Welcome





Artist rendering of the McLoughlin Point Wastewater Treatment Plant

Welcome to the Wastewater Treatment Project Community Information Open House.

Construction is underway on the McLoughlin Point Wastewater Treatment Plant in Esquimalt, and the cross-harbour undersea pipe at Ogden Point in Victoria.

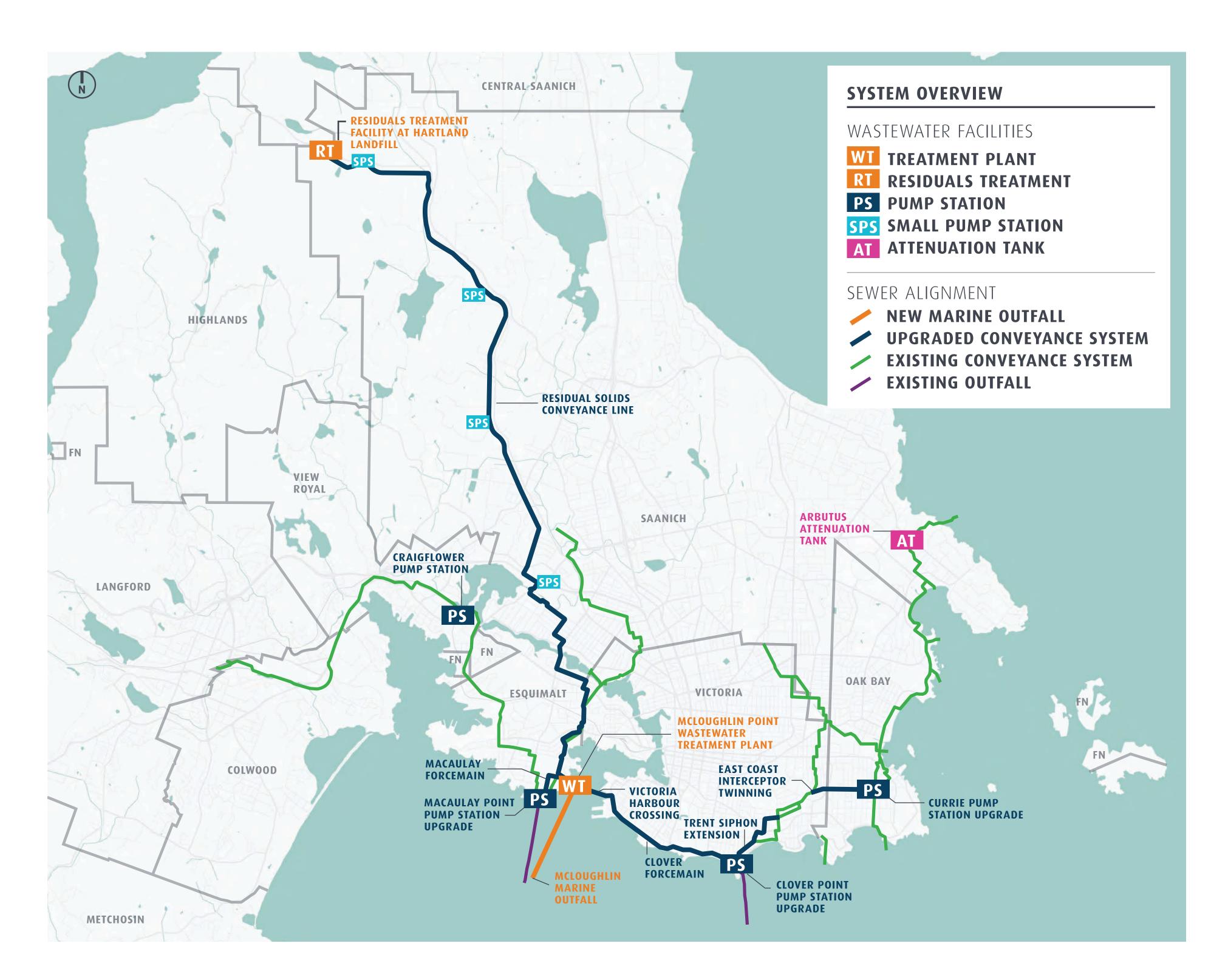
Construction of other Wastewater Treatment Project components, including the Clover Forcemain, Clover Point Pump Station, Macaulay Point Pump Station and Forcemain, Residual Solids Conveyance Line and Residuals Treatment Facility will begin in 2018.

The Wastewater Treatment Project Team is here to provide you with information and respond to your questions regarding construction activities in these locations.

Wastewater Treatment Project



The Wastewater Treatment Project will provide tertiary treatment for wastewater from the core area municipalities of Victoria, Esquimalt, Saanich, Oak Bay, View Royal, Langford and Colwood, and the Esquimalt and Songhees First Nations. The Project will be built so we comply with federal regulations by the end of 2020.



The Wastewater Treatment Project consists of three main elements:

MCLOUGHLIN POINT WASTEWATER TREATMENT PLANT

Located at McLoughlin Point, the wastewater treatment plant will provide tertiary treatment to the core area's wastewater.

RESIDUALS TREATMENT FACILITY

Residual solids from the wastewater treatment plant will be piped to Hartland Landfill, where they will be turned into what are known as Class A biosolids. These biosolids are a high quality by-product treated such that it is safe for further use.

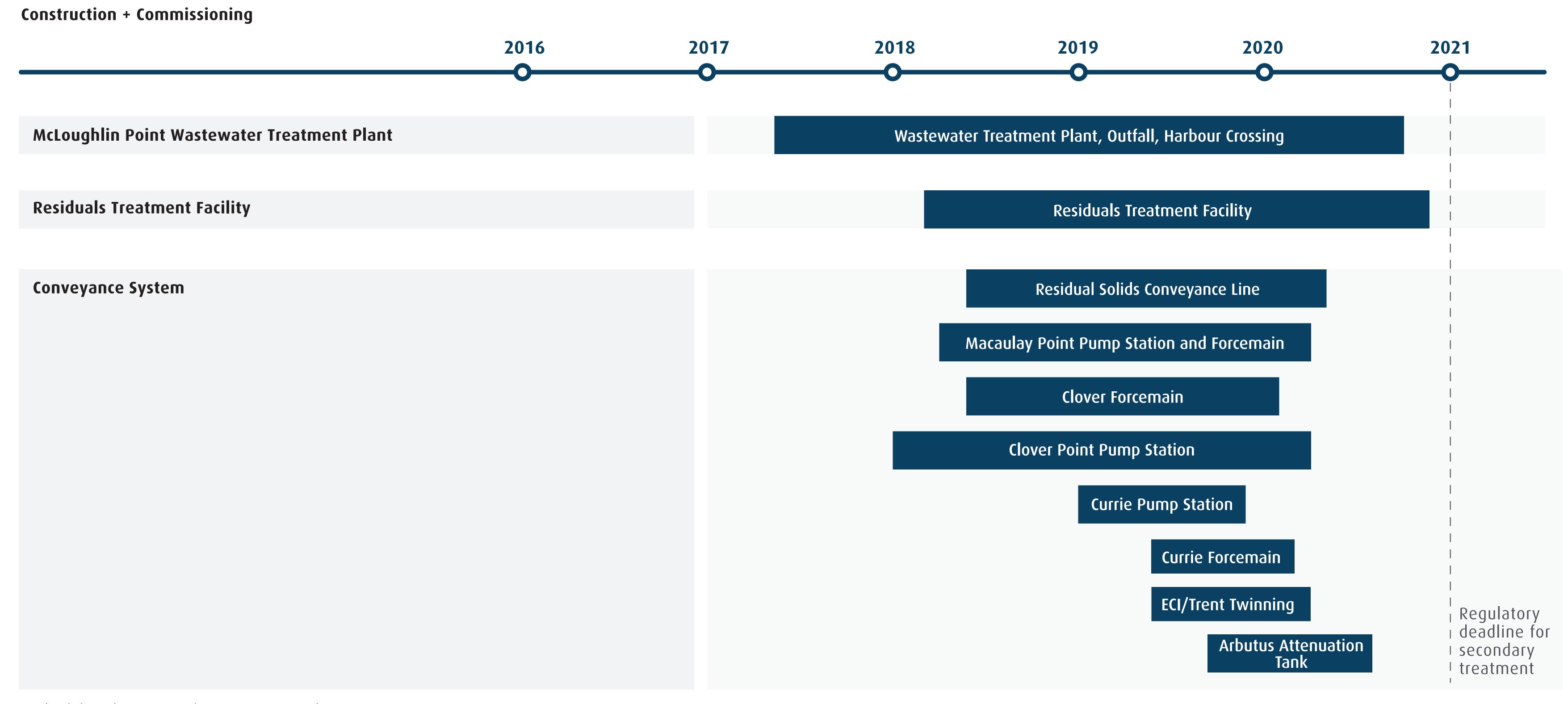
CONVEYANCE SYSTEM

The conveyance system refers to the "pumps and pipes" of the Wastewater Treatment Project. This system will carry wastewater from across the core area to the treatment plant, and carry residual solids from the wastewater treatment plant to the residuals treatment facility.

Project Schedule



The Wastewater Treatment Project will be constructed through nine separate contracts, and construction will be staged to the end of 2020. Communications and engagement activities will take place in advance of project construction beginning in each area.



^{*}Schedule subject to updates as project planning progresses.

Project Funding



The Wastewater Treatment Project costs \$765 million. The project is funded by:

GOVERNMENT OF CANADA

- Up to \$120 million through the Building Canada Fund for the McLoughlin Point Wastewater Treatment Plant
- Up to \$50 million through the Green Infrastructure Fund for the conveyance system
- Up to \$41 million through the P3 Canada Fund for the Residuals Treatment Facility

GOVERNMENT OF BRITISH COLUMBIA

Up to \$248 million for the three components of the project

THE CAPITAL REGIONAL DISTRICT

• Remaining \$306 million for the three project components; responsible for any additional costs.



Communications and Engagement



Wastewater Treatment Project

Treated for a cleaner future

The Wastewater Treatment Project Team is engaging with residents throughout construction to ensure that the community is fully informed on the progress of the Project.

THE COMMUNICATIONS AND ENGAGEMENT PROGRAM INCLUDES

- Regular project updates
- Outreach: community associations, businesses, schools, day cares, recreational groups, transportation providers, tourism groups and other organizations
- Community/neighbourhood/stakeholder meetings
- Communications tools include: website, project information phone line, email, social media, community updates, construction notifications, traffic media updates, door-to-door advisories (where appropriate)

HOW TO CONTACT THE PROJECT

Website: wastewaterproject.ca
Email: wastewater@crd.bc.ca

24-7 Phone Line: 1.844.815.6132

HOW TO SIGN UP FOR PROJECT UPDATES

Send an email to **wastewater@crd.bc.ca** to let us know you are interested in receiving construction notices.

HOW TO FIND OUT ABOUT BUSINESS OPPORTUNITIES

Register on BC Bid (**bcbid.gov.bc.ca**) and the CRD's Business Opportunities Website (**www.crd.bc.ca/about/contracts-rfps/current**) to receive email notifications of any bidding opportunities for the Project and the CRD.

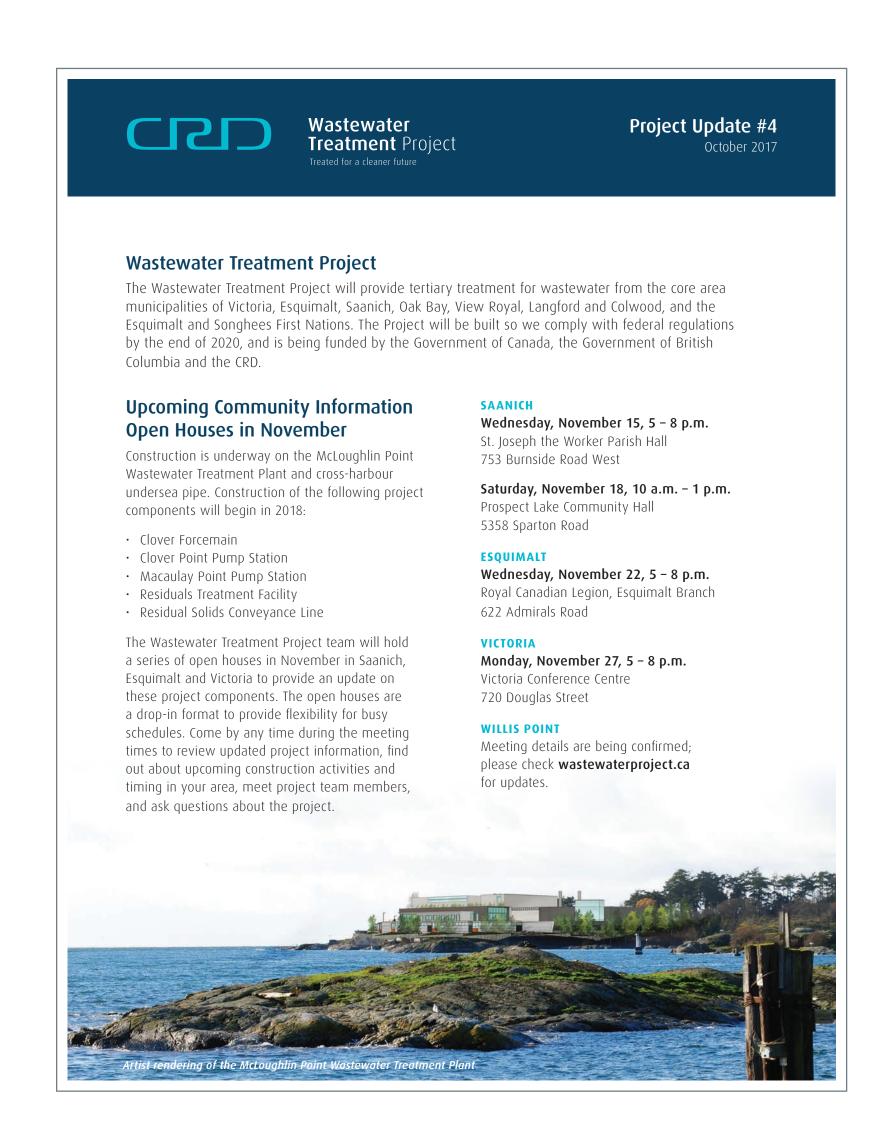


Community Meeting Notification



Wastewater
Treatment Project
Treated for a cleaner future

MEETING NOTICE





Posted on the Wastewater Treatment Project website on November 2, 2017

wastewaterproject.ca



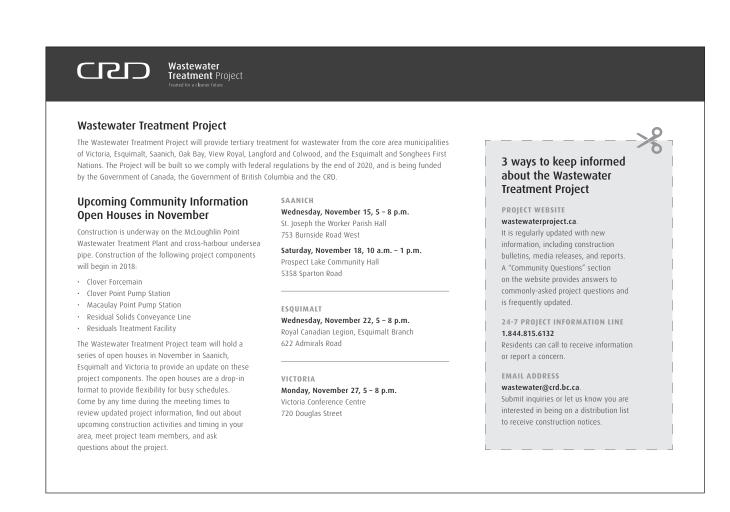
Home delivery via Canada Post

 58,800 residences in Victoria, Esquimalt and Saanich



Emails to stakeholder groups and residents who signed up for project updates

NEWSPAPER AD



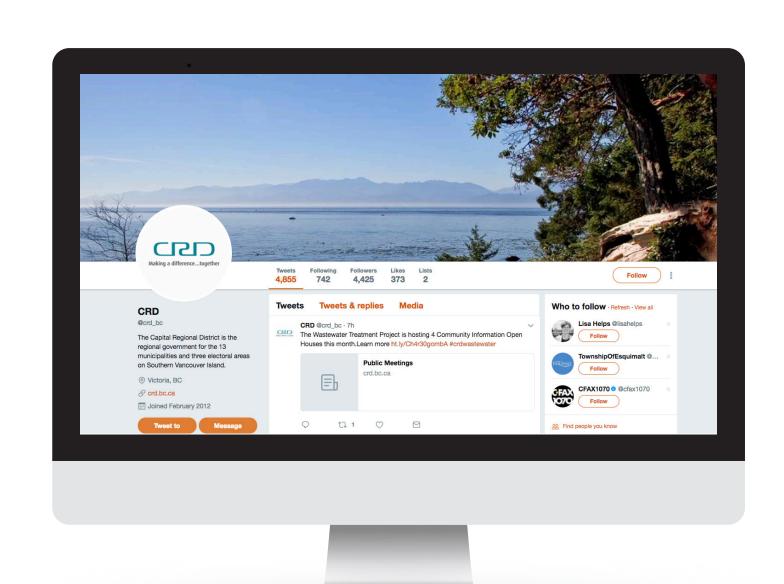


Peninsula News and Saanich News November 3, 2017

*Times Colonist*November 4, 2017

*Victoria News*November 10, 2017

CAPITAL REGIONAL DISTRICT TWITTER





November 8, 2017 November 14, 2017 November 17, 2017 November 21, 2017 November 26, 2017

Ogden Point Construction



The McLoughlin Point Wastewater Treatment
Plant includes the construction of a cross-harbour
undersea pipe from Ogden Point to McLoughlin
Point, using a process called horizontal directional
drilling. This work is underway at Ogden Point
behind the sound wall.

This work is taking place from both sides of Victoria Harbour. At Ogden Point, a 5-metre high sound wall was built to mitigate impacts to residents. The casing, or entry point, for the cross-harbour pipe between Ogden Point and McLoughlin Point has been installed. This was the noisiest part of the work and we thank local residents for their patience while this work was completed.

Horizontal directional drilling is underway and noise monitoring shows it is generally within 75 dBA at the midpoint of Dallas Road, below the 85 dBA noise bylaw. Once the horizontal directional drilling is complete, the pipe will be pulled through the drill passage.

OGDEN POINT CONSTRUCTION ACTIVITIES ANTICIPATED MAY 2017 – JUNE 2018*

COMPLETE: JUNE 2017

Remove Anglers Hut

Set up work site

- Bring equipment and materials to the site
- Build sound wall

COMPLETE: JULY 2017

Install casing for approximately 3 weeks

COMPLETE: SEPTEMBER 2017

Extend length of sound wall to include an additional panel

UNDERWAY: JUNE 2017 - JUNE 2018

Conduct horizontal directional drilling

- Involves equipment and generators for drilling operations
- Noise generally within 75 dBA at the midpoint of Dallas Road

JUNE 2018

Assemble pipe on Niagara Street (approximately 30 days)

- Deliver pipe segments
- Weld pipe together

Pull pipe through directional drill passage (24 hours per day for approximately one week)

^{*} Construction schedules subject to updates based on construction operations. Project to provide regular updates on anticipated dates.

Niagara Street Pipe Pull



Once the horizontal directional drilling is complete, the pipe will be assembled along Niagara Street, before it is pulled through the directional drill passage between Ogden Point and McLoughlin Point.

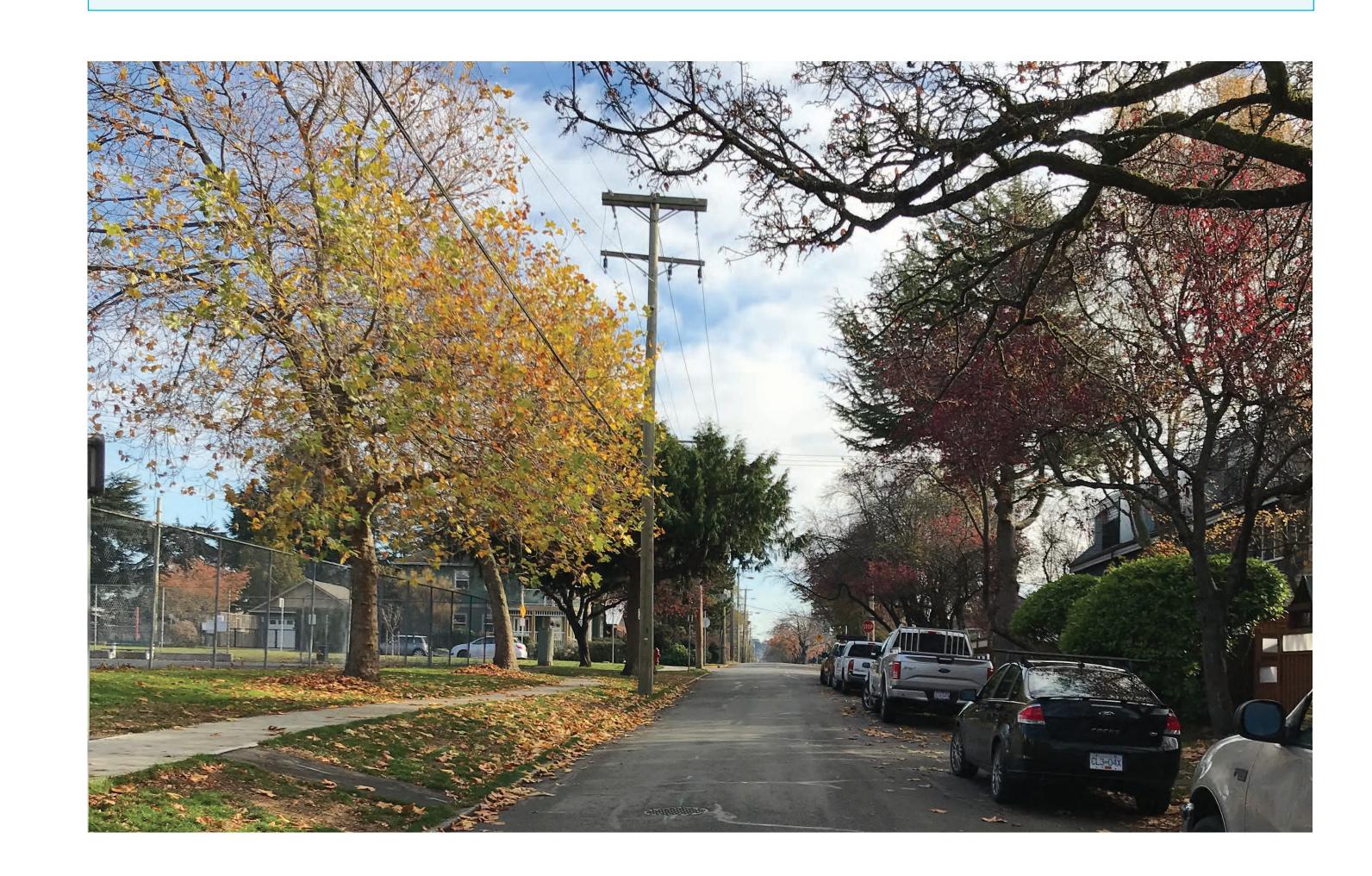
Parts of Niagara Street will be temporarily closed to traffic for approximately one month while the pipe is assembled and welded together. A portion of Dallas Road will be temporarily closed for approximately one week while the pipe is being pulled along Niagara Street and through the directional drill passage.

While the work on Niagara Street and Dallas Road is anticipated to take place in June 2018, the exact timing of this work will be determined based on construction operations. As construction progresses, the Project Team will provide updates on anticipated dates.

During the pipe assembly and pull, residents will have pedestrian access to their homes at all times, and resident parking will be considered as part of the Project plan.

The Project Team will coordinate with emergency services and there will be a first responder emergency services access plan in place. Emergency services will have access to all homes at all times.

The contractor, Harbour Resource Partners, is currently finalizing plans for this one-month construction period, which includes mitigating impacts. The Project Team will meet with neighbours in early 2018 when we have more information to discuss details of the temporary impact and address residents' needs and concerns.



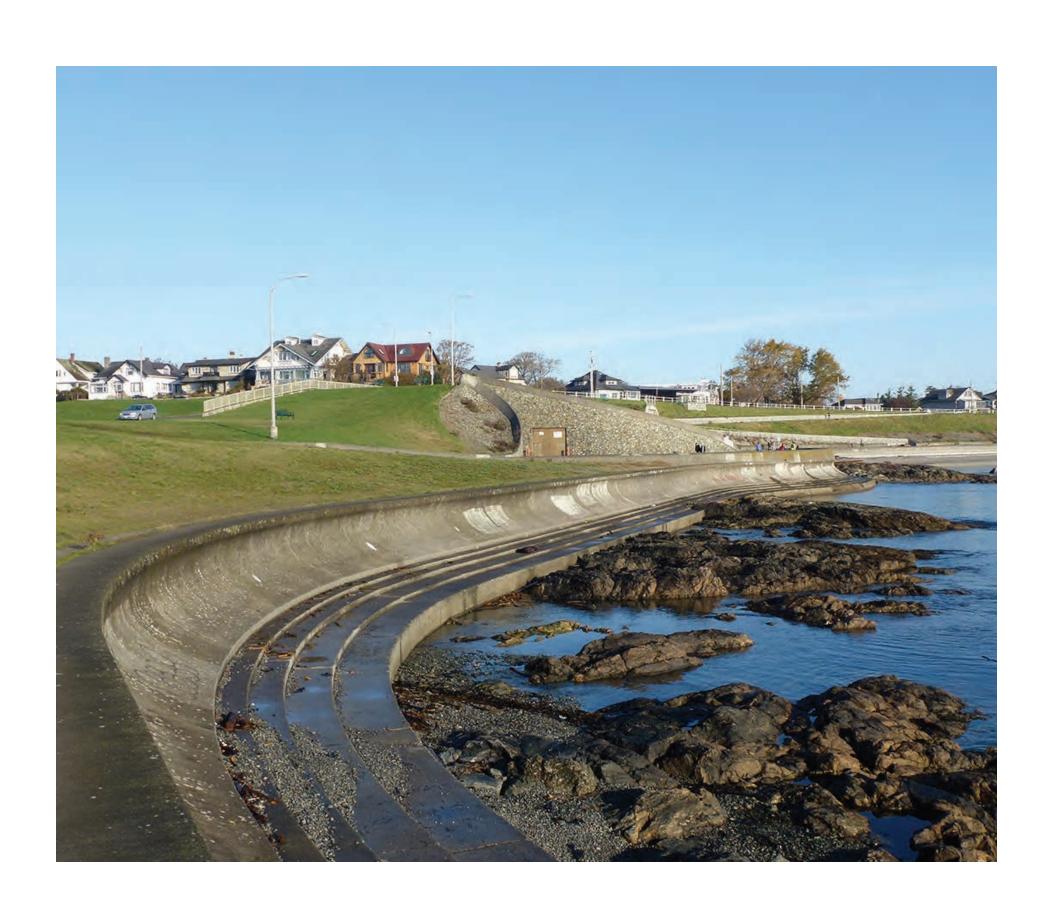
Clover Point Pump Station



The Clover Point Pump Station will be upgraded and expanded as part of the Wastewater Treatment Project. The current pump station pumps sewage directly into the ocean. The expanded pump station will pump wastewater to the McLoughlin Point Wastewater Treatment Plant for tertiary treatment and provide bypass pumping to the existing outfall during storm events.

The Clover Point Pump Station expansion will be below the grade of the adjacent section of Dallas Road. Similar materials to those on the current pump station will be used to blend the expanded facility with the existing facility and surrounding area.

The expansion will increase the internal pump station area from approximately 500m² to approximately 1500m². As part of the pump station expansion, the existing split rock wall facing the waterfront will be extended to enable access to the pump station and maintain the seaside walkway.



The seaside walkway will be maintained at the Clover Point Pump Station

NOISE

Noise from the expanded pump station will not exceed the current level of noise from the existing pump station.

ODOUR

The pump station will be designed with state-of-the-art odour control systems so that it will not exceed the current level of odour from the pump station and there will be no discernible odour in the community.

Clover Point Pump Station – Construction



Construction of the Clover Point Pump Station expansion is anticipated to begin in early 2018 and take approximately two years to complete.

The contractor, Kenaidan, will conduct further geotechnical investigations in the upper parking lot at the Clover Point in early December 2017. In January 2018, Kenaidan will set up a preliminary work site on the west side of the entrance to Clover Point.

The contractor will work with municipal staff to develop a traffic management plan for the Clover Point Pump Station prior to construction starting, using the following guidelines:

- Public safety for motorists, cyclists and pedestrians
- Impacts on the local community
- Bylaw compliance

More information will be provided about work in this area in early 2018. A key consideration during the construction will be managing potential impacts on the surrounding community. All construction activity will comply with City of Victoria bylaws regarding hours of work and noise levels.



Clover Point Pump Station work area

Clover Point Public Realm Improvements

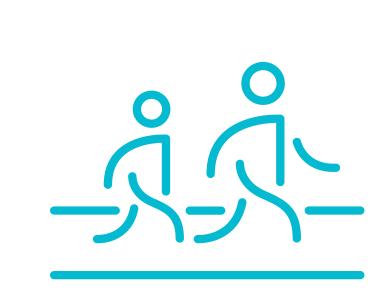


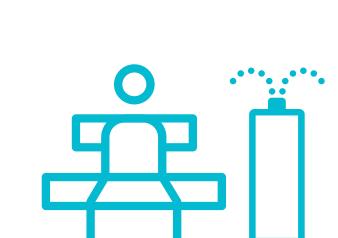
There will be public realm improvements as part of the Clover Point Pump Station expansion construction. The City of Victoria has determined the vision and overall principles as identified in the design guidelines for the improvements.

Public realm improvements at Clover Point will include:

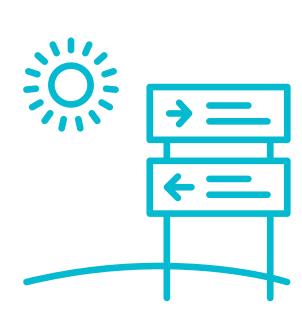
- Public plaza accessible to pedestrians and cyclists, to replace the existing parking lot above the pump station
- Street furniture and bicycle facilities (e.g. benches, bike racks, a bike rack for bicycle maintenance and repair, and a drinking fountain) on the plaza
- Bike node (pathway intersection for bike and pedestrian traffic)
- Interpretive signage and wayfinding signs at the public plaza
- Two replanted grassed open spaces to the west and east of the public plaza
- One public washroom with two gender neutral, universally accessible stalls

- · Clover Point Road and Dallas Road intersection improvements
- New connecting walkway and bike path across Clover Point Road to the Dallas Road/Ross Bay Seawalk
- Pedestrian path from Dallas Road alongside Clover Point Road and connecting to the existing Clover Point Park path









Dallas Road Public Realm Improvements

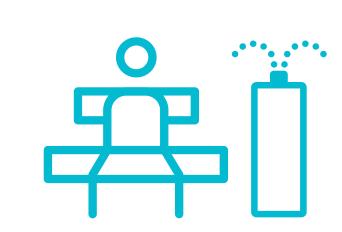


There will be public realm improvements as part of the Clover Forcemain construction. The City of Victoria has determined the vision and overall principles as identified in the design guidelines for the improvements and cycle track.

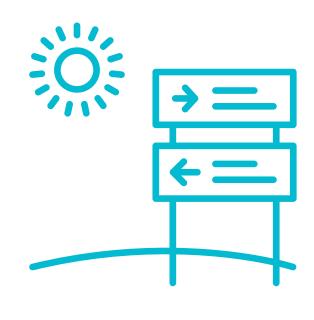
Public realm improvements for the Clover Forcemain (Dallas Road) will include:

- Cycle track extending from Dock Street at the Ogden Point breakwater to Clover Point
- Gathering/dismount area for the cycle track incorporated on the west side of Clover Point Road at Dallas Road
- Site furnishings (bike rack and a bench at a minimum of six locations at key intersections)
- Barrier fencing between dog off-leash areas
- Wayfinding signage
- One-time payment for the construction of additional capital improvements by the City of Victoria









Next Steps: Public Realm Improvements



The contractor is currently designing the public realm improvements based on the City of Victoria's design guidelines. The final design of the exterior of the Clover Point Pump Station building and public realm improvements will be subject to input from the community and the City of Victoria Council.

PUBLIC INPUT:

JANUARY 2018

Presentation of the 50% design to obtain feedback for incorporation into the final design:

- **1. James Bay Neighbourhood Association**. Project Team to present the design and alignment of the cycle track and alignment of the Clover Forcemain.
- 2. Fairfield Gonzales Community Association. Project Team to present the design and alignment of the cycle track and alignment of the Clover Forcemain, as well as the design for the exterior of the Clover Point Pump Station building and the public realm improvements.

CITY OF VICTORIA COUNCIL INPUT:

FEBRUARY 2017

City of Victoria Council defined the scope and design guidelines for the public realm improvements.

DECEMBER 2017

Project Team to present design proposal to the City of Victoria Council for their review.

FEBRUARY 2018

Project Team to present the 50% design to the City of Victoria Council. This presentation will reflect input received from the community associations in January.

MARCH 2018

The public realm improvements, cycle track design and alignment, exterior of the Clover Point Pump Station building, and Clover Forcemain alignment is subject to City of Victoria approval in accordance with the criteria set out in the City of Victoria licences.

Clover Forcemain



The Clover Forcemain is a pipe that will transport wastewater from the Clover Point Pump Station to the McLoughlin Point Wastewater Treatment Plant for tertiary treatment.

This pipe will run from the Clover Point Pump Station along Dallas Road to Ogden Point, where it will connect to the cross-harbour undersea pipe.

The Clover Forcemain alignment was developed in collaboration with City of Victoria staff and considered protection of the bluffs, the location of mature trees and sensitive vegetation, potential erosion, and traffic impacts during construction.

In 2014, alignment options were developed and evaluated based on environmental, social and economic considerations. The options were evaluated by the CRD and the Dallas Road alignment was selected. The alignment has since been reviewed and validated by the Wastewater Treatment Project Team in consultation with the City of Victoria.



Alignment of the Clover Forcemain along Dallas Road

Clover Forcemain - Construction



Construction of the Clover Forcemain is anticipated to begin in spring 2018 and take approximately two years to complete.

The pipe will be installed in segments in a linear manner, to minimize impacts to residents and traffic. The safety, access and movement of Victoria residents and tourists is a primary consideration.

The contractor will be required to consider the multiple users of Dallas Road and the impacts to vehicle traffic, cyclists and pedestrians, as well as parking and access to residences and businesses along Dallas Road, as they develop construction and traffic management plans. Traffic control measures will be implemented, and traffic control personnel will direct traffic where required.

PLANNING FOR CONSTRUCTION ACTIVITIES

The Project Team will work with the City of Victoria, Greater Victoria Harbour Authority, tourism, transit, and community groups to coordinate municipal works and access. A key focus of the Project will be to ensure people have as much information as possible in advance so they can plan for construction activities.

Communications and engagement activities will keep residents and stakeholders informed of project plans, construction and traffic information. The Project Team will receive and respond to questions and concerns raised by the community. More information will be available in advance of construction, including traffic management and construction plans.

Clover Forcemain – Geotechnical Assessment



In September 2017, the Project Team retained the design engineering team, who reviewed previous studies and technical reports, and completed a geotechnical assessment.

The assessment concluded that the Dallas Road alignment is suitable from a geotechnical perspective and that the forcemain can be constructed and operated without having an adverse environmental or geotechnical impact on the Dallas Road bluffs.

The design engineering team includes:

- Kerr Wood Leidal expertise with the Dallas Road Bluffs
- CH2M HILL expertise in seismic design and resiliency of large diameter forcemains in high seismic areas such as Metro Vancouver and the Pacific Northwest
- Thurber Engineering geotechnical specialists including slope stability and terrain hazard assessments
- · Plan Dynamics Limited local environmental expertise



24 boreholes were completed as part of the design engineering team's geotechnical assessment

Next Steps

The design engineering team will define the alignment within the Dallas Road right-of-way and will undertake further geotechnical investigations in three locations to assist with this: Dallas Road between Douglas Street and Paddon Avenue; Dallas Road at the foot of Cook Street; and the James Bay seawall.

Geotechnical investigations will include drilling additional boreholes, in situ testing including geophysics, laboratory testing, seismic analysis and numerical modeling of slope stability.

The final alignment, within the road right-of-way, will be presented in spring 2018 along with construction mitigation plans.

Residual Solids Conveyance Line Map



The Residual Solids Conveyance Line will include two pipes along with four or five small pump stations. The two pipes will be installed in a common trench where possible and will be in the existing road right-of-way. Though the design is not complete, it is anticipated that a common trench will be used along the majority of the route.

- The first pipe will be approximately 250mm (10 inches) in diameter and 18.5km long, and will transport residual solids from the McLoughlin Point Wastewater Treatment Plant to the Residuals Treatment Facility for treatment.
- The second pipe will be approximately 350mm (14 inches) in diameter and 11.5km long, and will return the liquid removed from the residual solids during the treatment process to the Marigold Pump Station, from where it will be returned to the McLoughlin Point Wastewater Treatment Plant through the existing conveyance system.

The Wastewater Treatment Project will leave the surface of the conveyance line in as good or better condition than its current state.



Residual Solids Conveyance Line Route Selection



In 2014, alignment options were developed based on technical, environmental, social and economic considerations. The options were evaluated by the CRD, with input from the District of Saanich, Township of Esquimalt and City of Victoria, and a preferred alignment was selected.

The evaluation of the alignment has since been reviewed and validated by the Wastewater Treatment Project Team in consultation with the municipalities. The Project Team is working with the municipalities to ensure technical issues related to the alignment are addressed and, where possible, to coordinate municipal works with construction of the Residual Solids Conveyance Line.

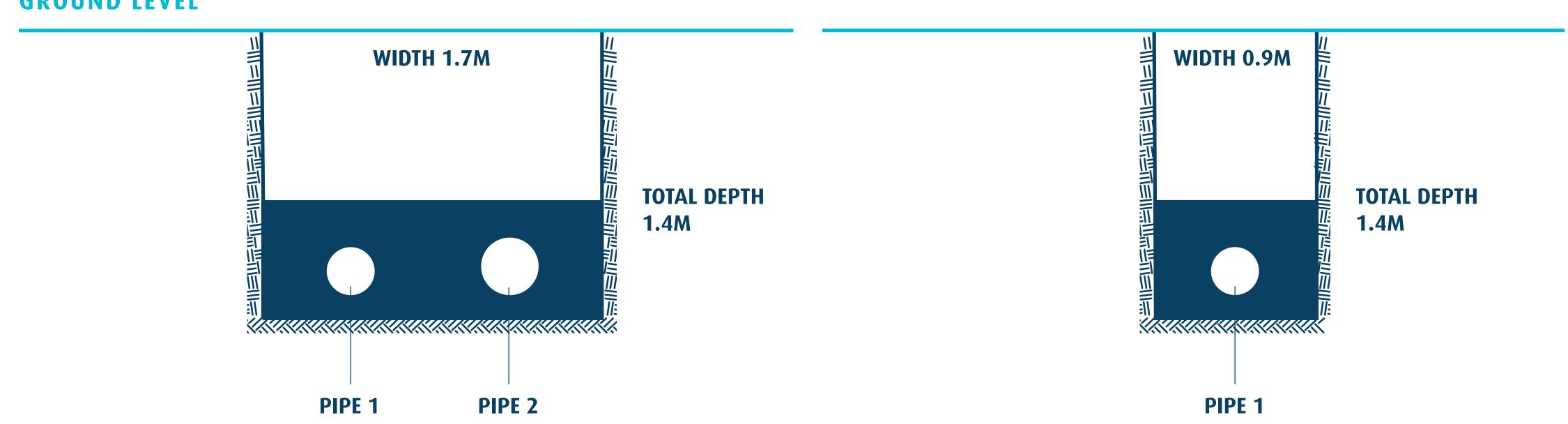
While the route is close to final, it is still subject to input from communities. Feedback we receive during the November meetings will be considered, along with other technical and financial considerations, in finalizing the design. Feedback forms are available at the open houses, or feedback can be provided by e-mailing **wastewater@crd.bc.ca**.

FAVOURABLE CONSIDERATIONS FOR THE ROUTE INCLUDE:

- Shortest of all alignments
- Power available at pump station locations
- Good maintenance access
- No impact on wildlife habitat
- Lowest capital, operating and maintenance costs

CROSS-SECTION OF TYPICAL TRENCH

GROUND LEVEL



Residual Solids Conveyance Line Construction



Construction is anticipated to begin in summer 2018 and take approximately two years to complete.

The conveyance pipe will be installed in segments in a linear manner, to minimize impacts to residents and traffic. All work will be completed within existing road right-of-ways. This includes all watercourse crossings where the pipe will cross over top of existing culverts or hang underneath existing bridges.

While detailed construction plans will be developed by the contractor, the sequence of construction is anticipated to be as follows:

- 1. Survey the pipe location and confirm existing underground utilities
- 2. Install traffic controls and construction signage
- 3. Cut the pavement
- 4. Join the pipe and store it on the surface of the ground
- 5. Dig the trench and place the pipe in the trench
- 6. Backfill the trench and compact the surface
- 7. Pave and restore the surface

OPERATION AND MONITORING OF THE CONVEYANCE SYSTEM

All of the Wastewater Treatment Project's facilities, including the treatment plant, residuals treatment facility, pump stations and conveyance system, are designed to meet stringent post-disaster design requirements. This means they must be designed to remain operational following a major earthquake.

The conveyance pipes will be made of a highly durable material proven to perform well in earthquake prone areas. The system will be controlled 24 hours a day, 365 days a year. Operations would be automatically halted in the event of an alarm, based on change in flow or pressure, and incident response procedures would be immediately initiated. Operations would only be resumed following investigation.

The CRD and core area municipalities operate over 175 pump stations and 110km of existing sanitary sewer pipe in the core area. The CRD has a thorough ongoing operations and maintenance program, as well as a robust spill response plan. The CRD has a 24-7 operations line that residents can call to report a concern: **250.474.9630**.

