Annacis Island Wastewater Treatment Plant
OUTFALL PROJECT

PORT COMMUNITY LIAISON COMMITTEE - DELTA

John Newby
SENIOR VICE PRESIDENT
CDM SMITH
Delta, Thursday, July 12, 2018

Ken Massé
PROJECT MANAGER
LIQUID WASTE SERVICES
Project Overview / Update
Project Setting
Outfall System Requirements

• Provide a total capacity of 25.3 m³/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
Project Plan

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.
Project Main Elements

- CCTs / Level Control Structure
- Effluent Shaft and Effluent Tunnel
- Outfall Shaft and Outfall Tunnel
- Riser Shaft and River Diffuser
- Retrofit Existing Outfall
Riser and Diffuser
River Riser

- “Safe Haven” for tunnel completion
- Resistance to lateral forces
- Seal against water pressure
- Must provide separation of internal work area from river
Diffuser Pipeline

- Accommodate post-disaster deformation
- Clam shell dredging
- At-sea or on-land disposal
- Contractor options to limit dredging / backfill
- Buried in river bed with armor rock protection
Activities Since March 2017 Meeting
Key Project Activities

- March 2017: 60% Design Review Completed
  - Developed visualizations of in-river construction
- April 2017: Completed Salinity Monitoring Program
  - Used as input for final diffusion and dilution modelling
  - Provided report to City of Delta (Hugh Fraser)
- May 2017: Marine User Presentation and Workshop
  - Recommendation to perform barge landing simulation
- July 2017: Conducted Marine Barge Simulation at BCIT
  - Ran 31 simulated manoeuvres using the Kongsberg simulators
Key Project Activities (continued)

• August 2017: Summary Report of Manoeuvring Analysis
  • Recommended procedures for project planning and implementation
• August 2017: 90% Design Review Completed
  • PDBCO tunnel removed from project
• September 2017: Met with Delta Fire and Emergency Services
  • Discussed role in construction safety and emergency response
• September 2017: Met with City of Delta
  • Discussed permitting for the Site Preparation contract
Key Project Activities (continued)

- October 2017: Vancouver Fraser Port Authority Update Meeting
  - Presented information developed for Navigation Impact Assessment
- January 2018: Transport Canada Notice of Works Submitted
  - Included much of the information in the PER application
- January 2018: 99% Design Completed
  - Contractor Request for Qualifications (RFQ) issued
  - 10 Firms/Joint Ventures responded
Key Project Activities (continued)

• March 2018: Stage 2 Environmental Impact Study
  • Included final Diffuser Design and Dilution Modelling Report
  • Submitted to Ministry of Environment for review
  • Completed the PER application submittal
• June 2018: Contractor Request for Proposal (RFP)
  • Issued to 4 contractors with the highest ranked RFQ submittals
Timeline

1. RFP closes (September 13, 2018)
2. Board approval sought to award the contract (~Feb 22, 2019)
3. Notice of Intent to Award issued to contractor (Feb 28, 2019)
4. Metro Vancouver signs (Contract is executed) (April 19, 2019)
5. Notice-to-Proceed (mobilization can start) (early-May 2019)
6. First In-Water Work Season (likely June 2020)
7. Completion of In-Water Work (within three years of start of in-water work)
Permitting / Consultation
VPFA Permit Application Web Site

Other Permitting Activities

- Department of Fisheries & Oceans (DFO)
  - Authorization Not Required Letter
  - Mitigation Measures – Higher-Risk, In-Water Work
- Port Authority
  - Draft Permit Conditions Received
  - CEMP Update
- Transport Canada (TC)
  - Notice of Works Application
  - Navigation Impact Assessment
Other Permitting Activities (continued)

- City of Delta
  - Noise Variance (24-hour, 7-day)
  - MV Noise Standards/Specifications
- Environment and Climate Change Canada
  - Sediment Characterization Report to Support a Potential Disposal at Sea Application
- FLNRO Archaeology Branch
  - Chance Find Protocol
  - Inspection Permit
Other Permitting Activities (continued)

- Ministry of Environment
  - Environmental Impact Study
  - Authorization and Operating Certificate
- First Nations Consultation
  - In Progress
  - Comments Received
Construction Impacts and Mitigation

• Navigation Impacts
  • Contractor Navigation Plan
  • Environmental Impact Study

• Fish and Fish Habitat
  • Timing of In-Water Work
  • Dredging: Clamshell Bucket and Sonar Surveys
  • Pile Driving: Acoustic Monitoring and Marine Mammal Exclusion Zone
Contractor Navigation Plan

• Navigation protection requirements to be determined by Contractor based on their selected methodology.
• Contractor required to prepare and submit a project specific Navigation Plan to VPFA, TC, Marine Users, etc.
• Navigation Plan must meet all rules and regulations in force such as the Canada Marine Act, Marine Transportation Security Regulations, etc.
• Navigation Plan to be revised based on input and approved prior to the start of work in the river.
Marine Contractor Requirements during Work

- Hold Regular Meetings with Marine Users
- Submit a Marine Communications Plan
- Issue a Temporary Notice to Mariners
- Issue Weekly Notice to Shipping Advisories
- Post Public Notice
- Provide Assist Tug
- Hydrographic Survey
- Permanent Notice with Chart Correction
Questions or comments?