Project Overview
Project Setting
Outfall System Requirements

• Provide a total capacity of 25.3 m$^3$/s (i.e. Stage VIII PWWF) at a 200-year river level of 103.18 m GD.

• Achieve a minimum dilution ratio of 20:1 under slack water and low flows in the river

• Meet “Post Disaster” requirements in accordance with MV Seismic Design Criteria

• Meet all other standard requirements for MV facilities
The Annacis Island Wastewater Treatment Plant site.

A cross-section of outfall tunnel route, riser shaft and one of many diffuser valves. The new outfall will meet standards for seismic resilience.
Selected Diffuser Location

- Safety Boundary
- Outer Navigation Channel Line
- Conveyance Tunnel
- Existing Outfall
- New Outfall Riser Shaft
- New Outfall Diffuser Manifold
Permitting Activities

- Integrated Liquid Waste Resource Management Plan (GVS&DD)
- Ministry of Environment (MoE): Stage 1 and 2 EIS
- Port of Vancouver (VFPA): PER Submission
- Environment and Climate Change Canada (ECCC): Disposal at Sea
- Fisheries and Oceans Canada (DFO): Request for Review
- Ministry of Forests, Lands and Natural Resource Operations (FLNRO): WSA Change Approval Submission
- Transport Canada (TC): Navigation
- Corporation of Delta
- First Nations Engagement (MV, VFPA, FLNRO)
Construction Impacts
Construction Elements and Impacts

- Outfall Tunnel and Shaft Construction
  - Traffic (excavation spoil, segments, concrete)
  - Work Hours / Noise (minor)

- Outfall Riser
  - Navigation (generally within safety zone)
  - River Caisson (piles/sheet piles, excavation spoil, concrete)
  - Work Hours / Noise (limited periods)

- Diffuser System
  - Navigation (generally within safety zone)
  - Buried Diffuser Pipeline (dredging, bedding, backfill, riprap)
Tunnel Launch Shaft Site
Riser Shaft Plan
Riser Shaft Section

1. Float-in cutoff wall and guide frame.
2. Drive driven piles and lower cutoff wall to grade.
3. Tieback and drive pipe piles to grade (EL: 40.5).
4. Tieback and lower earth retention sheet piles to grade (EL: 42.5).
5. Tieback and lower environmental sheet piles to top of earth retention sheet piles (EL: 88.5).
6. Excavate inside cutoff wall to EL: 88.5. Installing wheel bearings and struts as excavation proceeds.
7. Install structural concrete shear slab to EL: 87.5.
8. Place low-strength grout concrete to EL: 74.5.
9. Set riser shaft with lower and upper bulheads in place.
10. Install structural concrete surrounding riser shaft to EL: 87.7.
11. Install and connect riser cam.
12. Cut steel pipe piles at EL: 88.5.
13. Remove guide frame, shear pipe piles, and earth retention sheet piles above EL: 88.5.
Diffuser Section
Dredge Prism
Design and Construction Schedule

- March 2017 – 60% Design Complete
- April 2017 – DFO Application for Review
- Spring/Summer 2017 – Public and First Nations Engagement
- August 2017 – 90% Design Complete
- September 2017 – MoE Stage 2 EIS, VFPA Application, FLNRO
- April 2018 – RFP Issued
- January 2019 – Notice to Proceed, Shaft Construction
- June 2019 – Start of In-River Riser Construction
- June 2020 – Dredging and Diffuser Installation
Construction Schedule

Construction NTP January 2019

- Notice to Proceed
- Obtain, Assemble and Test TBM
- Tunnel Drive 1
- Tunnel Drive 2
- Tunnel Drive 3
- Launch Shaft Construction
- CCT Receiving Shaft Construction
- PDSCO Receiving Shaft Construction
- River Riser Construction (June 2019)
- Diffuser Construction (June 2010)
- Diffuser Connection (Summer 2021)
- CCT Connection
- Complete PS Shaft
Consultation & Communications
Role of Public Involvement
A spectrum of public participation

**Inform**
- To provide balanced and objective information in a timely manner
- "We will keep you informed"

**Consult**
- To obtain feedback on analysis, issues, alternatives and decisions
- "We will listen to and acknowledge your concerns"

**Involve**
- To work with public to make sure that concerns and aspirations are considered and understood
- "We will work with you to ensure your concerns and aspirations are directly reflected in the decisions made"

**Collaborate**
- To partner with the public in each aspect of the decision-making
- "We will look to you for advice and innovation and incorporate this in decisions as much as possible"

**Empower**
- To place the final decision-making in the hands of the public
- "We will implement what you decide"

Source: M2Z Author General of BC
## Communications

<table>
<thead>
<tr>
<th>Impacted Groups</th>
<th>CLO*</th>
<th>Interviews/Meetings**</th>
<th>Fact sheet</th>
<th>Website</th>
<th>Road and River Signage</th>
<th>Mobilization Notification</th>
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<tbody>
<tr>
<td>Businesses</td>
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* Community Liaison Officer
** As required
# Timeline

<table>
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<tr>
<th>In Advance of Construction</th>
<th>Design (30%)</th>
<th>Design (60%)</th>
<th>Design (90%)</th>
<th>RFP issued</th>
<th>Pre-construction</th>
<th>During construction</th>
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<td>Summer 2016</td>
<td>Summer 2016</td>
<td>Spring-Summer 2017</td>
<td>Summer - Fall 2017</td>
<td>Spring 2018 (6-8 months)</td>
<td>Summer 2018 (Min.10 business days in advance of construction)</td>
<td>2019 - 2021 (ongoing)</td>
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</tbody>
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## Engagement Activities

- **Meet with Corporation of Delta**
- **Website**
- **Presentation to PCLC**
- **Submit Port application including:**
  - Draft Construction Communications Plan
  - First Nations Engagement Plan
- **Fact sheet**
- **Newspaper ad**
- **Final Construction Communication Plan submitted to Port of Vancouver**
- **Newsletters**
- **Road/river signage**
- **Notifications**
- **Website updates**
- **Road/river signage**
- **Traffic advisories**
- **CLO**

- **Ongoing First Nations engagement**
- **High impact stakeholder meetings**
Businesses

- Businesses located along construction/outfall project route (and AIWWTP upgrade project)
- Businesses located on Annacis Island but not directly affected by construction
- Businesses (and some residents) on the southern shore of the river
Environmental Groups

- Metro Vancouver Watch
- Fraser River Sturgeon Conservation Society
- Save the Fraser
- BC Nature
- David Suzuki Foundation
- Nature Vancouver
- Pacific Salmon Foundation
- Pacific Wildlife Foundation
- South Fraser Action Network
- Georgia Straight Alliance
- Fraser Health Authority
Marine Users

- Catherwood
- Council of Marine Carriers
- Delta Tug & Barge Ltd.
- Forrest Marine
- Fraser River Pile and Dredge
- Fraser River Pilots
- Harken Towing
- Hodder Towing
- JJM Construction Ltd.
- LaFarge Canada
- Ledcor
- Amix Marine Services
- Mercury Launch & Tug LTD.
- North Arm Transportation
- Quadrant Towing
- Quality Towing
- Samson Tugboats
- Seaspan
- Saam Smit Canada Inc.
- SRY Rail Link
- Trident Navigation Ltd.
- Valley Towing
- Vancouver Pile and Dredge
Agricultural Groups

- Delta Farmer’s Association
- Delta Farmer’s Institute
Port Community Liaison Committee

Port Community Liaison Committee – Delta represents port industry, rail, local residents, farming, the Corporation of Delta, and Tsawwassen First Nation. The committee was established to take a proactive approach to communication and address local port-related issues.
Questions or comments?