WELCOME





FRASER RIVER TUNNEL PROJECT Process Planning

Recognition of Traditional Territories

We acknowledge with respect that the proposed Fraser River Tunnel Project is on the territory of the Coast Salish Peoples.

Overview



ABOUT THE PROPOSED PROJECT

- > New toll-free eight-lane immersed tube tunnel will:
 - Replace the existing George Massey Tunnel on Highway 99
 - Provide three vehicle lanes and a dedicated transit lane in each direction
 - Feature a separated multi-use pathway for cyclists and pedestrians that connects to active transportation routes on both sides of the Fraser River
 - Maintain Fraser River navigational channel clearances
- > Construct a new Deas Slough Bridge
- > Retire the existing tunnel once the new tunnel is in operation
- Provide new connections to Highway 99 between
 Steveston Highway and Highway 17A
- is in operation een

ABOUT THE PROPONENT

Transportation Investment Corporation (TI Corp) has a mandate to deliver major infrastructure projects on behalf of the Ministry of Transportation and Infrastructure.







Submit your comments to the EAO: engage.eao.gov.bc.ca/FraserTunnel-PP



Project Benefits



RELIABILITY

The new tunnel will improve reliability, resulting in average speeds of 80 km/hr along the corridor (versus 30 km/hr today) by:

- Increasing capacity from > four to eight lanes
- Adding shoulders and wider lanes >
- Removing the inefficient > counterflow system



The new eight-lane tunnel will:

- Offer a safe crossing for pedestrians > and cyclists
- Provide better access for >emergency vehicles
- Meet current seismic standards >

TRANSIT

- Make bus trips faster, safer and > more reliable
- Support future bus rapid transit > service
- Ensure public transit is a convenient option

ACTIVE TRANSPORTATION



- The new tunnel will include a dedicated path for pedestrians and cyclists for the first time. It will:

- Be fully separated > from vehicles Offer weather protection >
- Connect to local bike networks >





Transit-only lanes between Ladner Trunk Road and Westminster Highway will:

Key Project Milestones



- Test dredge and geotechnical investigation programs completed to inform design
- Community Office opened
- Detailed Project Description submitted to Environmental Assessment Office





- Environmental Assessment Office-led review of the Detailed Project Description
- Updated Detailed Project Description submitted to the Environmental Assessment Office

S







WE ARE HERE



- Environmental Assessment Office determines the Project is ready to proceed to an Environmental Assessment
- Completing reporting on existing conditions studies
- Current focus is on scoping for the **Environmental Assessment**





Permanent Project Components

The map below outlines the permanent components that make up the Project









Temporary Project Components

The map below outlines the temporary components that are needed to build the Project



Temporary Jetties

Up to three temporary jetties for managing barge deliveries during construction, removing excavated materials, mooring tunnel elements and staging marine equipment.

New since Initial Project Description

Construction Access

Temporary roads within the Project footprint including a temporary trestle bridge across Deas Slough and temporary bridges over the existing tunnel portals.

New since Initial Project Description





could be fabricated.

Deas

Island





Construction Activities

Anticipated construction activities will include:

- Dredging to prepare the river >
- Constructing temporary roads and bridges > to access the laydown areas

The maps below are draft illustrations of how the construction sites in Richmond and Delta could be used to support these activities.

				THE REAL PROPERTY OF
	Richmond		HALL 99	
No. 5 Rd				
	Rice Mill Rd	Tower crane		
		North site offices		
			Rice Mill Road detour	
A DECEMBER OF THE OWNER OWNER OF THE OWNER OWNE				Constant of the second se

Legend

Dry excavation

Wet excavation

Circulation road

Jetty

- Excavating to build the casting basin and approaches >
- Pile driving and installing stone columns to stabilize > the ground and river bed





Temporary at-grade rail crossing

Crane rails

Laydown for piles, aggregate, cement





Casting basin

Construction access

Highway 99 Tunnel Program FRASER RIVER TUNNEL

Preparing for a Complex Project

A number of programs were completed to advance Project design, understand the area the Project would be constructed in and identify ways to manage impacts from construction.



MARINE NAVIGATION SIMULATION



We organized a virtual simulation to ensure we can successfully manage river traffic and operations throughout construction, including safe use of detours during river closures.

GEOTECHNICAL INVESTIGATION



We studied upland and in-river geology to inform design, construction methodology and materials management.

MONTHLY HYDROTECHNICAL SURVEYS



We have ongoing surveys to study river flows, including sediment build-up rates.





Existing Conditions Program

The Existing Conditions Program builds off existing environmental study information for this area of the Fraser River. Between spring 2022 and fall 2023, we completed over 40 additional studies to learn more about the environment, fill in data gaps and identify potential Project effects. These studies focused on:



TERRESTRIAL ENVIRONMENT

Wildlife and wildlife habitat

Vegetation and ecosystems

Soils

Archaeology

Air quality and greenhouse gas emissions







HUMAN ENVIRONMENT

Noise and vibration

Visual quality

Human health risk assessment

Human environment





Valued Components

Valued Components are a way to organize what we will study so we can understand the potential environmental, economic, social, cultural and health impacts the Project may have.

In an Environmental Assessment, Valued Components are identified based on a comprehensive process that includes Indigenous, scientific and local knowledge which reveals the values that matter to people and that consider the specific impacts, both positive and negative, that this Project will have.

Based on the Existing Conditions Program and feedback from engagement with the public, interested parties and Indigenous nations, 18 Valued Components have been identified for the Project.

How will the **Project interact with** your interests?

What is important to you and your family?





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Valued Components

The Valued Components are organized into the five categories below. Each Valued Component has been colour coded to show the type of environments (aquatic environment, terrestrial environment and human environment) it interacts with.







Health

Human health

Community health and well-being



Aquatic Environment



	Marine mammals	
	Marine mammals have the potential to occur near the Project footprint and may include harbour porpoise, humpback whales, grey whales, California sea lions, Stellar sea lions and harbour seals.	Fish Fish anc
Project activities that interact with Valued Components	 Materials transportation in river Construction activity in river Dredging, moorage/floating/immersion of tunnel elements 	 R P T r T N A
What we learned from the Existing Conditions Program and engagement	 Marine mammals sensitive to underwater noise Seals and sea lions can be found near Project footprint (haul out/resting sites nearby) Marine mammals listed under federal <i>Species at Risk Act</i> and protected under <i>Fisheries Act</i> 	• - • II • C ir
What we're doing	 Studying under- and above-water noise and effects from construction activities Studying effects on food sources for marine mammals Considering interactions between marine mammals and Project vessels Monitoring vessel traffic activity 	 S f P R r
Linkages to other Valued Components	Fish and fish habitat Marine use Acoustic	Ma M W En
	Legend Aquatic Environment	Те





Fish and fish habitat

h and fish habitat play vital roles in aquatic ecosystems. h species include salmon, sturgeon, eulachon, trout, char d others in traditional use.

- River dredging and changes to river flows Pre-construction activity, including hydrotechnical surveys
- Trestle installation across Deas Slough and Deas Slough Bridge replacement Towing materials
- Tunnel and interior materials installation Maintenance dredging
- Addressing existing tunnel
- Habitat compensation could be required Impacts to insects and microbes should be reviewed Consider cumulative effects from Project and others in proximity
- Studying effects on fish and fish habitat, with a specific focus on salmon, sturgeon, eulachon and trout Preparing Construction Environmental Management Plan (CEMP) Reviewing all relevant federal and provincial permitting requirements
- Surface water and sediment quality arine mammals River hydraulics and morphology Vegetation rine use ildlife and wildlife habitat Human health mployment and economy
- errestrial Environment

Human Environment



Marine use

In-river work could potentially affect marine access and area use, Indigenous interests and marine recreation. This includes commercial transportation; commercial, recreational and Aboriginal fisheries; marine tourism and recreation; and other Indigenous marine use.

- Construction materials and workers transportation on
- water routes Materials delivery by barge
- Trestle installation across Deas Slough
- In-river pile installation
- Dredging and shipping material between Project and disposal sites Potential tunnel fabrication and elements transport and storage
- Temporary flood protection installation
- Marine use is of vital importance to Indigenous nations, regulatory agencies, commercial fish harvesters and local governments that have direct connection to Fraser River

Studying potential impacts to marine and foreshore area access and use

- Studying potential impacts to Indigenous, commercial and recreational marine resources
- Studying potential impacts to marine commercial navigation and recreational environmental setting
- Preparing dredge materials management framework River hydraulics and morphology Fish and fish habitat
- Marine mammals Employment and economy Visual quality Community health and well-being Acoustic Wildlife and wildlife habitat













Terrestrial Environment









Vegetation

Vegetation plays a fundamental role in the ecosystem. A variety of plant species and types are present in the Project area.

 Utility locations and installation Site drainage excavation and new stormwater systems

- installation Site area excavation and clearing
- Temporary roads construction
- River dredging and new tunnel elements installation Reconstruction of existing dikes

• Two plant species identified under *Species at Risk Act* • 28 invasive plant species identified within Project area • Culturally important traditional use plant species located within Project area

• Importance of Indigenous rights to harvest vegetation resources • Importance of conserving health practices that include use of medicinal plants

 Studying changes to habitat availability Studying changes to habitat distribution

Studying changes in vegetation abundance

irface water and sediment qual	lity	Fish a	nd fish habi	tat
ver hydraulics and morphology	G	roundv	vater	
ildlife and wildlife habitat	Land an	nd reso	ource use	Soil
frastructure, services and trans	sportatio	n	Air quality	,

Terrestrial Environment

Human Environment



Construction activities could affect soil quality and including through dredging, excavation, ground impro and dike infrastructure.

• Site excavation to create ditches and install stormwat

- management facility • Stormwater and flood protection systems installation
- Piling and grading on both sides of river Tunnel approaches construction
- Portal excavation on Deas Island
- Deas Slough Bridge construction
- Excavated material management Addressing existing tunnel

 Large-scale excavation removes old soil and introduce new materials Potential for contaminated soil as Project is located with industrial and commercial lands • Management of contaminated soil and proper dispos

 Monitoring changes in soil quantity and distribution • Monitoring changes in soil chemistry due to introduct or removal of contaminants

Monitoring changes in soil quality, especially within w

Surface water and sediment quality Groundwater Wildlife and wildlife habitat Land and resource use Community health and well-being Air quality

	Land and resource use	Archaeological ar
uantity, provements	Project activities may affect land and resource use, including access, availability and productivity.	The Project has the potential historical heritage resources artifacts and sites.
er	 Construction materials and worker transportation Temporary roads construction Project components fabrication and storage Dikes and flood protection installation in Richmond Temporary closures of Fraser River to install tunnel elements Long-term tunnel operations 	 Site area excavation and cleat Piling and grading on both set Portal excavation on Deas Ise Deas Slough Bridge construction In-river dredging and towing Walls installation along tunn Tunnel elements construction Flood protection systems compared
es /ithin sal required	 Land use is important to Indigenous nations and regional governments Project may affect nearby residential and public facility access and use Construction may affect nearby commercial, retail and industrial land access and use Project may affect agricultural land and farming operations adjacent to Highway 99 corridor 	 Palaeontological, archaeolog resources are protected und Project is unlikely to affect p Fraser River, but this will be a Project is unlikely to affect a during construction and will regulatory requirements Project may affect historical managed to meet regulatory
tion vater areas	 Assessing land use plans, policies, land use designations and zonings Assessing agricultural land availability and nearby farming operations and infrastructure Monitoring noise, vibration and air/visual quality conditions and potential effects to resident and public facilities Studying location and use of parks, protected areas, trails and other recreational infrastructure 	 Documenting volume/integr Potential palaeontologica 'Spirit of place' of archaeo 'Spirit of place' of register
Vegetation	Surface water and sediment quality Groundwater	Surface water and sediment qua
	River hydraulics and morphology Soil Vegetation	River hydraulics and morpholog
nan health	Wildlife and wildlife habitatCommunity health and well-beingEmployment and economyVisual qualityAir qualityAcousticInfrastructure, services and transportation	

















	Acoustic	Visual quality	Employment and economy	Infrastructure, services and transportation	Human health	Community health and well-being
	The Project has the potential to increase noise and vibration levels during construction, which can have adverse effects on human and animal health.	Project construction may temporarily affect the visual appeal and visual experience of the landscape.	The Project is expected to contribute to economic output and regional economic development.	The Project may affect existing infrastructure as well as regional services to support the Project workforce.	Project activities that result in a change to environmental quality may affect human health.	Construction activities may temporarily affect the health and well-being of nearby communities, including dust and noise from construction, recreational, traditional and other land uses.
Project activities that interact with Valued Components	 In-river pile driving and pile posts installation Piling and grading on both sides of river In-river dredging and new tunnel elements installation Portal excavation on Deas Island Deas Slough Bridge construction Refilling excavated areas in the river 	 Site excavation and preparations Construction crew mobilization and equipment storage Site circulation and temporary roads construction Piling and grading on both sides of river Potential on-site tunnel fabrication and tunnel elements towing Deas Slough Bridge construction CN railway bridge removal Existing Rice Mill Road overpass removal Long-term tunnel operations 	 Labour, goods and services procurement Construction materials and workers transport on water routes Temporary roads construction Dredging and dredged material shipping Tunnel elements temporary moorage outside navigation tunnel Tunnel elements labour and construction Labour, goods and services during long-term operations and maintenance 	 Labour, goods and services procurement Construction materials and worker transportation Portal excavation on Deas Island and Deas Slough Bridge construction Construction of flood protection systems Re-construction of existing dikes within Ministry right-of-way Commissioning of new tunnel and tie-in to Highway 99 	 Utility locations and installation Construction activity on land and in river Potential tunnel fabrication and installation Excavated material management Refilling excavated areas in the river Long-term operations 	 Labour, goods and services procurement Construction materials and worker transportation Ground preparation, geotechnical and archaeological assessments Riverbed changes may result in changes to water levels, flow condition and erosion/deposition patterns In-river dredging and material shipping between project and disposal sites Portal excavation on Deas Island Deas Slough Bridge construction Addressing existing tunnel
What we learned from the Existing Conditions Program and engagement	 Project may increase noise levels at nearby receptors during construction, operations and decommissioning Project may increase vibration levels at nearby receptors during construction 	 Construction activities will have a visual impact, including use of lights at nighttime Visual qualities and context of places are associated with Indigenous oral history and culture in both daytime and nighttime settings Deas Island Regional Park holds high visual importance for recreational and tourism purposes 	 Transportation infrastructure is an important component of regional economic development Fishing, agriculture, water-based tourism and industrial uses within Project area could be affected International and domestic vessel operators and marine terminal operators may be affected by in-river works Components are important to all levels of government and Indigenous nations 	 There are existing utilities and some infrastructure in the area Project may overlap with other nearby ongoing infrastructure and transportation projects Project has potential to affect accessibility of emergency and health services Project may affect accessibility of labour, increasing pressure on local housing cost and availability 	 Project activities that result in changes to environmental quality (e.g., soil, groundwater, sediment, surface water and air quality) will affect human health 	 Community health and well-being is important to all levels of government and health authorities Health and well-being key concern raised by Indigenous nations
What we're doing	 Monitoring noise levels at noise-sensitive receptors Monitoring changes to ground vibration at vibration-sensitive receptors Following the Ministry of Transportation and Infrastructure and Health Canada noise guidelines 	 Assessing changes in viewing conditions in relation to existing landscape and environment Assessing changes in light levels created by the Project 	 Assessing Project's potential economic effects Assessing changes in government revenues and expenditures Aligning with regional economic development and planning Assessing changes in employment and labour incomes Assessing changes in contracting opportunities and revenues Examining labour market for training and skills opportunities Assessing changes to nearby businesses such as foreshore works, fisheries and land and marine-based recreation and tourism 	 Assessing change in infrastructure and utilities, including water, waste, power and determining capacity and supply needs Changing flood protection infrastructure as part of Project construction Assessing emergency and health service supply and demands Assessing housing and temporary accommodation demand and availability due to temporary migration of workers 	 Monitoring changes in air emission contaminants Monitoring changes in water surface quality and sediment quality Monitoring changes in soil and conducting testing Monitoring changes in vegetation due to water or air quality changes 	 Refining criteria for healthy built and physical environments Refining criteria for community, emergency and public transit services Refining criteria for sustainable livelihoods such as access to employment and income levels Refining criteria that contribute to healthy lifestyles such as recreational/traditional land use, supportive housing and personal health status/practices
Linkages to	Marine mammals Community health and well-being	Fish and fish habitat Marine use Land and resource use	Marine use Infrastructure, services and transportation	River hydraulics and morphology Land and resource use	Surface water and sediment quality Vegetation Soil	Marine use Land and resource use Acoustic
other Valued Components	Land and resource use Wildlife and wildlife habitat	Community health and well-being Wildlife and wildlife habitat	Land and resource use Community health and well-being	Community health and well-being Employment and economy	Community health and well-being Air quality	Human healthAir qualityEmployment and economyInfrastructure, services and transportationVisual quality
	Legend Aquatic Environment	Terrestrial Environment Human Environme	ent			











Public Engagement

The Project team is committed to ongoing engagement with the public and interested parties to ensure the proposed Project reflects the needs of a diverse community that is representative of the Richmond, Delta and Metro Vancouver region.



WHAT WE LEARNED DURING EARLY ENGAGEMENT

Key areas of interest to the public include:

- > active transportation/transit
- > traffic congestion
- > supporting the local economy

Input received helped to inform the development of the Detailed Project Description and the key areas of study for the Environmental Assessment.



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- > protecting the environment
- > safety
- > construction impacts





Have Your Say



YOUR FEEDBACK IS IMPORTANT

Submit your comments to the Environmental Assessment Office by December 15, 2023 at:

STAY INFORMED



Community Office

5180 Ladner Trunk Road, Delta Wednesdays and Thursdays from 9 a.m. to 5 p.m.

engage.eao.gov.bc.ca/FraserTunnel-PP



Online

engage.gov.bc.ca/ fraserrivertunnel









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