



## Committee of the Whole Report For the Meeting of April 12, 2018

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**To:** Committee of the Whole **Date:** April 6, 2018  
**From:** Fraser Work, Director of Engineering and Public Works  
**Subject:** Wastewater Treatment Project – Staff Review

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### RECOMMENDATION

That Council:

1. Accept the CRD's 50% project design as presented, with the following additions/amendments:
  - Endorse parking configuration number two, which includes 4 curb extensions for the section of Dallas Road between Dock Street and Lewis Street, as it balances the retention of on-street parking with increased/improved pedestrian connections to the James Bay neighbourhood.
  - Endorse three new marked crosswalks be installed, at Dallas/Boyd, Dallas/Government, and Dallas/Linden
  - Endorse the proposed cycle track lighting configuration and the CRD project installation of street lighting along Dallas Road, from Douglas Street to Cook Street.
2. Direct staff to work with the CRD Project Team to finalize all remaining issues identified in this report, at the 90% stage.

### EXECUTIVE SUMMARY

The CRD Wastewater Treatment Project (WWTP) is being built to meet the provincial and federal regulations for treatment of the Core Area's wastewater by December 31, 2020. The project consists of three main elements, including McLoughlin Point Wastewater Treatment Plant, Residuals Treatment Facility, and the Conveyance System

The WWTP conveyance system will be constructed within the City of Victoria, at the Clover Point Pump Station, and the Dallas Road Forcemain, and the conveyance pipe carrying residual solids from the McLoughlin Point Treatment Plant to the Residuals Treatment Facility at Hartland Landfill. The CRD / City Licence agreements are in place for Public Realm Improvements at the Clover Point Pump Station, a Cycle Track on Dallas Road, and other design and consultation obligations.

The CRD has now progressed through their required public engagement process, and have worked with City on the technical elements of the project under consideration of the various public inputs. The CRD is presenting 50% design proposals for the Clover Point Pump Station and the Dallas Road Forcemain to Committee of the Whole. Following this presentation, CRD will proceed with detailed design and tender preparations.

The 50% design includes the alignment and cycle track design and refined designs of the Clover Point Pump Station and its amenities. The parking options along Dallas road have to be balanced with the amount of right-of-way and impacts to green space. The current design will result in an overall loss of 6% of parking, but will retain angled parking along the seawall, and will also improve parking efficiency via the addition of stall markings. Green space impacts are minimized in the proposed parking configuration. Geotechnical analysis

has been completed by the CRD consultant teams, and the cycle track and forcemain alignments reflect the setbacks required to minimize any future erosion/seismic risk to or from the installation. Impacts to mature trees is minimised through the cycle track and forcemain alignment, which does traverse through treed areas, away from mature trees to minimize impacts, and follows existing underground utility alignments. Additional crosswalks and street/pathway lighting is recommended as part of the project, to increase pedestrian amenities and improve vulnerable road user safety.

CRD plans to complete the tendering process as soon as possible, and begin construction in July 2018. The forcemain and pump station construction is planned to be completed by June 2020, and in service before the end of 2020. Construction planning and minimizing public disruption is also part of the licence agreement.

CRD is required to host a future 90% Design Workshop with City staff and First Nation's representation, followed by final acceptance by City staff of the Clover Point Pump Station Building, the Public Realm Improvements, Dallas Road Forcemain alignment and design, and the Cycle Track alignment. The CRD will also provide the Director of Engineering with a public engagement plan prior to commencing construction.

Finally, the CRD will host a Community Information Open House to provide project information, present the final designs, and answer questions about the project, prior to commencing construction later this year.

## **PURPOSE**

The purpose of this report is to provide Council with the design information pertaining to the CRD Clover Point Pump Station and Dallas Road conveyance Forcemain, in order to progress to 90% design and project tender.

## **BACKGROUND**

The CRD Wastewater Treatment Project is being constructed to meet the provincial and federal regulations for Core Area wastewater treatment by December 31, 2020. The project (see Annex A) consists of three main elements:

- McLoughlin Point Wastewater Treatment Plant
- Residuals Treatment Facility
- Conveyance System

A portion of the project's wastewater conveyance system will be completed within the City of Victoria. The Victoria components of the conveyance system include the Clover Point Pump Station and the Dallas Road Forcemain, between Clover Point and Ogden Point.

On February 22, 2017, the City of Victoria and the CRD entered into licence agreement related to the Clover Point Pump Station and the Dallas Road Forcemain.

The Clover Point Pump Station licence agreement allows the CRD to construct and maintain the facility, and sets out certain design requirements for the pump station, including a conceptual plan for the building exterior, as well as a concept plan and design guidelines for the Public Realm Improvements. This licence agreement also establishes the requirement to meet certain design and development obligations, payment of fees, and project public consultation.

A Dallas Road Forcemain licence agreement allows the CRD to construct and maintain the system of sanitary sewer works between Clover Point and Ogden Point. Under the agreement, the CRD has also agreed to construct a cycle track/bike facility along Dallas Road between Clover Point and Dock Street, and meet certain obligations associated with design development and public consultation.

The CRD presented the Design Proposal prior to commencement of detailed design, to the Committee of the Whole on December 14, 2017. The Design Proposal was also presented to the James Bay and Fairfield-Gonzales Community Associations in separate meetings (January 10 and 11, 2018). Public input from these meetings and from on-line feedback, was subsequently considered during the design refinement process.

Council's recommendations from December 2017 included the following:

- Adjustments between the lower foreshore/walkway at Clover Point and the loading bays/retaining walls,
- Materials/design improvements of the lower foreshore walkway,

- Parking considerations along Dallas Road between Dock Street and Lewis Street

Public feedback has established key themes identified in the January 2018 community meetings, including the following public considerations:

- Minimizing parking loss, on Dallas Road and at Clover Point
- Support and opposition of the cycle path
- Safety/accessibility for pedestrians, cyclists and parking
- Construction impacts to trees/vegetation on the corridor
- Off-leash dog areas/fencing

The CRD has now completed their planned phase of public engagement and design work, with inputs from City staff on the technical elements of the project. CRD has completed the 50% design phase for the Clover Point Pump Station and the Dallas Road Forcemain. With design approval at this phase, the CRD would proceed with detailed design of the Clover Point Pump Station building, the Public Realm Improvements, the Dallas Road Forcemain, and the Cycle Track.

The CRD is required to host a 90% Design Workshop with City staff and First Nation's representatives, and may proceed to construction with 90% design acceptance by City staff of the Clover Point Pump Station Building, the Public Realm Improvements, Dallas Road Forcemain alignment and design, and the Cycle Track alignment. The CRD is also required to provide the City with their public engagement plan prior to commencing construction. Finally, the CRD will host a Community Information Open House to provide project information, present the final designs, and answer questions about the project, prior to construction.

## **ISSUES AND ANALYSIS**

The CRDs design of the Clover Point Pump Station and Dallas Road Forcemain is now at the 50% design stage, and is presented for Council's review and consideration. Several issues and considerations have shaped the design and are outlined in the following paragraphs in more detail.

Overall, the primary design issues/considerations, include the following:

- Geotechnical considerations and analysis,
- Parking impacts on Dallas Road associated with cycle track construction,
- Tree impacts along the corridor associated with construction activities,
- lighting considerations – overall safety and security lighting along cycle track and street,
- Pedestrian connectivity and safety, and
- Barrier fencing within Beacon Hill Park.

The following key project elements are examined by staff, in more detail below:

1. Clover Point Pump Station and Park;
2. Dallas Road Forcemain;
3. Dallas Road and Cycle Track Design;
4. Park and Natural Capital Impacts;
5. Niagara Street Engineering Works;
6. Other Waste Water Treatment Activities and Works;

### **Detailed Considerations**

#### **1) Clover Point Pump Station and Park:**

##### **a) Licence Requirements:**

Under the agreement, the CRD agreed to construct the Public Realm Improvements upon the Licence Area and the surrounding lands, including a Public Plaza, a Bike Node, two (2) public washrooms, intersection improvements at Clover Point Road and Dallas Road, new connecting walkways and pedestrian pathways, site furnishings, wayfinding signage, and landscaping.

The licence agreement also set out certain obligations associated with the design development process, payment of fees and public consultation. Outstanding items include:

- A Design Workshop at the 90% design stage for City staff and CRD to work collaboratively on development

and finalization of the design details related to the exterior of the Building and design of the Public Realm Improvements.

- The CRD is also committed to inviting the Songhees and Esquimalt First Nations to participate in the 90% Design Workshop. The CRD invited the Songhees and Esquimalt First Nation Liaisons to participate in the 30% and 50% Design Workshops. The Songhees Liaison participated in the 30% and 50% Design Workshops, and the Esquimalt Liaison participated in the 50% Design Workshop.
- The CRD WTP will submit the final design of the exterior of the Building and the Public Realm Improvements for City staff approval.
- The CRD will provide the City with a one-time payment of \$75,000 for the maintenance of the public washrooms upon completion of the Public Realm Improvement.
- The CRD will provide the City a one-time payment of \$100,000 toward the construction of additional capital improvements by the City, after the Design Workshop at the 90% completion stage and upon receipt of a report from City staff that outlines the community's feedback and the final improvements to be implemented by the City.
- The CRD WTP will provide the Director of Engineering with a public engagement plan outlining how the CRD will manage inquiries, complaints and correspondence from the public.

The licence agreement sets out certain design requirements for the Pump Station, including a conceptual plan for the Building exterior, as well as a concept plan and design guidelines for the Public Realm Improvements. All items, noted in the Licence Agreement, are summarized below, and are included in the design:

- construct and install the Public Plaza to be accessible to pedestrians and cyclists and replace the existing public parking lot located above the existing pump station;
- construct and install the Bike Node;
- interpretative signage and wayfinding signs at the Public Plaza;
- two replanted grassed open spaces to the west and east of the Public Plaza;
- install, as part of the Public Plaza, street furniture and bicycle facilities including benches, bike racks, a bike rack for maintenance and repair, and a drinking fountain;
- install a public washroom with two gender neutral washrooms, including all necessary sanitary sewer, electrical, and water connections;
- construct intersection improvements at Clover Point Road and Dallas Road;
- construct a pedestrian path from Dallas Road alongside Clover Point Road and connecting to the existing Clover Point Path; and
- construct a new connecting walkway and bike path across Clover Point Road to the Dallas Road/Ross Bay Seawall.

#### **b) Community Feedback:**

Through the various engagement activities and feedback, the community has raised commentary on the following Clover Point Pump Station issues:

- The Pump Station exterior should blend with the site/surrounding area
- Opportunities to provide viewing of the interior of the Pump Station should be explored
- Ramps should be provided to connect the two levels of the Pump Station Public Realm
- Consider extending the walking path around the end of Clover Point
- Public Art
- Landscaping features/native plantings, and bird/plant information
- signage (First Nations)
- Relocating the viewing area/amenities from Dallas Road
- Washroom design improvements (more washrooms, more conspicuous location) and operational concerns (locked at night)

#### **c) CRD Design/Analysis/Proposal:**

The CRD design team made design amendments, altering the retaining wall to reduce massing/profile, and included a treatment to the maintenance bay doors to improve aesthetics.

The CRD WTP team is working with the Songhees and Esquimalt First Nations Liaisons to develop public art/signage features.



#### **d) City Staff Commentary:**

##### Pump Station:

- All items identified in the Licence Agreement have been included in the proposed Public Realm Improvements.
- Staff support the proposed modifications to the retaining wall.
- Staff support the Project Team assessment to not redesign the Pump Station building to accommodate views into the interior of the building. Providing the public with information on the inner workings of the Pump Station can be accomplished through on-site signage.
- An exhaust vent will be part of the pump station design. The CRD project team will give consideration to adding a safe and decorative exhaust cover.

##### Clover Point Park Amenities:

- Staff agree with the CRD Project Team that spatial limitations prohibit ramp relocations nearer the Pump Station. Relocating the public washroom to a more prominent location is also not supported, due to sightline impacts. The suggested relocation of the viewing plaza is also not supported, given the impacts to the overall design of the site.
- The City of Victoria will continue to work with the CRD and Songhees/Esquimalt representatives on public art and wayfinding/signage opportunities for this project.

##### Clover Point Washroom:

The proposed washroom building design has been designed to address staff input regarding safety, security, and operational requirements. Other design items specific to washroom specifications have been provided to the CRD project team and contractor, and will be finalized at the 90% stage.

##### Clover Point Road/Cycle Track Interface:

- The south side sidewalk on Dallas Road will be continued through the Dallas Road/Clover Point intersection, to reinforce the pedestrian right-of-way at this intersection. Design details will be finalized at the 90% stage.
- Further pathway extensions are not part of the proposed scope of work/licence agreement. Staff would consider these items in future capital budget requests.

## **2) Dallas Road Forcemain:**

#### **a) Licence Requirements:**

The agreement allows the CRD to install, entrench, construct, operate, maintain, repair and replace one or more systems of sanitary sewer works, i.e. the Clover forcemain. Under the agreement, the CRD agreed to:

- Construct a Cycle Track connecting Clover Point to Dock Street in accordance with the conceptual plans and Design Guidelines in the licence agreement.

The licence agreement also set out certain obligations associated with the design development process, payment of fees and public consultation. Outstanding items include:

- A Design Workshop at the 90% design stage for City staff and CRD to work collaboratively on development and finalization of the design details related to the Cycle Track.
- The CRD is committed to inviting the Songhees and Esquimalt First Nations to participate in the 90% Design Workshop. The CRD invited the Songhees and Esquimalt First Nation Liaisons to participate in the 30% and 50% Design Workshops. The Songhees Liaison participated in the 30% and 50% Design Workshops, and the Esquimalt Liaison participated in the 50% Design Workshop.
- The CRD WTP will submit the final design and alignment of the Cycle Track for City staff approval.
- The CRD WTP will provide the Director of Engineering with a public engagement plan outlining how the CRD will manage inquiries, complaints and correspondence from the public.

#### **b) Community Feedback:**

The community feedback related to forcemain alignment is focussed primarily on the perceived risks that the installation could possibly increase seismic instability in specific locations. There was also some comments from the public regarding a proposed alternative alignment option for a sea-bed conveyance. All geotechnical

risks have been considered, assessed and mitigated by the proposed design and/or addressed by the CRD project team and their consultants.

**c) CRD Design/Analysis/Proposal:**

The forcemain alignment (Annex B) was selected by the project team based on a number of considerations. Geotechnical assessments, as well as schedule, cost, archaeological, environmental, and community impacts shaped the proposed design.

The CRD initially engaged Stantec Engineering to prepare an indicative design of the Forcemain. Following completion of this work, CRD engaged Kerr Wood Leidel (KWL) to review the indicative design, and prepare detailed design documents. The scope of KWL's work also included a technical review of geotechnical factors affecting the indicative design – to do so, KWL assembled an interdisciplinary team with expertise in the fields of conveyance system design, geotechnical engineering, terrain analysis, marine construction, environmental analysis, and civil engineering.

The KWL team agreed with the selection of Dallas Road as the recommended corridor for the Clover Forcemain. The KWL team also concluded that the forcemain can be designed, constructed and operated safely in the Dallas Road alignment without affecting the Dallas Road Bluffs and without the bluffs affecting the forcemain.

The forcemain alignment is in boulevard/natural areas between Clover Point and Circle Drive, and between Government Street and Lewis Street. The forcemain will be located primarily under the travelled portion of Dallas Road, primarily to avoid mature boulevard trees, to complement existing utility alignments, and to maintain setbacks from the Dallas Road Seawall. The alignment deviates from the roadway in two main locations, to avoid mature trees, and parallel an existing City utility corridor situated between tree stands.

**d) City Staff Commentary:**

Forcemain Alignment

Staff have no objections with the proposed alignment, and will be working with the Project team as they resolve any underground utility conflicts with City sanitary, storm, and water lines, as well as with any third-party utilities prior to 90% design.

Geotechnical Considerations

The main staff considerations regarding forcemain alignment were related to protection of the Dallas bluffs and seawall, and minimizing conflicts with trees and existing utilities. City staff have reviewed the geotechnical analysis and report and accept the findings that construction and operation of the forcemain will not impact the bluffs; and the state of the bluffs will not impact the forcemain.

City utilities have already been installed along this alignment, in proximity to the Dallas bluffs, and have been in operation for over 70 years (see Figure 1 below).



Figure 1 – Existing Utilities at Dallas/Douglas Intersection

Stantec had originally prepared their indicative design alignment for the forcemain in 2014 based on their initial geotechnical analysis. Stantec also prepared a report on the cliffs, titled Dallas Road Cliffs - Historic Foreshore Erosion Assessment. This covered a review of past studies on the topic and made recommendations on the detailed borehole program.

In the past year, CRD had hired KWL and Thurber Engineering to review the Stantec indicative design, complete more detailed and additional bore-hole analysis, and then prepare the detailed design, as the Engineer of Record. Corporately, KWL is familiar with the condition of the Dallas bluffs, having prepared a Dallas Bluffs conservation plan for the City in 2011.

The geotechnical analysis, which included drilling 24 boreholes along the forcemain alignment, slope assessments, and groundwater monitoring wells, was expanded in 2017, as highlighted in Stantec's May 30, 2017 report to include additional geotechnical assessment at critical locations, including (1) below the intersection at Douglas and Dallas Roads, (2) between Paddon Avenue and Fonyo Beach, and (3) along the James Bay seawall.

KWL and Thurber engineering analysis (released in their November 2017 report) outlined the results from their testing. In all locations, the consultants assess that the required forcemain setbacks are achievable to reduce risk of creating additional instability in locations where erosion or seismic risks are higher. In this report, the consultant asserts that *"the team confirmed that the forcemain can be designed, constructed and operated within the Dallas Road corridor without impacting the bluffs and without the bluffs impacting the forcemain"*.

Further ongoing monitoring by CRD includes installation of ground and slope monitoring controls, and monitoring during pre- and post-construction phases.

Staff are confident that the professional engineering findings have and will continue to appropriately inform the design to reduce risks to acceptable levels.

#### Other Site Considerations:

An air valve chamber/vent is required near the Douglas/Dallas intersection, at the high point of the forcemain. The final location of this vent will be determined at the 90% stage – while air treatment/odour control facilities will be in place, the objective will be to keep venting away from the Mile 0 site.

### **3) Dallas Road and Cycle Track Design:**

#### **a) Licence Requirements:**

The Licence Agreement requires the CRD to construct a Cycle Track connecting Clover Point to Dock Street in accordance with the conceptual plans and Design Guidelines.

#### **b) Community Feedback:**

Feedback on the cycle track focussed on support/opposition of the cycle track, parking impacts on Dallas Road and at Clover Point, safety (for pedestrians and for cyclists), and accessibility (parking, and access across the cycle track).

#### **c) CRD Design/Analysis/Proposal:**

The CRD project team has met the terms and conditions of the design guidelines and specifications in the Licence Agreement, and have recommended solutions to address the concerns raised through discussions with City staff and the community feedback process.

#### **d) City Staff Commentary:**

##### Cycle Track alignment:

Staff concurs with the CRD's proposed cycle track alignment. Various items identified for refinement towards the 90% design stage include:

- Curb cuts/improved accessibility at all locations where the cycle track crosses pedestrian paths. Design elements at these junctions, including signs, markings, surface treatments and grade changes, will reinforce that the pedestrian movement has priority, and that cyclists on the cycle track are required to yield to pedestrians.



- Pedestrian accessibility adjacent the angled parking stalls is required, to enable easy access to sidewalks from these parking areas.
- Markings on the cycle track will follow regional trail standards, to provide consistency for users.
- Drainage design will be refined at the 90% stage to ensure the cycle track does not have ponding/low spots.

#### Mile 0 Location:

The project development surrounding the Mile 0 location generated feedback from community, as there is an interest within community to realign Douglas Street/ Dallas Road and Beacon Hill Park boundaries, to consolidate green space into the main portion of Beacon Hill Park.

The main consideration from staff is whether this is the appropriate time to consider redesigning this particular site. Staff assess that any redesign of this roadway would not be within scope of the CRD project due to proximity issues and would require significant planning, engagement and park/roadway design which are not achievable within current project timelines.

Re-design would require realignment of the entire section of Douglas Street between Niagara Street and Dallas Road, to provide safe motor vehicle approaches/sight lines - utilizing the existing westerly leg of Douglas Street at Dallas Road is not recommended, as sightlines for southbound left turn vehicles would be insufficient (see Figure 2 below, showing areas of concern). Staff also note that no capital work (EPW utilities upgrades, road reconstruction, or Parks Master Plan-related improvements) at this intersection is currently identified in the Financial Plan.

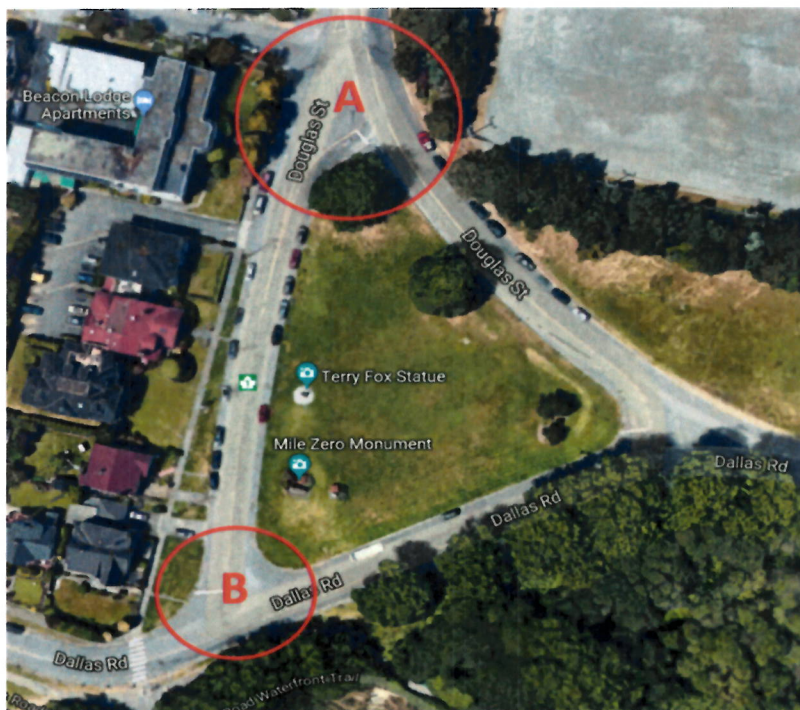


Figure 2 – Mile 0 Redesign Areas of Concern

A number of optional cycle track alignments on Dallas Road at Mile 0, including an on-street option, were also reviewed by CRD and staff. The proposed alignment was determined to be the optimal alignment, as it retains mature trees along the boulevard, triggers removal of some of the invasive species between Dallas Road and the bluffs, while creating an enjoyable route through the park separate from vehicle traffic. The on-street alignments were assessed but not progressed as narrowing, or altering the north curb on the Mile 0 frontage resulted in insufficient tracking space for buses/larger vehicles currently using Dallas Road. Any redesign of this zone would be beyond the scope of the CRD project.

Any future optimisation of Mile 0 green-space and the adjacent roadway would require extensive planning and would ideally be undertaken following further public consultation, across City departments and the public. This work is not currently part of the upcoming, defined financial planning process.

#### Pedestrian Connectivity/Crosswalks:

The CRD Project team included Watt Consulting Group, who reviewed the eight existing crosswalk locations using Transportation Association of Canada guidelines and warrants, to determine if they were signed/marked to the appropriate standard of intervention. The consultant confirmed the eight existing crosswalks on the corridor were appropriately signed and marked, and that no further upgrades were warranted at this time.

In addition, the consultant assessed pedestrian desire lines and crosswalk spacing, to evaluate if additional crosswalks along the corridor were appropriate. Based on their review, the team suggested 'potential candidate' crosswalks at the following locations:

- Boyd/Dallas
- Government/Dallas
- Linden/Dallas

Staff reviewed these locations, and recommend the project include installing marked crosswalks at all three locations - Boyd, Government, and Linden (see Figure 3 below).



Figure 3 – Existing and Proposed Marked Crosswalks

Given that the high-level review done by the consultant did not include location-specific pedestrian volumes, estimated pedestrian activity would suggest these locations be marked at this time with zebra-style road markings, and side-mounted signs. Once in place post-construction, seasonal and updated pedestrian counts would be required to determine what, if any, upgrades may be warranted along this corridor.

#### Vehicle Parking:

CRD presented a forcemain and multi-use pathway alignment to Committee of the Whole in December 2017 which identified proposed parallel parking on the south side of the street between Dock Street and Lewis Street. With direction from Council, the CRD project team and City staff continued to examine project options that retained angle-parking on Dallas Road between Dock Street and Lewis Street.

The CRD presented two updated parking options to the public at its January meetings in James Bay and Fairfield (see Annex C - Parking Assessment).

Option 2 parking configuration would result in the loss of 37 of 598 parking stalls along the corridor, with the most impact (14 stalls) on the north side of Dallas Road, between Dock Street and Lewis Street. The addition of parking demarcation lines along the entire corridor, however, will improve parking efficiency and likely result



in an overall parking capacity improvement, when compared to less formal parking habits currently employed (see figure in Annex C).

Staff's assessment suggest that Option 2 presents the most favorable parking configuration between Dock Street and Lewis Street, as it represents the highest level of parking retention with increased/improved pedestrian connections to the James Bay neighbourhood. Staff would also note that a few additional parking stalls may be realized as the design proceeds to the 90% stage, with clarifications provided on the exact location of bulbs/curbs on the south side of the street, and final parking bay extents refined relative to trees, utility poles, and other above-ground infrastructure in the boulevard area.

Should Council wish to lessen parking loss impacts associated with Option 2 (11 stalls between Dock Street and Lewis Street, 13 stalls between Lewis Street and Douglas Street, 13 stalls between Douglas Street and Cook Street), new parking stalls could be created by utilizing some of the adjacent green space, primarily near Lewis Street, where the angled parking bay on the south side of the street could be expanded to the east. Costs for this expansion could be minimal, as the area will have to be excavated for forcemain installation.

Re-capturing on-street parking between Lewis Street and Douglas Street is not recommended. Parking lost on the north side of the street in this area is used predominantly by residents – any parking reinstated on the south side of the street would displace green space in a narrowed portion of the park, would not be designated for resident use, and would be utilized by the general public.

Community feedback also indicated support for time limit restrictions on angled parking areas, particularly near the Ogden Point Breakwater (Dock Street to Lewis Street), to address a growing issue of long-term/employee parking in this area. Staff would recommend instituting 2-hour, 8-6, M-S parking restrictions in this area at this time, with monitoring over the next several months to determine the impacts of the change.

#### Pathway and Street Lighting:

Licence Agreement design requirements include incorporating CEPTD principles in lighting the cycle track – there was no reference to on-street lighting in the Licence Agreement. The CRD project team retained an electrical consultant to assess lighting conditions on both Dallas Road, and the proposed cycle track.

Pathway lighting: Staff recommended applying the CEPTD principles to the two sections of cycle track that go through warranted areas, with decreased visibility, along the wooded areas within Beacon Hill Park (Dallas/Douglas, and near Dallas/Circle Drive). The proposed light fixture would be a 5m tall lamp standard, consistent with units currently installed throughout Beacon Hill Park.

Street Lighting: There is currently no system of street lighting installed on Dallas Road between Douglas Street and Cook Street (only a single solar lamp standard at the mid-block crosswalk south of the Pavilion). Providing street lighting levels consistent with the remainder of Dallas Road between Ogden Point and Clover Point would enhance safety and visibility of vulnerable road and pathway users, and would require approximately 25 lamp standards (9m tall). The lamp standards would be installed on the south side of Dallas Road, and would utilize LED lighting at the appropriate wattage/design/temperature to minimize area light pollution.

There was no clear consensus from the public on the issue of lighting - community input varied from support (personal safety concerns) to opposition (dark sky/aesthetic concerns for the Beacon Hill Park frontage).

Staff recommend the project include CEPTD-specific lighting on the two sections of the proposed cycle track through wooded areas within Beacon Hill Park, and that street lighting be provided on Dallas Road between Douglas Street and Cook Street.

#### **4) Park and Natural Capital Impacts:**

##### **a) Licence Requirements:**

Licence Agreement requirements relative to park/natural capital impacts were specific to plaza and pathway areas, green space, and signing/wayfinding at the Clover Point Pump Station, and are captured previously in this report.

**b) Community Feedback:**

Community feedback relative to other green infrastructure included the retention of mature trees, limiting impacts to natural ecosystems, and comments about off-leash areas/conflicts between user groups, and fencing.

**c) CRD Design/Analysis/Proposal:**

The 50% Design Proposal includes a combination of split rail fencing and low plantings, to provide separation at key locations along the Cycle Track. Final details will be confirmed at the 90% stage.

**d) City Staff Commentary:**

Trees

The Capital Regional District has retained the services of an ISA Certified Arborist to assess potential impacts and to assist in the field during construction as required. The arborist report confirmed that routing the cycle track through the two wooded areas in Beacon Hill Park, will impact several smaller trees and native shrubs, but enable the retention of the larger, mature boulevard trees along Dallas Road.

There are 104 trees along the length of the project site. A total of 21 trees are proposed for removal, including 4 to be relocated, and 10 that were identified as needing further assessment during construction.

Trees proposed for removal include 17 small trees, located within the two wooded areas in Beacon Hill Park, along with a large Elm on the Dallas Road frontage of 640 Paddon Avenue; a Hedge Maple at 628 Dallas Road, and one large Horse Chestnut in poor condition within the wooded area south of Douglas Street.

The CRD is also proposing removal of a large Horse Chestnut tree located in the boulevard near Harrison Yacht Pond. According to the arborist report, retention of this tree is unlikely to be successful due to the construction impact.

The four trees proposed for relocation are trees that were recently planted on the boulevard near the Harrison Yacht Pond.

Parks staff also noted several other construction-related risks to be mitigated along the corridor, relating to potential root damage and tree replacement plans. These items will be reviewed and assessed with the CRD project team, as they proceed to complete the 90% design drawings.

Fencing

The Licence Agreement requires the project install barrier fencing between the off-leash dog park and the cycle track. In addition, the CRD project team propose providing separation/barrier at key access points, using a combination of split-rail fencing and low plantings. A conceptual plan was shown in the CRD presentation – detailed designs will be finalized as part of the 90% design development.

**5) Niagara Street Engineering Works**

Since March 5<sup>th</sup>, crews have been using Niagara Street between Dallas Road and South Turner Street to assemble the effluent pipe that will be pulled through the drill passage for the under-harbour crossing. Traffic and parking impacts on Niagara Street are being managed by the contractor assembling the pipe, who continue to liaise with residents and other affected road users. The pipe pull process is anticipated to be complete by mid-April, at which time Niagara Street will be re-opened for public use.

**6) Other Waste Water Treatment Activities and Works**

The Residual Solids Conveyance Line is part of the Wastewater Treatment Project. It includes two pipes along with four or five small pump stations. Though the design is not complete it is anticipated that a common trench will be used along the majority of the route. Within the City of Victoria, the proposed alignment is along Dominion Road/Hereward Road in Victoria West.

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.

In 2014, alignment options for the Residual Solids Conveyance Line 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, 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.

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

The Project Team held four community information open houses in November to share the alignment for the Residual Solids Conveyance Line, and feedback received is being considered, along with other technical and financial considerations, in finalizing the design.

City staff will meet in the coming weeks with the CRD project team to discuss the residuals conveyance design and plan, before it is finalized. The public has raised issues during public consultation, which include construction impacts, pedestrian amenities, and potential opportunities for improved traffic operations and management. Staff will report back to Council with final design and considerations prior to construction. Construction is planned to begin in July 2018, and is expected to take approximately two years to complete.

## **7) First Nations Consultation and Feedback**

The Licence Agreement for the Clover Point Pump Station and the Dallas Road Forcemain included requirements that provide a framework for engagement with the Songhees First Nation and Esquimalt First Nation, as well as opportunities to incorporate public art, in consultation with the City's artist and aboriginal artist-in-residence. To date, this has included design workshops, First Nations/CRD WTP liaison meetings, and engagement with the City's artist and aboriginal artist-in-residence. At this time, themes and ideas are being brought forward for discussion and consideration, and the CRD, the Songhees and Esquimalt Liaisons, and the City of Victoria will continue working to incorporate various features, including public art, to share the story of the Lekwungen people in a respectful and appropriate manner.

## **OPTIONS AND IMPACTS**

**1. Adopt the 50% design and proceed to 90% design and tender process (recommended):** Council could endorse the 50% design, with noted additions/amendments presented in this report, enabling the CRD to proceed to the 90% design stage. CRD would host a 90% Design Workshop with City staff and First Nation's representation, followed by final acceptance by City staff of the Clover Point Pump Station Building, the Public Realm Improvements, Dallas Road Forcemain alignment and design, and the Cycle Track alignment. The CRD would also provide the Director of Engineering with a public engagement plan prior to commencing construction.

Finally, the CRD would host a Community Information Open House to provide project information, present the final designs, and answer questions about the project, prior to commencing construction later this year.

**2. Amend the 50% design in accordance with Council direction, and proceed to 90% design and tender:** Council could endorse the 50% design, with additional changes beyond those noted in this report. Any further changes are required to remain within the terms of the Licence Agreements. The CRD would then proceed to the 90% design stage. CRD would host a 90% Design Workshop with City staff and First Nation's representation, followed by final acceptance by City staff of the Clover Point Pump Station Building, the Public Realm Improvements, Dallas Road Forcemain alignment and design, and the Cycle Track alignment. The CRD would provide a public engagement plan, and host a Community Information Open House, as noted above.

**3. Amend the 50% design and report back to Council to review before proceeding to 90% design and tender (not recommended):** Council may choose to amend the design, with a report back to Council to review any changes prior to the CRD proceeding to the 90% design stage. Any further changes are required to remain within the terms of the Licence Agreements. A process for reporting back to Council following the 50% design presentation was not contemplated in the Licence Agreement. To meet Federal Wastewater System Effluent Regulations under the Fisheries, Act, the proposed facilities are to be upgraded prior to December 31, 2020. Delays in the design and tender process may impact the CRD's ability to meet this timeline.

## RECOMMENDATION

Staff recommend that Council:

1. Accept the CRD's 50% project design as presented, with the following additions/amendments:
  - Endorse parking configuration number two, which includes 4 curb extensions for the section of Dallas Road between Dock Street and Lewis Street, as it balances the retention of on-street parking with increased/improved pedestrian connections to the James Bay neighbourhood.
  - Endorse three new marked crosswalks be installed, at Dallas/Boyd, Dallas/Government, and Dallas/Linden
  - Endorse the proposed cycle track lighting configuration and the CRD project installation of street lighting along Dallas Road, from Douglas Street to Cook Street.
2. Direct staff to work with the CRD Project Team to finalize all remaining issues identified in this report, at the 90% stage.

### *2015 – 2018 Strategic Plan*

Objective 9: Complete a Multi-Modal and Active Transportation Network: Substantial increase in the number of trips by bicycles, with the completion of a skeletal cycling network.

Objective 11: Steward Water Systems and Waste Streams Responsibly: A sewage treatment plant is under construction.

### *Accessibility Impact Statement*

The project incorporates accessibility features that will improve access to waterfront pedestrian walkways, areas of waterfront angle parking, and viewing plazas/walkways at Clover Point. In addition, new crosswalks proposed for the project will improve waterfront access to pedestrians in adjacent neighbourhoods.

Staff will present the updated 50% design drawings to the City's Active Transportation Advisory Committee, and the Accessibility Working Group, for feedback and input, as the design progresses to 90%.

### *Impacts to Financial Plan*

There is no immediate impact to the Financial Plan. Future capital budget requests for pathway extensions at Clover Point may be considered in the 2019 budget process. Future operating budget for the maintenance of the public washrooms at Clover Point will be requested, as the one-time \$75,000 CRD allocation is expended.

### *Official Community Plan Consistency Statement*

Infrastructure: Goal 11(C) - Efficient and effective liquid waste management protects human health and the natural environment and makes use of resource potential.

Broad Objective 11 (e) - that waste water is managed to safeguard public health and to protect the marine environment.

## CONCLUSIONS


The CRD Project Team has progressed designs for the Clover Point Pump Station Building exterior and Public Realm improvements, and the Clover Forcemain and Cycle Track alignment to the 50% stage, in accordance

with the Licence Agreements between the CRD and the City of Victoria. Staff support the proposed design, with the noted additions/amendments presented in this report. To meet the December 31, 2020 deadline to meeting federal regulations regarding effluent quality performance standards, staff support the CRD proceeding to the 90% design stage at this time, followed by workshops, final City staff approvals, and open houses prior to construction, as per the Licence Agreements.

Respectfully submitted,

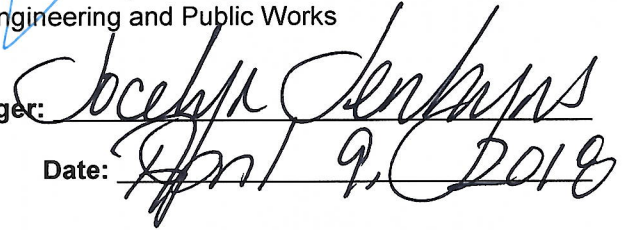


Brad Dellebuur, Manager  
Transportation



Fraser Work, Director  
Engineering and Public Works

Report accepted and recommended by the City Manager:



Date:

Annex A: Project Limits/City of Victoria  
Annex B: Forcemain Alignment  
Annex C: Parking Assessment