or close.

Should a situation arise that will not allow the bridge to open as per the above protocol, the Bridge Tender will advise the Master immediately and the Master will take all necessary actions to adjust the ETA or abort the transit if possible.

8.21 TOWING

GENERAL

The practices and procedures described in this section are applicable to all areas under navigational jurisdiction of the port authority.

MOVEMENT AND CONTROL OF FLOATING PROPERTY AND BOOMS

The owner or person in charge of a vessel that has in tow any boom, cargo or other vessel shall ensure that the towing vessel has sufficient power at all times to maintain full control over the movements of the tow.

No person shall move a boom or floating property in the port unless the boom or floating property is in tow of a vessel.

No person shall leave unmoored floating property unattended in the port.

No person shall obstruct, with a boom or floating property, any channel in the port.

Where a boom or floating property is located in an unauthorized area of the port, the port authority may move the boom or floating property to any other location in the port and the owner, or representative, shall pay the port authority the cost upon invoice.

All owners or persons in charge of any boom or floating property entering the port must provide the port authority with all such information regarding the boom or floating property prior to arrival or as soon thereafter as is practical.

LOG BOOMS

Unless authorized by the port authority pursuant to a water lot or foreshore lease, no vessel shall deposit logs in the waters or on the foreshore.

In the event of a spill of logs or an escape of boom sections, the port authority may, by order in writing, suspend log salvage activities by any vessel in the port for a period of up to 10 days during which period the owner or his authorized agent shall recover the spilled logs or escaped boom sections. During such period and within such areas of the port as are specified in the order no person in charge of any vessel, other than the owner of the logs or booms or his authorized agent, shall attempt to recover the logs or booms referred to in the order.

BRIDGE TRANSITS WITH A TOW

The owner or person in charge of a vessel that has in tow any boom, cargo or other vessel shall not, within 500 metres of a swing or lift span bridge, overtake or attempt to overtake any part of the tow of any other vessel.

The owner or person in charge of a vessel with two or more scows or barges in tow shall not pass through the draw of a swing span bridge unless the scows or barges are close coupled in such a manner as to prevent the scows or barges from sheering.

Except where otherwise specified, the owner or person in charge of a vessel shall not tow, within the limits of the port, any boom exceeding 36 boom sections in length or one boom section in width.

TUGS AND TOWS – MINIMUM TUG BOLLARD GUIDELINES:

The overall adequacy of the towing arrangement in the context of voyage conditions is a key planning aspect for an intended voyage. Inadequate tug power may result in unsafe operating practices and increase the risk of navigational incidents. In order to enhance safety in tug and barge operations VFPA in partnership with National Research Council, Coastal and Engineering Research Centre (NRC-OCRE) has developed minimum tug bollard pull guidelines. The main focus of the NRC study was to investigate into existing methodologies and their applicability to barge towing operations in the Port of Vancouver navigational jurisdiction and develop a simplified formula to estimate tug powering requirements. Tug operators in the port provided the vessel data and input for this study.

Any tug transiting the region with a tow must meet the minimum bollard pull requirement "Figure 1" to perform station-keeping against the worst-case current and wind forecast along their route for their given transit time.

$$BP = 1.122 \times 10^{-4} \left(574.5(B_{hull} \times T_{hull}) C_{hull} V_{water}^2 + 0.6125(B_{sup} \times T_{sup}) C_{sup} V_{wind}^2\right)$$

Figure 1

The Bollard Pull Estimator can be found here.

These guidelines apply to all tugs and tows engaged in barge towing operations. The procedures do not relieve the Master from compliance with the Canada Shipping Act 2001 or other regulations, requirements, or standards regarding vessels operating in Canadian ports.

OTHER

The owner or person in charge of a vessel towing scows, barges, booms, or floating property shall ensure the tow is securely fastened and under control while in transit in the port.

The owner or person in charge of a vessel engaged in towing is to ensure that the tow vessel is not moored or stopped at a location where part of the tow lies under a bridge.

The owner or person in charge of a vessel towing booms or floating property in the port shall ensure that a distance of 500 metres is maintained between the vessel and the stern of any preceding tow.

The owner or person in charge of a vessel shall not overtake or attempt to overtake any part of a tow of another vessel within 500 meters of a swing span.

8.22 DISPLAY OF SIGNALS AND LIGHTS

Every vessel equipped with an Automatic Identification System (AIS) shall keep their AIS in operation and transmitting data at all times within the port except where international or national agreements, rules or standards provide for the AIS to be switched off; in that case, the master or representative shall report this action and the reason for doing so to the Operations Centre at +1 604 665 9086 or by e-mail at harbour_master@portvancouver.com

Vessels in the port are to display lights and shapes in accordance with the *Collision Regulations*

In addition to those vessels required by Transport Canada to be equipped with an AIS, Vessels within the port that are certified to carry more than twelve (12) passengers shall be equipped with, at a minimum, a Class B AIS Transponder.

Seabus vessels, operated by Translink between Vancouver's central waterfront terminal and North Vancouver's Lonsdale Quay terminal, along the charted ferry route, must be fitted and display, where it can best be seen, a white, all round strobe light, at all times.

8.23 RECREATIONAL VESSELS

SAFE BOATING PRACTICES

The Port of Vancouver is a busy harbour. Recreational boaters must exercise caution in high activity areas, including approaches to Coal Harbour, First Narrows (Lions Gate Bridge), Second Narrows (Iron Workers Memorial Bridge), the Fraser River, and aircraft operations zones. All mariners must maintain a minimum of 50 metres from any commercial or deep sea vessel at berth.

Boaters must at all times proceed at a safe speed so that they can take proper and effective action to avoid collision and be stopped within a distance appropriate to the prevailing circumstances and conditions. With respect to speed all recreational boaters must be aware that the port authority has designated specific areas of the port as either Traffic Control Zones or speed control zones where speed restrictions apply to recreational boaters. These areas include First Narrows TCZ, Coal Harbour, areas of Indian Arm, and Port Moody. For more information on these areas and the speed restrictions, refer to section 8.2 Speed.

All recreational activities that involve the towing or connection between a vessel and other equipment for the purpose of recreation, such as but not limited to, waterskiing, wakeboarding, parasailing, flyboarding and kiteboarding must not impede any other vessel traffic within the port. All such activities must be carried out in a safe manner, in areas where commercial vessel traffic will not be impeded, and with respect of other users of the port.

For more information on safe boating and use of pleasure craft, visit our website and refer to our safe boating guides.

PLEASURE CRAFT

Pleasure craft, including those under oars should keep well clear of all commercial vessels underway and not impede their passage. A vessel at anchor or berthed at a terminal may move without warning and a safe distance should be maintained. Particular attention must be paid to navigation in the high activity areas.

Tide and wind conditions may cause turbulent seas in both First and Second narrows. Caution should be exercised. Only adequately powered craft may pass through either narrows. No pleasure craft under sail or oars may transit either narrows. One sail sheeted home is allowed for stability when under power in First or Second Narrows. Otherwise sails should be lowered.

For safety reasons, vessels engaged in fishing, personal watercraft such as jet skis, row boats, canoes and vessels, sailing or proceeding without mechanical power, are not permitted within the boundaries of First Narrows TCZ (TCZ-1), Second Narrows TCZ (TCZ-2) and all areas of Vancouver Harbour in between. Fishing, sailing and other non-powered recreational activity is permitted only in designated areas outside of the boundaries of TCZ-1, TCZ-2 and Vancouver Harbour, for example west of the TCZ-1 western boundary or east of the TCZ-2 eastern boundary.

No person shall operate any pleasure craft under the power of oars or paddles:

- In a traffic separation zone,
- Within 50 metres of a commercial or deep sea vessel at berth,
- Within 300 metres of a vessel at anchor.

PERSONAL WATERCRAFT

Personal watercraft may operate during daytime hours only. Daytime includes the hours between dawn and dusk as defined by the morning and evening civil twilight (after sunset or before sunrise), respectively.

Any person operating a Jet-ski or similar vehicle shall have attached to his person, clothing, or personal flotation device, a lanyard-type engine cut-off switch.

No person shall operate a jet-ski, flyboard, kiteboard, parasail or similar recreational apparatus:

- Within the boundaries of First Narrows TCZ (TCZ-1), Second Narrows TCZ (TCZ-2) and all areas of Vancouver Harbour in between,
- In a traffic separation zone,
- Within 300 metres of a vessel at anchor,
- Within 50 metres of a commercial or deep sea vessel at berth,
- At a speed of more than five knots within 300 metres of a swimming area,
- At a speed of more than five knots within 300 metres of a launch ramp.

Notwithstanding the above, use of personal watercraft in exhibitions, parades and other similar marine events may be permitted if the organizers of such an event have the written permission of the port authority for the use of personal watercraft. Such permission may only be granted after the port authority receives an application for a marine event. For more information on marine events, see Section 5.4.

Any person operating a personal watercraft must operate the vessel in a safe and prudent manner, having regard for other traffic, speed and wake restrictions, and all other circumstances so as not to endanger the life, injury or property of any person.

FUELING

Refueling of powered vessels shall only be done at recognized fueling stations with adherence to all posted safety procedures.

ANCHORING

The port authority has management and control of the port, which may include the establishment of places of moorage within the port. No vessel shall, except in an emergency, moor or anchor outside of designated anchorage areas without approval of the authority, and then only as directed. For information on the designated anchorage areas for recreational boats, refer to our website.

Should a recreational vessel need to anchor outside of a designated anchorage area for a short duration due to an emergency, the operator must contact the Operations Centre at +1 604 665 9086 and provide the mitigating circumstances, as well as the location and the expected duration of the anchorage, to ensure the safety of the vessel and other port users. The port authority may not agree to the proposed anchorage and may direct the vessel to another location.

There are no permanent designated anchorages within the Fraser River. Anchoring is only at the discretion and authorization of the port authority. Anchoring within Steveston Harbour is strictly prohibited.

Vessels moored or anchored at authorized locations are not permitted to raft vessels together. Vessel masters are responsible for ensuring their vessels are anchored in sufficient water to ensure safety at all stages of the tide and in all weather conditions.

Anchored vessels must display the appropriate day and night signals.

DERELICT, ABANDONED, ILLEGALLY MOORED OR ANCHORED VESSELS

Where the owner or person in charge of a vessel in the port is not available or refuses or neglects to obey any order to move the vessel, the port authority may, at the risk and expense of the owner of the vessel:

- Take possession of the vessel
- Use any means and force reasonably necessary to move the vessel
- Berth, anchor, moor the vessel at any place satisfactory to the port authority
- Remove the vessel out of the water and store it at any place satisfactory to the port authority.
- Dispose of the vessel by any method satisfactory to the port authority.

8.24 FISHING VESSELS

GENERAL

Commercial vessel traffic and fishers must be aware of the dangers posed by each other's activities during fishery openings on the Fraser River, as unsafe and dangerous situations can occur when commercial traffic attempts to maneuver around nets.

Fishing or the use of fishing related equipment (including crab-by-trap) is prohibited within the boundaries of First Narrows TCZ (TCZ-1), Second Narrows TCZ (TCZ-2) and all areas of Vancouver Harbour in between.

In all areas of the port, vessels engaged in fishing should be aware of the *Collision Regulations* established under the Canada Shipping Act, 2001. Specifically Rule 9, Narrows Channels which states "a vessel engaged in fishing shall not impede the passage of any other vessel navigating within a narrows channel or fairway".

COMMUNICATIONS

Fishers must monitor VHF channel 74. During Area 29 (Fraser River) gillnet openings, all commercial traffic movements are broadcast on this channel, providing warning to fishers of ship movements along the Fraser River.

COMMERCIAL NAVIGATION CONSIDERATIONS

Vessels are to stay in the proper upriver or downriver designated channel. Operators of all vessels are to take early and substantial action to keep well clear of all other vessels and gear.

Vessels should not to alter course, as generally fishers will judge by the speed of the vessels and through broadcasts when to lift the net. Altering course may cause additional hazards.

Fully extended gillnets are up to 200 fathoms (375 metres) long and supported on the surface by small floats that may not be readily visible. During the day a float is at the end of the net and at night the end of the net is marked by a white light. When approaching, vessels are to reduce speed until the floats are observed, or the operator signals by hand or with a spotlight at night, indicating the direction in which the net is set.

The correct navigation lights or shapes are to be displayed at all times.

FISHING VESSEL CONSIDERATIONS

Any person using a net to fish in the port shall, upon hearing four long whistle blasts from an approaching ship, haul in their net to allow passage of the approaching vessel.

When setting near swing or lift bridges, operators are to monitor VHF channel 74 for valuable information on traffic intending to transit the bridge and be watchful for a bridge opening as this indicates the approach of a larger vessel. Do not make a set that interferes with the vessel's transit of the bridge.

Fishing vessels should work with a partner vessel that can render assistance if needed.

Fishers on a drift should set their nets in the same direction, whenever possible, to permit safe passage of other traffic.

In order to avoid impacting another vessel, and to reduce the possibility of serious injury, loss of life, or damage to the vessel, vessels unable to manoeuvre quickly are to provide whistle signals in accordance with the *Collision Regulations* and remain on course.

If collision with another vessel is imminent, fishers should either run the net out, so the net sustains the damage, or "dog" the drum and attempt to tow the net out of danger, thus reducing the possibility of loss of life or damage to the vessel.

At night, when approached by other vessels, fishers are to use a searchlight to show the direction of the net in the water, ensuring the searchlight does not blind the operator of the approaching vessel. Towboats are also to use searchlights, whenever possible, to show their preferred direction of travel in order to help fishers decide when and how far to move

8.25 LOG OPERATIONS

GENERAL

Unless authorized by the port authority pursuant to a water lot or foreshore lease, no vessel shall deposit logs in the waters or on the foreshore.

NORTH ARM LOG TRANSIT AND SCOW MOORING GROUNDS

The port authority may determine the applicable period of temporary mooring for booms, scows and barges, from time to time.

No vessel shall, for the purposes of salvaging logs, enter the log transit grounds, the Point Grey log storage grounds or the scow mooring grounds.

The port authority may move any vessel located in the log transit grounds or the scow mooring grounds for more than 72 hours to any other place in the port at the risk and expense of the owner or person in charge of the vessel.

All owners or persons in charge of any boom or floating property entering the North Arm of the Fraser River must provide the authority with all such information regarding the boom or floating property prior to arrival or as soon thereafter as is practical.

No boom moored in the log transit grounds shall exceed:

- When fronting mooring dolphins 1 to 71, inclusive, in the North Arm Jetty log transit grounds, three boom sections in width
- When fronting mooring dolphins 72 to 82, inclusive, in the North Arm Jetty log transit grounds, four boom sections in width
- When fronting mooring dolphins 83 to 85, inclusive, in the North Arm Jetty log transit grounds, three boom sections in width

- When fronting mooring dolphins 86 to 96, inclusive, in the North Arm Jetty log transit grounds, two boom sections in width
- When fronting mooring dolphins 1 to 9, inclusive, in the Sea Island (Sheeting) log transit grounds, two boom sections in width
- Boom sections moored at dolphins 1 thru 96, inclusive, in the North Arm Jetty log transit grounds longer than 72 hours will be charged a fee as detailed in the fee document for each 24 hour period.

In order to promote the safe and efficient navigation of the North Arm of the Fraser River, all vessels using the log transit grounds must adhere to the following procedures:

- All available dolphin wires must be utilized when securing boom sections
- Tween ties (belly ties) must be made every four to six boom sections
- In the event a boom does not fit between dolphins, it must be moved into a position which will enable tow ties and prevent the boom swinging onto the beach area
- When unusual circumstances make it necessary to temporarily moor a boom that will exceed the limit of width for the area concerned, the vessel in charge shall stand by its tow while so moored and immediately notify the Operations Centre.

CMH Consulting is responsible for management and billing for the Fraser River North Arm Jetty on behalf of the authority. Daily Log Boom Delivery reports with dolphin numbers, if applicable, must be e-filed with both the authority and CMH. Any amounts invoiced by the authority continue to be payable to the port authority. Contact information is noted below.

Vancouver Fraser Port Authority	CMH Consulting Inc.
100 the Pointe, 999 Canada Place	3651 Shuswap Avenue
Vancouver, BC, V6C 3T4	Richmond, BC, V7E 2A9
(P) 604-665-9000	(P) 604-802-2719
stats@portvancouver.com	chris@cmhconsulting.ca

SUSPENSION OF LOG SALVAGE OPERATIONS

In the event of a spill of logs or an escape of booms, the port authority may, by order in writing suspend log salvage activities by any ship in any area of the port for a period of up to 10 days during which time the owner or his authorized agent shall recover the spilled logs or escaped booms.

During such period and within such areas as determined by the port authority, no person in charge of any vessel, other than the owner of the logs or booms or his authorized agent, shall attempt to recover the spilled logs or escaped booms.

8.26 TUGS

No vessel shall attempt to pass between a tug and its tow, nor close astern of the tow since many have a trailing floating line.

8.27 AIRCRAFT

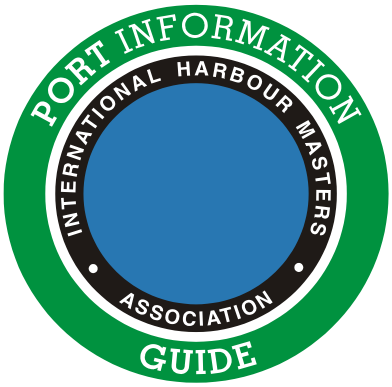
Aircraft on the water must comply with the *Collision Regulations*. An aircraft traffic control tower is in operation at Granville Square to provide service to aircraft using Burrard Inlet and the Fraser River. The aircraft operations zones marked on the chart are areas of high activity and operators of recreational vessels or pleasure craft are required to keep clear.

8.28 MILITARY VESSELS

Where possible, no vessel, including any pleasure craft or personal watercraft, shall come within 100 metres of any military vessel, whether Canadian or foreign, while in the port.

All military vessels wishing to visit the Port of Vancouver must make a request directly to MARPAC JTF-P. Upon approval by the Royal Canadian Navy, the visit info must be submitted to the port authority through the pacific gateway portal. For further information, contact the operations centre at +1 604 665 9086

9 Port Safety



9.1 GENERAL

The port authority has a dual role in emergencies: it is responsible for the safety and welfare of officers and employees of the port authority and it must also ensure that the port continues to operate during emergency situations.

In order to achieve this objective, port authority departments and external organizations must work together. Areas of authority or responsibility should be flexible enough to adjust to any situation. At times the magnitude of an emergency may mean that many port authority departments, outside agencies and organizations are engaged in a coordinated effort.

Federal, provincial and municipal government agencies, and private agencies and organizations that may be engaged in the coordinated effort of response to port incidents include, but are not limited to: Department of Fisheries and Oceans, Canadian Coast Guard, Transport Canada, Environment Canada, Public Safety Canada, Royal Canadian Mounted Police, Vancouver Police Department, Vancouver Fire and Rescue Services and the Western Canada Marine Response Corporation.

The port authority follows the BC emergency response management system which uses the Incident Command System (ICS) adopted by other emergency response agencies within BC and around North America. This enables the port authority to have a collaborative, effective and unified response to any emergency within the port.

9.2 EMERGENCY CONTACTS

Persons involved in, or witness to, any activities within the port which result in an incident involving material loss or damage or an explosion, fire, accident, grounding, stranding or incident of pollution shall as soon as possible report the incident to the Operations Center at +1 604 665 9086 or by email at harbour_master@portvancouver.com

Marine distress emergencies shall be indicated on Marine VHF 16, Cellular *16 and/or 911

EMERGENCY NUMBERS

- Fire Emergency 911
- Fire Non-emergency 311
- HAZMAT (Fire Department) 911
- Police Emergency 911
- VPD Non-emergency +1 604-717-3321
- Ambulance Emergency 911

HARBOUR MASTER AND OPERATIONS CENTRE

Telephone: +1 604 665 9086harbour_master@portvancouver.com

MARINE COMMUNICATIONS & TRAFFIC SERVICES

Telephone: +1 250 363 6333. VHF 12 / 11 / 74 / 16

WESTERN CANADA MARINE RESPONSE CORPORATION

Telephone: +1 604 294 6001

24 Hour Emergency Telephone: +1 855 294 9116

TUG SERVICES

- SMIT Harbour Towage Telephone: +1 604 253 8881
- Seaspan Marine Telephone: +1 604 988 3111

All other emergencies in the port will be indicated to emergency responders by calling 911.

Subsequent communications between the scene and the incident commander may be assigned to separate approved specific emergency response frequency(s) or telephone numbers. Fire departments will be notified through telephone via 911. Municipal boundaries will determine the initial response.

9.3 EMERGENCY RESPONSE EQUIPMENT

Every person in the port shall follow the fire protection and prevention measures necessary for the safety of persons and property in the port.

Multiple response agencies have equipment available to respond to emergencies. The port authority has the ability to coordinate and escalate response to emergencies on port waters or lands.

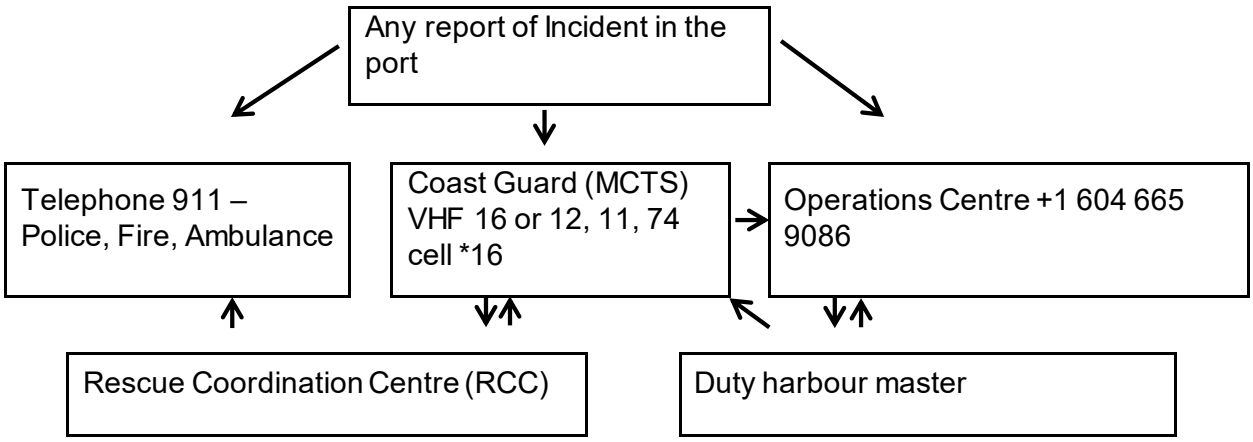
9.4 EMERGENCY COORDINATION CENTRE

The Operations Center is a 24/7/365 hub to manage activities in the port related to:

- Marine safety and environmental protection
- Port security and incident reporting
- Supply chain fluidity and reliability
- Emergency response coordination
- Water watch – reporting unusual activity

9.5 EMERGENCY SCENARIOS

PROCEDURE IN CASE OF EMERGENCY / ALARM



SPILLS

For marine pollutant or spills call Vancouver Traffic VHF 12 / 11 / 74 / 16

In the event of a spill during transfer operations, the receiver and supplier must both immediately notify the Canadian Coast Guard (telephone: +1 800 889 8892 or +1 250 363 6333) and the authority (telephone: +1 604 665 9086). The *Canada Shipping Act* requires both the oil supplier and oil receiver to immediately implement their oil pollution emergency plan and respond to the spill. Western Canada Marine Response Corporation (WCMRC) is a certified response organization with resources in Vancouver and the Lower Mainland to mitigate the impact when an oil spill occurs.

ACCIDENTAL DISCHARGES

All accidental over side discharges should be reported immediately to the Operations Centre. If the discharges contain oil or other deleterious substances, the vessel must immediately notify MCTS and activate its pollution response plan.

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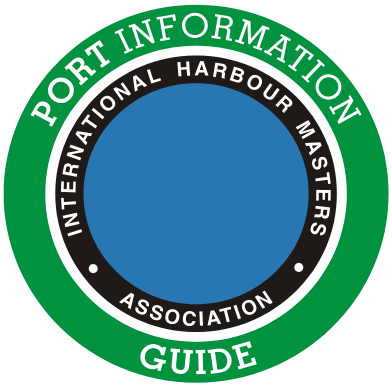
10 Port Security



10.1 GENERAL

The International Maritime Organization (IMO) adopted the *International Ship and Port Facility Security Code* (ISPS Code) in December 2002, which meant that all IMO contracting governments, including Canada, were required to have adopted this code and have necessary regulations in place by July 1, 2004. This was done successfully in Canada through the *Marine Transportation Security Regulations*, which brought into effect both the mandatory *ISPS Code* Part A requirements as well as a majority of the voluntary Part B requirements.

The "Vancouver Fraser Port Authority *Master Security Plan*" outlines the security polices for compliance within the Port of Vancouver. Each facility has a terminal specific approved security plan outlining their requirements for compliance with regulation.

Nationally, threat levels are assigned by Transport Canada Marine Security (TCMS).

MARSEC

MARSEC stands for marine security. MARSEC levels are designed to easily communicate pre-planned responses to increased threat levels.

MARSEC LEVEL 1

Appropriate security measures under normal operating conditions.

MARSEC LEVEL 2

Increased security measures maintained for a heightened security threat or incident for a limited period of time.

MARSEC LEVEL 3

Additional security measures when a security threat or security incident is probable or imminent.

10.2 PRESENT ISPS SECURITY LEVEL INFORMATION

The purpose of a declaration of security (DoS) is to ensure agreement is reached between the vessel and the port facility, or with other vessels with which it interfaces, in relation to security measures each must adopt according to the provisions of their security plans.

The marine facility security officer is responsible for ensuring a declaration of security is completed when a vessel is in port and interfaces with their facility.

A declaration of security must be completed before an interface starts between a marine facility and a vessel if:

- The marine facility and vessel are operating at different security levels
- The marine facility or the vessel do not have a security plan approved by a contracting government

- The interface involves a cruise ship or involves a vessel carrying, loading or discharging dangerous cargoes which pose a higher than normal risk to persons, property or the environment
- The ship security officer or the marine facility security officer deems it necessary for specific security reasons

A new or revised declaration of security is required when:

- There is a change to the security level, for the vessel or the marine facility, while the vessel is in the port.
- There has been a definite security threat or a security incident involving the vessel or involving the marine facility.
- Transport Canada declares it must be so

The declaration of security must be signed and dated by the marine facility security officer and the ship security officer or the master, and must include the duration, relevant security level and the contact details once completed.

The Marine Facility Security Officer must implement a continuing Declaration of Security for a vessel or offshore facility with which the marine facility frequently interfaces for the period of:

90 days for MARSEC Level 1; and 30 days for MARSEC Level 2. ISPS part A s. 5.6. (contracting government)

If you have any questions regarding this requirement please contact the Operations Centre at +1 604 665 9086.

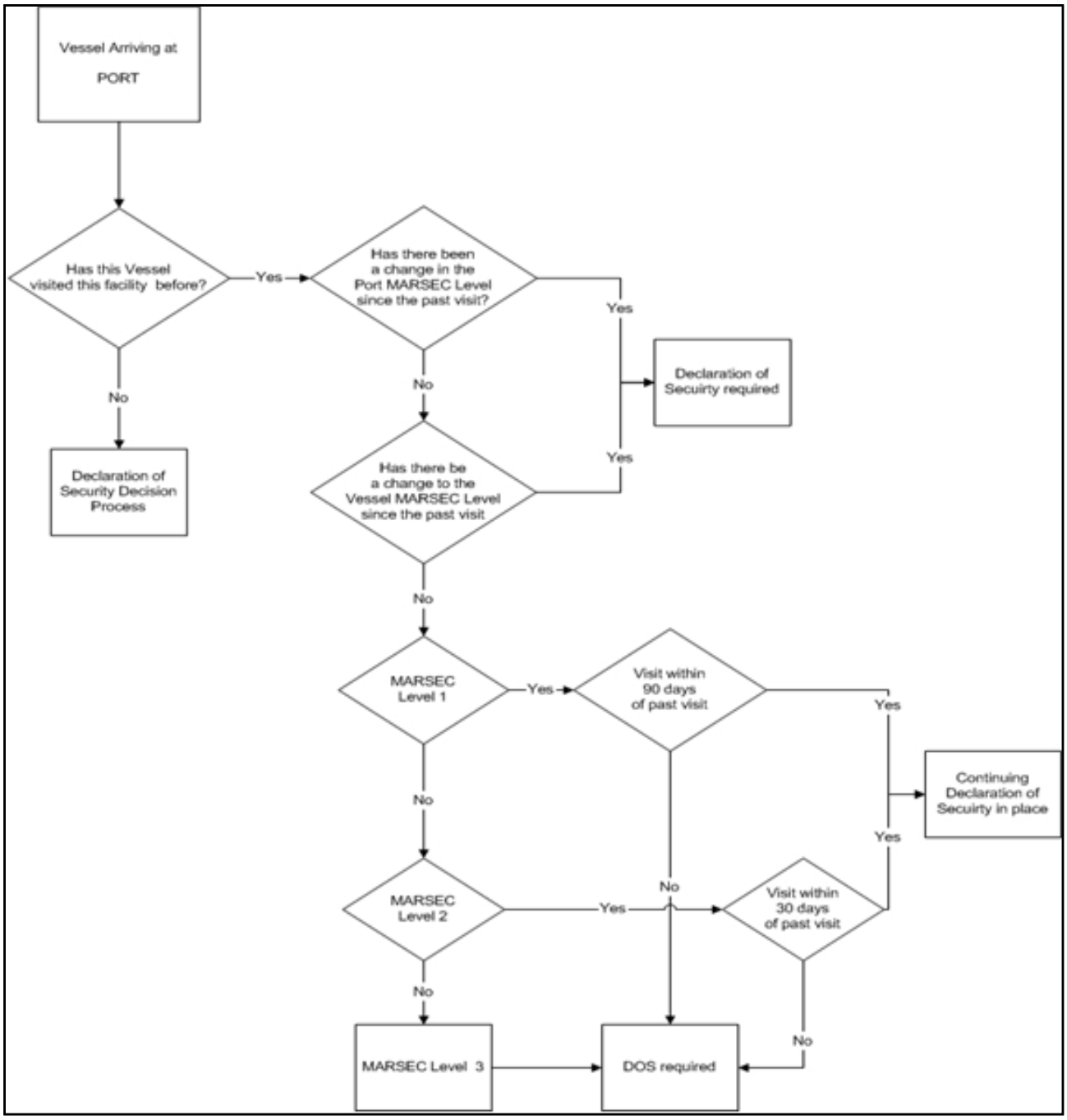


Image – Declaration of Security (DOS) flow chart

10.3 REPORTING TO PORT FACILITES

Vessels entering the port must declare their MARSEC level to MCTS 96 hours prior to arrival.

Security incidents must be immediately reported to the port security officer and the terminal operator.

PORT SECURITY OFFICER

Anita Gill, Manager of Security, is the port security officer. The port security officer can be contacted through the Operations Centre at +1 604 665 9086.

10.4 UNMANNED AIR VEHICLES

Recreational or hobby use of UAV or model aircraft is not permitted over lands or waters within the port without prior permission from the port authority.

Unmanned air vehicle (UAV) operations on or over the jurisdiction of the port authority must be coordinated through Transport Canada Aviation. Prior to any UAV operation within the port, a copy of the special flight operations certificate (SFOC) must be provided to the Operation Centre along with the details of the planned flight (time, date, area and altitude). A marine event permit may be required for the UAV operation if it is occurring over the water.

Any suspicious or unexpected use of UAV will be reported to police and/or Transport Canada.

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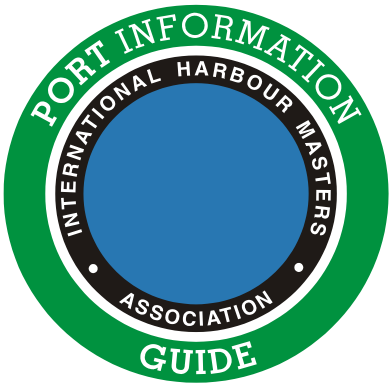
11 Nautical Services



11.1 GENERAL

Where the port authority requires that a vessel or operation obtain the services of tugs, pilots, agencies, or other services, those services will be procured at the expense and risk of the vessel or operation.

11.2 VTS

VESSEL TRAFFIC SERVICES AND TRAFFIC CONTROL

Vessels approaching the port from sea will enter into a vessel traffic services (VTS) zone at the entrance to Juan de Fuca Strait. A cooperative vessel traffic services agreement (CVTS) exists between Canada and the US. As part of the agreement, Tofino Traffic provides VTS for the offshore approaches to the Juan de Fuca Strait and along the Washington State coastline from 48 degrees north. Seattle Traffic provides VTS for both the Canadian and US waters of Juan de Fuca Strait and Victoria Traffic provides VTS for both Canadian and US waters of Haro Strait, Boundary Passage, and the lower Georgia Strait.

In the Strait of Georgia, vessels will enter into the Vancouver VTS zone, managed by Victoria Traffic.

RADAR COVERAGE

The Canadian Coast Guard operates radar stations around Vancouver. Radar and AIS are used to monitor vessel movements.

BASIC RULES OF COMMUNICATION

Radiotelephone procedures are described in the *Canadian Coast Guard Radio Aids to Marine Navigation*, part 4. In the interest of safe navigation, masters should ensure that a continuous listening watch is maintained on both 2182 kHz and on VHF 16 (156.8 MHz) as well as the local VTS channel.

2182 KHz and VHF 16 shall only be used for distress, urgency and safety communications, and for calling purposes.

Marine channels with licensed assigned frequencies are regulated by Industry Canada. Unauthorized channel interference may result in charges under the *Radio Communication Act* and the *Radio Communication Regulations*.

Vessel Traffic Services (VTS) assigned frequency in the Port of Vancouver:

VHF 74 Fraser River, VHF 12 Vancouver and English Bay, VHF 11 Roberts Bank.

REQUIRED TO PARTICIPATE

- Every vessel 20 metres or more in length
- Every vessel engaged in towing or pushing any vessel or object, other than fishing gear, where:
    a) The combined length of the vessel and any vessel or object towed or pushed by the vessel is 45 metres or more in length
    b) The length of the vessel or object being towed or pushed by the vessel is 20 metres or more in length

EXCEPTIONS

- A vessel towing or pushing inside a log booming ground
- A pleasure craft less than 30 metres in length
- A fishing vessel that is less than 24 metres in length and not more than 150 gross tonnes

VESSEL TRAFFIC SERVICES

Canada's vessel traffic services system is operated by Canadian Coast Guard Marine Communication and Traffic officers, who monitor the movement of vessels using VHF radio, direction finding equipment, AIS, and in some areas, surveillance radar.

Prior to beginning a voyage within Canadian waters or entering from seaward, ships are required to obtain a VTS clearance. This clearance is issued by a marine communication officer after screening information about identity, condition, cargo and intentions of the vessel. As it proceeds on its voyage the ship is required to maintain a listening watch on designated marine VHF radio channels and report at specific positions, calling-in-points (CIPs). In turn, the vessel is provided with information, advice, navigational safety and weather information. In many places traffic routing systems have been established to further enhance vessel movement safety.

VESSEL SCHEDULES

The port authority authorizes all vessel movements and assigns anchorages. Agents and pilots may request changes to the schedule or anchorage assignment by contacting the Operations Centre at +1 604 665 9086 or harbour_master@portvancouver.com. All efforts will be made to accommodate short notice requests due to mechanical failures, weather changes or other unforeseen situations or in an emergency.

11.3 PILOTAGE

Every commercial vessel that is over 350 gross tonnes, and every pleasure craft over 500 gross tonnes, is subject to compulsory pilotage. The master, owner or agent of a vessel that is to arrive in a compulsory pilotage area shall notify the Pacific Pilotage Authority of the estimated time of arrival, universal time co-coordinated (UTC) and local time, at Brotchie Ledge near

Victoria, at least 48 hours prior to arrival, and shall confirm or correct the estimated time of arrival 10 hours prior to arrival.

The port is designated a compulsory pilotage area under the *Pilotage Act*. Any vessel required to carry a pilot under the *Pilotage Act* will not navigate within the port unless a certified BC Coast Pilot or Fraser River Pilot is on board, or in emergencies, as directed by the port authority.

The Pacific Pilotage Authority (PPA) will issue *Notices to Industry* when there are important updates to pilotage rules and regulations. They can be found here. These notices will also advise of new initiatives, services, and other important announcements concerning pilotage.

ORDERING PILOTS

a) Arriving ships

Normally pilots will be ordered by the ship's agent who will contact the Pacific Pilotage Authority or use the online agent portal.

b) Departing ships and ships in the port

Normally pilots will be ordered by the ship's agent at least 10 hours before the estimated time of departure. If a vessel fails to anchor in its assigned anchorage or if it drags out of its position in the anchorage, the vessel may be ordered by the port authority to be repositioned by a certified BC coast pilot. A vessel so ordered will absorb all costs associated with the repositioning.

HOW TO PREPARE THE SHIP FOR BOARDING OF THE PILOT

Ships arriving at Brotchie shall prepare a pilot ladder on both sides of the vessel (unless otherwise directed) and lower it to one metre above the waterline. Ships are also to have a line available to hoist up the pilot's bag prior to the pilot embarking.

In the port the pilot may prefer to use the ship's gangway. Vessels should confirm boarding arrangements with the pilot on VHF 17.

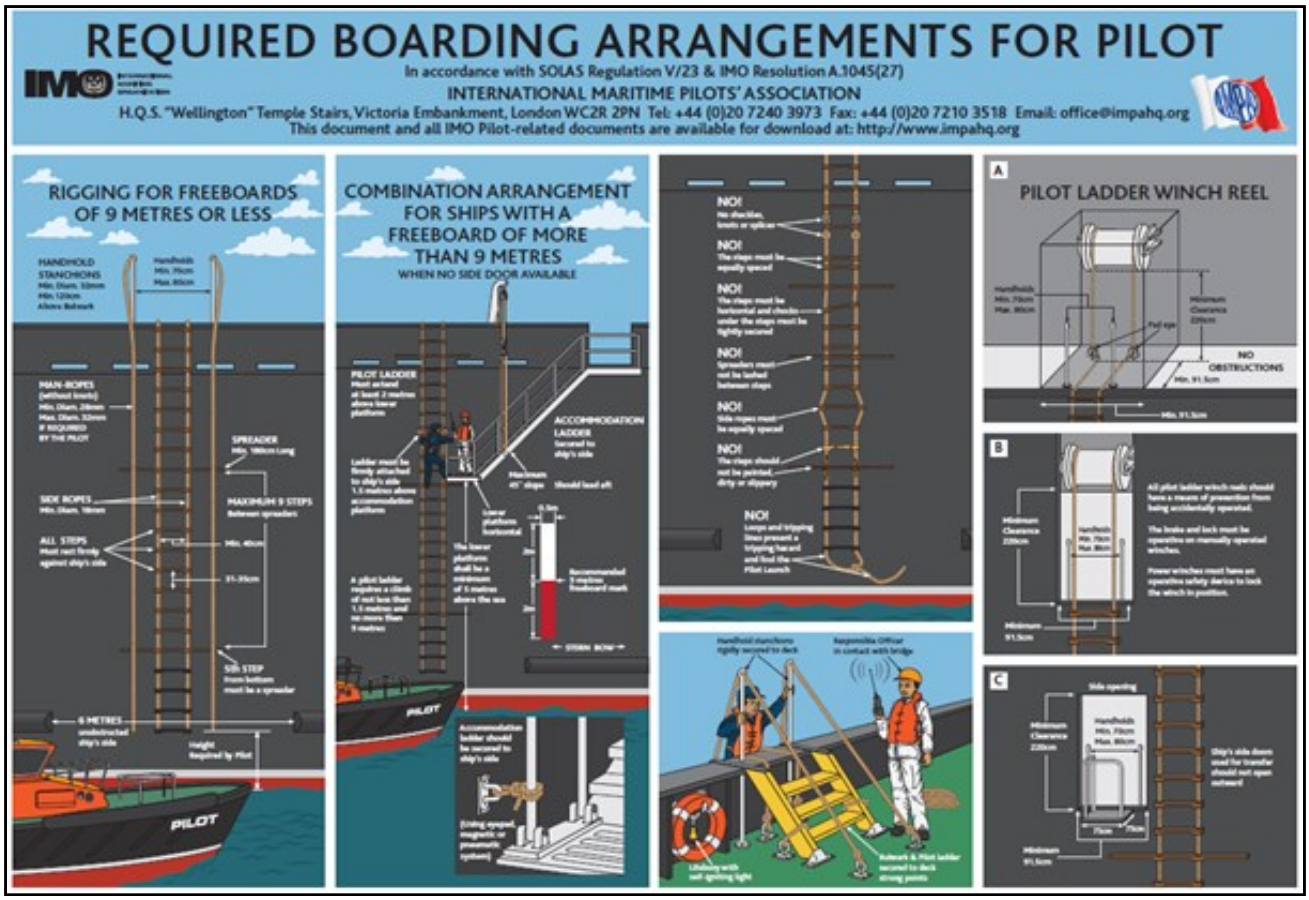


Image – Required Boarding Arrangements for Pilot

PILOT BOARDING STATION

The pilot boarding station is located near Victoria at 48 22' 30" N 123 23' 30" W

Within the port, the pilot will board the ship at the anchorage or berth at which she is located.

PILOT BOAT

The pilot may come to the ship by pilot boat or by tug.

11.4 TUGS

There are several tug companies within the port. Generally the vessel's agent will arrange for tugs as required.

For information about conducting push and pull tests on terminal bollards, contact the port Operations Centre at +1 604 665 9086 or harbour_master@portvancouver.com.

11.5 MOORING

MOORING OF VESSELS ALONGSIDE

Mooring arrangements will be specific to the terminal or dock. In certain situations such as overhanging a berth or immobilizing a main engine, the port authority may require additional lines to be used.

Unless the terminal specifically requires otherwise, tankers should rig emergency towing-off wires. One should be on the offshore forward end and one on the offshore quarter.

See the Port Sections Guide for more information about each terminal.

MOORING BUOYS

There are mooring buoys located in North Vancouver, called the navy buoys, which are managed by T&B Moorings. Users may secure appropriately insured barges to the navy buoys for short periods of time whenever space is available. The following procedures must be followed when using navy buoys:

- No cargo operations are permitted to take place while moored at any buoy
- Loaded or partially loaded oil barge moorage at the buoys is strictly prohibited
- All lines used to secure barges at the navy buoys are to be of acceptable quality and condition, sufficient strength, diameter, and appropriate length to ensure mooring is maintained throughout the length of stay at the buoy
- All mooring lines need to be appropriately protected from chafing forces or other potential damages
- No more than four barges, two per mooring point, are allowed to be moored to a buoy either directly or rafted to another barge moored to the buoy, at any time
- Buoy lines are to be secured to the bow or stern of barges
- There is to be a minimum of one headline and one stern line between barges secured to the navy buoys
- Buoy lines shall not be secured to the side deck mooring fixtures of barges
- Rafted barges, i.e., a barge secured with no buoy lines alongside a barge secured directly to a buoy, shall use a minimum of four lines between barges. These lines will consist of a bowline, two spring lines and a stern line
- Rafted barges shall be positioned so that their forward ends are aligned with one another
- If standing lines are unavailable at a buoy, it is the towing master's responsibility to ensure that the barge to be rafted to is safely moored and that the second barge is adequately secured as described above
- All barges secured at the buoys must have adequate liability insurance coverage
- Barges secured at the buoys remain in the care and custody of the tug and/or the company securing the barge to the buoys
- All loads overhanging the perimeter of the barges must be lit to advertise their presence to mariners in the area

Limitations to be observed

- The following limitations apply to the specific buoys:
  - North Buoy – limited to barges of 67m (220') or less
  - East Buoy – limited to barges of 106 m (350') or less
  - South Buoy – limited to barges of 106m (350') or less
  - West Buoy – limited to barges of 67 m (220') or less
- No derelict barges are permitted to be moored at the buoys at any time.
- All barges must be in a safe and seaworthy condition with proper boarding ladders and handrails.
- All hatches and manholes are to properly closed and secured.
- Barges with raised foredecks exceeding 7.6m (25') shall not be secured to the buoys

T&B Moorings will invoice users of the buoys directly.There is another mooring buoy located in English Bay near the entrance to False Creek. Users may secure barges to this buoy as well, but are expected to self-report the length of barge and duration of mooring directly to T&B moorings at 604.687.9677 or cmc@comc.cc.

Emergency Towing Lines

In the event of a fire or other emergency, it may be necessary to take a vessel off the berth by tug. Tankers berthed in the port must rig a towline at both bow and stern, securely fastened on deck by one end and hanging over the offshore side of the vessel with an eye in the other end and positioned one meter above the waterline.

All other deep-sea vessels must rig a suitable towline on both bow and stern hanging off the offshore side for immediate use.

11.6 LASHING OF CARGO

Lashing of cargo is carried out by stevedores within the port.

11.7 GANGWAYS

CRUISE TERMINAL GANGWAY PROCEDURES

Vessels are to remain securely made fast to the dock at all times the gangways are attached. No singling up for departure is to take place unless properly trained personnel are attending the gangway ready to disengage from the vessel.

Prior to the vessel moving off the berth, or making a close approach to the berth, the gangways are to be folded and stowed against the building.

Prior to singling up, the vessel must release any safety lines or nets that may have been attached to the gangways.

OTHER TERMINAL GANGWAY PROCEDURES

Vessels are to remain securely made fast to the dock at all times the gangways are attached. The gangways must be fastened safely and securely at all times in order to avoid any incident or damage to person or property.

Vessels berthed at Vancouver Wharves berth 1 and 5 must ensure that the gangway is rigged as a floating gangway in combination with a pedestal staircase provided by the terminal operator, as illustrated in the image below. The ship's gangway must be monitored and kept at a height above the bollards, rails and other fixed structures on the dock. Whenever possible the mid ship gangway should be used instead of the aft gangway.

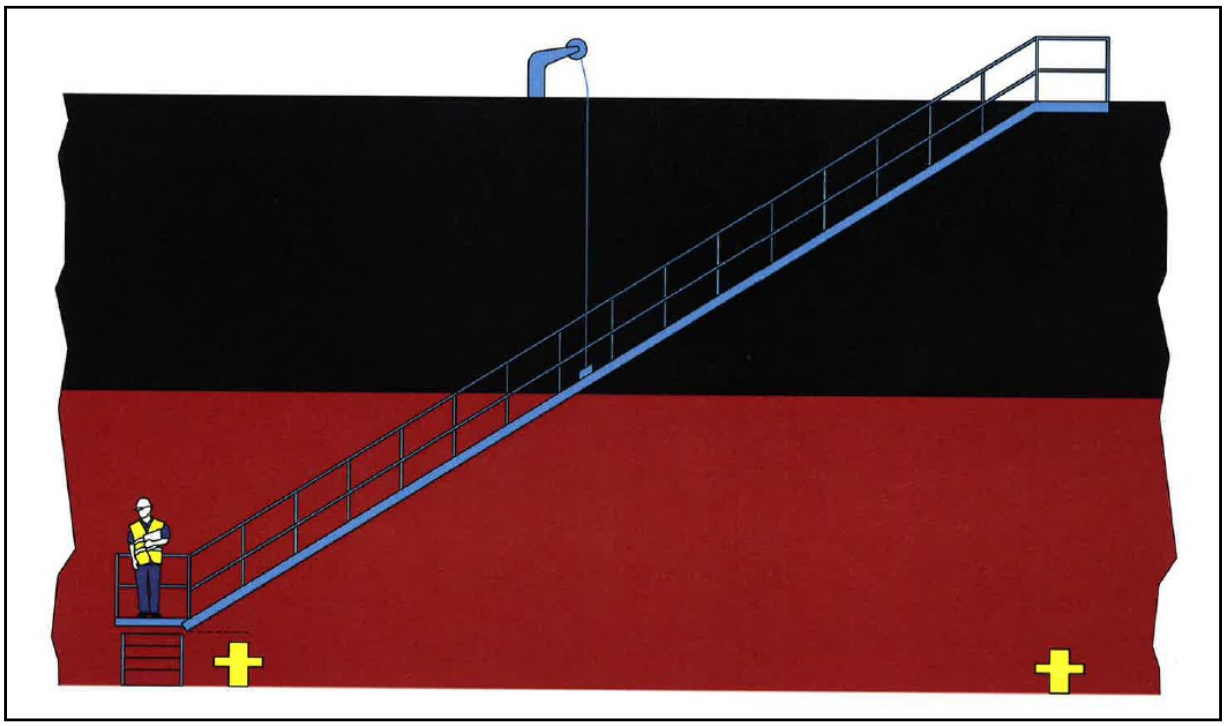


Image: Floating Gangway in combination with pedestal staircase

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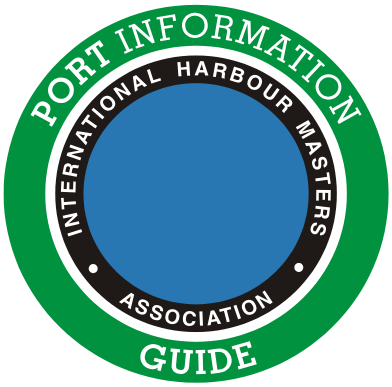
12 Nautical Communication



12.1 GENERAL

The proper use of radio frequencies and procedures are outlined in the *Radio Aids to Marine Navigation*. All ships in waters under Canadian jurisdiction are required to carry the most recent applicable edition of this publication.

12.2 VHF CHANNELS NAUTICAL COMMUNICATION

MCTS Sector 1 (i.e. Roberts Bank) – VHF Channel 11

MCTS Sector 2 (i.e. Fraser River) – VHF Channel 74

MCTS Sector 3 (ie. Burrard Inlet east of Pt. Atkinson) - VHF Channel 12

PPA working channel – VHF Channel 17

International Distress, Safety and Calling – VHF Channel 16

For further information or reference, refer to the Canadian Coast Guard *Radio Aids to Marine Navigation*.

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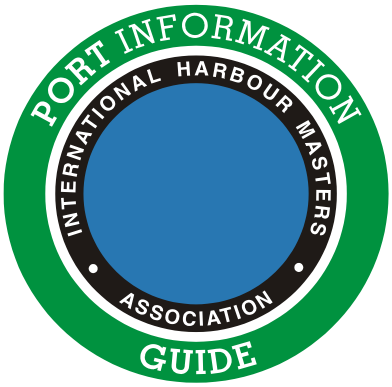
13 Cargo Operations



13.1 GENERAL

This chapter describes the rules and regulations concerning cargo operations in the port.

13.2 LOADING/DISCHARGING PROCEDURES

For specific cargo loading/discharging information regarding particular terminals please reference the appropriate Port Sections Guide.

INTERNAL TRANSFERS

Care should be taken if it is necessary to transfer oil internally between tanks. Soundings should be taken before and after the transfer to confirm the levels in both tanks.

FUMIGATION

Fumigation is done in accordance with the *Cargo, Fumigation and Tackle Regulations* of the *Canada Shipping Act*.

Fumigation in the port is arranged through the vessel's agent.

13.3 BULK LIQUID TRANSFERS

APPLICATION

The approved ISGOTT Ship/Shore Safety Check-List must be used in the transfer of bulk liquid cargoes from marine facility to vessel (ship-to-shore), the practices and procedures outlined herein apply to all vessels, terminals and operators within the port authority's area of jurisdiction;

These procedures are developed to enhance safe transfer operations within the port. Representatives from the ship (responsible officer) and terminal (terminal representative) must complete the Ship/Shore Safety Check-List prior to the start of transfer operations, the purpose of such will:

- Establish and follow written standard operating practice for routine and non-routine activities
- Provide for adequate supervision during transfer operations
- Provide continuous supervision of the marine transfer operation, monitor and log pertinent data

All parties involved in the planning, delivering and/or receiving of liquid bulk products, must be fully aware of the requirements of this section as well as of any additional requirements issued and enforced by specific terminal operators;

These requirements are designed to be used as complementary to other existing safety controls and regulations that govern shipping safety and in no way supersede or make such controls and regulations irrelevant.

The Ship/Shore Safety Check-List comprises four parts:

- Part A – Bulk liquids, physical checks
- Part B – Bulk liquids, verbal verification
- Part C – Bulk liquid chemicals
- Part D – Bulk liquefied gases

Parts A and B shall be applicable to all vessels and terminals engaged in the transfer of bulk liquids.

Parts C and D shall only be applicable to those vessels and terminals engaged in the transfer of bulk liquid chemicals and/or bulk liquefied gases.

GENERAL REQUIREMENTS

All transfer operations must be carried out in accordance with the latest edition of ISGOTT and the additional requirements provided in these practices and procedures.

The master of every vessel engaged in transfer operations shall appoint an officer to be used during all aspects of the transfer operations who is fluent in English. English is the language to be used during all aspects of the transfer operation.

The Ship/Shore Safety Check-List must be kept on file for at least one year.

THE SHIP/SHORE SAFETY CHECKLIST

For the complete version of ISGOTT's Ship/Shore Safety Check-List, see Appendix D of this guide.

13.4 DRY CARGO LIGHTERING

The lightering of dry cargo at anchor introduces an additional risk of pollution incidents by the double handling of the product. This also prolongs the usage of anchorages. Therefore it will only be allowed at the discretion of the port authority.

Permission may be granted when all precautions are made to assure there is no spillage of pollutants into water (i.e. tarps from ship to barge). Contact the Operations Centre for more information at +1 604 665 9086 or harbour_master@portvancouver.com.

13.5 CLEANING PROCEDURES

No hold/tank washings are to be discharged without approval from the port authority. For tank cleaning procedures on board tankers please see section 14.8 of this document.

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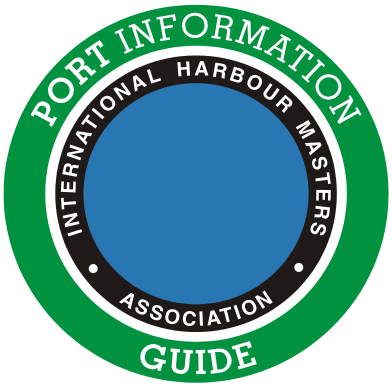
14 Vessel Operations



14.1 GENERAL

Some vessel operations require notification, and in some cases additional requirements, before the work can proceed. To notify the port authority and request permission for certain work, application must be made electronically through the Pacific Gateway Portal.

The following operations require a Vessel Service Request:

- Anchoring
- Taking bunkers or fueling
- Cargo hold inspection
- Engine immobilization
- Hot work
- Lifeboat servicing
- Shifting along a berth without a pilot
- Tanker transits
- Other service requests (including commercial diving operations)

For more information contact the Operations Centre at +1 604 665 9086 or harbour_master@portvancouver.com.

14.2 LOWERING BOATS AND RAFTS

The port authority is aware of the various national and international requirements for the exercising of lifeboats at designated intervals and will accommodate all such activities.

Prior to conducting lifeboat exercises the vessel must advise the Operations Centre through MCTS of their intentions including start and finish time. Pre-approval must also be granted by submitting a request through the Pacific Gateway Portal.

If lifeboats are lowered into the water, cast off from the falls and exercised under oars or power, they must remain within 50 metres of the vessel. Vessels at Canada Place are to ensure their lifeboats remain well clear of Seabus lanes and seaplane landing areas.

14.3 MAINTENANCE AND REPAIR

IMMOBILIZING MAIN ENGINES AND TESTING PROPULSION

No vessel shall immobilize its main engines while alongside or engage/test its propulsion systems and machinery whilst alongside without the approval of the port authority. The Operations Centre will consider:

- The prevailing weather conditions, tide or current
- The type of berth and cargo operations
- The length of time the engines are expected to be immobilized or the machinery to be tested
- The characteristics of the vessel

If approval is given through a Vessel Service Request, then the vessel will be required to:

- Provide a continuous vigilant deck watch
- Advise Marine Communications and Traffic Services at the commencement and completion of the immobilization or machinery testing
- Provide continuous monitoring of VHF channel 12 in Burrard Inlet, VHF channel 74 in the Fraser River or VHF channel 11 in Deltaport/Roberts Bank
- Provide a minimum of four head/stern lines and two springs each end, under even tension. A vessel engaging/testing its propulsion systems and machinery requires additional head and stern mooring lines to be deployed

In some circumstances a tug may be required to stand by the vessel.

A tug must stand by a vessel that requires immobilizing its engines while at anchor. The tug must be of sufficient bollard pull to hold the vessel in place in the expected weather conditions.

Nothing in these procedures relieves the master of the vessel from his obligations for safety or from following additional precautions as would be required by the normal practice of seamen. These procedures are to be considered the minimum requirements.

PAINTING OVER THE WATER

If a vessel would like to touch up the paint on the hull while alongside or at anchor, a vessel service request must be submitted.

Preparation of the area to be touched up is limited to rinsing with non-chlorinated fresh water, or wiping with a clean rag. Pressure washing of the hull is not permitted without written permission from the port authority. Pressure washing of the hull must be reviewed by VFPA- Environmental Programs, and must be requested at least 48 hours prior to the work.

All precautions must be taken to ensure that no paint or debris goes into the water, and precautions must be taken to ensure that any crew working over the side or at a height are safe and protected from falls.

14.4 UNDERWATER INSPECTION/ CLEANING

All persons wishing to perform recreational or commercial diving in the port must obtain permission from the port authority by completing a service request on Pacific Gateway Portal. Diving may only commence when the diving permit is completed in its entirety and approved by the Operations Centre.

The dive site shall be properly identified by appropriate buoys, flags or lights.

The port authority may not grant permission for proposed diving operations where these conflict with the safe operations of the port.

This section does not apply when the dive is to take place in a designated recreational diving area, such as at Cates Park.

14.5 ENVIRONMENTAL REQUIREMENTS

EXHAUST GAS CLEANING SYSTEM (ECGS) WASH WATER DISCHARGE

The discharge of wash water from exhaust gas cleaning systems (EGCS) from all fuel combustion machinery (excluding engines in use for propulsion) into the environment is not permitted while a vessel is at anchorage or at berth within the Port of Vancouver. This applies to the wash water from open-loop and closed-loop EGCS. It does not apply to inert-gas scrubbers required by tankers for cargo operations and safety reasons. While in the Port of Vancouver, ships fitted with hybrid scrubbers shall switch to the closed-loop mode and operate the scrubber in a zero-discharge mode. Bleed-off from closed-loop scrubbers is prohibited and all EGCS wash water must be retained on the vessel in a holding tank or be disposed of at an authorized shore reception facility. If wash water cannot be recirculated, vessels must switch over to compliant fuel or shore power (where available). The change-over should be effected as soon as possible after arrival to anchorage or berth and as late as possible before departure. ECGS overboard discharge valves should be shut and secured/sealed in closed position while the vessels are in the Port of Vancouver. All vessels are required to electronically submit a 24-hour pre-arrival declaration through the ‘Pacific Gateway Portal’.

ECOACTION PROGRAM AND BLUE CIRCLE AWARD

The Vancouver Fraser Port Authority is committed to ensuring our operations remain environmentally responsible and sustainable, as well as safeguarding and promoting the protection of local wildlife. Vessels that go beyond the requirements to operate sustainably can receive recognition through the EcoAction program and Blue Circle Award Program. The EcoAction program includes gold, silver and bronze discounted harbour due rates, with those shipping lines that have the highest level of participation also eligible for a Blue Circle Award.

Additional information on the EcoAction program, harbour due rates and eligibility for discount can be found in the VFPA Fee Detail Document.

Rate applications must be submitted online through the Pacific Gateway Portal.

Questions or comments regarding the EcoAction program or the Blue Circle Award can be directed to the Operations Centre at +1 604 665 9086 or by email at harbour_master@portvancouver.com.

ECHO PROGRAM

The Enhancing Cetacean Habitat and Observation (ECHO) Program is a Vancouver Fraser Port Authority led initiative aimed at better understanding and managing the impact of shipping activities on at-risk whales throughout the southern coast of British Columbia. Some of the key threats to whales in this region include: acoustic disturbance (underwater noise), physical disturbance (ship strikes), environmental contaminants, and the availability of prey.

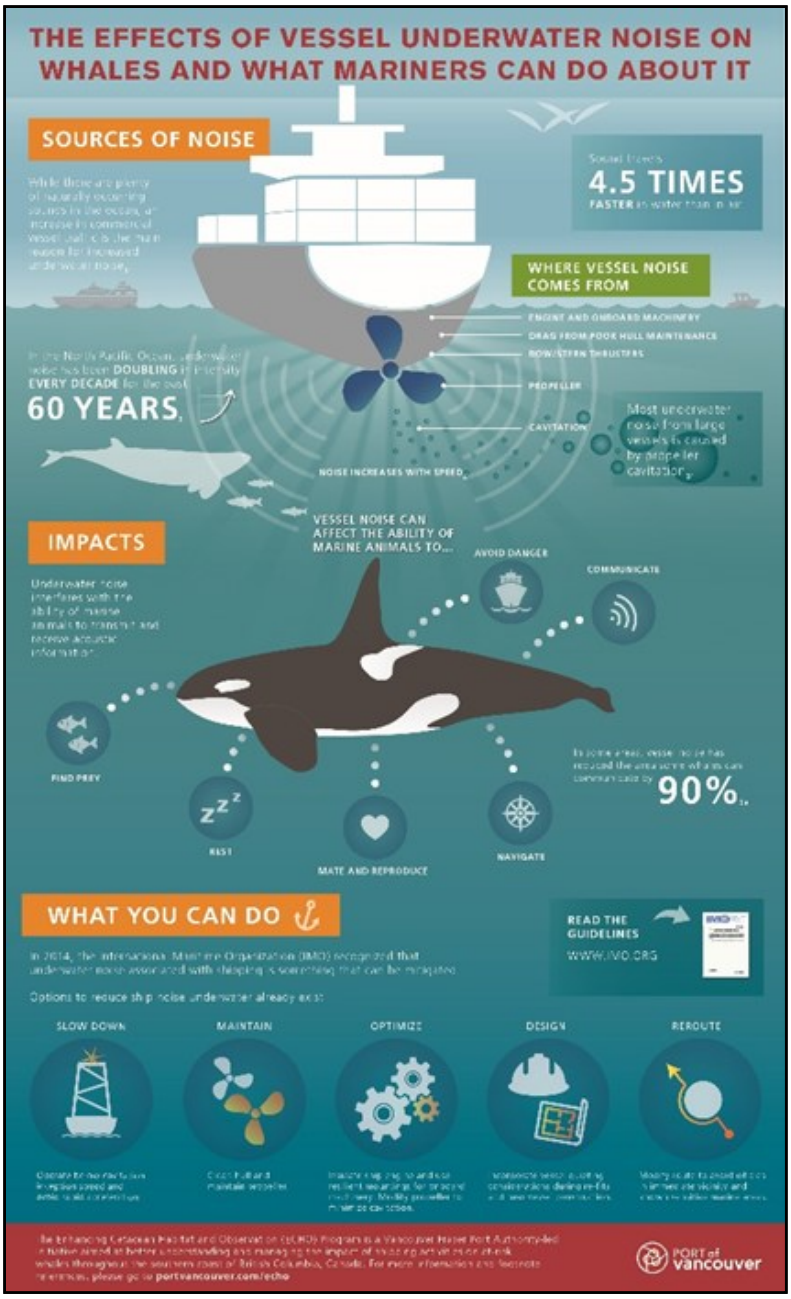
The long-term goal of the ECHO Program is to develop mitigation measures that will lead to a quantifiable reduction in potential threats to whales as a result of shipping activities.

The Fisheries and Oceans Canada Recovery Strategy for killer whales identifies disturbance, including underwater noise, as one of the current threats impacting killer whales in British Columbia. Whales use sound to navigate, communicate, and locate prey. For this reason, underwater noise is a priority study area the ECHO Program is addressing.

Since 2014, the ECHO Program has undertaken numerous collaborative research initiatives to better understand and manage the cumulative effects of shipping activities on whales in our region, in particular the southern resident killer whales. Initiatives include voluntary seasonal slowdown and lateral displacement through key southern resident killer whale critical habitat. Check to see if the slowdown is active on the ECHO Program.

Stay up to date on the ECHO Program initiatives by subscribing to the ECHO newsletter.

For more information, and to see the infographic below, please go to the ECHO Program webpage.



VESSEL DISCHARGES

a) Vessel garbage

Vessel garbage must be retained on board in suitable containers with properly fitted covers. Garbage removal services are available and must be used to properly manage the volume of garbage on board prior to sailing. Garbage, dunnage and scrap materials may not be dumped in Canadian territorial waters. The use of shipboard incinerators is not permitted when in the jurisdiction of the port authority.

b) Discharge of Liquids

The term "vessel discharges" refers to the discharge of any liquids from a vessel other than ballast water.

No person or vessel is allowed to illegally discharge any pollutant into the water within the port.

Information surrounding the discharge of liquids from vessels, including distances offshore and areas where such activities may be permitted, can be found in the *Vessel Pollution and Dangerous Chemical Regulations* within the *Canada Shipping Act* (CSA 2001).

c) Accidental discharge

All accidental vessel discharges must be reported immediately to report to Canadian Coast Guard Environmental Response on VHF Channel 16 or by phone 1 800 889 8852 (24 hours). If the discharge contains oil or other deleterious substances, the vessel must immediately activate its pollution response plan.

d) Black and Grey Water Discharge

The discharge of black water (waste from toilets) and grey water (waste from sinks, showers and drains) into the environment, by any vessel certified to carry more than 15 passengers or over 400 tons, is not permitted within the Port of Vancouver unless an overview of the Transport Canada approved waste water treatment plant is provided to the port authority and accepted.

Pleasure craft must also ensure they comply with the regulatory restrictions and best management practices related to the discharge of black water and grey water within the port.

All vessels should be retaining black/grey water on board, using pump out facilities as appropriate, or arranging for a collection barge/vessel to properly dispose of the waste while in the port.

In extreme circumstances, permission may be granted for the discharge of grey water into the environment from a deep sea vessel provided it is deemed by the port authority not harmful to do so. A test for harmful substances/bacteria must be completed prior to any discharge. Contact the Operations Centre for more information.

Anyone who suspects a vessel is or has discharged black and/or grey water is urged to record the incident (photo/video and details) and report it to appropriate authorities.

For concerns related to non-compliance of pleasure crafts, contact Transport Canada's Office of Boating Safety at 604 666 2681.

Concerns related to sewage discharge can be reported to the BC Provincial Emergency Program at 1 800 663 3456.

For all other marine pollution incidents, report to Canadian Coast Guard Environmental Response on VHF Channel 16 or by phone 1 800 889 8852 (24 hours).

Accidental discharges and/or reports of non-compliance related to black and grey water discharge by deep sea or other commercial vessels should also be reported to the operations center at 604 665 9086.

For more information on compliance with sewage discharge regulations, refer to the Transport Canada's *Complying with Sewage Discharge Regulations* image below.

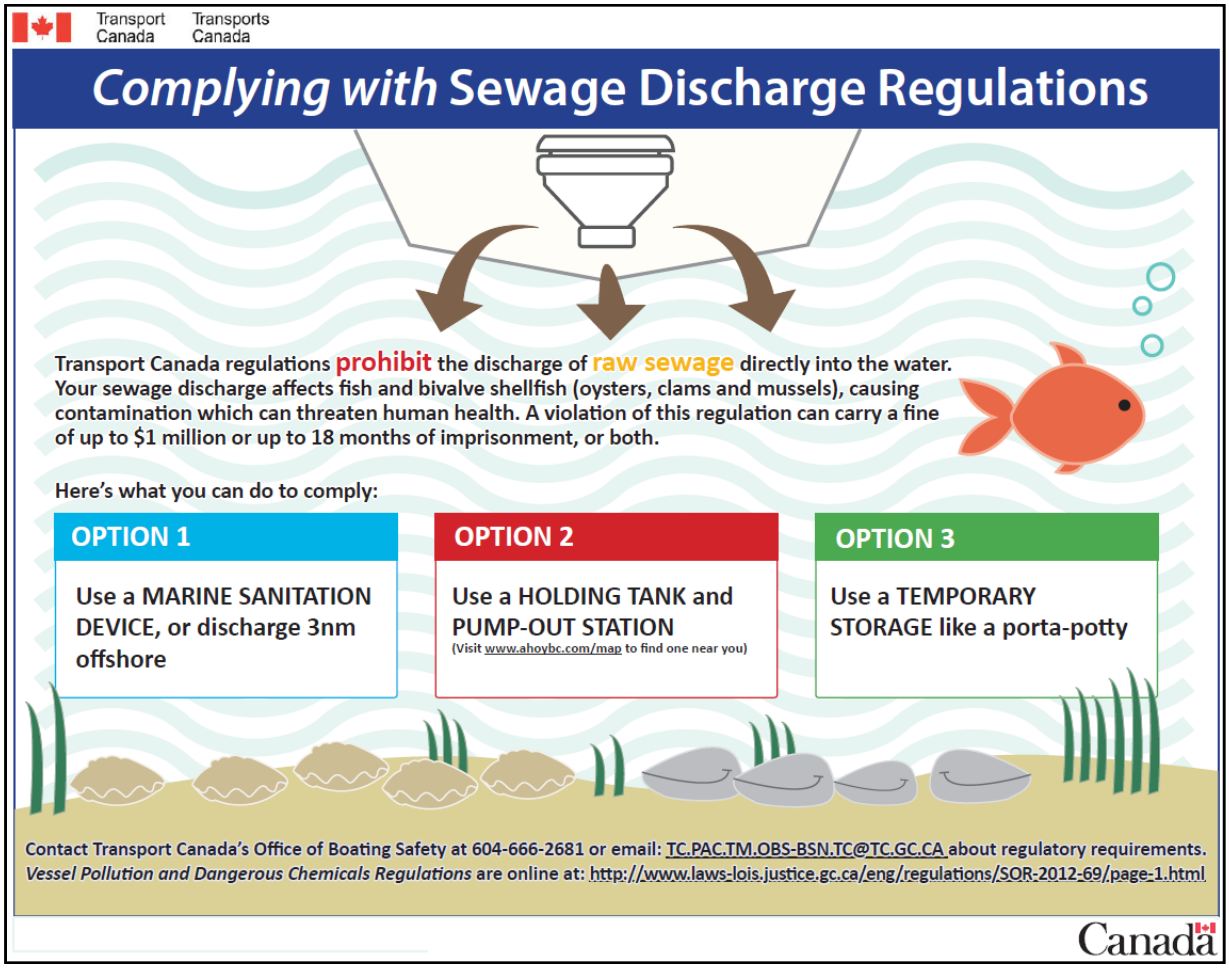


Image – Transport Canada Office of Boating Safety – Complying with Sewage Discharge Regulations

e) Bilge and Sludge Discharge

All bilge and sludge discharge operations must receive prior approval from the Operations Centre and will be handled on a case-by-case basis. If the operation is to be carried out while the vessel is alongside, the terminal operator will also have to grant permission. If approved, the vessel must follow the same transfer procedures and safety checks for a bunkering operation as per Section 14.7 of this document.

f) Hold washing discharge

All hold washing operations will be approved on a case-by-case basis by the Operations Centre. If a hold washing operation has been approved, all residual washings must be discharged through an approved disposal method to a shore-side facility or retained onboard.

14.6 ANCHORAGE PROCEDURES

GENERAL

These practices and procedures are made pursuant to the *Canada Marine Act* section 56 subsection (1) (b) and have been developed for the purpose of promoting safe and efficient use of anchorages utilized by deep-sea ships calling at facilities within the port.

Deep sea vessel anchorages within the port are established to serve vessels calling the port that require anchorages as part of an international voyage.

All permanent anchorages are indicated in the appropriate nautical charts and publications produced by the Canadian Hydrographic Service. Temporary short term-use anchorages may also be authorized by the harbour master in case of emergency or operations for which a suitable berth is not available.

Nothing in these procedures relieves the master of the vessel from their obligations for safety or from following the requirements under any applicable international or Canadian statutes, regulations and guidelines.

ANCHORAGES

The main anchorages serving ships calling the port facilities are located in Burrard Inlet and are known as: English Bay anchorages (North and South), Inner Harbour anchorages and Indian Arm anchorages.

Other anchorages include short term anchorages operating more as holding areas for vessels calling Fraser River terminals and Roberts Bank terminals as well as a number of emergency anchorages strategically located in the main anchoring areas. For a full list of anchorages and their particulars see the anchorage tables in this section.

Inner Harbour anchorages are assigned as short term anchorages to vessels that require sheltered waters and better accessibility to port services such as bunkering as well to facilitate transit of Second Narrows when needed. With the exception of tankers, the period might be extended on request if there are no other ships requiring Inner Harbour anchorages.

Anchorages in English Bay and Indian Arm are assigned for a period of up to seven days. The period might be extended on request if there are no other ships requiring anchorages in English Bay or Indian Arm.

ANCHORAGE ASSIGNMENTS

The port authority assigns anchorages to deep sea vessels on a first come first served basis, as available and in accordance with suitability criteria and other restrictions outlined in this document. For the purposes of this section "first come" refers to the time the vessel would arrive at the anchorage

Anchorage requests can be made online through the Pacific Gateway Portal as soon as it is known that a vessel requires the use of an anchorage. The Operations Center will assign a suitable anchorage based on availability and vessel's estimated time of arrival at anchorage. The Operations Centre can be contacted 24/7 at +1 604 665 9086, harbour_master@portvancouver.com.

In the event a vessel has stayed longer than seven days at an anchorage in English Bay or Indian Arm, and the anchorage is required by another vessel, the vessel will be required to shift to a berth, or to an anchorage in Nanaimo or the Gulf Islands upon direction from the Operations Center pursuant to *the Canada Marine Act* Section 58. The port authority will endeavor to inform the ship's agent of a required shift with as much notice as possible.

NON-AVAILABILITY OF ANCHORAGES

There may be times that there is no suitable anchorage available for a vessel. The port authority will endeavor to inform the ship's agent of a non-availability with as much notice as possible.

If there is no suitable anchorage available in the port, a vessel will need to find another suitable anchorage. There are anchorages available in Nanaimo and throughout the Gulf Islands. These anchorages are assigned by the Nanaimo Port Authority and MCTS/BC Coast Pilots respectively.

If a vessel has to anchor in Nanaimo or in the Gulf Islands to await a berth in the Port of Vancouver due to non-availability of anchorages in the port, the vessel may be considered to have arrived at the Port of Vancouver for the purposes of issuing a notice of readiness to load or discharge at a terminal in the port.

If a vessel has to anchor outside of the Port of Vancouver in between two or more berths in Vancouver or the Fraser River due to non-availability of anchorages in the port, or due to the vessel overstaying the seven day limit, it will be considered as one call for the purposes of harbour dues.

IMPROPERLY ANCHORED VESSELS

It is the responsibility of the ship's master to ensure the vessel is anchored correctly and a proper watch is maintained. In case MCTS and/or the Port Authority Operations Center determine that the vessel is outside its assigned anchorage area, a pilot will be ordered on behalf of the vessel to confirm the anchorage position and, if needed, reposition the vessel accordingly. The vessel is responsible for all associated costs.

SAFETY FACTORS

The master of a ship is ultimately responsible for assessing the suitability of the anchorage assigned to them. In doing so, the master must ensure that the vessel is equipped with sufficient anchor chain length to ensure that the anchor chain meets the required scope for the depth of the assigned anchorage at all times.

Ships at anchor are required to retain an adequate amount of ballast onboard and ensure that a minimum trim by the stern as well as sufficient propeller immersion, in order to not adversely affect ship manoeuvrability.

The master of a vessel at anchor must ensure that:

- The anchor is properly and firmly set, prior to the pilot departing the vessel
- The latest edition of the largest scale chart is used at all times for taking vessel positions

Ships proceeding to the North English Bay anchoring area, specifically anchorage 16, 17 or 18, are required to:

- Have a chain scope (i.e. ratio of chain length to depth) of six as the minimum required to develop the full holding power of the anchor
- Exercise extra caution when exposed to winds over 20 knots from any direction, including:
    a) Closely monitor distances to shore and to adjacent ship at anchor, to ensure that they are being maintained
    b) Have the main engines and propulsion gear immediately available for use
    c) Have the windlass arrangement and anchoring equipment in good working condition

Vessels at anchor must not immobilize their main engine or propulsion gear at anchor without permission from the port authority. If emergency repairs are required, permission may be granted, provided a tug or tugs of adequate power are kept in attendance.

WATCH-KEEPING STANDARDS

All ships at anchor must maintain a continuous navigational watch at all times and never leave the navigation bridge unattended.

The officer in charge of the navigational watch must follow the requirements contained in the Standards of Training, Certification and Watch-keeping Code, as amended as well as be guided accordingly by these practices and procedures, complementary to the STCW watch-keeping standards.

In maintaining an anchor watch, the officer in charge must ensure to:

- Correctly place the initial anchor position on the appropriate chart
- Conduct position fixing by ranges and bearings to monitor anchor dragging and uses radar and GPS alarm rings only as an additional warning tool
- Monitor weather conditions in case they change appreciably
- Check the anchor chain regularly
- Monitor reports of the local vessel traffic services

- Immediately call the master and take appropriate action if anchor starts dragging or safety margins are otherwise compromised

NOISE AND LIGHTS

All vessels, while at anchor, should minimize noise levels and light usage in consideration of local residents.

The following guidelines apply to all vessels anchoring within the Port of Vancouver.

Noise:

- Generator usage should be reduced to the minimum required generator(s) to operate essential services and systems
- External doors and hatches to machinery spaces must be kept closed as much as possible
- Power tools and chipping hammers usage must be kept to a minimum and is not permitted on deck between sunset and sunrise
- Loud hailer and ship's whistle usage should be limited, except as required by the *Collision Regulations* or by an emergency

Lights:

- Deck lights must be kept to a minimum consistent with the safety and security of the vessel
- Lighting used to illuminate a vessel's decks must be aimed downward, and not outward or toward the shore

ADVERSE WEATHER CONDITIONS

A wind warning advisory will be broadcast on VHF 12 by MCTS to all vessels at anchor in the port when winds from any direction reach or exceed 25 knots. The wind warning advisory will be cancelled when winds have abated below 25 knots for over one hour.

When a wind warning advisory is in effect for ships at anchor, a continuous navigational and engineering watch as when under way must be maintained by all ships at anchor.

Be prepared to take early and effective action including: letting out more chain, use of engines to maintain position and calling for a pilot if repositioning of the vessel is required.

ANCHORAGES (TABLES)

English Bay

Anchorage	Coordinates Latitude ° ’ ” Longitude ° ’ ”	Maximum Vessel Length Overall (metres)	Depth at Centre of Anchorage (metres)	Control Depth within Anchorage Area (metres)	Notes
English Bay Anchorage 1	49 17 57 N 123 14 19 W	400	60	48	Cape size capable
English Bay Anchorage 2	49 17 33 N 123 13 53 W	260	37	14	
English Bay Anchorage 3	49 18 04 N 123 13 33 W	400	45	37	
English Bay Anchorage 4	49 17 39 N 123 13 11 W	260	37	28	
English Bay Anchorage 5	49 17 15 N 123 12 42 W	230	21	12	
English Bay Anchorage 6	49 18 12 N 123 12 48 W	400	40	30	Cape size capable
English Bay Anchorage 7	49 17 47 N 123 12 25 W	260	27	23	
English Bay Anchorage 8	49 17 22 N 123 11 59 W	230	19	16	
English Bay Anchorage 9	49 16 56 N 123 11 33 W	190	12.3	10	
English Bay Anchorage 10	49 18 19 N 123 12 03 W	400	30	24	Cape size capable
English Bay Anchorage 11	49 17 54 N 123 11 38 W	260	25	19	
English Bay Anchorage 12	49 17 29 N 123 11 14 W	230	18	14	
English Bay Anchorage 13	49 17 05 N 123 10 49 W	190	11.8	10	
English Bay Anchorage 14	49 18 25 N 123 11 19 W	400	24	21	Cape size capable
English Bay Anchorage 15	49 18 01 N 123 10 53 W	260	19	17	
English Bay Anchorage 16	49 19 57 N 123 13 08 W	260	40	20	
English Bay Anchorage 17	49 19 56 N 123 13 54 W	260	52	32	
English Bay Anchorage 18	49 19 55 N 123 14 39 W	260	55	32	
English Bay Anchorage Uniform (U)	49 17 45 N 123 15 13 W	400	47	28	Short term only

English Bay Anchorage Zulu (Z)	49 17 09 N 123 10 00 W	100	10.3	9	

Inner Harbour

Anchorage	**Coordinates** Latitude ° ’ ” Longitude ° ’ ”	**Maximum Vessel Length Overall** (metres)	**Depth at Centre of Anchorage** (metres)	**Control Depth within Anchorage Area** (metres)	**Notes**
Inner Harbour Anchorage Alpha (A)	49 18 11 N 123 05 26 W	300	35	24	
Inner Harbour Anchorage Bravo (B)	49 18 06 N 123 04 46 W	260	23	19.4	
Inner Harbour Anchorage Charlie (C)	49 18 01 N 123 04 11 W	260	21	16.2	
Inner Harbour Anchorage Delta (D)	49 17 39 N 123 05 03 W	300	35	29.8	Emergency Anchorage; Assigned at discretion of the harbour master
Inner Harbour Anchorage Echo (E)	49 17 44 N 123 03 55 W	230	16	15.7	
Inner Harbour Anchorage Whiskey (W)	49 17 43 N 123 05 54 W	300	55	30	Short term only; pilot to remain onboard
Inner Harbour Anchorage X-ray (X)	49 18 17 N 123 06 05 W	185	20	17	
Inner Harbour Anchorage Yankee (Y)	49 18 01 N 123 03 35 W	260	16	14.8	Short term only; pilot to remain onboard

Indian Arm

Anchorage	Coordinates Latitude ° ' " Longitude ° ' "	Maximum Vessel Length Overall (metres)	Depth at Centre of Anchorage (metres)	Control Depth within Anchorage Area (metres)	Notes
Indian Arm Anchorage Kilo (K)	49 18 03 N 122 56 41 W	185	27	15.3	
Indian Arm Anchorage Lima (L)	49 17 59 N 122 56 06 W	250	18.5	15.2	
Indian Arm Anchorage Mike (M)	49 18 23 N 122 56 17 W	250	25.5	17.8	Use only if no other suitable anchorages are available
Indian Arm Anchorage November (N)	49 17 38 N 122 58 03 W	185	16	15.3	Outbound vessels waiting for transit window

Roberts Bank

Anchorage	Coordinates Latitude ° ' " Longitude ° ' "	Maximum Vessel Length Overall (metres)	Depth at Centre of Anchorage (metres)	Control Depth within Anchorage Area (metres)	Notes
Roberts Bank Anchorage Romeo (R)	49 00 46 N 123 12 14 W	320	70	40	Short term only; pilot to remain onboard

Sandheads

Anchorage	Coordinates Latitude ° ' " Longitude ° ' "	Maximum Vessel Length Overall (metres)	Depth at Centre of Anchorage (metres)	Control Depth within Anchorage Area (metres)	Notes
Sandheads Anchorage Sierra (S)	49 07 45 N 123 18 29 W	320	70	40	Short term only; pilot to remain onboard

14.7 BUNKERING AND FUELING

GENERAL

Bunkering refers to the supply and transfer of fuel oil, lube oil, diesel, LNG or any other petroleum product in bulk for the purpose of fueling or maintaining engines to a **deep-sea Vessel**.

Fueling refers to the supply and transfer of fuel oil, lube oil, diesel, LNG, gasoline or any other petroleum product in bulk for the purpose of fueling or maintaining engines to **any vessel that is not a deep-sea vessel**.

Bunkering and fueling may take place at anchor or alongside. It may be pumped from a bunker barge, another tanker or ship, or a road tanker, with the exception of a road tanker afloat on a deck barge when the liquid to be transferred is defined as a Class 3 flammable liquid, or a marine pollutant by the *International Maritime Dangerous Goods Code*. Irrespective of the method and provider, the practices and procedures outlined herein apply to all vessels receiving bunkers or fuel within the port.

These procedures are developed to enhance safe bunkering and fueling operations within the port. They cover pre-delivery, actual delivery and post-delivery requirements, checks and documentation related to bunkering operations.

All parties involved in the planning and delivering of bunker services, must be fully aware of the bunkering practices and procedures as well as of any additional requirements issued and enforced by specific terminal operators.

The bunkering practices and procedures are designed to be used as complementary to other existing safety controls and regulations that govern shipping safety and in no way supersede or make such controls and regulations irrelevant.

Requirements for bunkering with liquid natural gas (LNG) are contained at the end of this section.

BUNKER SUPPLIERS

Companies that supply bunker oil to vessels that call the Port of Vancouver are required to register with the port authority. Bunker suppliers are subject to an annual accreditation program. Only registered bunker suppliers participating in the annual accreditation program are authorized to conduct bunker operations in the port. Contact the Port Operations Centre for further details.

BUNKERING ALONGSIDE OR AT ANCHOR

- To allow for the efficient utilization of anchorages and not generate unnecessary extra traffic in port areas, ships that have an opportunity to bunker alongside should do so.
- Vessels in the inner harbour that are unable to bunker alongside due to time constraints or other safety reasons may bunker at anchorage.
- In order to eliminate unnecessary traffic, tankers that plan to make a stop at a location east of Second Narrows should schedule to bunker in that location.
- Vessels 275 metres in length or greater requiring a transit of the First Narrows for bunkering purposes only should plan to do so prior to loading, when possible.

BUNKERING PORT AREAS

Bunkering may occur alongside a berth or at anchorage. Procedures and restrictions that affect bunkering vary depending on the area of the port where the vessel is.

Burrard Inlet: English Bay anchorage areas, north and south; Vancouver Harbour (west portion), which is the area between First and Second Narrows (also known as Inner Harbour).

Vancouver Harbour (east portion), which is the area east of Second Narrows.

Fraser River: bunkering can only occur alongside a berth; there are no long term designated anchorages in this area.

Roberts Bank: Transportation of bulk liquid cargoes at Roberts Bank area is not currently permitted. This restriction also applies to bunkering services in this area until such time as a comprehensive assessment of the environmental impacts is conducted and appropriate control measures are developed.

a) Bunkering in English Bay

English Bay anchorages exposed to higher wind speeds and wave activity than anchorages in Burrard Inlet and the weather conditions in this area may change on short notice. Vessels of any size may carry out bunkering operations in English Bay to allow better management of vessel traffic in the Inner Harbour. In such cases, the following restrictions will apply:

- Bunkering operations shall not proceed when winds are blowing or forecast to blow above force 5 (i.e. 17 -21 knots)
- Bunkering operations must be completed or ceased six hours prior to inclement weather.
- The port authority uses the following official government website for weather forecasts.
- An attending tug must remain on site and ready to render assistance during the entire bunkering operation (does not apply to self-propelled delivery vessels).
- Registered bunker suppliers may be subject to further restrictions based on the LOA of the receiving vessel, check with the Port Operations Center for further details.

Nothing in this section shall relieve or preclude the master of the delivery vessel from its responsibility to take or execute any decision which, in the master's professional judgment, is necessary for the safe navigation and operation of their vessel.

b) Bunkering in the Fraser River

Bunkering of deep sea vessels calling at Fraser River terminals may occur only alongside a safe berth. Due to changing river conditions, passing traffic and terminal layout, a tug capable of handling the bunker barge is required to be in attendance while bunkering of deep sea vessels at any of the Fraser River terminals.

Bunkering operations at Fraser Surrey Docks and Annacis Auto Terminal may impede the safe movement of other vessels at these terminals. To address this issue, bunkering operations at either terminal must be coordinated as outlined below:

Bunkering at Fraser Surrey Docks

Bunkering agents are required to work with the terminal to avoid conflicts between bunkering and vessel berthing schedules at FSD.

Bunkering agents must advise by email their bunkering schedule at least 24 hours in advance to:

- Fraser Surrey Docks: superintendents@fsd.bc.ca
- Pacific Pilotage Authority: info@ppa.gc.ca
- Vancouver Fraser Port Authority: harbour_master@portvancouver.com
- Victoria Traffic: RMIC-Pacific@pac.dfo-mpo.gc.ca.

A stand-by tug must be in attendance of bunker barges moored alongside or otherwise at Fraser Surrey Docks. If a towing company is used, it is the responsibility of the bunkering agent to ensure the towing company is aware of the bunkering and berthing schedule.

When bunkering operations are under way, tug masters are required to maintain communication with Victoria Traffic on VHF Channel 74 to monitor for deep-sea traffic that may affect bunkering operations and advise when bunkering operations begin and complete.

In the event a ship must transit past a berth within the same breakwater where a bunkering operation is underway, the barge must be removed to allow for the safe and timely transit of arriving, shifting or departing vessels.

Bunkering at Annacis Auto Terminal

Bunkering at this terminal may impede vessels arriving or departing from Fraser Surrey Docks (FSD). The following procedure applies to the safe management of bunkering operations at this terminal:

Bunkering agents must advise by email their bunkering schedule at least 24 hours in advance to:

- Annacis Auto Terminal (AAT)
- Pacific Pilotage Authority: info@ppa.gc.ca
- Vancouver Fraser Port Authority: harbour_master@portvancouver.com
- Victoria Traffic: RMIC-Pacific@pac.dfo-mpo.gc.ca.

A stand-by tug must be in attendance of bunker barges moored alongside. If a towing company is used, it is the responsibility of the bunkering agent to ensure the towing company is aware of the bunkering and berthing schedule.

In the event a ship requires to maneuver for arrival or departure at FSD, the bunker barge, at the discretion of a Fraser River pilot must be removed to allow appropriate swing room for the ship.

When bunkering operations are under way, tug masters are required to maintain communication with Victoria Traffic on VHF Channel 74 and deep-sea vessels that will be passing AAT to clarify whether the barge is required to be moved or not. They shall also advise VTS when bunkering operations begin and complete.

Bunkering agents should consider the anticipated deep sea vessel movements when scheduling bunkers at AAT.

When assessing the requirement for a barge to move, a Fraser River pilot will take into consideration items including, but not limited to:

- The berth the vessel is maneuvering from or to
- Whether the vessel will berth port or starboard side alongside
- The size of the vessels involved
- The prevailing wind and weather conditions

BUNKERING OPERATIONS

All bunkering operations must be carried out in accordance with the latest edition of ISGOTT and the additional information provided in these practices and procedures.

The master of every vessel engaged in bunkering operations shall appoint an officer to be in charge of bunkering operations who is fluent in English. English is the language to be used during all aspects of the bunkering operation.

The bunkering checklist (Appendix C) must be kept on file for at least one year and a copy emailed to the Operations Center at harbour_master@portvancouver.com after bunkering is completed.

When bunkering alongside a berth, both receiving vessel and the bunker vessel or road tanker must be fully aware of the specific requirements issued by the terminal operator as applicable.

The use of a proper gangway between vessels is required during bunkering operations. The gangway must be safely and securely fastened at all times.

NOTIFICATIONS

Bunker suppliers must advise their bunkering schedule by email at least 24 hours in advance to:

- The Operations Center at harbour_master@portvancouver.com
- The appropriate terminal operator when bunkering occurs alongside a berth.

The master of bunkering vessels (or the driver of the road tanker in the case of land transfer) shall contact the Operations Center via phone at +1 604 665 9086 or via VHF through MCTS providing:

- the berth / anchorage and the time that bunkering will commence

- A verbal report on the completion of requirements below

BEFORE BUNKER TRANSFER COMMENCES

The master of a bunker barge shall not begin a transfer before:

- The bunker barge is securely moored in accordance with a mooring plan that is pre-arranged between the bunker vessel and the receiving vessel
- Reliable communication methods that will enable an immediate shutdown have been established and can be maintained throughout the operation
- The receiving vessel has provided a safe means of access to the bunker vessel crew in accordance with the relevant regulations made pursuant to the *Canada Shipping Act* and the *Marine Occupational Safety and Health Regulations*
- The hoses are in good condition and tested in accordance with the appropriate Canadian standard or as per ISGOTT
- The hoses are well supported, of sufficient length to allow for movement of vessels and well rigged to not be damaged by the movement of the vessel
- The bunker safety checklist has been truthfully completed and, with all questions answered in the affirmative, completed and signed by the masters of both the bunker vessel and the receiving vessel
- The Operations Center has been contacted and notified accordingly

ENFORCEMENT

The port authority patrol vessel or any authorized officer of the port authority may attend a bunkering operation to verify that these procedures are being followed.

If deviation from these procedures is identified and if safety of the operation requires, bunkering may be stopped until such time as the situation is remedied.

SPILL RESPONSE

In the event of a spill during the handling or storage of bunker or fuel products, all operations must be immediately stopped and vessels involved must activate their SOPEP. The spill must be reported to the regional marine information centre pollution line +1 800 889 8852 or via VHF on channel 12 for Vancouver, channel 11 for Victoria and channel 74 for Fraser River traffic.

The bunker vessel must be equipped to stop the bunkering supply pumps immediately from a place close to the manifold on the bunker vessel.

Each bunker vessel must have portable, approved VHF and portable sirens marked “emergency signal” for attracting attention in the event of an emergency.

BUNKERING DURING CARGO OPERATIONS

When bunkering alongside a berth, caution must be exercised to maintain a safe distance between bunkering operations and other concurrent activities (i.e. cargo loading operations, heavy equipment operating and movement of loads on and above dock).

Bunkering alongside must be scheduled so that:

- There is no interference with cargo operations or other activities under way
- Personnel involved in the bunkering operation on board remain dedicated to this operation only and have no other tasks

DE-BUNKERING

Occasionally, vessels may need to off-load bunkers due to the vessel receiving wrong grade(s) of bunker fuel or the need to enter a local shipyard for repairs, docking, etc. Ships requesting de-bunkering operations will need to obtain permission from the port authority and follow these practices and procedures as applicable.

BUNKERING WITH LIQUID NATURAL GAS (LNG)

Vessels using liquid natural gas as a fuel must receive approval from Transport Canada. They must also comply with all operating practice and procedure requirements that pertain to their specific vessel type and company, as established by Transport Canada.

The port authority is a member of the Society for Gas as a Marine Fuel (SGMF) and recognizes the recommended competence guidelines for the supply and bunkering of LNG for marine vessels.

Vessels transferring LNG ship-to-ship, shore-to-ship or truck-to-ship must use a recognized bunkering checklist. Included in this guide, Appendix E LNG Bunker Checklist, is an example of a recognized bunkering checklist for ship-to-ship transfers. Recognized checklists for ship-to-ship, shore-to-ship and truck-to-ship can also be found online.

After bunkering is completed, a recognized LNG bunkering checklist must be kept on file for at least one year and a copy must be emailed to the Operations Center at harbour_master@portvancouver.com.

Any incidents involving LNG used as a fuel on a vessel must be reported to the Operations Centre at 604.665.9086 or harbour_master@portvancouver.com.

FUELING OPERATIONS

All fueling operations must be carried out in accordance with best practices and the additional information provided in these practices and procedures.

English is the language to be used during all aspects of the fueling operation.

Commercially operated vessels such as tugs, fishing vessels, passenger ferries and water taxis must complete applicable sections of the safety checklist (Appendix C) to be kept on file for at least one year. The completed safety checklist must be produced when asked for by a representative of the Vancouver Fraser Port Authority.

Both the receiving vessel and the supplier of fuel must be fully aware of the specific requirements in the safety checklist.

Safe access between vessels is required during fueling operations. The gangway or access must be safely and securely fastened at all times.

14.8 TANKER OPERATIONS

GENERAL

All oil tankers while in the port must conduct all of their operations in accordance with the safety standards set out in the latest edition of *The International Safety Guide for Oil Tankers and Terminals* (ISGOTT).

Tankers carrying, loading or discharging bulk liquid cargoes other than oil or petroleum products must comply with any applicable sections of ISGOTT as appropriate.

HOT WORK

Hot work taking place on board tankers represents an increased risk than hot work on other vessel types. When submitting a service request for hot work, it must be noted that the work is proposed to take place on a tanker.

In addition to the requirements for hot work in the service request, safety precautions for hot work in the latest addition of *The International Safety Guide for Oil Tankers and Terminals* (ISGOTT) will be considered before approving the work.

REPORTING

The master of a tanker in a loaded or non-gas free condition must obtain permission from the authority to enter the port limits.

In order to receive permission, the master shall provide the Operations Centre with the following information at least two working days in advance of the vessel's arrival:

- A complete list of all bulk liquid cargo on board
- The generic (technical) name of each product
- I.M.O. class of each product when applicable
- Tank stowage and quantities of each product
- Slops remaining on board
- Products to be loaded, discharged and intended terminal rotation (if applicable)
- Vessels estimated time of arrival and estimated time of departure
- Small locally owned tankers that regularly trade in and out of the port might be exempt from these reporting procedures

TANK ATMOSPHERE

The master or responsible officer shall ensure that at all times during a tanker's call to the port, the tank atmosphere remains within safe parameters of flammability and pressure.

Every oil tanker shall at all times maintain a positive inert gas pressure with an oxygen content of less than 8 percent by volume, with the exception of tanks that are gas-free for inspection or other work.

If an oil tanker arrives at the port in a gas free condition, her tanks must be inerted prior to loading.

While any oil tanker is loading or alongside a terminal in the port that is equipped with an operational reception system for vapour recovery, the system shall be utilized. Before disconnecting from any vapour emission control system or departing a berth, the master or responsible officer shall ensure that any excess tank pressure has been vented into the system taking into account the forecast ambient temperature and the characteristics of the cargo.

As much as possible, venting into the atmosphere through the mast riser within the port shall be avoided.

Any defect with any component of the inert gas system on board a tanker, including the pressure/vacuum valves or breaker shall be reported to the Operations Centre at +1 604 665 9086 or harbour_master@portvancouver.com.

In general, with the exception of emergencies, purging and gas-freeing operations are not permitted within the port.

TANK CLEANING (TANKERS)

Crude oil washing (COW) is permitted as required by *MARPOL*, provided that it is carried out as per all requirements in the *International Safety Guide for Oil Tankers and Terminals* (ISGOTT)

Tank washing, with water using the COW machines, may be permitted by the port authority, provided it does not involve venting to the atmosphere, entering any tanks, and all slops can be retained on board or discharged to a reception facility. Additionally, it must be confirmed that the tank atmosphere is inerted and non-flammable. To receive permission a Vessel Service Request must be submitted through the Pacific Gateway Portal.

Any cleaning of cargo tanks involving entry of personnel will need to be carried out as per all requirements in the *International Safety Guide for Oil Tankers and Terminals* (ISGOTT) and other applicable safety guidelines. Please contact the Operations Centre with as much notice as possible if work of this nature is required.

LIGHTERING

The lightering of petroleum products to tankers at anchor introduces an additional risk of pollution incidents by the double handling of the product. Therefore it will only be allowed at the discretion of the port authority.

Permission to lighter may be granted after every effort has been made, including the arrangement of loading rotation, to ensure that lightering is the only possible means of loading.

Lightering operations to tankers will only take place at anchorages K, L or M.

Prior to pumping product, the safety check list must be completed by the receiving vessel and the delivery vessel.

When transferring petroleum products, a boat provided with a minimum crew of two, equipped with cleanup materials and sufficient containment boom to surround the lightering operation, will stand by at the vessels at all times during the transfer operation.

When the product being lightered is diesel fuel oil or heavier, the containment boom must be deployed around the vessels at all times while product is being transferred.

Only product being lightered from the local oil pipeline terminals will be considered for transfer at anchor. Product being barged in for export from other sources, such as the United States, will not be allowed to lighter to tankers at anchor.

Request, in writing, from the ship's agent will be considered for the approval of a transfer operation only after proof that all other alternatives have been exhausted.

The port authority may alter these conditions at any time without notice.

The port authority may terminate the practice of lightering at its discretion without consultation.

COMBINATION CARRIERS – OIL, BULK, ORE

The above requirements shall not apply if either of the following criteria are met:

The vessel's master or representative produces, before arrival, a properly completed "Certificate of Class" satisfying the authority that the vessel has been re-classified for the carriage of dry-bulk cargoes only.

Or

There is produced to the port authority's satisfaction, a letter from the vessel's master or representative, stating that the vessel has not carried oil cargoes of any description since the last quadrennial survey.

Prior to arriving at the loading berth for dry bulk cargo the vessel must have:

- All cargo compartments designed for dry bulk loading thoroughly cleaned and declared gas free. All other holds to be gas free, inerted or ballasted
- All wing or side tanks which have previously contained oil, but are not used for dry bulk must be thoroughly cleaned, gas freed or inerted
- Oil slop tanks unless gas free must be inerted to maintain a maximum of eight percent oxygen content in the system at constant positive pressure
- A certificate from a qualified marine chemist for the current conditions existing under the items above as of time of arrival at the port is required. This certificate shall be valid for a period of 48 hours before entering a loading berth. Should entry be delayed beyond that time, than a further check will be required within 48 hours of the vessel proceeding to the loading berth.

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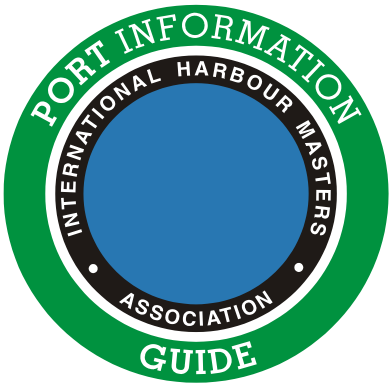
15 Port Inspections



15.1 GENERAL

This chapter describes relevant inspections that one can expect in the port.

15.2 INSPECTIONS FROM PORT STATE CONTROL

The Tokyo Memorandum of Understanding (MOU) and Paris MOU on port state control both aim at eliminating substandard shipping by ensuring compliance with applicable international conventions. Canada was a driving force in the creation of the Tokyo MOU, which focuses specifically on the Asia-Pacific region, and has been a member since its inception in December 1993. Ship inspections are carried out by marine safety inspectors (MSI) from the marine safety branch of Transport Canada. An inspection database and list of detained ships are maintained by the headquarters group at Transport Canada.

More information on port state control can be found on Transport Canada's port state control website.

CONTACT DETAILS

Transport Canada Marine Safety and Security (AMSEA), Tower C, Place de Ville, 330 Sparks Street, 10th Floor, Ottawa, ON K1A 0N5

Email: oep-epe@tc.gc.ca

Telephone: +1 855 859 3123 (Toll Free) or +1 613 991 3135 (local)

Teletypewriter / TDD: +1 888 675 6863

Facsimile: +1 613 993 8196

15.3 INSPECTIONS FROM OTHER PARTIES

INSPECTIONS FROM THE CANADIAN FOOD INSPECTION AGENCY

The Canadian Food Inspection Agency (CFIA) uses a risk-based approach to verify that domestically produced and imported products meet Canadian standards and regulations. CFIA compliance and enforcement actions occur all along the supply chain and they involve

numerous stakeholders and jurisdictions. Vessels arriving in the port may be subject to inspection by CFIA. More information may be found on the CFIA website.

INSPECTIONS FROM THE VANCOUVER FRASER PORT AUTHORITY

Every vessel entering the port may be subject to a visit from a harbour patrol officer.

During their visit on board, the officer may issue orders to accomplish certain tasks and may ask to see certain documents. These will generally relate to sealing of over-side discharge valves, bunker fuel in use, and overall compliance with the practices and procedures within this document.

The harbour patrol officers will, upon request, provide the master with information about the port.

SECURITY AND SEARCH

An enforcement officer designated pursuant to section 108 of the *Canada Marine Act* may board any vessel and conduct inspections of the vessel to determine whether the vessel complies with any of the provisions of these practices and procedures. The enforcement officer may direct any vessel to provide them with reasonable information concerning the condition of the vessel, its equipment, the nature and quantity of its fuel and the manner and locations in which the cargo and the fuel of the vessel are stored, and any other reasonable information that they consider appropriate for the administration of these practices and procedures. The enforcement officer may take any action or issue any orders on board a vessel with respect to that vessel that they consider necessary or reasonable in the circumstance to:

- Prevent the occurrence, commission or continuation of a violation or offence under law, or any other act or regulation within the authority's responsibility or jurisdiction
- Gather evidence, information, materials or samples of any substance or material that may be required by the port authority with respect to a violation or offence under any other act or regulation within the port authority's responsibility or jurisdiction

The master of any vessel and every person on board the vessel shall give the authority all reasonable assistance to enable the enforcement officer to carry out their duties and functions under this section. No person shall obstruct or hinder the enforcement officer while they are engaged in carrying these duties and functions, or knowingly make a false or misleading statement, either orally or in writing, to the port authority.

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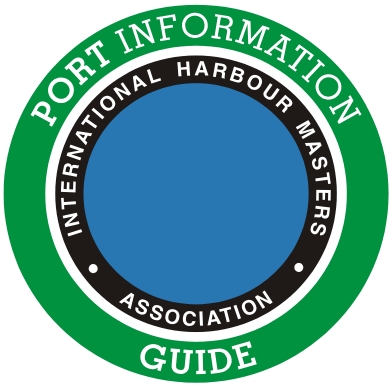
16 Port Services



16.1 GENERAL

This chapter describes available services that one can expect in the port.

16.2 FUEL AND LUBRICATION OIL

A variety of bunker fuels including ultra-low sulphur fuel oil are available in the port. Vessels should make arrangements through their agent for delivery.

16.3 FRESH WATER

Fresh water is available at most facilities. Vessels can arrange delivery through their agent.

16.4 STORES

Stores and provisions can be arranged through the vessel's agent.

16.5 SHORE BASED ELECTRICITY

In 2009, the Port of Vancouver became the first port in Canada and third in the world to install shore power for cruise ships, allowing ships to shut down their diesel generators and connect to a land-based electrical grid while docked at Canada Place.

Currently Canada Place is the only facility offering a shore power connection. Options to expand this to other terminals and ship types are being explored.

16.6 WASTE

Garbage collection and other waste discharge to reception facilities can be coordinated through the vessel's agent.

16.7 REPAIRS

There are numerous companies and service providers in the Vancouver area for repairs. There is also a full service dry dock capable of docking a Panamax-sized vessel.

16.8 Ship Sanitation Certificate

In accordance with the *International Health Regulations* 2005, from the World Health Organization, all international vessels stopping in Canada must have a valid "Ship Sanitation Certificate". These certificates, the Ship Sanitation Control Exemption Certificate or a Ship Sanitation Control Certificate (formerly known as De-ratting/Deratification Certificates), must be renewed every six months. In Canada these certificates are issued by Health Canada and inspection can be requested via the appropriate form thru the vessel's agent.

16.9 SURVEYORS

Multiple services are available. Consult with the vessel's agent to arrange a survey.

16.10 SHIPPING AGENTS

SHIPPING AGENT	TELEPHONE
ACGI	604.891.7447
APL	604.681.0987
Canwest Marine Company	604.247.2487
Canpotex	604.983.4418
China Ocean Shipping (COSCO)	604.689.8989
China Shipping Canada Agency (CSCL)	604.632.3881
Colley West	604.687.3733
Evergreen America	604.682.8983
Genesis Maritime	604.279.9276
G2 Ocean Shipping Canada	604.661.2000
Holland America Group	206.281.3535
Hyundai America	604.601.2900
Inchcape Shipping	604.684.3750
International Chartering Service	604.685.6221

Interocean Shipping	604.682.4741
Intercruises	604.251.3500
Island Shipping	250.754.2305
Island Tug and Barge	604.873.4312
K-Line Canada	604.682.7270
LBH Shipping	604.599.8103
Ledcor Marine	604.699.8847
Lions Gate Shipping	604.255.1116
Mason Agency	604.689.8628
Marine Petrobulk	604.987.4415
Mercury Transport Inc.	604.921.7451
McLean Kennedy Inc.	604.572.7993
Montship Inc.	604.640.7400
Navitrans Shipping Agency	604.689.9555
Norton Lilley	604.640.7400
North Pacific Shipping	604.662.2811
Northcoast Shipping Agency	250.624.9668
Ocean Agencies	778.298.2126
OOCL Canada	604.689.4144
Pacific Northwest Shipping	604.924.1830
Pacnord Agencies	604.739.3263
Powell River Shipping	604.485.6866
Princess Cruises BC Ltd.	604.685.0454
Robert Reford	604.640.7400
Sinotrans Canada Inc.	604.685.1500
Sea Link Marine Group	604.524.4440
Trans-Oceanic Shipping	604.684.2388
Triton Marine Group	604.294.4444
Westward Shipping	604.273.6141
West Coast Agencies	604.688.1662
Wheelhouse Shipping Agency	604.891.5555
Wilhelmsen Ship Service	604.434.7447
Zim Line Canada	604.283.3957
Yang Ming Canada	604.681.9999

16.11 MEDICAL FACILITIES

There are many full service hospitals in the Lower Mainland and Vancouver area.

In any emergency call 911

16.12 SEAMAN'S MISSIONS

The Mission to Seafarers operates two locations within the Port of Vancouver. Locations include the Vancouver Waterfront and Roberts Bank Centre. Services include transportation, access to phone and internet, chaplaincy, recreation and local advice. For more information, including hours of operation, visit the website at http://www.flyingangel.ca or call +1 604 253 4421

16.13 TRANSPORT

LIFEBOAT FERRYING

The preferred practice is to use locally procured water taxis. If ships' lifeboats are used to ferry crew to and from ships anchored in English Bay, they must only land and embark persons at 'F' float at the Fisherman's Terminal on the south shore of False Creek, east of Burrard Street Bridge. This is the only Canada Customs (CBSA) approved landing place. Only vessels anchored in English Bay may use their own boats for ferrying.

Ship's crews must not land at private marinas.

Lifeboat engines must be fitted with an efficient muffler silencer system. If lifeboat engines produce considerable noise and/or pollution, they will be asked to return to their vessel and cease operations.

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APPENDIX A

FIRST NARROWS – MINIMUM CHANNEL DEPTHS AND MAXIMUM VESSEL AIR DRAFTS BASED ON TCZ-1 MOULDED BREADTH FACTOR FOR CHANNEL WIDTH.

Vessel Moulded Breadth	Required Channel Width	Minimum Channel Depth at Lower Low Water (LLWLT - Chart Datum) *	Maximum Vessel Air Draft at Higher High Water (HHWLT) *
20.0	74.0	15.0	57.4
21.0	77.7	15.0	57.4
22.0	81.4	15.0	57.3
23.0	85.1	15.0	57.3
24.0	88.8	15.0	57.3
25.0	92.5	15.0	57.3
26.0	96.2	15.0	57.3
27.0	99.9	15.0	57.1
28.0	103.6	15.0	57.1
29.0	107.3	15.0	57.1
30.0	111.0	15.0	57.1
31.0	114.7	15.0	57.1
32.0	118.4	15.0	56.8
33.0	122.1	15.0	56.8
34.0	125.8	15.0	56.8
35.0	129.5	15.0	56.8
36.0	133.2	15.0	56.8
37.0	136.9	15.0	56.8
38.0	140.6	15.0	56.5
39.0	144.3	15.0	56.5
40.0	148.0	15.0	56.5
41.0	151.7	15.0	56.5
42.0	155.4	15.0	56.5
43.0	159.1	15.0	56.2
44.0	162.8	15.0	56.2
45.0	166.5	15.0	56.2
46.0	170.2	15.0	56.2
47.0	173.9	15.0	56.2
48.0	177.6	15.0	55.9
49.0	181.3	15.0	55.9
50.0	185.0	15.0	55.9
51.0	188.7	15.0	55.9

Vessel Moulded Breadth	Required Channel Width	Minimum Channel Depth at Lower Low Water (LLWLT – Chart Datum) *	Maximum Vessel Air Draft at Higher High Water (HHWLT) *
52.0	192.4	15.0	55.9
53.0	196.1	15.0	55.9
54.0	199.8	15.0	55.6
55.0	203.5	15.0	55.6
56.0	207.2	15.0	55.6
57.0	210.9	15.0	55.6
58.0	214.6	15.0	55.6
59.0	218.3	15.0	55.3
60.0	222.0	15.0	55.3

Dimensions are rounded to the nearest decimeter.

*Additional channel depth or additional vessel air draft can be generated by means of tidal assist, which will limit transit opportunities to specific transit windows.

APPENDIX B

SECOND NARROWS - CONTROLLING DEPTHS AND BRIDGE HEIGHTS BASED ON TCZ-2 MOULDED BREADTH FACTOR FOR CHANNEL WIDTH

Vessel Moulded Breadth	Channel Width	Control Depth at Chart Datum	Maximum Vessel Air Draft (HHWLT)
20.0	57.0	14.7	42.7
20.1	57.3	14.6	42.7
20.2	57.6	14.6	42.7
20.3	57.9	14.6	42.7
20.4	58.1	14.5	42.7
20.5	58.4	14.5	42.7
20.6	58.7	14.5	42.7
20.7	59.0	14.4	42.7
20.8	59.3	14.4	42.7
20.9	59.6	14.4	42.7
21.0	59.9	14.4	42.7
21.1	60.1	14.4	42.7
21.2	60.4	14.4	42.7
21.3	60.7	14.3	42.7
21.4	61.0	14.3	42.7
21.5	61.3	14.3	42.7
21.6	61.6	14.3	42.7
21.7	61.8	14.3	42.7
21.8	62.1	14.3	42.7
21.9	62.4	14.3	42.7
22.0	62.7	14.3	42.7
22.1	63.0	14.3	42.7
22.2	63.3	14.3	42.7
22.3	63.6	14.3	42.7
22.4	63.8	14.3	42.7
22.5	64.1	14.3	42.7
22.6	64.4	14.3	42.7
22.7	64.7	14.3	42.7
22.8	65.0	14.3	42.7
22.9	65.3	14.3	42.7
23.0	65.6	14.3	42.7
23.1	65.8	14.3	42.7
23.2	66.1	14.3	42.7

Vessel Moulded Breadth	Channel Width	Control Depth at Chart Datum	Maximum Vessel Air Draft (HHWLT)
23.3	66.4	14.3	42.7
23.4	66.7	14.3	42.7
23.5	67.0	14.3	42.7
23.6	67.3	14.3	42.7
23.7	67.5	14.3	42.7
23.8	67.8	14.3	42.7
23.9	68.1	14.3	42.7
24.0	68.4	14.3	42.7
24.1	68.7	14.3	42.7
24.2	69.0	14.3	42.7
24.3	69.3	14.3	42.7
24.4	69.5	14.3	42.7
24.5	69.8	14.3	42.7
24.6	70.1	14.2	42.7
24.7	70.4	14.2	42.7
24.8	70.7	14.1	42.7
24.9	71.0	14.1	42.7
25.0	71.3	14.1	42.7
25.1	71.5	13.9	42.7
25.2	71.8	13.8	42.7
25.3	72.1	13.7	42.7
25.4	72.4	13.7	42.7
25.5	72.7	13.7	42.7
25.6	73.0	13.7	42.7
25.7	73.2	13.7	42.7
25.8	73.5	13.7	42.7
25.9	73.8	13.7	42.7
26.0	74.1	13.6	42.7
26.1	74.4	13.5	42.7
26.2	74.7	13.5	42.7
26.3	75.0	13.5	42.7
26.4	75.2	13.5	42.7
26.5	75.5	13.5	42.7
26.6	75.8	13.5	42.7
26.7	76.1	13.5	42.7
26.8	76.4	13.5	42.7
26.9	76.7	13.5	42.7
27.0	77.0	13.5	42.7
27.1	77.2	13.5	42.3
27.2	77.5	13.5	42.3

Vessel Moulded Breadth	Channel Width	Control Depth at Chart Datum	Maximum Vessel Air Draft (HHWLT)
27.3	77.8	13.5	42.3
27.4	78.1	13.5	42.3
27.5	78.4	13.5	42.3
27.6	78.7	13.5	42.3
27.7	78.9	13.5	42.3
27.8	79.2	13.5	42.3
27.9	79.5	13.5	42.3
28.0	79.8	13.5	42.3
28.1	80.1	13.5	42.3
28.2	80.4	13.4	42.3
28.3	80.7	13.4	42.3
28.4	80.9	13.4	42.3
28.5	81.2	13.4	42.3
28.6	81.5	13.4	42.3
28.7	81.8	13.4	42.3
28.8	82.1	13.4	42.3
28.9	82.4	13.4	42.3
29.0	82.7	13.4	42.3
29.1	82.9	13.4	42.3
29.2	83.2	13.3	42.3
29.3	83.5	13.3	42.3
29.4	83.8	13.3	42.3
29.5	84.1	13.3	42.3
29.6	84.4	13.2	42.3
29.7	84.6	13.2	42.3
29.8	84.9	13.1	42.3
29.9	85.2	13.1	42.3
30.0	85.5	13.1	42.3
30.1	85.8	13.0	42.3
30.2	86.1	12.9	42.3
30.3	86.4	12.8	42.3
30.4	86.6	12.8	42.3
30.5	86.9	12.8	42.3
30.6	87.2	12.8	42.3
30.7	87.5	12.8	42.3
30.8	87.8	12.7	42.3
30.9	88.1	12.7	42.3
31.0	88.4	12.6	42.3
31.1	88.6	12.5	42.3
31.2	88.9	12.5	42.3

Vessel Moulded Breadth	Channel Width	Control Depth at Chart Datum	Maximum Vessel Air Draft (HHWLT)
31.3	89.2	12.5	42.3
31.4	89.5	12.5	42.3
31.5	89.8	12.5	42.3
31.6	90.1	12.5	42.3
31.7	90.3	12.5	42.3
31.8	90.6	12.5	42.3
31.9	90.9	12.5	42.3
32.0	91.2	12.5	42.3
32.1	91.5	12.5	42.3
32.2	91.8	12.5	42.3
32.3	92.1	12.5	42.3
32.4	92.3	12.5	42.3
32.5	92.6	12.5	42.3
32.6	92.9	12.5	42.3
32.7	93.2	12.5	42.3
32.8	93.5	12.5	42.3
32.9	93.8	12.5	42.3
33.0	94.1	12.5	42.3
33.1	94.3	12.5	42.3
33.2	94.6	12.5	42.3
33.3	94.9	12.5	42.3
33.4	95.2	12.5	42.3
33.5	95.5	12.5	42.3
33.6	95.8	12.5	42.3
33.7	96.0	12.5	42.3
33.8	96.3	12.4	42.3
33.9	96.6	12.3	42.3
34.0	96.9	12.3	42.3
34.1	97.2	12.3	42.3
34.2	97.5	12.3	42.3
34.3	97.8	12.2	42.3
34.4	98.0	12.2	42.3
34.5	98.3	12.1	42.3
34.6	98.6	12.1	42.3
34.7	98.9	12.1	42.3
34.8	99.2	12.1	42.3
34.9	99.5	12.1	42.3
35.0	99.8	12.1	42.3
35.1	100.0	12.1	42.3
35.2	100.3	12.0	42.3

Vessel Moulded Breadth	Channel Width	Control Depth at Chart Datum	Maximum Vessel Air Draft (HHWLT)
35.3	100.6	12.0	42.3
35.4	100.9	12.0	42.3
35.5	101.2	12.0	42.3
35.6	101.5	12.0	42.3
35.7	101.7	12.0	42.3
35.8	102.0	12.0	42.3
35.9	102.3	12.0	42.3
36.0	102.6	12.0	42.3
36.1	102.9	12.0	41.8
36.2	103.2	12.0	41.8
36.3	103.5	11.9	41.8
36.4	103.7	11.9	41.8
36.5	104.0	11.9	41.8
36.6	104.3	11.9	41.8
36.7	104.6	11.9	41.8
36.8	104.9	11.9	41.8
36.9	105.2	11.8	41.8
37.0	105.5	11.7	41.8
37.1	105.7	11.7	41.8
37.2	106.0	11.7	41.8
37.3	106.3	11.7	41.8
37.4	106.6	11.7	41.8
37.5	106.9	11.6	41.8
37.6	107.2	11.5	41.8
37.7	107.4	11.4	41.8
37.8	107.7	11.4	41.8
37.9	108.0	11.4	41.8
38.0	108.3	11.4	41.8
38.1	108.6	11.4	41.8
38.2	108.9	11.4	41.8
38.3	109.2	11.3	41.8
38.4	109.4	11.3	41.8
38.5	109.7	11.2	41.8
38.6	110.0	11.2	41.8
38.7	110.3	11.2	41.8
38.8	110.6	11.2	41.8
38.9	110.9	11.2	41.8
39.0	111.2	11.2	41.8
39.1	111.4	11.2	41.8
39.2	111.7	11.2	41.8

Vessel Moulded Breadth	Channel Width	Control Depth at Chart Datum	Maximum Vessel Air Draft (HHWLT)
39.3	112.0	11.2	41.8
39.4	112.3	11.2	41.8
39.5	112.6	11.1	41.8
39.6	112.9	11.1	41.8
39.7	113.1	11.0	41.8
39.8	113.4	11.0	41.8
39.9	113.7	11.0	41.8
40.0	114.0	11.0	41.8
40.1	114.3	11.0	41.8
40.2	114.6	11.0	41.8
40.3	114.9	11.0	41.8
40.4	115.1	11.0	41.8
40.5	115.4	11.0	41.8
40.6	115.7	11.0	41.8
40.7	116.0	11.0	41.8
40.8	116.3	11.0	41.8
40.9	116.6	11.0	41.8
41.0	116.9	10.9	41.8
41.1	117.1	10.9	41.8
41.2	117.4	10.9	41.8
41.3	117.7	10.9	41.8
41.4	118.0	10.9	41.8
41.5	118.3	10.8	41.8
41.6	118.6	10.8	41.8
41.7	118.8	10.7	41.8
41.8	119.1	10.7	41.8
41.9	119.4	10.7	41.8
42.0	119.7	10.7	41.8
42.1	120.0	10.7	41.8
42.2	120.3	10.6	41.8
42.3	120.6	10.6	41.8
42.4	120.8	10.6	41.8
42.5	121.1	10.5	41.8
42.6	121.4	10.5	41.8
42.7	121.7	10.5	41.8
42.8	122.0	10.5	41.8
42.9	122.3	10.5	41.8
43.0	122.6	10.5	41.8
43.1	122.8	10.4	41.8
43.2	123.1	10.4	41.8

Vessel Moulded Breadth	Channel Width	Control Depth at Chart Datum	Maximum Vessel Air Draft (HHWLT)
43.3	123.4	10.3	41.8
43.4	123.7	10.3	41.8
43.5	124.0	10.2	41.8
43.6	124.3	10.2	41.8
43.7	124.5	10.2	41.8
43.8	124.8	10.1	41.8
43.9	125.1	10.0	41.8
44.0	125.4	9.9	41.8
44.1	125.7	9.8	41.8
44.2	126.0	9.8	41.8
44.3	126.3	9.8	41.8
44.4	126.5	9.8	41.8
44.5	126.8	9.8	41.8
44.6	127.1	9.7	41.8
44.7	127.4	9.7	41.8
44.8	127.7	9.7	41.8
44.9	128.0	9.7	41.8
45.0	128.3	9.7	41.8
45.1	128.5	9.6	40.9
45.2	128.8	9.6	40.9
45.3	129.1	9.5	40.9
45.4	129.4	9.4	40.9
45.5	129.7	9.3	40.9
45.6	130.0	9.3	40.9
45.7	130.2	9.3	40.9
45.8	130.5	9.3	40.9
45.9	130.8	9.3	40.9
46.0	131.1	9.2	40.9
46.1	131.4	9.1	40.9
46.2	131.7	9.0	40.9
46.3	132.0	9.0	40.9
46.4	132.2	9.0	40.9
46.5	132.5	9.0	40.9
46.6	132.8	9.0	40.9
46.7	133.1	9.0	40.9
46.8	133.4	8.9	40.9
46.9	133.7	8.8	40.9
47.0	134.0	8.8	40.9
47.1	134.2	8.8	40.9
47.2	134.5	8.8	40.9

Vessel Moulded Breadth	Channel Width	Control Depth at Chart Datum	Maximum Vessel Air Draft (HHWLT)
47.3	134.8	8.8	40.9
47.4	135.1	8.8	40.9
47.5	135.4	8.7	40.9
47.6	135.7	8.7	40.9
47.7	135.9	8.7	40.9
47.8	136.2	8.7	40.9
47.9	136.5	8.7	40.9
48.0	136.8	8.7	40.9
48.1	137.1	8.7	40.9

Channel widths and vertical clearances are rounded to the nearest decimeter.

APPENDIX C

BUNKERING SAFETY CHECKLIST

Port _____ Date _____

Ship _____ Barge _____

Master _____ Master _____

1. Bunkers to be Transferred

Grade	Tonnes	Volume at Loading Temp	Loading Temperature	Maximum Transfer Rate	Maximum Line Pressure
Fuel Oil					
Gas Oil/Diesel					
Lub. Oil in Bulk					

2. Bunker Tanks to be Loaded

Tank No.	Grade	Volume of Tank @ ____%	Vol. of Oil in Tank before Loading	Available Volume	Volume to be Loaded	Total Volumes Grade

3. Checks by Barge Prior to Berthing

Bunkering	Ship	Barge	Code	Remarks
1. The barge has obtained the necessary permissions to go alongside receiving ship.				
2. The fenders have been checked, are in good order and there is no possibility of metal to metal contact.			R	
3. Adequate electrical insulating means are in place in the barge-to-ship connection. **(34)**				
4. All bunker hoses are in good condition and are appropriate for the service intended. **(7)**				

4. Checks Prior to Transfer

Bunkering	Ship	Barge	Code	Remarks
5. The barge is securely moored. **(2)**			R	
6. There is a safe means of access between the ship and barge. **(1)**			R	
7. Effective communications have been established between Responsible Officers. **(3)**			A R	(VHF/UHF Ch .....). Primary System: Backup System: Emergency Stop Signal:
8. There is an effective watch on board the barge and on the ship receiving bunkers. **(22)**				
9. Fire hoses and fire-fighting equipment on board the barge and ship are ready for immediate use. **(5)**				
10. All scuppers are effectively plugged. Temporarily removed scupper plugs will be monitored at all times. Drip trays are in position on decks around connections and bunker tank vents. **(10) (11)**			R	
11. Initial line up has been checked and unused bunker connections are blanked and fully bolted. **(13)**				
12. The transfer hose is properly rigged and fully bolted and secured to manifolds on ship and barge. **(7)**				
13. Overboard valves connected to the cargo system, engine room bilges and bunker lines are closed and sealed. **(16)**				
14. All cargo and bunker tank hatch lids are closed. **(15)**				
15. Bunker tank contents will be monitored at regular intervals.			A R	at intervals not exceeding ..... minutes
16. There is a supply of oil spill clean-up material readily available for immediate use.				
17. The main radio transmitter aerials are earthed and radars are switched off. **(42)**				
18. Fixed VHF/UHF transceivers and AIS equipment are on the correct power mode or switched off. **(40)**				
19. Smoking rooms have been identified and smoking restrictions are being observed. **(36)**			A R	Nominated Smoking Rooms Tanker: Barge:

Bunkering	Ship	Barge	Code	Remarks
20. Naked light regulations are being observed. **(37)**			R	
21. All external doors and ports in the accommodation are closed. **(17)**			R	
22. Material Safety Data Sheets (MSDS) for the bunker transfer have been exchanged where requested. **(26)**			R	
23. The hazards associated with toxic substances in the bunkers being handled have been identified and understood. **(27)**			R	H_2S Content ..... Benzene Content .....

DECLARATION

We have checked, where appropriate jointly, the items of the Check-List in accordance with the instructions and have satisfied ourselves that the entries we have made are correct to the best of our knowledge.

We have also made arrangements to carry out repetitive checks as necessary and agreed that those items coded 'R' in the Check-List should be re-checked at intervals not exceeding _____ hours.

If, to our knowledge, the status of any item changes, we will immediately inform the other party.

For Ship	For Barge
Name _____	Name _____
Rank _____	Rank _____
Signature _____	Signature _____
Date _____	Date _____
Time _____	Time _____

Record of repetitive checks:

Date:			
Time:			
Initials for Ship:			
Initials for Barge:			

APPENDIX D

THE SHIP/SHORE SAFETY CHECK-LIST

Ship's Name _____

Berth _____ Port _____

Date of Arrival _____ Time of Arrival _____

Part 'A' – Bulk Liquid General – Physical Checks

Bulk Liquid – General	Ship	Terminal	Code	Remarks
1. There is safe access between the ship and shore.			R	
2. The ship is securely moored.			R	
3. The agreed ship/shore communication system is operative.			A R	System: Backup System:
4. Emergency towing-off pennants are correctly rigged and positioned.			R	
5. The ship's fire hoses and fire-fighting equipment are positioned and ready for immediate use.			R	
6. The terminal's fire-fighting equipment is positioned and ready for immediate use.			R	
7. The ship's cargo and bunker hoses, pipelines and manifolds are in good condition, properly rigged and appropriate for the service intended.				
8. The terminal's cargo and bunker hoses or arms are in good condition, properly rigged and appropriate for the service intended.				
9. The cargo transfer system is sufficiently isolated and drained to allow safe removal of blank flanges prior to connection.				
10. Scuppers and save-alls on board are effectively plugged and drip trays are in position and empty.			R	
11. Temporarily removed scupper plugs will be constantly monitored.			R	
12. Shore spill containment and sumps are correctly managed.			R	
13. The ship's unused cargo and bunker connections are properly secured with blank flanges fully bolted.				
14. The terminal's unused cargo and bunker connections are properly secured with blank flanges fully bolted.				

Bulk Liquid – General	Ship	Terminal	Code	Remarks
15. All cargo, ballast and bunker tank lids are closed.				
16. Sea and overboard discharge valves, when not in use, are closed and visibly secured.				
17. All external doors, ports and windows in the accommodation, stores and machinery spaces are closed. Engine room vents may be open.			R	
18. The ship's emergency fire control plans are located externally.				Location:

If the ship is fitted, or is required to be fitted, with an inert gas system (IGS), the following points should be physically checked:

Inert Gas System	Ship	Terminal	Code	Remarks
19. Fixed IGS pressure and oxygen content recorders are working.			R	
20. All cargo tank atmospheres are at positive pressure with oxygen content of 8% or less by volume.			P R	

Part 'B' – Bulk Liquid General – Verbal Verification

Bulk Liquid – General	Ship	Terminal	Code	Remarks
21. The ship is ready to move under its own power.			P R	
22. There is an effective deck watch in attendance on board and adequate supervision of operations on the ship and in the terminal.			R	
23. There are sufficient personnel on board and ashore to deal with an emergency.			R	
24. The procedures for cargo, bunker and ballast handling have been agreed.			A R	
25. The emergency signal and shutdown procedure to be used by the ship and shore have been explained and understood.			A	
26. Material Safety Data Sheets (MSDS) for the cargo transfer have been exchanged where requested.			P R	

Bulk Liquid – General	Ship	Terminal	Code	Remarks
27. The hazards associated with toxic substances in the cargo being handled have been identified and understood.				H_2S Content: Benzene Content:
28. An International Shore Fire Connection has been provided.				
29. The agreed tank venting system will be used.			A R	Method:
30. The requirements for closed operations have been agreed.			R	
31. The operation of the P/V system has been verified.				
32. Where a vapour return line is connected, operating parameters have been agreed.			A R	
33. Independent high level alarms, if fitted, are operational and have been tested.			A R	
34. Adequate electrical insulating means are in place in the ship/shore connection.			A R	
35. Shore lines are fitted with a non-return valve, or procedures to avoid back filling have been discussed.			P R	
36. Smoking rooms have been identified and smoking requirements are being observed.			A R	Nominated smoking rooms:
37. Naked light regulations are being observed.			A R	
38. Ship/shore telephones, mobile phones and pager requirements are being observed.			A R	
39. Hand torches (flashlights) are of an approved type.				
40. Fixed VHF/UHF transceivers and AIS equipment are on the correct power mode or switched off.				
41. Portable VHF/UHF transceivers are of an approved type.				
42. The ship's main radio transmitter aerials are earthed and radars are switched off.				
43. Electric cables to portable electrical equipment within the hazardous area are disconnected from power.				
44. Window type air conditioning units are disconnected.				

Bulk Liquid – General	Ship	Terminal	Code	Remarks
45. Positive pressure is being maintained inside the accommodation, and air conditioning intakes, which may permit the entry of cargo vapours, are closed.				
46. Measures have been taken to ensure sufficient mechanical ventilation in the pumproom.			R	
47. There is provision for an emergency escape.				
48. The maximum wind and swell criteria for operations have been agreed.			A	Stop cargo at: Disconnect at: Unberth at:
49. Security protocols have been agreed between the Ship Security Officer and the Port Facility Security Officer, if appropriate.			A	
50. Where appropriate, procedures have been agreed for receiving nitrogen supplied from shore, either for inerting or purging ship's tanks, or for line clearing into the ship.			A P	

If the ship is fitted, or is required to be fitted, with an inert gas system (IGS) the following statements should be addressed:

Inert Gas System	Ship	Terminal	Code	Remarks
51. The IGS is fully operational and in good working order.			P	
52. Deck seals, or equivalent, are in good working order.			R	
53. Liquid levels in pressure/vacuum breakers are correct.			R	
54. The fixed and portable oxygen analysers have been calibrated and are working properly.			R	
55. All the individual tank IG valves (if fitted) are correctly set and locked.			R	
56. All personnel in charge of cargo operations are aware that, in the case of failure of the inert gas plant, discharge operations should cease and the terminal be advised.				

If the ship is fitted with a Crude Oil Washing (COW) system, and intends to crude oil wash, the following statements should be addressed:

Crude Oil Washing	Ship	Terminal	Code	Remarks
57. The Pre-Arrival COW check-list, as contained in the approved COW manual, has been satisfactorily completed.				
58. The COW check-lists for use before, during and after COW, as contained in the approved COW manual, are available and being used.			R	

If the ship is planning to tank clean alongside, the following statements should be addressed:

Tank Cleaning	Ship	Terminal	Code	Remarks
59. Tank cleaning operations are planned during the ship's stay alongside the shore installation.	Yes/No*	Yes/No*		
60. If 'yes', the procedures and approvals for tank cleaning have been agreed.				
61. Permission has been granted for gas freeing operations.	Yes/No*	Yes/No*		

** Delete Yes or No as appropriate*

Part 'C' – Bulk Liquid Chemicals – Verbal Verification

Bulk Liquid Chemicals	Ship	Terminal	Code	Remarks
1. Material Safety Data Sheets are available giving the necessary data for the safe handling of the cargo.				
2. A manufacturer's inhibition certificate, where applicable, has been provided.			P	
3. Sufficient protective clothing and equipment (including self-contained breathing apparatus) is ready for immediate use and is suitable for the product being handled.				
4. Countermeasures against accidental personal contact with the cargo have been agreed.				
5. The cargo handling rate is compatible with the automatic shutdown system, if in use.			A	
6. Cargo system gauges and alarms are correctly set and in good order.				

Bulk Liquid Chemicals	Ship	Terminal	Code	Remarks
7. Portable vapour detection instruments are readily available for the products being handled.				
8. Information on fire-fighting media and procedures has been exchanged.				
9. Transfer hoses are of suitable material, resistant to the action of the products being handled.				
10. Cargo handling is being performed with the permanent installed pipeline system.			P	
11. Where appropriate, procedures have been agreed for receiving nitrogen supplied from shore, either for inerting or purging ship's tanks, or for line clearing into the ship.			A P	

Part 'D' – Bulk Liquefied Gases – Verbal Verification

Bulk Liquefied Gases	Ship	Terminal	Code	Remarks
1. Material Safety Data Sheets are available giving the necessary data for the safe handling of the cargo.				
2. A manufacturer's inhibition certificate, where applicable, has been provided.			P	
3. The water spray system is ready for immediate use.				
4. There is sufficient suitable protective equipment (including self-contained breathing apparatus) and protective clothing ready for immediate use.				
5. Hold and inter-barrier spaces are properly inerted or filled with dry air, as required.				
6. All remote control valves are in working order.				
7. The required cargo pumps and compressors are in good order, and the maximum working pressures have been agreed between ship and shore.			A	
8. Re-liquefaction or boil-off control equipment is in good order.				

Bulk Liquid Chemicals	Ship	Terminal	Code	Remarks
9. The gas detection equipment has been properly set for the cargo, is calibrated, has been tested and inspected and is in good order.				
10. Cargo system gauges and alarms are correctly set and in good order.				
11. Emergency shutdown systems have been tested and are working properly.				
12. Ship and shore have informed each other of the closing rate of ESD valves, automatic valves or similar devices.			A	Ship: Shore:
13. Information has been exchanged between ship and shore on the maximum/minimum temperatures/ pressures of the cargo to be handled.			A	
14. Cargo tanks are protected against inadvertent overfilling at all times while any cargo operations are in progress.				
15. The compressor room is properly ventilated, the electrical motor room is properly pressurised and the alarm system is working.				
16. Cargo tank relief valves are set correctly and actual relief valve settings are clearly and visibly displayed. *(Record settings below.)*				

Tank No 1 ☐ Tank No 5 ☐ Tank No 8 ☐

Tank No 2 ☐ Tank No 6 ☐ Tank No 9 ☐

Tank No 3 ☐ Tank No 7 ☐ Tank No 10 ☐

Tank No 4 ☐

DECLARATION

We, the undersigned, have checked the above items in Parts A and B, and where appropriate Part C or D, in accordance with the instructions, and have satisfied ourselves that the entries we have made are correct to the best of our knowledge.

We have also made arrangements to carry out repetitive checks as necessary and agreed that those items with code 'R' in the Check-List should be re-checked at intervals not exceeding _____ hours.

If to our knowledge the status of any item changes, we will immediately inform the other party.

For Ship	For Shore
Name _____	Name _____
Rank _____	Position or Title _____
Signature _____	Signature _____
Date _____	Date _____
Time _____	Time _____

Record of repetitive checks:

Date:			
Time:			
Initials for Ship:			
Initials for Shore:			

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APPENDIX E

LNG BUNKER CHECKLIST

LNG BUNKER CHECKLIST

Part A: Planned Operations Checks

This part of the checklist should be completed by the LNG bunker provider and receiver independently within 48 h in advance of a planned LNG bunker operation.

Planned date and time

LNG receiving vessel

Port and Berth or location

LNG bunker vessel

	Check	Receiving vessel	Bunker vessel	Bunker terminal	Remarks
1	Emergency fire plans are located externally				Location:
2	International shore connection available				Location:
3	Firefighting equipment available for use				
4	Gas detection equipment tested, calibrated and available for use				
5	Personnel protective equipment available for use				
6	Water spray system available for use				
7	Spill containment and hull protection system in place				
8	LNG transfer pumps and/or equipment in working order				
9	Remote control valves tested and in working order				
10	LNG tank pressure control equipment in working order				
11	Instrumentation, control, shutdown and safety devices in working order				
12	Bunker plans, operations manual and emergency procedures are available				

	Check	Receiving vessel	Bunker vessel	Bunker terminal	Remarks
13	Personnel have required training and are instructed in the use of the equipment and procedures				
14	Bunker provider list of local Port State Control (PSC) restrictions or notifications required as a condition of the planned bunkering operation (i.e. wind speed less than 25 knots):				
	a. _____ b. _____ c. _____ d. _____				

DECLARATION

The undersigned as applicable have checked the above items in Part A and are satisfied that the entries made are correct.

Receiving vessel	Bunker vessel	Bunker terminal
Name:	Name:	Name:
Position:	Position:	Position:
Signature:	Signature:	Signature:
Date:	Date:	Date:
Time:	Time:	Time:

Instructions for completing this checklist

This independent declaration should be signed only by the applicable party. Once signed, copies of this document shall be kept onboard the LNG receiving vessel and the bunker vessel or terminal (as appropriate) for at least 1 year.

LNG BUNKER CHECKLIST

Part B: Pre-Operational Checks

This part of the checklist should be completed jointly by all appropriate parties, including any terminal where vessel to vessel bunkering occurs, immediately before the start of transfer operations.

Planned date and time

LNG receiving vessel

Port and Berth or location

LNG bunker vessel

	Check	Receiving vessel	Bunker vessel	Terminal	Code	Remarks
1	Part A has been completed and conditions noted have not changed				A	
2	Permission (if applicable) for LNG bunkering received and notifications made				P	
3	Present weather and wave conditions are within agreed limits				A, R	
4	Vessels are securely moored with sufficient fendering				R	
5	There is a safe means of access between the vessels				R	
6	The LNG bunker manifold is sufficiently illuminated				A, R	
7	The vessels are able to move under their own power in a safe and unobstructed direction				R	
8	Adequate supervision by responsible individuals is in place				R	
9	The method of electrical insulation has been agreed upon				A	
10	The controlled area designated, marked and free of unauthorized personnel				A, R	Location:
11	Control of ignition sources in controlled area implemented				A, R	
12	Material safety data sheets (MSDS) for LNG available				A	
13	External doors, portholes and accommodation ventilation inlets closed				A	

	Check	Receiving vessel	Bunker vessel	Terminal	Code	Remarks
14	An effective means of communication has been tested and language for communication agreed upon				A	Language that will be used: Primary system: Backup system: VHF/UHF Channel:
15	Emergency procedures reviewed and emergency shutdown systems (ESD) tested. Closing times for ESD's exchanged				A	Emergency stop signal: Provider ESD: _____ s Receiver ESD: _____ s
16	Procedures for prevention of falling object in place				A	
17	An effective deck watch has been established to monitor mooring				R	
18	An effective LNG bunker oversight has been established to monitor piping and controls				R	
19	Personnel working in the vicinity of the LNG bunker manifold are using appropriate personnel protective equipment				R	
20	Dry-break couplings installed on LNG bunker connections are in working order				A	
21	Bunker connections are adequately supported, properly connected and leak tested. Unused connections are closed, blanked and fully bolted				A	
22	Procedures for purging, cool down and LNG transfer operations have been agreed by the receiving vessel and provider				A	
23	Part C has been completed				A	
24	The receiving vessel confirms that LNG bunker operations can commence				P	Time notified: _____ h

DECLARATION

The undersigned as applicable have checked the above items in Part B and are satisfied that the entries made are correct.

Receiving vessel	Bunker vessel	Bunker terminal
Name:	Name:	Name:
Position:	Position:	Position:
Signature:	Signature:	Signature:
Date:	Date:	Date:
Time:	Time:	Time:

Instructions for completing this checklist

The "codes" indicate the following:

a) A (Agreement): indicating an agreement or procedure that may be detailed in the "Remarks" column;

b) R (Re-check): indicating that the item will be periodically reconfirmed at intervals agreeable to the parties;

c) P (Permission): indicating that permission has been granted by the appropriate authorities.

This joint declaration should be signed only when both parties have checked and accepted their assigned responsibilities. Once signed, copies of this document shall be kept onboard the LNG receiving vessel and the bunker vessel or terminal (as appropriate) for at least 1 year.

LNG BUNKER CHECKLIST

Part C: LNG Transfer

This part of the checklist should be completed immediately before the start of transfer operations by the LNG bunker provider and receiver.

Planned date and time _____

LNG receiving vessel _____

Port and Berth or location _____

LNG bunker vessel _____

AGREED STARTING TEMPERATURES AND PRESSURES

Note the agreed physical quantity unit (PQU): m^3 Tonnes _____

	Receiving vessel		Provider		Units[a]
	Tank 1	Tank 2	Tank 1	Tank 2	
LNG tank start temperature					°C/°F
LNG tank start pressure					bar/psi/MPa (absolute)
Available LNG tank capacity					PQU

[a] Delete as appropriate.

AGREED BUNKER OPERATIONS

	Receiving vessel		Units[a]
	Tank 1	Tank 2	
Agreed quantity to be transferred			PQU
LNG tanks start pressure			bar/psi/MPa (absolute)
Start pressure at manifold			bar/psi/MPa (gauge)
Starting flow rate			PQU per hour
Maximum transfer flow rate			PQU per hour
Topping off flow rate			PQU per hour
Maximum pressure at manifold			bar/psi/MPa (gauge)

[a] Delete as appropriate.

AGREED MAXIMUM AND MINIMUM BUNKERING PARAMETERS

Receiving vessel	Maximum	Minimum	Units[a]
LNG bunker tank pressure			bar/psi/MPa (absolute)
LNG temperature			°C/°F
Filling limit of LNG bunker tanks			%

[a] Delete as appropriate.

AGREED SIMOPS LNG BUNKER/OIL BUNKER/CARGO OPERATIONS[1)]

Activity	Receiving vessel	Bunker vessel	Bunker terminal

RESTRICTION ON AGREED DEVIATION IN LNG BUNKER OPERATIONS[2)]

Activity	Receiving vessel	Bunker vessel	Bunker terminal	Mitigation measures

DECLARATION

The undersigned as applicable have checked the above items in Part C and are satisfied that the entries made are correct. We have arranged for the repetitive checks, noted as code "R" in Part B, to be re-checked at intervals not exceeding ___ min. If, to our knowledge, the status of any item changes, we will immediately inform the other party.

Receiving vessel	Bunker vessel	Bunker terminal
Name:	Name:	Name:
Position:	Position:	Position:
Signature:	Signature:	Signature:
Date:	Date:	Date:
Time:	Time:	Time:

Instructions for completing this checklist

This joint declaration should be signed only when both parties have agreed on the information. Once signed, copies of this document shall be kept onboard the LNG receiving vessel and the bunker vessel or terminal (as appropriate) for at least 1 year.

LNG BUNKER CHECKLIST

PART D: SIMOPS

This part of the checklist should be completed by all appropriate parties, including terminals where vessel to vessel bunkering takes place, immediately before starting the transfer.

Planned date and time

LNG receiving vessel

Port and Berth or location

LNG bunker vessel

	Check	Receiving vessel	Bunker vessel	Terminal	Code	Remarks
1	LNG bunkering simultaneously with other fuels is in accordance with the vessel's fuel handing manual				A	
2	LNG bunkering simultaneously with cargo operations is in accordance with terminal procedures				A	
3	Competent authorities have granted permission (if applicable) for simultaneous operations				P	
4	Safety measures are agreed upon and observed				A, R	

DECLARATION

The undersigned as applicable have checked the above items in Part D and are satisfied that the entries made are correct.

Receiving vessel	Bunker vessel	Bunker terminal
Name:	Name:	Name:
Position:	Position:	Position:
Signature:	Signature:	Signature:
Date:	Date:	Date:
Time:	Time:	Time:

Instructions for completing this checklist

The "codes" indicate the following:

a) A (Agreement): indicating an agreement or procedure that may be detailed in the "Remarks" column;

b) R (Re-check): indicating that the item will be periodically reconfirmed at intervals agreeable to the parties;

c) P (Permission): indicating that permission has been granted by the appropriate authorities.

LNG BUNKER CHECKLIST

Part E: Post-Transfer Checklist

This part of the checklist should be completed jointly by the bunker provider and receiver at the completion of transfer operations.

Planned date and time

LNG receiving vessel

Port and Berth or location

LNG bunker vessel

	Check	Receiving vessel	Bunker vessel	Bunker terminal	Remarks
1	Manifold valves are closed and ready for disconnection				
2	LNG bunkering lines have been warmed-up, purged and ready for disconnection				
3	Controlled area has been deactivated and vessels in the vicinity notified				
4	The receiving vessel has been notified that LNG bunkering is complete				Time notified: _____ h.
5	Near missies and incidents reported to competent authorities				Report number:

RECORD OF PERIODIC CHECKS

A record of periodic re-check of conditions as agreed in Parts B and D. Observations should be noted under "Remarks".

Date	Time	Receiving vessel	Bunker vessel	Bunker terminal	Remarks

DECLARATION

The undersigned as applicable have checked the above items in Part E and are satisfied that the entries made are correct.

Receiving vessel	Bunker vessel	Bunker terminal
Name:	Name:	Name:
Position:	Position:	Position:
Signature:	Signature:	Signature:
Date:	Date:	Date:
Time:	Time:	Time:

Instructions for completing this checklist

This joint declaration should be signed only when both parties have agreed on the information. Once signed, copies of this document shall be kept onboard the LNG receiving vessel and the bunker vessel or terminal (as appropriate) for at least 1 year.

APPENDIX F

PORT SECTIONS GUIDE

	Port Sections Guide
	VANCOUVER HARBOUR - NORTH SHORE
	Read user guidelines first. Always check all adjoining sections

Terminal	**KINDER MORGAN VANCOUVER WHARVES**
Area	**Vancouver Harbour – North Shore**
Date	**January 2021**

Position (lat / lon)	49˚18.7 N & 123˚07.3 W
Minimum control-led water depth	Refer to *Burrard Inlet and Roberts Bank berth soundings* document for Vancouver Fraser Port Authority and Pacific Pilotage Authority approved control depths
Chart datum	Vertical: Chart Datum LLW Horizontal: WGS84
Range of water densities	1.01587 (annual mean minimum) - 1.02102 (annual mean maximum) – Vancouver Harbour - source: *PAC 200 Sailing Directions*
Tidal range	5.0 metres
UKC policy alongside	Alongside berth UKC requirement for all states of tide is 5%
Bottom type	Stone
Dredging regime	None
Distance pilot station to berth	
ISPS	Transport Canada security approved
Loading/unloading requirements	All vessels berthed at Vancouver Wharves berth #1 and berth #5 are required to adhere to the specific requirements in **Section 11.7 Gangways** of the Port Information Guide regarding the rigging of a floating gangways and pedestal staircase combination.
Mooring Arrangement & Tension	Mooring arrangements should be a minimum of four headlines, two forward spring lines, two aft spring lines, and four stern lines for all vessels; if possible, Panamax vessels should deploy additional lines. Mooring line tension should always be maintained at 10% of their Minimum breaking loads (MBL).
Website	http://www.kindermorgan.com/content/docs/terminalbrochures/W-C-VancouverWharves.pdf

Manoeuvre	**Arrival**
UKC policy	

Control Area	*Rising Tide*	*Falling Tide*	*Slack Tide*
Burrard Inlet (manoeuvring)	5%	10%	10%

	Burrard Inlet (transiting)	10%	10%	10%
Size restriction				
Tidal restriction	Refer to *Pacific Pilotage Authority* BC Berth Controlling Depths & Operating Parameters for relevant instructions.			
Wind restriction	BC Coast Pilot and Ship Master discretion			
Visibility restriction	BC Coast Pilot and Ship Master discretion			
Speed restriction	Safe speed as defined by COLREGS - Rule #6			
Passing requirements	As coordinated by BC Coast Pilots/Ship's Master and monitored by CCG Vessel Traffic Service/VFPA			
Tug use				
Berthing requirements				

Manoeuvre	**Departure**			
UKC policy	*Control Area*	*Rising Tide*	*Falling Tide*	*Slack Tide*
	Burrard Inlet (manoeuvring)	5%	10%	10%
	Burrard Inlet (transiting)	10%	10%	10%
Size restriction				
Tidal restriction	Refer to *Pacific Pilotage Authority* BC Berth Controlling Depths & Operating Parameters for relevant instructions.			
Wind restriction	BC Coast Pilot and Ship Master discretion			
Visibility restriction	BC Coast Pilot and Ship Master discretion			
Speed restriction	Safe speed as defined by COLREGS - Rule #6			
Passing requirements	As coordinated by BC Coast Pilots/Ship's Master and monitored by CCG Vessel Traffic Service/VFPA			
Tug use				
Unberthing requirements				

Terminal	FIBRECO
Area	Vancouver Harbour – North Shore
Date	January 2021

Position (lat / lon)	49˚18.7 N & 123˚06.6 W
Minimum control-led water depth	Refer to *Burrard Inlet and Roberts Bank berth soundings* document for Vancouver Fraser Port Authority and Pacific Pilotage Authority approved control depths
Chart datum	Vertical: Chart Datum LLW Horizontal: WGS84
Range of water densities	1.01587 (annual mean minimum) - 1.02102 (annual mean maximum) – Vancouver Harbour - source: *PAC 200 Sailing Directions*
Tidal range	5.0 metres
UKC policy alongside	Alongside berth UKC requirement for all states of tide is 5%
Bottom type	Stone
Dredging regime	None
Distance pilot station to berth	Distance from Brotchie Pilot Station to Vancouver 80' nm
ISPS	Transport Canada security approved
Loading/unloading requirements	
Website	http://fibreco.com/

Manoeuvre	Arrival
UKC policy	

Control Area	*Rising Tide*	*Falling Tide*	*Slack Tide*
Burrard Inlet (manoeuvring)	5%	10%	10%
Burrard Inlet (transiting)	10%	10%	10%

Size restriction	
Tidal restriction	Refer to *Pacific Pilotage Authority* BC Berth Controlling Depths & Operating Parameters for relevant instructions.
Wind restriction	BC Coast Pilot and Ship Master discretion
Visibility restriction	BC Coast Pilot and Ship Master discretion
Speed restriction	Safe speed as defined by COLREGS - Rule #6
Passing requirements	As coordinated by BC Coast Pilots/Ship's Master and monitored by CCG Vessel Traffic Service/VFPA
Tug use	
Berthing requirements	

Manoeuvre	Departure
UKC policy	

Control Area	*Rising Tide*	*Falling Tide*	*Slack Tide*
Burrard Inlet (manoeuvring)	5%	10%	10%

	Burrard Inlet (transiting)	10%	10%	10%
Size restriction				
Tidal restriction	Refer to *Pacific Pilotage Authority* BC Berth Controlling Depths & Operating Parameters for relevant instructions.			
Wind restriction	BC Coast Pilot and Ship Master discretion			
Visibility restriction	BC Coast Pilot and Ship Master discretion			
Speed restriction	Safe speed as defined by COLREGS - Rule #6			
Passing requirements	As coordinated by BC Coast Pilots/Ship's Master and monitored by CCG Vessel Traffic Service/VFPA			
Tug use				
Unberthing requirements				

Terminal	JAMES RICHARDSON INTERNATIONAL
Area	Vancouver Harbour – North Shore
Date	January 2021

Position (lat / lon)	49˚18.3 N & 123˚04.0 W
Minimum control-led water depth	Refer to *Burrard Inlet and Roberts Bank berth soundings* document for Vancouver Fraser Port Authority and Pacific Pilotage Authority approved control depths
Chart datum	Vertical: Chart Datum LLW Horizontal: WGS84
Range of water densities	1.01587 (annual mean minimum) - 1.02102 (annual mean maximum) – Vancouver Harbour - source: *PAC 200 Sailing Directions*
Tidal range	5.0 metres
UKC policy alongside	Alongside berth UKC requirement for all states of tide is 5%
Bottom type	Mud & Sand
Dredging regime	None
Distance pilot station to berth	Distance from Brotchie Pilot Station to Vancouver 80' nm
ISPS	Transport Canada security approved
Loading/unloading requirements	
Website	https://www.richardson.ca/our-business/terminals/

Manoeuvre	Arrival
UKC policy	

Control Area	*Rising Tide*	*Falling Tide*	*Slack Tide*
Burrard Inlet (manoeuvring)	5%	10%	10%
Burrard Inlet (transiting)	10%	10%	10%

Size restriction	
Tidal restriction	Refer to *Pacific Pilotage Authority* BC Berth Controlling Depths & Operating Parameters for relevant instructions.
Wind restriction	BC Coast Pilot and Ship Master discretion
Visibility restriction	BC Coast Pilot and Ship Master discretion
Speed restriction	Safe speed as defined by COLREGS - Rule #6
Passing requirements	As coordinated by BC Coast Pilots/Ship's Master and monitored by CCG Vessel Traffic Service/VFPA
Tug use	
Berthing requirements	

Manoeuvre	Departure
UKC policy	

Control Area	*Rising Tide*	*Falling Tide*	*Slack Tide*
Burrard Inlet (manoeuvring)	5%	10%	10%

	Burrard Inlet (transiting)	10%	10%	10%
Size restriction				
Tidal restriction	Refer to *Pacific Pilotage Authority* BC Berth Controlling Depths & Operating Parameters for relevant instructions.			
Wind restriction	BC Coast Pilot and Ship Master discretion			
Visibility restriction	BC Coast Pilot and Ship Master discretion			
Speed restriction	Safe speed as defined by COLREGS - Rule #6			
Passing requirements	As coordinated by BC Coast Pilots/Ship's Master and monitored by CCG Vessel Traffic Service/VFPA			
Tug use				
Unberthing requirements				

Terminal	CARGILL VANCOUVER TERMINAL
Area	Vancouver Harbour – North Shore
Date	January 2021

Position (lat / lon)	49˚18.3 N & 123˚03.5 W
Minimum control-led water depth	Refer to *Burrard Inlet and Roberts Bank berth soundings* document for Vancouver Fraser Port Authority and Pacific Pilotage Authority approved control depths
Chart datum	Vertical: Chart Datum LLW Horizontal: WGS84
Range of water densities	1.01587 (annual mean minimum) - 1.02102 (annual mean maximum) – Vancouver Harbour - source: *PAC 200 Sailing Directions*
Tidal range	5.0 metres
UKC policy alongside	Alongside berth UKC requirement for all states of tide is 5%
Bottom type	Mud & Sand
Dredging regime	None
Distance pilot station to berth	Distance from Brotchie Pilot Station to Vancouver 80' nm
ISPS	Transport Canada security approved
Loading/unloading requirements	
Website	http://www.cargill.ca/en/index.jsp

Manoeuvre	Arrival
UKC policy	

Control Area	*Rising Tide*	*Falling Tide*	*Slack Tide*
Burrard Inlet (manoeuvring)	5%	10%	10%
Burrard Inlet (transiting)	10%	10%	10%

Size restriction	
Tidal restriction	Refer to *Pacific Pilotage Authority* BC Berth Controlling Depths & Operating Parameters for relevant instructions.
Wind restriction	BC Coast Pilot and Ship Master discretion
Visibility restriction	BC Coast Pilot and Ship Master discretion
Speed restriction	Safe speed as defined by COLREGS - Rule #6
Passing requirements	As coordinated by BC Coast Pilots/Ship's Master and monitored by CCG Vessel Traffic Service/VFPA
Tug use	
Berthing requirements	

Manoeuvre	Departure
UKC policy	

Control Area	*Rising Tide*	*Falling Tide*	*Slack Tide*
Burrard Inlet (manoeuvring)	5%	10%	10%

	Burrard Inlet (transiting)	10%	10%	10%
Size restriction				
Tidal restriction	Refer to *Pacific Pilotage Authority* BC Berth Controlling Depths & Operating Parameters for relevant instructions.			
Wind restriction	BC Coast Pilot and Ship Master discretion			
Visibility restriction	BC Coast Pilot and Ship Master discretion			
Speed restriction	Safe speed as defined by COLREGS - Rule #6			
Passing requirements	As coordinated by BC Coast Pilots/Ship's Master and monitored by CCG Vessel Traffic Service/VFPA			
Tug use				
Unberthing requirements				

Terminal	NEPTUNE BULK TERMINALS
Area	Vancouver Harbour – North Shore
Date	January 2021

Position (lat / lon)	49˚18.3 N & 123˚03.0 W
Minimum control-led water depth	Refer to *Burrard Inlet and Roberts Bank berth soundings* document for Vancouver Fraser Port Authority and Pacific Pilotage Authority approved control depths
Chart datum	Vertical: Chart Datum LLW Horizontal: WGS84
Range of water densities	1.01587 (annual mean minimum) - 1.02102 (annual mean maximum) – Vancouver Harbour - source: *PAC 200 Sailing Directions*
Tidal range	5.0 metres
UKC policy alongside	Alongside berth UKC requirement for all states of tide is 5%
Bottom type	Mud & Sand
Dredging regime	None
Distance pilot station to berth	Distance from Brotchie Pilot Station to Vancouver 80' nm
ISPS	Transport Canada security approved
Loading/unloading requirements	
Website	http://www.neptuneterminals.com/

Manoeuvre	Arrival
UKC policy	

Control Area	*Rising Tide*	*Falling Tide*	*Slack Tide*
Burrard Inlet (manoeuvring)	5%	10%	10%
Burrard Inlet (transiting)	10%	10%	10%
Second Narrows TCZ	10%	10%	10%

Size restriction	
Tidal restriction	Refer to *Pacific Pilotage Authority* BC Berth Controlling Depths & Operating Parameters for relevant instructions.
Wind restriction	BC Coast Pilot and Ship Master discretion
Visibility restriction	BC Coast Pilot and Ship Master discretion
Speed restriction	Safe speed as defined by COLREGS - Rule #6
Passing requirements	As coordinated by BC Coast Pilots/Ship's Master and monitored by CCG Vessel Traffic Service/VFPA
Tug use	
Berthing requirements	

Manoeuvre	Departure
UKC policy	

Control Area	*Rising Tide*	*Falling Tide*	*Slack Tide*

Burrard Inlet (manoeuvring)	5%	10%	10%
Burrard Inlet (transiting)	10%	10%	10%
Second Narrows TCZ	10%	10%	10%

Size restriction	
Tidal restriction	Refer to *Pacific Pilotage Authority* BC Berth Controlling Depths & Operating Parameters for relevant instructions.
Wind restriction	BC Coast Pilot and Ship Master discretion
Visibility restriction	BC Coast Pilot and Ship Master discretion
Speed restriction	Safe speed as defined by COLREGS - Rule #6
Passing requirements	As coordinated by BC Coast Pilots/Ship's Master and monitored by CCG Vessel Traffic Service/VFPA
Tug use	
Unberthing requirements	

Terminal	**G3 Terminal**
Area	**Vancouver Harbour – North Shore**
Date	**January 2021**

Position (lat / lon)	49˚18.2 N & 123˚02.6 W
Minimum control-led water depth	Refer to *Burrard Inlet and Roberts Bank berth soundings* document for Vancouver Fraser Port Authority and Pacific Pilotage Authority approved control depths
Chart datum	Vertical: Chart Datum LLW Horizontal: WGS84
Range of water densities	1.01587 (annual mean minimum) - 1.02102 (annual mean maximum) – Vancouver Harbour - source: *PAC 200 Sailing Directions*
Tidal range	5.0 metres
UKC policy alongside	Alongside berth UKC requirement for all states of tide is 5%
Bottom type	Sand & Stone
Dredging regime	None
Distance pilot station to berth	Distance from Brotchie Pilot Station to Vancouver 80' nm
ISPS	Transport Canada security approved
Loading/unloading requirements	
Website	http://www.westeve.com/term_operation.html

Manoeuvre	**Arrival**
UKC policy	

Control Area	*Rising Tide*	*Falling Tide*	*Slack Tide*
Burrard Inlet (manoeuvring)	5%	10%	10%
Burrard Inlet (transiting)	10%	10%	10%
Second Narrows TCZ	10%	10%	10%

Size restriction	
Tidal restriction	Refer to *Pacific Pilotage Authority* BC Berth Controlling Depths & Operating Parameters for relevant instructions.
Wind restriction	BC Coast Pilot and Ship Master discretion
Visibility restriction	BC Coast Pilot and Ship Master discretion
Speed restriction	Safe speed as defined by COLREGS - Rule #6
Passing requirements	As coordinated by BC Coast Pilots/Ship's Master and monitored by CCG Vessel Traffic Service/VFPA
Tug use	
Berthing requirements	

Manoeuvre	**Departure**
UKC policy	

Control Area	*Rising Tide*	*Falling Tide*	*Slack Tide*

Burrard Inlet (manoeuvring)	5%	10%	10%
Burrard Inlet (transiting)	10%	10%	10%
Second Narrows TCZ	10%	10%	10%

Size restriction	
Tidal restriction	Refer to *Pacific Pilotage Authority* BC Berth Controlling Depths & Operating Parameters for relevant instructions.
Wind restriction	BC Coast Pilot and Ship Master discretion
Visibility restriction	BC Coast Pilot and Ship Master discretion
Speed restriction	Safe speed as defined by COLREGS - Rule #6
Passing requirements	As coordinated by BC Coast Pilots/Ship's Master and monitored by CCG Vessel Traffic Service/VFPA
Tug use	
Unberthing requirements	

Terminal	LYNNTERM – EAST GATE
Area	Vancouver Harbour – North Shore
Date	January 2021

Position (lat / lon)	49˚18.0 N & 123˚02.0 W
Minimum control-led water depth	Refer to *Burrard Inlet and Roberts Bank berth soundings* document for Vancouver Fraser Port Authority and Pacific Pilotage Authority approved control depths
Chart datum	Vertical: Chart Datum LLW Horizontal: WGS84
Range of water densities	1.01587 (annual mean minimum) - 1.02102 (annual mean maximum) – Vancouver Harbour - source: *PAC 200 Sailing Directions*
Tidal range	5.0 metres
UKC policy alongside	Alongside berth UKC requirement for all states of tide is 5%
Bottom type	Gravel
Dredging regime	None
Distance pilot station to berth	Distance from Brotchie Pilot Station to Vancouver 80' nm
ISPS	Transport Canada security approved
Loading/unloading requirements	
Website	http://www.westeve.com/term_operation.html

Manoeuvre	Arrival
UKC policy	

Control Area	*Rising Tide*	*Falling Tide*	*Slack Tide*
Burrard Inlet (manoeuvring)	5%	10%	10%
Burrard Inlet (transiting)	10%	10%	10%
Second Narrows TCZ	10%	10%	10%

Size restriction	
Tidal restriction	Refer to *Pacific Pilotage Authority* BC Berth Controlling Depths & Operating Parameters for relevant instructions.
Wind restriction	BC Coast Pilot and Ship Master discretion
Visibility restriction	BC Coast Pilot and Ship Master discretion
Speed restriction	Safe speed as defined by COLREGS - Rule #6
Passing requirements	As coordinated by BC Coast Pilots/Ship's Master and monitored by CCG Vessel Traffic Service/VFPA
Tug use	
Berthing requirements	

Manoeuvre	**Departure**
UKC policy	<table><tr><th>*Control Area*</th><th>*Rising Tide*</th><th>*Falling Tide*</th><th>*Slack Tide*</th></tr><tr><td>Burrard Inlet (manoeuvring)</td><td>5%</td><td>10%</td><td>10%</td></tr><tr><td>Burrard Inlet (transiting)</td><td>10%</td><td>10%</td><td>10%</td></tr><tr><td>Second Narrows TCZ</td><td>10%</td><td>10%</td><td>10%</td></tr></table>
Size restriction	
Tidal restriction	Refer to *Pacific Pilotage Authority* BC Berth Controlling Depths & Operating Parameters for relevant instructions.
Wind restriction	BC Coast Pilot and Ship Master discretion
Visibility restriction	BC Coast Pilot and Ship Master discretion
Speed restriction	Safe speed as defined by COLREGS - Rule #6
Passing requirements	As coordinated by BC Coast Pilots/Ship's Master and monitored by CCG Vessel Traffic Service/VFPA
Tug use	
Unberthing requirements	

Terminal	LYNNTERM – BERTH #4 (UNIVAR)
Area	Vancouver Harbour – North Shore
Date	January 2021

Position (lat / lon)	49 17.5N 123 02.0W
Minimum control-led water depth	Refer to *Burrard Inlet and Roberts Bank berth soundings* document for Vancouver Fraser Port Authority and Pacific Pilotage Authority approved control depths
Chart datum	Vertical: Chart Datum LLW Horizontal: WGS84
Range of water densities	1.01587 (annual mean minimum) - 1.02102 (annual mean maximum) – Vancouver Harbour - source: *PAC 200 Sailing Directions*
Tidal range	5.0 metres
UKC policy alongside	Alongside berth UKC requirement for all states of tide is 5%
Bottom type	Mud
Dredging regime	None
Distance pilot station to berth	Distance from Brotchie Pilot Station to Vancouver - 80' nautical miles
ISPS	Transport Canada security approved
Loading/unloading requirements	ISGOTT Ship/Shore Safety Check-List must be used in the transfer of bulk liquid cargoes from marine facility to vessel (ship-to-shore)
Website	http://www.univar.com/Canada.aspx

Manoeuvre	Arrival
UKC policy	

Control Area	*Rising Tide*	*Falling Tide*	*Slack Tide*
Burrard Inlet (manoeuvring)	5%	10%	10%
Burrard Inlet (transiting)	10%	10%	10%
Second Narrows TCZ	10%	10%	10%

Bow to Center Manifold (BCM)	Maximum BCM is 105m
Size restriction	No restrictions, all vessels to comply with UKC, Spacing, and overhang requirements. Berth #7 is a 200m berth
Tidal restriction	This berth has a 2 knot restriction and ships will not normally be moved outside this parameter. Refer to *Pacific Pilotage Authority* BC Berth Controlling Depths & Operating Parameters for relevant instructions.
Wind restriction	BC Coast Pilot and Ship Master discretion
High Wind Procedures	Terminal Regulations for Vessels require Terminal operations staff, vessel masters & pilots to review what the anticipated maximum windspeed may be in the inner harbour and should not proceed to berth the vessel if sustained speeds are expected to be greater than 40knots. After berthing, Terminal Regulations for Vessels require that terminal operations staff and vessel masters monitor the windspeed at the dock, and as per the

	Terminal specific Isgott ship/shore safety checklist, operations will be adjusted as windspeeds increase. Any sustained windspeed greater than 40knots will require tugs to assist the vessel in remaining safely berthed.
Visibility restriction	BC Coast Pilot and Ship Master discretion
Speed restriction	Safe speed as defined by COLREGS - Rule #6
Passing requirements	As coordinated by BC Coast Pilots/Ship's Master and monitored by CCG Vessel Traffic Service/VFPA
Tug use	

Length Overall	Current strength	Wind Speed	Tug Bollard Pull Berthing
151m - 180m	0-1 knots	0-20 knots	1 x 20t + 1 x 30t
		> 20 knots	1 x 20t + 1 x 30t
	1-2 knots	0-20 knots	2 x 30t
		> 20 knots	2 x 30t
	> 2 knots	Current over 2 knots pilot's discretion	
181m - 210m	0-1 knots	0-20 knots	1 x 20t + 1 x 30t
		> 20 knots	2 x 30t
	1-2 knots	0-20 knots	2 x 30t
		> 20 knots	1 x 30t + 1 x 40t
	> 2 knots	Current over 2 knots pilot's discretion	
Consideration will be given for a bow thruster at or near slack water times.			

Source: Pacific Pilotage Authority *Notice to Industry #07/2016*

Berthing requirements	Berth #7 is Port side alongside. In all cases, pilot's discretion will apply, taking into consideration the weather, sea conditions, predicted current, freshet, draft, manoeuvring characteristics, fender capacity of the berth, space available and mechanical history of the vessel.

Manoeuvre	**Departure**
UKC policy	

Control Area	*Rising Tide*	*Falling Tide*	*Slack Tide*
Burrard Inlet (manoeuvring)	5%	10%	10%
Burrard Inlet (transiting)	10%	10%	10%
Second Narrows TCZ	10%	10%	10%

Size restriction	No restrictions, all vessels to comply with UKC, Spacing, and overhang requirements
Tidal restriction	This berth has a 2 knot restriction and ships will not normally be moved outside this parameter. Refer to *Pacific Pilotage Authority* BC Berth Controlling Depths & Operating Parameters for relevant instructions.
Wind restriction	BC Coast Pilot and Ship Master discretion
Visibility restriction	BC Coast Pilot and Ship Master discretion
Speed restriction	Safe speed as defined by COLREGS - Rule #6
Passing requirements	As coordinated by BC Coast Pilots/Ship's Master and monitored by CCG Vessel Traffic Service/VFPA

Tug use

Length Overall	Current strength	Wind Speed	Tug Bollard Pull Berthing
151m - 180m	0-1 knots	0-20 knots	1 x 20t + 1 x 30t
		> 20 knots	1 x 20t + 1 x 30t
	1-2 knots	0-20 knots	2 x 30t
		> 20 knots	1 x 30t + 1 x 40t
	> 2 knots	Current over 2 knots pilot's discretion	
181m - 210m	0-1 knots	0-20 knots	1 x 20t + 1 x 30t
		> 20 knots	2 x 30t
	1-2 knots	0-20 knots	1 x 30t + 1 x 40t
		> 20 knots	1 x 30t + 1 x 50t
	> 2 knots	Current over 2 knots pilot's discretion	
Consideration will be given for a bow thruster at or near slack water times.			

Source: Pacific Pilotage Authority *Notice to Industry #07/2016*

Unberthing requirements

Berth #7 is Port side alongside. In all cases, pilot's discretion will apply, taking into consideration the weather, sea conditions, predicted current, freshet, draft, manoeuvring characteristics, fender capacity of the berth, space available and mechanical history of the vessel.

APPENDIX G

	Port Sections Guide
	VANCOUVER HARBOUR - SOUTH SHORE
	Read user guidelines first. Always check all adjoining sections

Terminal	**CASCADIA PORT MANAGEMENT CORPORATION - CASCADIA**
Area	**Vancouver Harbour – South Shore**
Date	**January 2021**

Position (lat / lon)	49˚17.5 N & 123˚01.8 W
Minimum control-led water depth	Refer to *Burrard Inlet and Roberts Bank berth soundings* document for Vancouver Fraser Port Authority and Pacific Pilotage Authority approved control depths
Chart datum	Vertical: Chart Datum LLW Horizontal: WGS84
Range of water densities	1.01587 (annual mean minimum) - 1.02102 (annual mean maximum) – Vancouver Harbour - source: *PAC 200 Sailing Directions*
Tidal range	5.0 metres
UKC policy alongside	Alongside berth UKC requirement for all states of tide is 5%
Bottom type	Rock & Mud
Dredging regime	None
Distance pilot station to berth	Distance from Brotchie Pilot Station to Vancouver 80' nm
ISPS	Transport Canada security approved
Loading/unloading requirements	
Website	https://www.viterra.com/web/canada

Manoeuvre	**Arrival**
UKC policy	

Control Area	*Rising Tide*	*Falling Tide*	*Slack Tide*
Burrard Inlet (manoeuvring)	5%	10%	10%
Burrard Inlet (transiting)	10%	10%	10%
Second Narrows TCZ	10%	10%	10%

Size restriction	
Tidal restriction	Refer to *Pacific Pilotage Authority* BC Berth Controlling Depths & Operating Parameters for relevant instructions.
Wind restriction	BC Coast Pilot and Ship Master discretion

Visibility restriction	BC Coast Pilot and Ship Master discretion
Speed restriction	Safe speed as defined by COLREGS - Rule #6
Passing requirements	As coordinated by BC Coast Pilots/Ship's Master and monitored by CCG Vessel Traffic Service/VFPA
Tug use	
Berthing requirements	

Manoeuvre	**Departure**
UKC policy	

Control Area	*Rising Tide*	*Falling Tide*	*Slack Tide*
Burrard Inlet (manoeuvring)	5%	10%	10%
Burrard Inlet (transiting)	10%	10%	10%
Second Narrows TCZ	10%	10%	10%

Size restriction	
Tidal restriction	Refer to *Pacific Pilotage Authority* BC Berth Controlling Depths & Operating Parameters for relevant instructions.
Wind restriction	BC Coast Pilot and Ship Master discretion
Visibility restriction	BC Coast Pilot and Ship Master discretion
Speed restriction	Safe speed as defined by COLREGS - Rule #6
Passing requirements	As coordinated by BC Coast Pilots/Ship's Master and monitored by CCG Vessel Traffic Service/VFPA
Tug use	
Unberthing requirements	

Terminal	VITERRA – PACIFIC ELEVATORS
Area	Vancouver Harbour – South Shore
Date	January 2021

Position (lat / lon)	49˚17.2 N & 123˚ 04.1 W
Minimum control-led water depth	Refer to *Burrard Inlet and Roberts Bank berth soundings* document for Vancouver Fraser Port Authority and Pacific Pilotage Authority approved control depths
Chart datum	Vertical: Chart Datum LLW Horizontal: WGS84
Range of water densities	1.01587 (annual mean minimum) - 1.02102 (annual mean maximum) – Vancouver Harbour - source: *PAC 200 Sailing Directions*
Tidal range	5.0 metres
UKC policy alongside	Alongside berth UKC requirement for all states of tide is 5%
Bottom type	Rock & Mud
Dredging regime	None
Distance pilot station to berth	Distance from Brotchie Pilot Station to Vancouver 80' nm
ISPS	Transport Canada security approved
Loading/unloading requirements	

Manoeuvre	Arrival
UKC policy	

Control Area	*Rising Tide*	*Falling Tide*	*Slack Tide*
Burrard Inlet (manoeuvring)	5%	10%	10%
Burrard Inlet (transiting)	10%	10%	10%

Size restriction	
Tidal restriction	Refer to *Pacific Pilotage Authority* BC Berth Controlling Depths & Operating Parameters for relevant instructions.
Wind restriction	BC Coast Pilot and Ship Master discretion
Visibility restriction	BC Coast Pilot and Ship Master discretion
Speed restriction	Safe speed as defined by COLREGS - Rule #6
Passing requirements	As coordinated by BC Coast Pilots/Ship's Master and monitored by CCG Vessel Traffic Service/VFPA
Tug use	
Berthing requirements	
Website	https://www.viterra.com/web/canada

Manoeuvre	Departure
UKC policy	

Control Area	*Rising Tide*	*Falling Tide*	*Slack Tide*
Burrard Inlet (manoeuvring)	5%	10%	10%

	Burrard Inlet (transiting)	10%	10%	10%
Size restriction				
Tidal restriction	Refer to *Pacific Pilotage Authority* BC Berth Controlling Depths & Operating Parameters for relevant instructions.			
Wind restriction	BC Coast Pilot and Ship Master discretion			
Visibility restriction	BC Coast Pilot and Ship Master discretion			
Speed restriction	Safe speed as defined by COLREGS - Rule #6			
Passing requirements	As coordinated by BC Coast Pilots/Ship's Master and monitored by CCG Vessel Traffic Service/VFPA			
Tug use				
Unberthing requirements				

Terminal	GLOBAL CONTAINER TERMINALS – VANTERM
Area	Vancouver Harbour – South Shore
Date	January 2021

Position (lat / lon)	49 17.3N 123 04.3W
Minimum control-led water depth	Refer to *Burrard Inlet and Roberts Bank berth soundings* document for Vancouver Fraser Port Authority and Pacific Pilotage Authority approved control depths
Chart datum	Vertical: Chart Datum LLW Horizontal: WGS84
Range of water densities	1.01587 (annual mean minimum) - 1.02102 (annual mean maximum) – Vancouver Harbour - source: *PAC 200 Sailing Directions*
Tidal range	5.0 metres
UKC policy alongside	Alongside berth UKC requirement for all states of tide is 5%
Bottom type	Mud
Dredging regime	None
Distance pilot station to berth	Distance from Brotchie Pilot Station to Vancouver - 80' nautical miles
ISPS	Transport Canada security approved
Loading/unloading requirements	
Container Crane Positioning. Arr./Dep.	See Appendix L
Website	http://globalterminalscanada.com/gct-vanterm/

Manoeuvre	Arrival
UKC policy	

Control Area	*Rising Tide*	*Falling Tide*	*Slack Tide*
Burrard Inlet (manoeuvring)	5%	10%	10%
Burrard Inlet (transiting)	10%	10%	10%

Size restriction	No restrictions, all vessels to comply with UKC, Spacing, and overhang requirements
Tidal restriction	Refer to *Pacific Pilotage Authority* BC Berth Controlling Depths & Operating Parameters for relevant instructions.
Wind restriction	BC Coast Pilot and Ship Master discretion
Visibility restriction	BC Coast Pilot and Ship Master discretion
Speed restriction	Safe speed as defined by COLREGS - Rule #6
Passing requirements	As coordinated by BC Coast Pilots/Ship's Master and monitored by CCG Vessel Traffic Service/VFPA
Tug use	For vessels with a bowthruster; one tug of suitable power will be used on the stern and if the usable horsepower of the bowthruster is less than 4% of the vessel's summer deadweight, a second tug will be required forward. Source: Pacific Pilotage Authority *Notice to Industry* #02/2013
Berthing requirements	Terminal to position containers cranes at midships position

Mooring Arrangements	Minimum spacing distance of 25 metres between vessels must be maintained for LOA up to 350 metres. For vessels LOA greater than 350 metres, a minimum distance of 10% of LOA of the larger vessel must be used to determine the spacing requirements.
Mooring Plans	All container terminals within VFPA jurisdiction must provide PPA dispatch, BCCP and VFPA Operations Center a standardized mooring arrangement 12hrs in advance of vessel arrival. Terminals can find the standardized mooring plans here.

Manoeuvre	**Departure**
UKC policy	

Control Area	*Rising Tide*	*Falling Tide*	*Slack Tide*
Burrard Inlet (manoeuvring)	5%	10%	10%
Burrard Inlet (transiting)	10%	10%	10%

Size restriction	No restrictions, all vessels to comply with UKC, Spacing, and overhang requirements
Tidal restriction	Refer to *Pacific Pilotage Authority* BC Berth Controlling Depths & Operating Parameters for relevant instructions.
Wind restriction	BC Coast Pilot and Ship Master discretion
Visibility restriction	BC Coast Pilot and Ship Master discretion
Speed restriction	Safe speed as defined by COLREGS - Rule #6
Passing requirements	As coordinated by BC Coast Pilots/Ship's Master and monitored by CCG Vessel Traffic Service/VFPA
Tug use	For vessels with a bowthruster; one tug of suitable power will be used on the stern and if the usable horsepower of the bowthruster is less than 4% of the vessel's summer deadweight, a second tug will be required forward. Source: Pacific Pilotage Authority *Notice to Industry* #02/2013
Unberthing requirements	

Terminal	ALLIANCE GRAIN TERMINAL
Area	Vancouver Harbour – South Shore
Date	January 2021

Position (lat / lon)	49˚17.1 N & 123˚04.7 W
Minimum control-led water depth	Refer to *Burrard Inlet and Roberts Bank berth soundings* document for Vancouver Fraser Port Authority and Pacific Pilotage Authority approved control depths
Chart datum	Vertical: Chart Datum LLW Horizontal: WGS84
Range of water densities	1.01587 (annual mean minimum) - 1.02102 (annual mean maximum) – Vancouver Harbour - source: *PAC 200 Sailing Directions*
Tidal range	5.0 metres
UKC policy alongside	Alongside berth UKC requirement for all states of tide is 5%
Bottom type	Rock & Mud
Dredging regime	None
Distance pilot station to berth	Distance from Brotchie Pilot Station to Vancouver 80' nm
ISPS	Transport Canada security approved
Loading/unloading requirements	
Website	http://www.patersonglobalfoods.com/companies/alliance-grain-terminal/

Manoeuvre — Arrival

UKC policy

Control Area	*Rising Tide*	*Falling Tide*	*Slack Tide*
Burrard Inlet (manoeuvring)	5%	10%	10%
Burrard Inlet (transiting)	10%	10%	10%

Size restriction	
Tidal restriction	Refer to *Pacific Pilotage Authority* BC Berth Controlling Depths & Operating Parameters for relevant instructions.
Wind restriction	BC Coast Pilot and Ship Master discretion
Visibility restriction	BC Coast Pilot and Ship Master discretion
Speed restriction	Safe speed as defined by COLREGS - Rule #6
Passing requirements	As coordinated by BC Coast Pilots/Ship's Master and monitored by CCG Vessel Traffic Service/VFPA
Tug use	
Berthing requirements	

Manoeuvre — Departure

UKC policy

Control Area	*Rising Tide*	*Falling Tide*	*Slack Tide*
Burrard Inlet (manoeuvring)	5%	10%	10%

	Burrard Inlet (transiting)	10%	10%	10%
Size restriction				
Tidal restriction	Refer to *Pacific Pilotage Authority* BC Berth Controlling Depths & Operating Parameters for relevant instructions.			
Wind restriction	BC Coast Pilot and Ship Master discretion			
Visibility restriction	BC Coast Pilot and Ship Master discretion			
Speed restriction	Safe speed as defined by COLREGS - Rule #6			
Passing requirements	As coordinated by BC Coast Pilots/Ship's Master and monitored by CCG Vessel Traffic Service/VFPA			
Tug use				
Unberthing requirements				

Terminal	DP WORLD - CENTERM
Area	Vancouver Harbour – South Shore
Date	January 2021

Position (lat / lon)	49 17.2N 123 05.7W
Minimum control-led water depth	Refer to *Burrard Inlet and Roberts Bank berth soundings* document for Vancouver Fraser Port Authority and Pacific Pilotage Authority approved control depths
Chart datum	Vertical: Chart Datum LLW Horizontal: WGS84
Range of water densities	1.01587 (annual mean minimum) - 1.02102 (annual mean maximum) – Vancouver Harbour - source: *PAC 200 Sailing Directions*
Tidal range	5.0 metres
UKC policy alongside	Alongside berth UKC requirement for all states of tide is 5%
Bottom type	Mud
Dredging regime	None
Distance pilot station to berth	Distance from Brotchie Pilot Station to Vancouver - 80' nautical miles
ISPS	Transport Canada security approved
Loading/unloading requirements	
Container Crane Positioning. Arr./Dep.	See Appendix K
Website	https://www.dpworld.ca/

Manoeuvre	**Arrival**
UKC policy	

Control Area	*Rising Tide*	*Falling Tide*	*Slack Tide*
Burrard Inlet (manoeuvring)	5%	10%	10%
Burrard Inlet (transiting)	10%	10%	10%

Size restriction	No restrictions, all vessels to comply with UKC, Spacing, and overhang requirements
Tidal restriction	Refer to *Pacific Pilotage Authority* BC Berth Controlling Depths & Operating Parameters for relevant instructions.
Wind restriction	BC Coast Pilot and Ship Master discretion
Visibility restriction	BC Coast Pilot and Ship Master discretion
Speed restriction	Safe speed as defined by COLREGS - Rule #6
Passing requirements	As coordinated by BC Coast Pilots/Ship's Master and monitored by CCG Vessel Traffic Service/VFPA
Tug use	For vessels with a bowthruster; one tug of suitable power will be used on the stern and if the usable horsepower of the bowthruster is less than 4% of the vessel's summer deadweight, a second tug will be required forward. Source: Pacific Pilotage Authority *Notice to Industry* #02/2013
Berthing requirements	Terminal to position container cranes at midships position

Mooring Arrangements	Minimum spacing distance of 25 metres between vessels must be maintained for LOA up to 350 metres. For vessels LOA greater than 350 metres, a minimum distance of 10% of LOA of the larger vessel must be used to determine the spacing requirements.
Mooring Plans	All container terminals within VFPA jurisdiction must provide PPA dispatch, BCCP and VFPA Operations Center a standardized mooring arrangement 12hrs in advance of vessel arrival. Terminals can find the standardized mooring plans here.

Manoeuvre	**Departure**
UKC policy	

Control Area	*Rising Tide*	*Falling Tide*	*Slack Tide*
Burrard Inlet (manoeuvring)	5%	10%	10%
Burrard Inlet (transiting)	10%	10%	10%

Size restriction	No restrictions, all vessels to comply with UKC, Spacing, and overhang requirements
Tidal restriction	Refer to *Pacific Pilotage Authority* BC Berth Controlling Depths & Operating Parameters for relevant instructions.
Wind restriction	BC Coast Pilot and Ship Master discretion
Visibility restriction	BC Coast Pilot and Ship Master discretion
Speed restriction	Safe speed as defined by COLREGS - Rule #6
Passing requirements	As coordinated by BC Coast Pilots/Ship's Master and monitored by CCG Vessel Traffic Service/VFPA
Tug use	For vessels with a bowthruster; one tug of suitable power will be used on the stern and if the usable horsepower of the bowthruster is less than 4% of the vessel's summer deadweight, a second tug will be required forward. Source: Pacific Pilotage Authority *Notice to Industry* #02/2013
Unberthing requirements	Terminal to position container cranes at midships position

Terminal	CANADA PLACE
Area	Vancouver Harbour – South Shore
Date	January 2021

Position (lat / lon)	49˚17.3 N & 123˚06.8 W
Minimum control-led water depth	Refer to *Burrard Inlet and Roberts Bank berth soundings* document for Vancouver Fraser Port Authority and Pacific Pilotage Authority approved control depths
Chart datum	Vertical: Chart Datum LLW Horizontal: WGS84
Range of water densities	1.01587 (annual mean minimum) - 1.02102 (annual mean maximum) – Vancouver Harbour - source: *PAC 200 Sailing Directions*
Tidal range	5.0 metres
UKC policy alongside	Alongside berth UKC requirement for all states of tide is 5%
Bottom type	Mud
Dredging regime	None
Distance pilot station to berth	Distance from Brotchie Pilot Station to Vancouver 80' nm
ISPS	Transport Canada security approved
Loading/unloading requirements	
Website	http://www.canadaplace.ca/

Manoeuvre	Arrival
UKC policy	
Size restriction	
Tidal restriction	Refer to *Pacific Pilotage Authority* BC Berth Controlling Depths & Operating Parameters for relevant instructions.
Wind restriction	BC Coast Pilot and Ship Master discretion
Visibility restriction	BC Coast Pilot and Ship Master discretion
Speed restriction	Safe speed as defined by COLREGS - Rule #6
Passing requirements	As coordinated by BC Coast Pilots/Ship's Master and monitored by CCG Vessel Traffic Service/VFPA
Tug use	
Berthing requirements	

Control Area	*Rising Tide*	*Falling Tide*	*Slack Tide*
Burrard Inlet (manoeuvring)	5%	10%	10%
Burrard Inlet (transiting)	10%	10%	10%

<table>
<tr><th>Manoeuvre</th><th>Departure</th></tr>
<tr><td>UKC policy</td><td>
<table>
<tr><th>Control Area</th><th>Rising Tide</th><th>Falling Tide</th><th>Slack Tide</th></tr>
<tr><td>Burrard Inlet (manoeuvring)</td><td>5%</td><td>10%</td><td>10%</td></tr>
<tr><td>Burrard Inlet (transiting)</td><td>10%</td><td>10%</td><td>10%</td></tr>
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</td></tr>
<tr><td>Size restriction</td><td></td></tr>
<tr><td>Tidal restriction</td><td>Refer to Pacific Pilotage Authority BC Berth Controlling Depths & Operating Parameters for relevant instructions.</td></tr>
<tr><td>Wind restriction</td><td>BC Coast Pilot and Ship Master discretion</td></tr>
<tr><td>Visibility restriction</td><td>BC Coast Pilot and Ship Master discretion</td></tr>
<tr><td>Speed restriction</td><td>Safe speed as defined by COLREGS - Rule #6</td></tr>
<tr><td>Passing requirements</td><td>As coordinated by BC Coast Pilots/Ship’s Master and monitored by CCG Vessel Traffic Service/VFPA</td></tr>
<tr><td>Tug use</td><td></td></tr>
<tr><td>Unberthing requirements</td><td></td></tr>
</table>

APPENDIX H

	Port Sections Guide
	VANCOUVER HARBOUR - EAST
	Read user guidelines first. Always check all adjoining sections

Terminal	**CHEMTRADE ELECTROCHEM INC.**
Area	**Vancouver Harbour - East**
Date	**January 2021**

Position (lat / lon)	49˚18.0 N & 123˚00.9 W
Minimum control-led water depth	Refer to *Burrard Inlet and Roberts Bank berth soundings* document for Vancouver Fraser Port Authority and Pacific Pilotage Authority approved control depths
Chart datum	Vertical: Chart Datum LLW Horizontal: WGS84
Range of water densities	1.01587 (annual mean minimum) - 1.02102 (annual mean maximum) – Vancouver Harbour - source: *PAC 200 Sailing Directions*
Tidal range	5.0 metres
UKC policy alongside	Alongside berth UKC requirement for all states of tide is 5%
Bottom type	Gravel & Sand
Dredging regime	None
Distance pilot station to berth	Distance from Brotchie Pilot Station to terminal approximately 84' nm
ISPS	Transport Canada Certificate of Compliance #001710
Loading/unloading requirements	ISGOTT Ship/Shore Safety Check-List must be used in the transfer of bulk liquid cargoes from marine facility to vessel (ship-to-shore)
Website	http://www.chemtradelogistics.com/main/

Manoeuvre	**Arrival**
UKC policy	

Control Area	*Rising Tide*	*Falling Tide*	*Slack Tide*
Burrard Inlet (manoeuvring)	5%	10%	10%
Burrard Inlet (transiting)	10%	10%	10%
Second Narrows TCZ	10%	10%	10%

Size restriction	
Tidal restriction	Refer to *Pacific Pilotage Authority* BC Berth Controlling Depths & Operating Parameters for relevant instructions.
Wind restriction	BC Coast Pilot and Ship Master discretion
Visibility restriction	BC Coast Pilot and Ship Master discretion
Speed restriction	Safe speed as defined by COLREGS - Rule #6

Passing requirements	As coordinated by BC Coast Pilots/Ship's Master and monitored by CCG Vessel Traffic Service/VFPA
Tug use	
Berthing requirements	

Manoeuvre	**Departure**
UKC policy	

Control Area	*Rising Tide*	*Falling Tide*	*Slack Tide*
Burrard Inlet (manoeuvring)	5%	10%	10%
Burrard Inlet (transiting)	10%	10%	10%
Second Narrows TCZ	10%	10%	10%

Size restriction	
Tidal restriction	Refer to *Pacific Pilotage Authority* BC Berth Controlling Depths & Operating Parameters for relevant instructions.
Wind restriction	BC Coast Pilot and Ship Master discretion
Visibility restriction	BC Coast Pilot and Ship Master discretion
Speed restriction	Safe speed as defined by COLREGS - Rule #6
Passing requirements	As coordinated by BC Coast Pilots/Ship's Master and monitored by CCG Vessel Traffic Service/VFPA
Tug use	
Unberthing requirements	

Terminal	CHEVRON CANADA STANOVAN
Area	Vancouver Harbour - East
Date	January 2021

Position (lat / lon)	49˚17.5 N & 123˚00.2 W
Minimum control-led water depth	Refer to *Burrard Inlet and Roberts Bank berth soundings* document for Vancouver Fraser Port Authority and Pacific Pilotage Authority approved control depths
Chart datum	Vertical: Chart Datum LLW Horizontal: WGS84
Range of water densities	1.01587 (annual mean minimum) - 1.02102 (annual mean maximum) – Vancouver Harbour - source: *PAC 200 Sailing Directions*
Tidal range	5.0 metres
UKC policy alongside	Alongside berth UKC requirement for all states of tide is 5%
Bottom type	Gravel & Sand
Dredging regime	None
Distance pilot station to berth	Distance from Brotchie Pilot Station to terminal approximately 85' nm
ISPS	Transport Canada security approved
Loading/unloading requirements	ISGOTT Ship/Shore Safety Check-List must be used in the transfer of bulk liquid cargoes from marine facility to vessel (ship-to-shore)
Website	http://www.chevron.ca/our-businesses/burnaby-refinery

Manoeuvre	Arrival
UKC policy	

Control Area	*Rising Tide*	*Falling Tide*	*Slack Tide*
Burrard Inlet (manoeuvring)	5%	10%	10%
Burrard Inlet (transiting)	10%	10%	10%
Second Narrows TCZ	10%	10%	10%

Size restriction	
Tidal restriction	Refer to *Pacific Pilotage Authority* BC Berth Controlling Depths & Operating Parameters for relevant instructions.
Wind restriction	BC Coast Pilot and Ship Master discretion
Visibility restriction	BC Coast Pilot and Ship Master discretion
Speed restriction	Safe speed as defined by COLREGS - Rule #6
Passing requirements	As coordinated by BC Coast Pilots/Ship's Master and monitored by CCG Vessel Traffic Service/VFPA
Tug use	
Berthing requirements	

Manoeuvre	Departure
UKC policy	

Control Area	*Rising Tide*	*Falling Tide*	*Slack Tide*

Burrard Inlet (manoeuvring)	5%	10%	10%
Burrard Inlet (transiting)	10%	10%	10%
Second Narrows TCZ	10%	10%	10%

Size restriction	
Tidal restriction	Refer to *Pacific Pilotage Authority* BC Berth Controlling Depths & Operating Parameters for relevant instructions.
Wind restriction	BC Coast Pilot and Ship Master discretion
Visibility restriction	BC Coast Pilot and Ship Master discretion
Speed restriction	Safe speed as defined by COLREGS - Rule #6
Passing requirements	As coordinated by BC Coast Pilots/Ship's Master and monitored by CCG Vessel Traffic Service/VFPA
Tug use	
Unberthing requirements	

Terminal	SHELL CANADA PRODUCTS SHELLBURN
Area	Vancouver Harbour - East
Date	January 2021

Position (lat / lon)	49˚17.3 N & 122˚57.8 W
Minimum control-led water depth	Refer to *Burrard Inlet and Roberts Bank berth soundings* document for Vancouver Fraser Port Authority and Pacific Pilotage Authority approved control depths
Chart datum	Vertical: Chart Datum LLW Horizontal: WGS84
Range of water densities	1.01587 (annual mean minimum) - 1.02102 (annual mean maximum) – Vancouver Harbour - source: *PAC 200 Sailing Directions*
Tidal range	5.0 metres
UKC policy alongside	Alongside berth UKC requirement is 0.9 m
Bottom type	Mud
Dredging regime	None
Distance pilot station to berth	Distance from Brotchie Pilot Station to terminal approximately 85' nm
ISPS	Transport Canada security approved
Loading/unloading requirements	ISGOTT Ship/Shore Safety Check-List must be used in the transfer of bulk liquid cargoes from marine facility to vessel (ship-to-shore)
Contact / Website	24 hour Marine Incident Reporting Hotline: (713) 241-2532 http://www.shell.ca/

Manoeuvre — Arrival

UKC policy

Control Area	*Rising Tide*	*Falling Tide*	*Slack Tide*
Burrard Inlet (manoeuvring)	5%	10%	10%
Burrard Inlet (transiting)	10%	10%	10%

Size restriction

Min depth alongside	*Max acceptable draft*	*Max vessel length*	*Max displacement*	*Max freeboard*
10.9 m at MLLW	10.0 m	218 m	52830 tonnes	10.4 m

Tidal restriction	Refer to *Pacific Pilotage Authority* BC Berth Controlling Depths & Operating Parameters for relevant instructions.
Wind restriction	BC Coast Pilot and Ship Master discretion
Visibility restriction	BC Coast Pilot and Ship Master discretion
Speed restriction	Safe speed as defined by COLREGS - Rule #6
Passing requirements	As coordinated by BC Coast Pilots/Ship's Master and monitored by CCG Vessel Traffic Service/VFPA
Tug use	
Berthing requirements	A minimum of one assist tug is required for docking barges at Shellburn. A minimum of two assist tugs are required for docking a ship or ATB at Shellburn. Where assist tugs are required the assist tug horsepower must equal or exceed 5 percent of the ship's deadweight tonnage.

Manoeuvre	Departure
UKC policy	<table><tr><th>*Control Area*</th><th>*Rising Tide*</th><th>*Falling Tide*</th><th>*Slack Tide*</th></tr><tr><td>Burrard Inlet (manoeuvring)</td><td>5%</td><td>10%</td><td>10%</td></tr><tr><td>Burrard Inlet (transiting)</td><td>10%</td><td>10%</td><td>10%</td></tr></table>
Size restriction	
Tidal restriction	Refer to *Pacific Pilotage Authority* BC Berth Controlling Depths & Operating Parameters for relevant instructions.
Wind restriction	BC Coast Pilot and Ship Master discretion
Visibility restriction	BC Coast Pilot and Ship Master discretion
Speed restriction	Safe speed as defined by COLREGS - Rule #6
Passing requirements	As coordinated by BC Coast Pilots/Ship's Master and monitored by CCG Vessel Traffic Service/VFPA
Tug use	
Unberthing requirements	A minimum of one assist tug is required for docking barges at Shellburn. A minimum of two assist tugs are required for docking a ship or ATB at Shellburn. Where assist tugs are required the assist tug horsepower must equal or exceed 5 percent of the ship's deadweight tonnage.

Terminal Area	TRANS MOUNTAIN WESTRIDGE MARINE TERMINAL Vancouver Harbour - East
Date	**January 2021**

Position (lat / lon)	49˚17.3 N & 122˚57.2 W
Minimum control-led water depth	Refer to *Burrard Inlet and Roberts Bank berth soundings* document for Vancouver Fraser Port Authority and Pacific Pilotage Authority approved control depths
Chart datum	Vertical: Chart Datum LLW Horizontal: WGS84
Range of water densities	1.01587 (annual mean minimum) - 1.02102 (annual mean maximum) – Vancouver Harbour - source: *PAC 200 Sailing Directions*
Tidal range	5.0 metres
UKC policy alongside	Alongside berth UKC requirement for all states of tide is 5%
Bottom type	Mud & Sand
Dredging regime	None
Distance pilot station to berth	Distance from Brotchie Pilot Station to terminal approximately 86' nm
ISPS	Transport Canada security approved
Loading/unloading requirements	ISGOTT Ship/Shore Safety Check-List must be used in the transfer of bulk liquid cargoes from marine facility to vessel (ship-to-shore)
Website	www.transmountain.com

Manoeuvre	**Arrival**
UKC policy	

Control Area	*Rising Tide*	*Falling Tide*	*Slack Tide*
Burrard Inlet (manoeuvring)	5%	10%	10%
Burrard Inlet (transiting)	10%	10%	10%

Size restriction	
Tidal restriction	Refer to *Pacific Pilotage Authority* BC Berth Controlling Depths & Operating Parameters for relevant instructions.
Wind restriction	BC Coast Pilot and Ship Master discretion
Visibility restriction	BC Coast Pilot and Ship Master discretion
Speed restriction	Safe speed as defined by COLREGS - Rule #6
Passing requirements	As coordinated by BC Coast Pilots/Ship's Master and monitored by CCG Vessel Traffic Service/VFPA
Tug use	
Berthing requirements	

Manoeuvre	**Departure**
UKC policy	

Control Area	*Rising Tide*	*Falling Tide*	*Slack Tide*
Burrard Inlet (manoeuvring)	5%	10%	10%
Burrard Inlet (transiting)	10%	10%	10%

Size restriction	
Tidal restriction	Refer to *Pacific Pilotage Authority* BC Berth Controlling Depths & Operating Parameters for relevant instructions.
Wind restriction	BC Coast Pilot and Ship Master discretion
Visibility restriction	BC Coast Pilot and Ship Master discretion
Speed restriction	Safe speed as defined by COLREGS - Rule #6
Passing requirements	As coordinated by BC Coast Pilots/Ship's Master and monitored by CCG Vessel Traffic Service/VFPA
Tug use	
Unberthing requirements	

Terminal	**SUNCOR BURRARD PRODUCTS TERMINAL**
Area	**Vancouver Harbour - East**
Date	**January 2021**

Position (lat / lon)	49˚17.3 N & 122˚53.8 W
Minimum control-led water depth	Refer to *Burrard Inlet and Roberts Bank berth soundings* document for Vancouver Fraser Port Authority and Pacific Pilotage Authority approved control depths
Chart datum	Vertical: Chart Datum LLW Horizontal: WGS84
Range of water densities	1.01587 (annual mean minimum) - 1.02102 (annual mean maximum) – Vancouver Harbour - source: *PAC 200 Sailing Directions*
Tidal range	5.0 metres
UKC policy alongside	Alongside berth UKC requirement for all states of tide is 5%
Bottom type	Mud
Dredging regime	None
Distance pilot station to berth	Distance from Brotchie Pilot Station to terminal approximately 88' nm
ISPS	Transport Canada security approved
Loading/unloading requirements	ISGOTT Ship/Shore Safety Check-List must be used in the transfer of bulk liquid cargoes from marine facility to vessel (ship-to-shore)
Website	www.suncor.com/marine

Manoeuvre	**Arrival**
UKC policy	

Control Area	*Rising Tide*	*Falling Tide*	*Slack Tide*
Burrard Inlet (manoeuvring)	5%	10%	10%
Burrard Inlet (transiting)	10%	10%	10%

Size restriction	
Tidal restriction	Refer to *Pacific Pilotage Authority* BC Berth Controlling Depths & Operating Parameters for relevant instructions.
Wind restriction	BC Coast Pilot and Ship Master discretion

Visibility restriction	BC Coast Pilot and Ship Master discretion
Speed restriction	Safe speed as defined by COLREGS - Rule #6
Passing requirements	As coordinated by BC Coast Pilots/Ship's Master and monitored by CCG Vessel Traffic Service/VFPA
Tug use	
Berthing requirements	

Manoeuvre	**Departure**
UKC policy	

Control Area	*Rising Tide*	*Falling Tide*	*Slack Tide*
Burrard Inlet (manoeuvring)	5%	10%	10%
Burrard Inlet (transiting)	10%	10%	10%

Size restriction	
Tidal restriction	Refer to *Pacific Pilotage Authority* BC Berth Controlling Depths & Operating Parameters for relevant instructions.
Wind restriction	BC Coast Pilot and Ship Master discretion
Visibility restriction	BC Coast Pilot and Ship Master discretion
Speed restriction	Safe speed as defined by COLREGS - Rule #6
Passing requirements	As coordinated by BC Coast Pilots/Ship's Master and monitored by CCG Vessel Traffic Service/VFPA
Tug use	
Unberthing requirements	

Terminal	IMPERIAL OIL IOCO TERMINAL
Area	Vancouver Harbour - East
Date	January 2021

Position (lat / lon)	49˚18.0 N & 122˚52.9 W
Minimum control-led water depth	Refer to *Burrard Inlet and Roberts Bank berth soundings* document for Vancouver Fraser Port Authority and Pacific Pilotage Authority approved control depths
Chart datum	Vertical: Chart Datum LLW Horizontal: WGS84
Range of water densities	1.01587 (annual mean minimum) - 1.02102 (annual mean maximum) – Vancouver Harbour - source: *PAC 200 Sailing Directions*
Tidal range	5.0 metres
UKC policy alongside	Alongside berth UKC requirement for all states of tide is 5%
Bottom type	Mud
Dredging regime	None
Distance pilot station to berth	Distance from Brotchie Pilot Station to terminal approximately 89' nm
ISPS	Transport Canada security approved
Loading/unloading requirements	ISGOTT Ship/Shore Safety Check-List must be used in the transfer of bulk liquid cargoes from marine facility to vessel (ship-to-shore)
Website	http://www.imperialoil.ca/

Manoeuvre — Arrival

UKC policy

Control Area	*Rising Tide*	*Falling Tide*	*Slack Tide*
Burrard Inlet (manoeuvring)	5%	10%	10%
Burrard Inlet (transiting)	10%	10%	10%

Size restriction	
Tidal restriction	Refer to *Pacific Pilotage Authority* BC Berth Controlling Depths & Operating Parameters for relevant instructions.
Wind restriction	BC Coast Pilot and Ship Master discretion
Visibility restriction	BC Coast Pilot and Ship Master discretion
Speed restriction	Safe speed as defined by COLREGS - Rule #6
Passing requirements	As coordinated by BC Coast Pilots/Ship's Master and monitored by CCG Vessel Traffic Service/VFPA
Tug use	
Berthing requirements	

Manoeuvre — Departure

UKC policy

Control Area	*Rising Tide*	*Falling Tide*	*Slack Tide*
Burrard Inlet (manoeuvring)	5%	10%	10%

	Burrard Inlet (transiting)	10%	10%	10%
Size restriction				
Tidal restriction	Refer to *Pacific Pilotage Authority* BC Berth Controlling Depths & Operating Parameters for relevant instructions.			
Wind restriction	BC Coast Pilot and Ship Master discretion			
Visibility restriction	BC Coast Pilot and Ship Master discretion			
Speed restriction	Safe speed as defined by COLREGS - Rule #6			
Passing requirements	As coordinated by BC Coast Pilots/Ship's Master and monitored by CCG Vessel Traffic Service/VFPA			
Tug use				
Unberthing requirements				

Terminal	PACIFIC COAST TERMINALS
Area	Vancouver Harbour - East
Date	January 2021

Position (lat / lon)	49˚17.0 N & 122˚51.8 W
Minimum control-led water depth	Refer to *Burrard Inlet and Roberts Bank berth soundings* document for Vancouver Fraser Port Authority and Pacific Pilotage Authority approved control depths
Chart datum	Vertical: Chart Datum LLW Horizontal: WGS84
Range of water densities	1.01587 (annual mean minimum) - 1.02102 (annual mean maximum) – Vancouver Harbour - source: *PAC 200 Sailing Directions*
Tidal range	5.0 metres
UKC policy alongside	Alongside berth UKC requirement for all states of tide is 5%
Bottom type	Rock & Mud
Dredging regime	None
Distance pilot station to berth	Distance from Brotchie Pilot Station to terminal approximately 89' nm
ISPS	Transport Canada security approved
Loading/unloading requirements	ISGOTT Ship/Shore Safety Check-List must be used in the transfer of bulk liquid cargoes from marine facility to vessel (ship-to-shore)
Website	http://pct.ca/

Manoeuvre	Arrival
UKC policy	

Control Area	*Rising Tide*	*Falling Tide*	*Slack Tide*
Burrard Inlet (manoeuvring)	5%	10%	10%
Burrard Inlet (transiting)	10%	10%	10%

Size restriction	
Tidal restriction	Refer to *Pacific Pilotage Authority* BC Berth Controlling Depths & Operating Parameters for relevant instructions.
Wind restriction	BC Coast Pilot and Ship Master discretion
Visibility restriction	BC Coast Pilot and Ship Master discretion
Speed restriction	Safe speed as defined by COLREGS - Rule #6
Passing requirements	As coordinated by BC Coast Pilots/Ship's Master and monitored by CCG Vessel Traffic Service/VFPA
Tug use	
Berthing requirements	

Manoeuvre	Departure
UKC policy	

Control Area	*Rising Tide*	*Falling Tide*	*Slack Tide*
Burrard Inlet (manoeuvring)	5%	10%	10%

	Burrard Inlet (transiting)	10%	10%	10%
Size restriction				
Tidal restriction	Refer to *Pacific Pilotage Authority* BC Berth Controlling Depths & Operating Parameters for relevant instructions.			
Wind restriction	BC Coast Pilot and Ship Master discretion			
Visibility restriction	BC Coast Pilot and Ship Master discretion			
Speed restriction	Safe speed as defined by COLREGS - Rule #6			
Passing requirements	As coordinated by BC Coast Pilots/Ship's Master and monitored by CCG Vessel Traffic Service/VFPA			
Tug use				
Unberthing requirements				

APPENDIX I

	Port Sections Guide
	ROBERTS BANK
	Read user guidelines first. Always check all adjoining sections

Terminal	**DELTAPORT – GLOBAL CONTAINER TERMINALS**
Area	**Roberts Bank**
Date	**January 2021**

Position (lat / lon)	49˚01.2 N & 123 09.4 W
Minimum control-led water depth	Refer to *Burrard Inlet and Roberts Bank berth soundings* document for Vancouver Fraser Port Authority and Pacific Pilotage Authority approved control depths
Chart datum	Vertical: Chart Datum LLW Horizontal: WGS84
Range of water densities	Not available
Tidal range	5.0 metres
UKC policy alongside	Alongside berth UKC requirement for all states of tide is 5%
Bottom type	Rock
Dredging regime	None
Distance pilot station to berth	Distance to Brotchie Pilot Station 51' nm
ISPS	Transport Canada security approved
Loading/unloading requirements	
Container Crane Positioning. Arr./Dep.	See Appendix N
Website	http://globalterminalscanada.com/gct-deltaport/

Manoeuvre	**Arrival**
UKC policy	

Control Area	*Rising Tide*	*Falling Tide*	*Slack Tide*
Roberts Bank	5%	10%	10%

Size restriction	
Tidal restriction	Refer to *Pacific Pilotage Authority* BC Berth Controlling Depths & Operating Parameters for relevant instructions.
Wind restriction	BC Coast Pilot and Ship Master discretion
Visibility restriction	BC Coast Pilot and Ship Master discretion
Speed restriction	Safe speed as defined by COLREGS - Rule #6
Passing requirements	As coordinated by BC Coast Pilots/Ship's Master and monitored by CCG Vessel Traffic Service/VFPA

Tug use	
Berthing requirements	
Mooring Arrangements	Minimum spacing distance of 25 metres between vessels must be maintained for LOA up to 350 metres. For vessels LOA greater than 350 metres, a minimum distance of 10% of LOA of the larger vessel must be used to determine the spacing requirements.
Mooring Plans	All container terminals within VFPA jurisdiction must provide PPA dispatch, BCCP and VFPA Operations Center a standardized mooring arrangement 12hrs in advance of vessel arrival. Terminals can find the standardized mooring plans here.

Manoeuvre	**Departure**
UKC policy	

Control Area	*Rising Tide*	*Falling Tide*	*Slack Tide*
Roberts Bank	5%	10%	10%

Size restriction	
Tidal restriction	Refer to *Pacific Pilotage Authority* BC Berth Controlling Depths & Operating Parameters for relevant instructions.
Wind restriction	BC Coast Pilot and Ship Master discretion
Visibility restriction	BC Coast Pilot and Ship Master discretion
Speed restriction	Safe speed as defined by COLREGS - Rule #6
Passing requirements	As coordinated by BC Coast Pilots/Ship's Master and monitored by CCG Vessel Traffic Service/VFPA
Tug use	
Unberthing requirements	

Terminal	WESTSHORE TERMINALS
Area	Roberts Bank
Date	January 2021

Position (lat / lon)	49˚01.0 N & 123˚10.0 W
Minimum control-led water depth	Refer to *Burrard Inlet and Roberts Bank berth soundings* document for Vancouver Fraser Port Authority and Pacific Pilotage Authority approved control depths
Chart datum	Vertical: Chart Datum LLW Horizontal: WGS84
Range of water densities	Not available
Tidal range	5.0 metres
UKC policy alongside	Alongside berth UKC requirement for all states of tide is 5%
Bottom type	Sand and fine silt
Dredging regime	None
Distance pilot station to berth	Distance to Brotchie Pilot Station 51'nm
ISPS	Transport Canada security approved
Loading/unloading requirements	
Website	http://www.westshore.com/#/main

Manoeuvre	Arrival
UKC policy	

Control Area	*Rising Tide*	*Falling Tide*	*Slack Tide*
Roberts Bank	5%	10%	10%

Size restriction	
Tidal restriction	Refer to *Pacific Pilotage Authority* BC Berth Controlling Depths & Operating Parameters for relevant instructions.
Wind restriction	BC Coast Pilot and Ship Master discretion
Visibility restriction	BC Coast Pilot and Ship Master discretion
Speed restriction	Safe speed as defined by COLREGS - Rule #6
Passing requirements	As coordinated by BC Coast Pilots/Ship's Master and monitored by CCG Vessel Traffic Service/VFPA
Tug use	
Berthing requirements	

Manoeuvre	Departure
UKC policy	

Control Area	*Rising Tide*	*Falling Tide*	*Slack Tide*
Roberts Bank	5%	10%	10%

Size restriction	
Tidal restriction	Refer to *Pacific Pilotage Authority* BC Berth Controlling Depths & Operating Parameters for relevant instructions.

Wind restriction	BC Coast Pilot and Ship Master discretion
Visibility restriction	BC Coast Pilot and Ship Master discretion
Speed restriction	Safe speed as defined by COLREGS - Rule #6
Passing requirements	As coordinated by BC Coast Pilots/Ship's Master and monitored by CCG Vessel Traffic Service/VFPA
Tug use	
Unberthing requirements	

APPENDIX J

	Port Sections Guide
	FRASER RIVER
	Read user guidelines first. Always check all adjoining sections

Terminal	**DP World Fraser Surrey (2,3,4)**
Area	**Fraser River**
Date	**January 2021**

Position (lat / lon)	49˚11.0 N & 122˚ 55.0 W
Minimum control-led water depth	For most recent soundings, refer to the Canadian Coast Guard's AVADEPTH website
Chart datum	Vertical: Chart Datum LLW Horizontal: WGS84
Range of water densities	0.99876 (annual mean minimum) - 1.00000 (annual mean maximum) - New Westminster - source: *PAC 200 Sailing Directions*
Tidal range	3.4 metres
UKC policy alongside	Alongside berth UKC requirement for all states of tide is 5%
Bottom type	Sand and Silt
Dredging regime	Annual maintenance dredging
Distance pilot station to berth	Brotchie to Sandheads 58 nm' + Sandheads to Terminal 18 nm'
ISPS	Transport Canada security approved
Standby tug requirements	Deep sea vessels moored at FSD, with a barge alongside for cargo operations, requires a tug to standby the barge at all times during freshet currents. Any exemption must be requested and approved by the port authority operations centre.
Website	http://www.fsd.bc.ca/

Manoeuvre	**Arrival**
UKC policy	

Control Area	*Rising Tide*	*Falling Tide*	*Slack Tide*
Fraser River (<250m LOA)	90cm	90cm	90cm
Fraser River (>250m LOA)	90cm	90cm	90cm

Size restriction	
Tidal restriction	Arrival restricted to transit windows – refer to Fraser River Tidal Window calculator: https://pilot.kleinsystems.com/Public/PPA/PPA_Disclaimer.aspx
Wind restriction	Fraser River Pilot discretion
Visibility restriction	Fraser River Pilot discretion
Speed restriction	Safe speed as defined by COLREGS - Rule #6

Passing requirements	As coordinated by Fraser River Pilots/Ship's Master and monitored by CCG Vessel Traffic Service/VFPA. Combined beam restriction 53m when passing ships at berths #2 and #3.
Tug use	Per Pacific Pilotage Authority requirements
Berthing requirements	In all cases, pilot's discretion will apply, taking into consideration the weather, sea conditions, predicted current, freshet, draft, maneuvering characteristics, fender capacity of the berth, space available and mechanical history of the vessel.

Manoeuvre	**Departure**
UKC policy	

Control Area	*Rising Tide*	*Falling Tide*	*Slack Tide*
Fraser River (<250m LOA)	90cm	90cm	90cm
Fraser River (>250m LOA)	90cm	90cm	90cm

Size restriction	
Tidal restriction	Departure restricted to transit windows – refer to Fraser River Tidal Window calculator: https://pilot.kleinsystems.com/Public/PPA/PPA_Disclaimer.aspx
Wind restriction	Fraser River Pilot discretion
Visibility restriction	Fraser River Pilot discretion
Speed restriction	Safe speed as defined by COLREGS - Rule #6
Passing requirements	As coordinated by Fraser River Pilots/Ship's Master and monitored by CCG Vessel Traffic Service/VFPA. Combined beam restriction 53m when passing ships at berths #2 and #3.
Tug use	Per Pacific Pilotage Authority requirements
Unberthing requirements	In all cases, pilot's discretion will apply, taking into consideration the weather, sea conditions, predicted current, freshet, draft, maneuvering characteristics, fender capacity of the berth, space available and mechanical history of the vessel.

Terminal	DP World Fraser Surrey – Upriver Berths (7,8,9,10)
Area	Fraser River
Date	January 2021

Position (lat / lon)	49˚11.0 N & 122˚ 55.0 W
Minimum control-led water depth	For most recent soundings, refer to the Canadian Coast Guard's AVADEPTH website
Chart datum	Vertical: Chart Datum LLW Horizontal: WGS84
Range of water densities	0.99876 (annual mean minimum) - 1.00000 (annual mean maximum) - New Westminster - source: *PAC 200 Sailing Directions*
Tidal range	3.4 metres
UKC policy alongside	Alongside berth UKC requirement for all states of tide is 5%
Bottom type	Sand and Silt
Dredging regime	Annual maintenance dredging
Distance pilot station to berth	Brotchie to Sandheads 58 nm' + Sandheads to Terminal 18 nm'
ISPS	Transport Canada security approved
Loading/unloading requirements	Deep sea vessels moored at FSD, with a barge alongside for cargo operations, requires a tug to standby the barge at all times during peak freshet currents.
Container Crane Positioning. Arr./Dep.	See Appendix M
Website	http://www.fsd.bc.ca/

Manoeuvre	Arrival
UKC policy	

Control Area	*Rising Tide*	*Falling Tide*	*Slack Tide*
Fraser River (<250m LOA)	90cm	90cm	90cm
Fraser River (>250m LOA)	90cm	90cm	90cm

Size restriction	
Tidal restriction	Arrival restricted to transit windows – refer to Fraser River Tidal Window calculator: https://pilot.kleinsystems.com/Public/PPA/PPA_Disclaimer.aspx
Wind restriction	Fraser River Pilot discretion
Visibility restriction	Fraser River Pilot discretion
Speed restriction	Safe speed as defined by COLREGS - Rule #6
Passing requirements	As coordinated by Fraser River Pilots/Ship's Master and monitored by CCG Vessel Traffic Service/VFPA. Vessels 260m LOA and greater arriving ports side to must have berth 7 open for sufficient swinging room within turning basin.
Tug use	Per Pacific Pilotage Authority requirements
Berthing requirements	In all cases, pilot's discretion will apply, taking into consideration the weather, sea conditions, predicted current, freshet, draft, maneuvering characteristics, fender capacity of the berth, space available and mechanical history of the vessel.

Mooring Arrangements	Minimum spacing distance of 25 metres between vessels must be maintained for LOA up to 350 metres. For vessels LOA greater than 350 metres, a minimum distance of 10% of LOA of the larger vessel must be used to determine the spacing requirements.
Mooring Plans	All container terminals within VFPA jurisdiction must provide PPA dispatch, BCCP and VFPA Operations Center a standardized mooring arrangement 12hrs in advance of vessel arrival. Terminals can find the standardized mooring plans here.

Manoeuvre	**Departure**
UKC policy	

Control Area	*Rising Tide*	*Falling Tide*	*Slack Tide*
Fraser River (<250m LOA)	90cm	90cm	90cm
Fraser River (>250m LOA)	90cm	90cm	90cm

Size restriction	
Tidal restriction	Departure restricted to transit windows – refer to Fraser River Tidal Window calculator: https://pilot.kleinsystems.com/Public/PPA/PPA_Disclaimer.aspx
Wind restriction	Fraser River Pilot discretion
Visibility restriction	Fraser River Pilot discretion
Speed restriction	Safe speed as defined by COLREGS - Rule #6
Passing requirements	As coordinated by Fraser River Pilots/Ship's Master and monitored by CCG Vessel Traffic Service/VFPA. Vessels 260m LOA and greater departing from starboard side to must have berth chainage 600m to 700m (lower 100m of berth 7) open to allow sufficient swinging room within the turning basin.
Tug use	Per Pacific Pilotage Authority requirements
Unberthing requirements	In all cases, pilot's discretion will apply, taking into consideration the weather, sea conditions, predicted current, freshet, draft, maneuvering characteristics, fender capacity of the berth, space available and mechanical history of the vessel.

Terminal	WWL VEHICLE SERVICES CANADA – ANNACIS AUTO TERMINAL
Area	Fraser River
Date	January 2021

Position (lat / lon)	49˚11.0 N & 122˚ 55.5 W
Minimum control-led water depth	For most recent soundings, refer to the Canadian Coast Guard's AVADEPTH website
Chart datum	Vertical: Chart Datum LLW Horizontal: WGS84
Range of water densities	0.99876 (annual mean minimum) - 1.00000 (annual mean maximum) - New Westminster - source: *PAC 200 Sailing Directions*
Tidal range	Arrival restricted to transit windows – refer to Fraser River Tidal Window calculator: https://pilot.kleinsystems.com/Public/PPA/PPA_Disclaimer.aspx
UKC policy alongside	Alongside berth UKC requirement for all states of tide is 5%
Bottom type	Sand and Silt
Dredging regime	Annual maintenance dredging
Distance pilot station to berth	Brotchie to Sandheads 58 nm' + Sandheads to Terminal 18 nm'
ISPS	Transport Canada security approved
Loading/unloading requirements	
Bunkering	Refer to **Section 14.7 BUNKERING AND FUELING -> Bunkering in Port Areas -> Bunkering in the Fraser River -> Bunkering at Annacis Auto Terminal** of this document for instructions on bunkering procedures at Annacis Auto Terminal
Website	http://www.2wglobal.com/

Manoeuvre	Arrival
UKC policy	

Control Area	*Rising Tide*	*Falling Tide*	*Slack Tide*
Fraser River (<250m LOA)	90cm	90cm	90cm
Fraser River (>250m LOA)	90cm	90cm	90cm

Size restriction	
Tidal restriction	Departure restricted to transit windows – refer to Fraser River Tidal Window calculator: https://pilot.kleinsystems.com/Public/PPA/PPA_Disclaimer.aspx
Wind restriction	Fraser River Pilot discretion
Visibility restriction	Fraser River Pilot discretion
Speed restriction	Safe speed as defined by COLREGS - Rule #6
Passing requirements	As coordinated by Fraser River Pilots/Ship's Master and monitored by CCG Vessel Traffic Service/VFPA

Tug use	Per Pacific Pilotage Authority requirements
Berthing requirements	In all cases, pilot's discretion will apply, taking into consideration the weather, sea conditions, predicted current, freshet, draft, maneuvering characteristics, fender capacity of the berth, space available and mechanical history of the vessel.

Manoeuvre	**Departure**
UKC policy	

Control Area	*Rising Tide*	*Falling Tide*	*Slack Tide*
Fraser River (<250m LOA)	90cm	90cm	90cm
Fraser River (>250m LOA)	90cm	90cm	90cm

Size restriction	
Tidal restriction	Departure restricted to transit windows – refer to Fraser River Tidal Window calculator: https://pilot.kleinsystems.com/Public/PPA/PPA_Disclaimer.aspx
Wind restriction	Fraser River Pilot discretion
Visibility restriction	Fraser River Pilot discretion
Speed restriction	Safe speed as defined by COLREGS - Rule #6
Passing requirements	As coordinated by Fraser River Pilots/Ship's Master and monitored by CCG Vessel Traffic Service/VFPA
Tug use	Per Pacific Pilotage Authority requirements
Unberthing requirements	In all cases, pilot's discretion will apply, taking into consideration the weather, sea conditions, predicted current, freshet, draft, maneuvering characteristics, fender capacity of the berth, space available and mechanical history of the vessel.

Terminal	WWL VEHICLE SERVICES CANADA – FRASER WHARVES
Area	Fraser River
Date	January 2021

Position (lat / lon)	49˚07.8 N & 123˚ 04.1 W
Minimum control-led water depth	For most recent soundings, refer to the Canadian Coast Guard's AVADEPTH website
Chart datum	Vertical: Chart Datum LLW Horizontal: WGS84
Range of water densities	0.99876 (annual mean minimum) - 1.00000 (annual mean maximum) - New Westminster - source: *PAC 200 Sailing Directions*
Tidal range	Arrival restricted to transit windows – refer to Fraser River Tidal Window calculator: https://pilot.kleinsystems.com/Public/PPA/PPA_Disclaimer.aspx
UKC policy alongside	Alongside berth UKC requirement for all states of tide is 5%
Bottom type	Sand and Silt
Dredging regime	Annual maintenance dredging
Distance pilot station to berth	Brotchie to Sandheads 58 nm' + Sandheads to Terminal 11 nm'
ISPS	Transport Canada security approved
Loading/unloading requirements	For stern ramp discharge, vessel must not overhang the berth more than 45% of the LOA; adhere to the following conditions: • Fraser River Pilots and Vessel's Master must concur with proposed mooring plan and vessel overhang arrangement; • Vessel's Master must ensure the vessel has sufficient UKC while alongside and is aware of shallow water depth located downriver of the berth, see For most recent soundings, refer to the Canadian Coast Guard's AVADEPTH website; • The Vessel's Master must ensure the Vessel is safely moored and a vigilant watch is maintained on all mooring lines and the Vessel makes use of the land-side bollards located abeam of the overhang area; • A standby tug must be in attendance should winds above 17 knots be observed or forecasted or if recommended by Fraser River Pilots; • Vessel's Master must ensure the vessel's overhang is properly illuminated from sunset to sunrise; • Master/Agent must notify VFPA Ops centre and the Fraser River Pilots at least 24 hours prior to arrival of intent to use stern ramp; • If a vessel wants to shift along the berth without a pilot and tugs, approval from the port authority is required. To gain port authority approval, a vessel service request must be submitted and the conditions outlined in section 8.10 SHIFTING VESSELS of this document must be met.
Website	http://www.2wglobal.com/

Manoeuvre	Arrival
UKC policy	<table><tr><th>Control Area</th><th>Rising Tide</th><th>Falling Tide</th><th>Slack Tide</th></tr><tr><td>Fraser River (<250m LOA)</td><td>90cm</td><td>90cm</td><td>90cm</td></tr><tr><td>Fraser River (>250m LOA)</td><td>90cm</td><td>190cm</td><td>90cm</td></tr></table>
Size restriction	
Tidal restriction	Departure restricted to transit windows – refer to Fraser River Tidal Window calculator: https://pilot.kleinsystems.com/Public/PPA/PPA_Disclaimer.aspx
Wind restriction	Fraser River Pilot discretion
Visibility restriction	Fraser River Pilot discretion
Speed restriction	Safe speed as defined by COLREGS - Rule #6
Passing requirements	As coordinated by Fraser River Pilots/Ship's Master and monitored by CCG Vessel Traffic Service/VFPA
Tug use	Per Pacific Pilotage Authority requirements
Berthing requirements	In all cases, pilot's discretion will apply, taking into consideration the weather, sea conditions, predicted current, freshet, draft, maneuvering characteristics, fender capacity of the berth, space available and mechanical history of the vessel.

Manoeuvre	Departure
UKC policy	<table><tr><th>Control Area</th><th>Rising Tide</th><th>Falling Tide</th><th>Slack Tide</th></tr><tr><td>Fraser River (<250m LOA)</td><td>90cm</td><td>90cm</td><td>90cm</td></tr><tr><td>Fraser River (>250m LOA)</td><td>90cm</td><td>90cm</td><td>90cm</td></tr></table>
Size restriction	
Tidal restriction	Departure restricted to transit windows – refer to Fraser River Tidal Window calculator: https://pilot.kleinsystems.com/Public/PPA/PPA_Disclaimer.aspx
Wind restriction	Fraser River Pilot discretion
Visibility restriction	Fraser River Pilot discretion
Speed restriction	Safe speed as defined by COLREGS - Rule #6
Passing requirements	As coordinated by Fraser River Pilots/Ship's Master and monitored by CCG Vessel Traffic Service/VFPA
Tug use	Per Pacific Pilotage Authority requirements
Unberthing requirements	In all cases, pilot's discretion will apply, taking into consideration the weather, sea conditions, predicted current, freshet, draft, maneuvering characteristics, fender capacity of the berth, space available and mechanical history of the vessel.

APPENDIX K: Centerm

Positioning of dock gantry cranes during berthing and unberthing operations

To minimize the risk of an allision between a vessel and a terminal gantry crane, the port authority recommends that terminal operators adopt the following best practices:

1. Prior to a vessel's arrival or departure from a berth, gantry cranes should be positioned in close proximity as near as practicable to the parallel mid-body section of the vessel and well clear vessel's bow and stern flares.
2. Crane booms should be raised to their maximum design position.
3. Cranes should not be moved until the vessel is fully secured or clear of the berth. If cranes must be moved to allow access to mooring bollards, this should not occur until the vessel is in position alongside.
4. Gantry cranes should be unmanned during berthing or unberthing operations.
5. A dock exclusion zone for the safety of non-essential personnel should be established at the berth in question during berthing and unberthing operations.
6. It should be noted that as the beam and air draft of container vessels continues to increase, gantry cranes operating in the boom down position at adjacent berths can also be exposed to allision with passing vessels. This may on occasion result in a request for booms to be temporarily raised to allow safe passage. Failure to comply with such request may result in delayed berthing or unberthing.
7. Idle crane booms should normally be raised to their maximum design position at vacant berths. If operations require a boom to be lowered over an empty berth, PPA dispatch office should be informed as early as possible and not later than at the time of pilot dispatch. Pilots should be notified of the likely duration and subsequent notification should be made if or when the boom is raised. Dock personnel working on gantry cranes that are lowered over an empty berth should be aware of the risks posed by passing vessels.
8. Should a vessel's ETA at berth materially change, thereby affecting known crane maintenance operations, such change in ETA shall be notified directly to the terminal by the pilot or via the PPA dispatch office.
9. When on occasion it is requested to berth or unberth a vessel with a crane boom down at the intended berth, such request (if known at the time) shall be made to the pilot dispatch office at the time of pilot ordering and copied to the harbour master's office at the port authority's Operations Centre along with the following information:
    a. The precise dock location of the crane in question and the distance from bow and stern of the vessel's intended docking position.
    b. The minimum vertical clearance between the underside of the crane boom or spreader and the container deck stow (minimum allowable clearance two metres).
    c. Confirmation that the crane in question will not otherwise impact the docking operation and will remain unmanned until the vessel is secured alongside or clear of the berth.
10. The docking of a large container vessel with a dock crane boom in the lowered position should be deemed an exceptional case and as such may be:
    a. Tidal restricted
    b. Wind restricted
    c. Daylight and/or visibility restricted

Further mitigation by way of an additional tug(s) may also be required and shall be determined by the vessel's master and pilot.

APPENDIX L: Vanterm

Positioning of dock gantry cranes during berthing and unberthing operations

To minimize the risk of an allision between a vessel and a terminal gantry crane, the port authority recommends that terminal operators adopt the following best practices:

1. Prior to a vessel's arrival or departure from a berth, gantry cranes should be positioned in close proximity as near as practicable to the parallel mid-body section of the vessel and well clear vessel's bow and stern flares.
2. Crane booms should be raised to their maximum design position.
3. Cranes should not be moved until the vessel is fully secured or clear of the berth. If cranes must be moved to allow access to mooring bollards, this should not occur until the vessel is in position alongside.
4. Gantry cranes should be unmanned during berthing or unberthing operations.
5. A dock exclusion zone for the safety of non-essential personnel should be established at the berth in question during berthing and unberthing operations.
6. It should be noted that as the beam and air draft of container vessels continues to increase, gantry cranes operating in the boom down position at adjacent berths can also be exposed to allision with passing vessels. This may on occasion result in a request for booms to be temporarily raised to allow safe passage. Failure to comply with such request may result in delayed berthing or unberthing.
7. Idle crane booms should normally be raised to their maximum design position at vacant berths. If operations require a boom to be lowered over an empty berth, PPA dispatch office should be informed as early as possible and not later than at the time of pilot dispatch. Pilots should be notified of the likely duration and subsequent notification should be made if or when the boom is raised. Dock personnel working on gantry cranes that are lowered over an empty berth should be aware of the risks posed by passing vessels.
8. Should a vessel's ETA at berth materially change, thereby affecting known crane maintenance operations, such change in ETA shall be notified directly to the terminal by the pilot or via the PPA dispatch office.
9. When on occasion it is requested to berth or unberth a vessel with a crane boom down at the intended berth, such request (if known at the time) shall be made to the pilot dispatch office at the time of pilot ordering and copied to the harbour master's office at the port authority's Operations Centre along with the following information:
    a. The precise dock location of the crane in question and the distance from bow and stern of the vessel's intended docking position.
    b. The minimum vertical clearance between the underside of the crane boom or spreader and the container deck stow (minimum allowable clearance two metres).
    c. Confirmation that the crane in question will not otherwise impact the docking operation and will remain unmanned until the vessel is secured alongside or clear of the berth.
10. The docking of a large container vessel with a dock crane boom in the lowered position should be deemed an exceptional case and as such may be:
    a. Tidal restricted
    b. Wind restricted
    c. Daylight and/or visibility restricted

Further mitigation by way of an additional tug(s) may also be required and shall be determined by the vessel's Master and pilot.

APPENDIX M: DP World Fraser Surrey

Positioning of dock gantry cranes during berthing and unberthing operations

To minimize the risk of an allision between a vessel and a terminal gantry crane, the port authority recommends that terminal operators adopt the following best practices:

1. Prior to a vessel's arrival or departure from a berth, gantry cranes should be positioned in close proximity as near as practicable to the parallel mid-body section of the vessel and well clear vessel's bow and stern flares.
2. Crane booms should be raised to their maximum design position.
3. Cranes should not be moved until the vessel is fully secured or clear of the berth. If cranes must be moved to allow access to mooring bollards, this should not occur until the vessel is in position alongside.
4. Gantry cranes should be unmanned during berthing or unberthing operations.
5. A dock exclusion zone for the safety of non-essential personnel should be established at the berth in question during berthing and unberthing operations.
6. It should be noted that as the beam and air draft of container vessels continues to increase, gantry cranes operating in the boom down position at adjacent berths can also be exposed to allision with passing vessels. This may on occasion result in a request for booms to be temporarily raised to allow safe passage. Failure to comply with such request may result in delayed berthing or unberthing.
7. Idle crane booms should normally be raised to their maximum design position at vacant berths. If operations require a boom to be lowered over an empty berth, PPA dispatch office should be informed as early as possible and not later than at the time of pilot dispatch. Pilots should be notified of the likely duration and subsequent notification should be made if or when the boom is raised. Dock personnel working on gantry cranes that are lowered over an empty berth should be aware of the risks posed by passing vessels.
8. Should a vessel's ETA at berth materially change, thereby affecting known crane maintenance operations, such change in ETA shall be notified directly to the terminal by the pilot or via the PPA dispatch office.
9. When on occasion it is requested to berth or unberth a vessel with a crane boom down at the intended berth, such request (if known at the time) shall be made to the pilot dispatch office at the time of pilot ordering and copied to the harbour master's office at the port authority's Operations Centre along with the following information:
    a. The precise dock location of the crane in question and the distance from bow and stern of the vessel's intended docking position.
    b. The minimum vertical clearance between the underside of the crane boom or spreader and the container deck stow (minimum allowable clearance two metres).
    c. Confirmation that the crane in question will not otherwise impact the docking operation and will remain unmanned until the vessel is secured alongside or clear of the berth.
10. The docking of a large container vessel with a dock crane boom in the lowered position should be deemed an exceptional case and as such may be:
    a. Tidal restricted
    b. Wind restricted
    c. Daylight and/or visibility restricted

Further mitigation by way of an additional tug(s) may also be required and shall be determined by the vessel's Master and pilot.

APPENDIX N: Deltaport

Positioning of dock gantry cranes during berthing and unberthing operations

To minimize the risk of an allision between a vessel and a terminal gantry crane, the port authority's recommends that terminal operators adopt the following best practices:

1. Prior to a vessel's arrival or departure from a berth, gantry cranes should be positioned in close proximity as near as practicable to the parallel mid-body section of the vessel and well clear vessel's bow and stern flares.
2. Crane booms should be raised to their maximum design position.
3. Cranes should not be moved until the vessel is fully secured or clear of the berth. If cranes must be moved to allow access to mooring bollards, this should not occur until the vessel is in position alongside.
4. Gantry cranes should be unmanned during berthing or unberthing operations.
5. A dock exclusion zone for the safety of non-essential personnel should be established at the berth in question during berthing and unberthing operations.
6. It should be noted that as the beam and air draft of container vessels continues to increase, gantry cranes operating in the boom down position at adjacent berths can also be exposed to allision with passing vessels. This may on occasion result in a request for booms to be temporarily raised to allow safe passage. Failure to comply with such request may result in delayed berthing or unberthing.
7. Idle crane booms should normally be raised to their maximum design position at vacant berths. If operations require a boom to be lowered over an empty berth, PPA dispatch office should be informed as early as possible and not later than at the time of pilot dispatch. Pilots should be notified of the likely duration and subsequent notification should be made if or when the boom is raised. Dock personnel working on gantry cranes that are lowered over an empty berth should be aware of the risks posed by passing vessels.
8. Should a vessel's ETA at berth materially change, thereby affecting known crane maintenance operations, such change in ETA shall be notified directly to the terminal by the pilot or via the PPA dispatch office.
9. When on occasion it is requested to berth or unberth a vessel with a crane boom down at the intended berth, such request (if known at the time) shall be made to the pilot dispatch office at the time of pilot ordering and copied to the harbour master's office at the port authority's Operations Centre along with the following information:
    a. The precise dock location of the crane in question and the distance from bow and stern of the vessel's intended docking position.
    b. The minimum vertical clearance between the underside of the crane boom or spreader and the container deck stow (minimum allowable clearance two metres).
    c. Confirmation that the crane in question will not otherwise impact the docking operation and will remain unmanned until the vessel is secured alongside or clear of the berth.
10. The docking of a large container vessel with a dock crane boom in the lowered position should be deemed an exceptional case and as such may be:
    a. Tidal restricted
    b. Wind restricted
    c. Daylight and/or visibility restricted

Further mitigation by way of an additional tug(s) may also be required and shall be determined by the vessel's Master and pilot.

Specific considerations applicable to Deltaport

- It is recognized that with a clearance from fender to waterside rail of 7.6 metres, the potential for vessel allision with a dock crane is largely mitigated.
- Given the set back of 7.6 metres, while it may not be necessary to fully raise crane booms to their maximum position to achieve a safe clearance during docking and undocking, a minimum horizontal clearance of four metres is recommended, measured from fender to the crane boom.

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