

FRASER RIVER BRIDGE TRANSIT PROCEDURES

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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 and Bridge Tender 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 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.

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.