

Port Information Guide

Notification date: February 13th, 2018

Preamble

In accordance with the *Canada Marine Act*, 1998, Section 57 – Notice, the Vancouver Fraser Port Authority is proposing amendments to the practices and procedures contained within the Port Information Guide. These practices and procedures are applicable to all *ship(s)* operating within the jurisdiction of the port authority. A *ship*, as defined by the *Canada Marine Act*, 1998, and *Port Information Guide* 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.

This notice of amendment is posted publicly, for a 30-day period, to notify industry, stakeholders and the public of several intended amendments to the Vancouver Fraser Port Authority's practices and procedures document, the Port Information Guide.

Anyone that may be affected by these amendments may comment in writing by March 14th, 2018 to the attention of:

Marine Operations Specialist
navigation.review@portvancouver.com

All comments received will be taken into consideration before the proposed amendments are implemented.

Summary

As a steward of Canada's largest port, the Vancouver Fraser Port Authority has developed practices and procedures applicable to all ships operating within defined vessel operating areas in the port authority's jurisdiction to support the safe and efficient movement of trade. These practices and procedures are available in the Port Information Guide, in accordance with Section 56 of the *Canada Marine Act*.

Under section 56 (1) of the Canada Marine Act, a Canada Port Authority may, 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,

- (a) monitor ships about to enter or within the waters of the port;
- (b) establish the practices and procedures to be followed by ships;
- (c) require ships to have the capacity to use specified radio frequencies; and
- (d) establish traffic control zones for the purposes of paragraphs (a) to (c).

The port authority proposes to make two key amendments to the Port Information Guide.

1. Historically, special vessel operating areas within the port authority's jurisdiction, such as the First and Second Narrows, have been defined a Movement Restriction Area (MRA). These areas are locally known as narrow waterways, often busy with vessel traffic, where mariners can expect to encounter challenging environmental hazards such as tidal currents.

In the *Canada Marine Act, 1998*, Section 56 – the term traffic control zones is used. In accordance with this, the term 'Traffic Control Zone' or TCZ will be introduced by the port authority into the Port Information Guide. The designation Traffic Control Zone accurately represents the mandate of the port authority to promote safe and efficient navigation in the waters of the port.

2. The port authority also proposes to establish the Fraser River deep-sea navigation channel as a traffic control zone, which will be named Traffic Control Zone-4, or TCZ-4. The Vancouver Fraser Port Authority has developed and formalized practices and procedures for vessel traffic control and safety in the Fraser River, in collaboration with the Pacific Pilotage Authority (PPA), the Fraser River Pilots (FRP) and the broader marine community. The proposed Fraser River Traffic Control Zone-4 procedures are described below.

Proposed amendments

1. Introduction of the term Traffic Control Zone (TCZ)

The term Traffic Control Zone (TCZ) will replace Movement Restriction Area (MRA) throughout the Port Information Guide, including:

- First Narrows Movement Restriction Area-1 (MRA-1) will be renamed First Narrows Traffic Control Zone-1 (TCZ-1);
- Second Narrows Movement Restriction Area-2 (MRA-2) will be renamed Second Narrows Traffic Control Zone-2 (TCZ-2).

2. Introduction of Fraser Traffic Control Zone Procedures (TCZ-4)

The proposed procedures are as follows:

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.

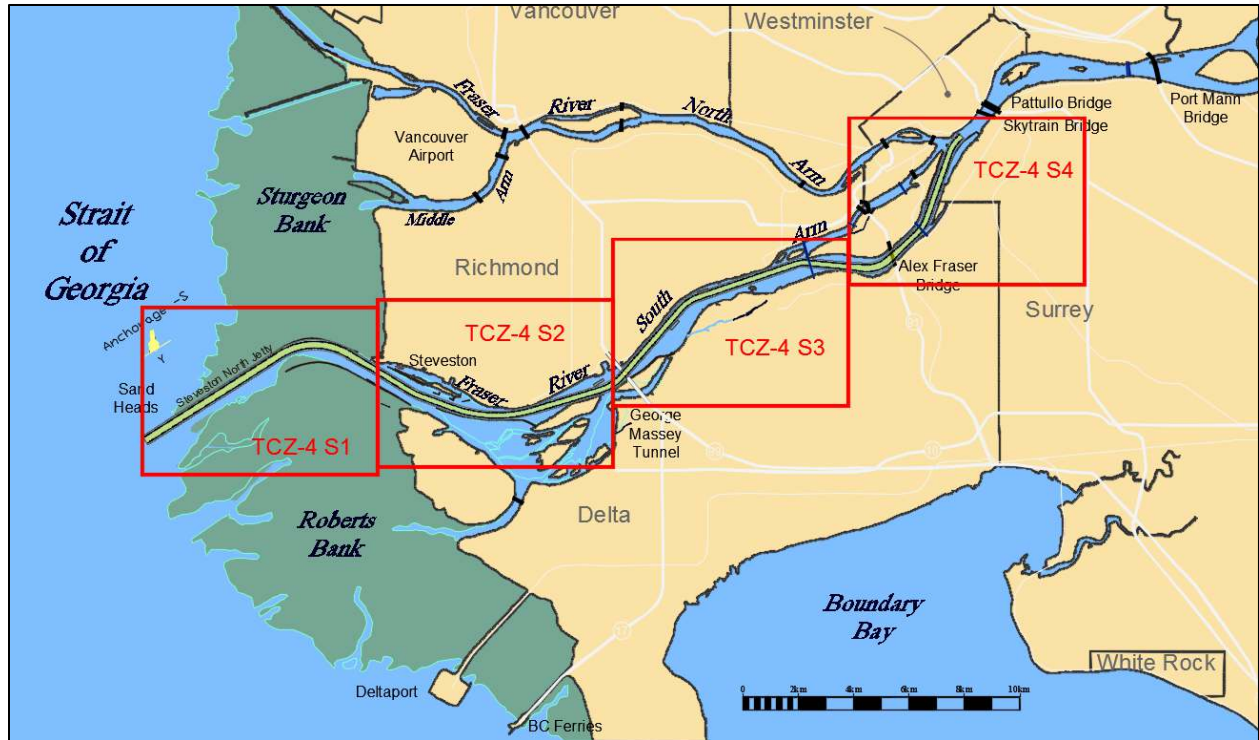


Image: TCZ-4 Boundaries

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

- 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 Westminister 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.

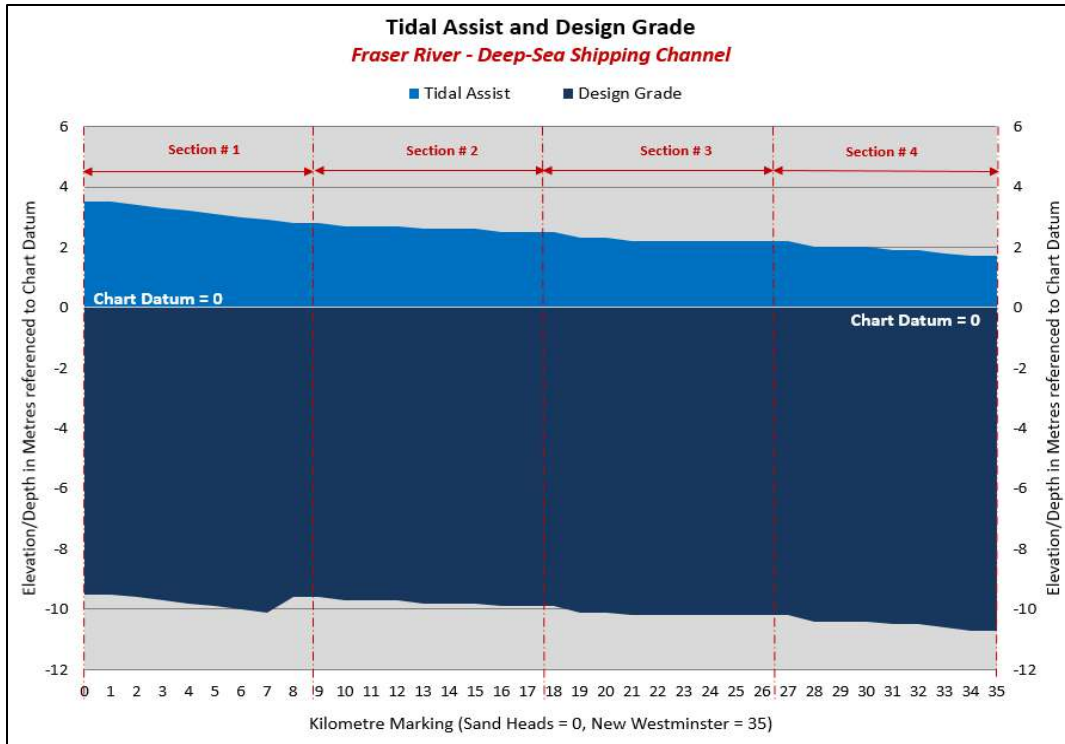


Image: TCZ-4 Tidal Assist and Design Grade

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 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.

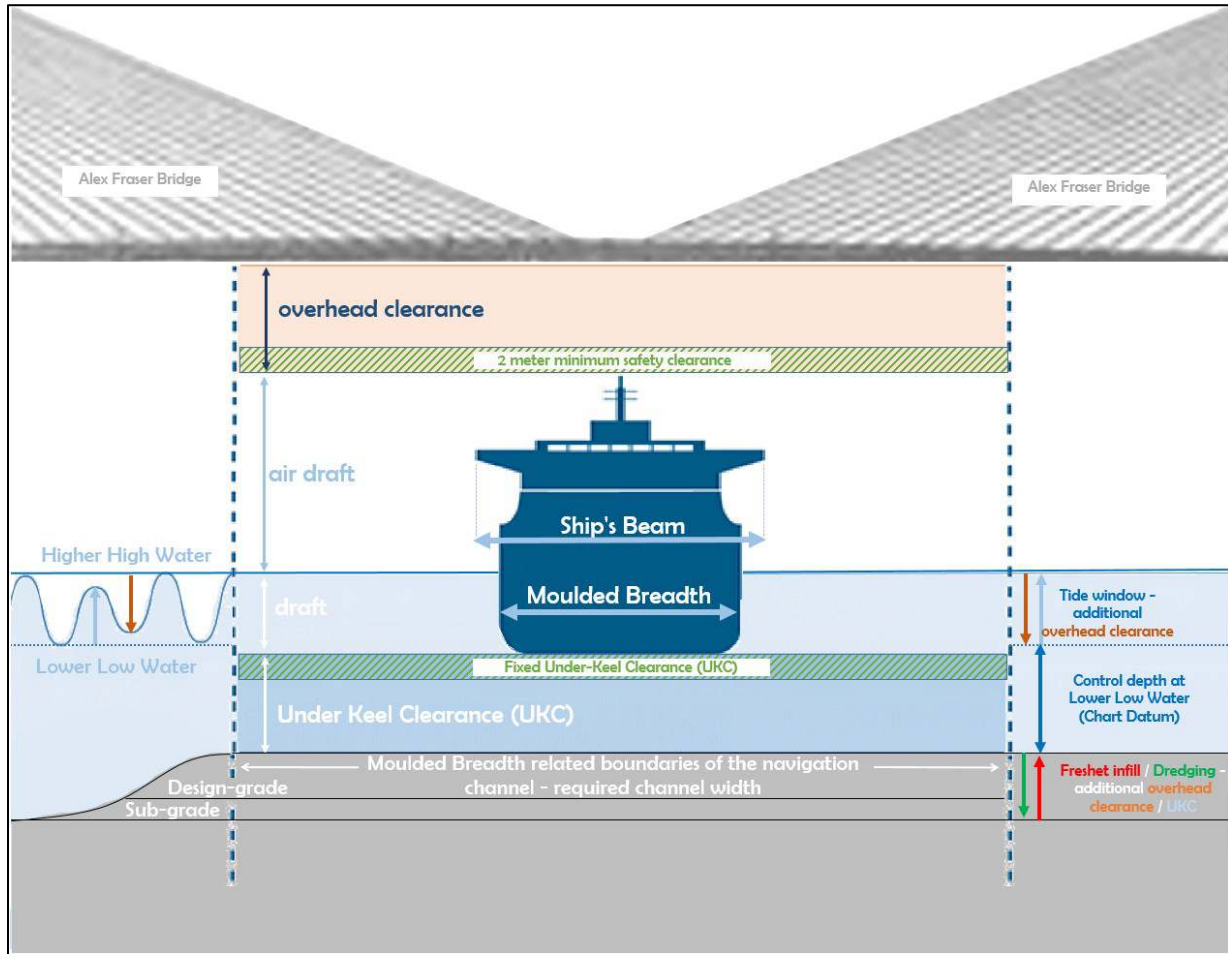


Image: TCZ-4 Navigation Envelope

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 shall must be provided to both the port authority and PPA. Thereafter, the verified vessel's draft/air draft shall 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.

UNDER KEEL CLERANCES (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 for all piloted Tier 1 vessels by FRP 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.

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.

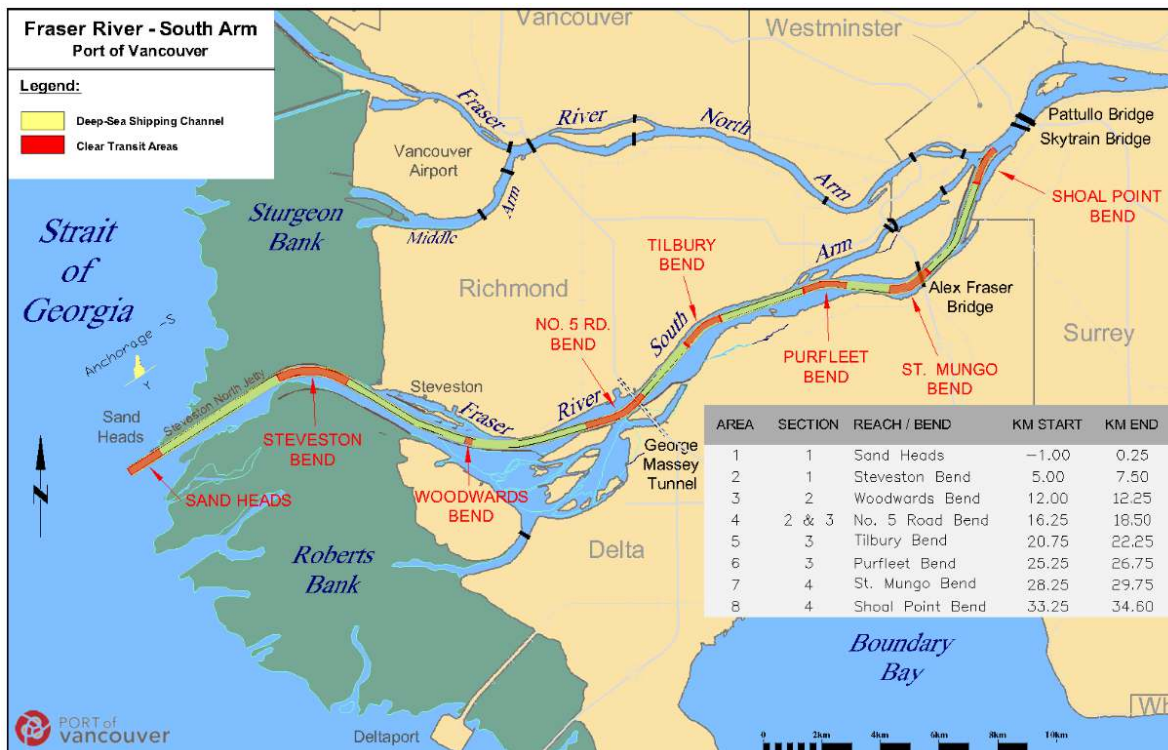


Image: TCZ-4 Clear Transit Areas

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 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.

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 of the *Pacific Pilotage Regulations*, the following pilotage requirements applies 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 may 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.