

## **The Fraser River and future trade**

### **Fraser River analysis**

In 2016, the port authority did an analysis of the Fraser River and its potential to accommodate increasing trade with Asia. The analysis considered a variety of possible development options on existing port lands, whether any new lands could be considered, and assessed dredging the river at several depths with and without the removal of the George Massey Tunnel.

The study determined that further deepening of the Fraser River would be extremely costly, requiring extensive environmental study and consultation with First Nations and stakeholders over a number of years.

As a result, the port authority has no plans to deepen the channel to accommodate larger vessels on the Fraser River within the foreseeable future. The river, as it is now and using existing terminals and port lands, can meet trade demand for decades to come.

### **Maintenance dredging of the Fraser River**

The Fraser River journeys 1,400 kilometres and drains more than one quarter of the province. Each year when snow melts, the river brings with it tens of millions of cubic metres of sand and silt. On average, an estimated 2.5 to 3.5 million cubic metres of that sediment is deposited annually within the Fraser River deep-sea shipping channel, which is located in the south arm of the Fraser River.

To safeguard continued navigation and flood prevention, the port authority conducts annual maintenance dredging in the lower reaches of the Fraser River to ensure shipping vessels can safely transit to their destination and meet Transport Canada's safe navigation requirements.

Dredging increases flow capacity and is a crucial flood protection measure to help keep the river below dyke levels during periods of increased flow. The river begins to rise each year in April, with peak flows usually occurring in June.

The amount of dredging required varies year to year and is predominantly dependent on the amount of infill from the annual freshet (rise in the level of a stream, caused by heavy rains or the rapid melting of snow and ice), large winter tides and the condition of the channel prior to the end of each dredge season.

### **George Massey Tunnel Replacement Project**

The Vancouver Fraser Port Authority is supportive of the project because it will ease traffic congestion from Roberts Bank. However, the project has no bearing on the port authority's plans to manage increasing trade on the Fraser River, as the existing tunnel is not constraining the current development potential of the river.

The bridge will be the same height above the water as the existing Alex Fraser Bridge, so maximum vessel height that can be accommodated upriver of the bridge will be the same. Commercial ships are increasing in size because it is more economical and environmentally responsible to run larger vessels. However, there are limitations to the river that restrict its ability to accommodate larger ships. In addition to depth and height restrictions, the width of the river can make it challenging for larger ships to turn.

The Province of B.C. leads the George Massey Tunnel replacement project and consulted with us on proposed designs because the port authority has navigational jurisdiction of the waterway and is therefore required to ensure any overhead or underwater structures do not impede current or future shipping.

*\*see map below demonstrating the narrow width of the Fraser River compared with the Burrard Inlet*



## Ship size limits and vessel numbers on the Fraser River

Vessel numbers along the Fraser River are forecast to increase from about 620 in 2008 to about 750 by 2026, including projects that have been permitted or may be permitted. Looking further back, the total river calls in 1995 were 385, peaking in 2003 with 774 vessel calls and tapering off in 2005 until 2008 with an average of 619 calls per year.

The port authority maintains a 36-kilometre-long, deep-sea navigation channel in the south arm of the Fraser River. The current deep-sea channel is designed to accommodate two-way traffic of vessels up to 270 metres in length, 32.3 metres in breadth, and 11.5 metres in draft (the vertical distance between the waterline and the bottom of the ship's hull).

### The most common vessels to transit the Fraser River are:



Container ship



Automobile carrier



Breakbulk carrier

As a one-lane channel, the existing Fraser River channel can accommodate larger vessels as long as the draft remains at 11.5 metres or less and the length does not compromise the vessel's ability to safely navigate the river bends or turn around at its destination.

In consultation with the Fraser River Pilots and the Pacific Pilotage Authority, the port authority considers requests for larger vessels carefully in regards to the vessel size, manoeuvrability, channel and turning basin condition, intended transit route, anticipated vessel traffic, and environmental conditions.