GREATER VANCOUVER SEWERAGE AND DRAINAGE DISTRICT (GVS&DD)
BOARD OF DIRECTORS

REGULAR BOARD MEETING
Friday, September 28, 2018
9:00 A.M.
28th Floor Boardroom, 4730 Kingsway, Burnaby, British Columbia

Membership and Votes

AGENDA

A. ADOPTION OF THE AGENDA

1. September 28, 2018 Regular Meeting Agenda
    That the GVS&DD Board adopt the agenda for its regular meeting scheduled for
    September 28, 2018 as circulated.

B. ADOPTION OF THE MINUTES

1. July 27, 2018 Regular Meeting Minutes
    That the GVS&DD Board adopt the minutes for its regular meeting held July 27, 2018
    as circulated.

C. DELEGATIONS

D. INVITED PRESENTATIONS

E. CONSENT AGENDA
    Note: Directors may adopt in one motion all recommendations appearing on the Consent
    Agenda or, prior to the vote, request an item be removed from the Consent Agenda for debate
    or discussion, voting in opposition to a recommendation, or declaring a conflict of interest
    with an item.

1. UTILITIES COMMITTEE REPORTS

1.1 Pavement Restoration for Sewer and Water Main Installations Policy
    That the GVS&DD Board approve the Pavement Restoration for Sewer and Water Main
    Installations Policy as presented in the report dated August 24, 2018, titled
    “Pavement Restoration for Sewer and Water Main Installations Policy”.

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1 Note: Recommendation is shown under each item, where applicable. All Directors vote unless otherwise noted.
1.2 **Northwest Langley Wastewater Treatment Project – Engagement Results**
That the GVS&DD Board receive for information the report dated September 7, 2018 titled “Northwest Langley Wastewater Treatment Project – Engagement Results”.

1.3 **Award of a Contract Resulting from Request for Proposal (RFP) No. 18-189: Project Management & Technical Services for Northwest Langley Wastewater Treatment Plant Project**
That the GVS&DD Board authorize:

a) award of a contract in the amount of up to $4,890,502 (exclusive of taxes) to Opus International Consultants (Canada) Ltd. for Project Management and Technical Services resulting from RFP No. 18-189: Northwest Langley Wastewater Treatment Project, Project Management and Technical Services; and

b) the Commissioner and the Corporate Officer to execute the contract.

1.4 **Amend Construction Contract from Tender No. 15-021 and Construction Engineering Service Contract from RFP No. 12-016 for Iona Island Wastewater Treatment Plant Solids Handling Upgrade**
That the GVS&DD Board:

a) amend construction contract (ITT No. 15-021) with Maple Reinders Inc. to include an additional $3,950,000 (exclusive of taxes) for the Iona Island Wastewater Treatment Plant Solids Handling Upgrade Project – Digester Mixing;

b) amend construction engineering services contract (RFP No. 12-016) with CH2M Hill Canada Limited to include an additional $1,600,000 (exclusive of taxes) for the Iona Island Wastewater Treatment Plant Solids Handling Upgrade Project; and

c) authorize the Commissioner and the Corporate Officer to execute the contract amendments.

That the GVS&DD Board request the Minister of Environment & Climate Change Strategy to extend the comprehensive review cycle of the *Integrated Liquid Waste and Resource Management Plan (ILWRMP)* from eight to ten years and direct staff to post notification of the request in newspapers and on the Metro Vancouver website.

2. **ZERO WASTE COMMITTEE REPORTS**

2.1 **Abandoned Waste – 2018 Waste in its Place Regional Campaign Results**
That the GVS&DD Board receive for information the report dated September 10, 2018, titled “Abandoned Waste – 2018 Waste in its Place Regional Campaign Results.”

2.2 **Update to Funding Model for Paid Recycling Services at Transfer Stations**
That the GVS&DD Board direct staff to report back with a strategy that examines the current recycling fee structure for clean wood, green waste/yard trimmings, gypsum and mattresses and that works toward achieving full cost recovery for these materials.
2.3 Reuse in Metro Vancouver
That the GVS&DD Board receive for information the report dated September 13, 2018, titled “Reuse in Metro Vancouver”.

2.4 Construction and Demolition Reuse and Recycling in Metro Vancouver
That the GVS&DD Board receive for information the report dated September 13, 2018, titled “Construction and Demolition Reuse and Recycling in Metro Vancouver”.

2.5 Extended Producer Responsibility Program Update
That the GVS&DD Board:

a) receive for information the report dated September 12, 2018, titled “Extended Producer Responsibility Program Update”; and
b) write a letter to the Ministry of Environment and Climate Change Strategy advocating for an Extended Producer Responsibility Program for mattresses.

3. FINANCE AND INTERGOVERNMENT COMMITTEE REPORTS
Note: The following items will be considered by the Intergovernment and Finance Committee on September 21, 2018. Any resulting changes to recommendations will be presented on table at the Board meeting.

3.1 Asset Management for Liquid Waste Services Policy
That the GVS&DD Board approve the Asset Management for Liquid Waste Services Policy as presented in the report dated September 13, 2018, titled “Asset Management for Liquid Waste Services Policy”.

F. ITEMS REMOVED FROM THE CONSENT AGENDA

G. REPORTS NOT INCLUDED IN CONSENT AGENDA

1. FINANCE AND INTERGOVERNMENT COMMITTEE REPORTS
Note: The following items will be considered by the Intergovernment and Finance Committee on September 21, 2018. Any resulting changes to recommendations will be presented on table at the Board meeting.

1.1 Liquid Waste Laboratory Equipment Reserve Fund Bylaw No. 316, 2018
[Recommendation a): simple weighted majority vote.] and
[Recommendation b): 2/3 weighted majority vote.]

That the GVS&DD Board:

a) give first, second and third reading to Liquid Waste Laboratory Equipment Reserve Fund Bylaw No. 316, 2018 being a bylaw to govern the Liquid Waste Laboratory Equipment Reserve; and
b) pass and finally adopt Liquid Waste Laboratory Equipment Reserve Fund Bylaw No. 316, 2018.
1.2 Liquid Waste Sustainability Innovation Reserve Fund Bylaw No. 317, 2018

[Recommendation a): simple weighted majority vote.] and
[Recommendation b): 2/3 weighted majority vote.]

That the GVS&DD Board:

a) give first, second and third reading to Liquid Waste Sustainability Innovation Reserve Fund Bylaw No. 317, 2018 being a bylaw to govern the Liquid Waste Sustainability Innovation Fund Reserve as a Statutory Reserve; and

b) pass and finally adopt Liquid Waste Sustainability Innovation Reserve Fund Bylaw No. 317, 2018.

H. MOTIONS FOR WHICH NOTICE HAS BEEN GIVEN

I. OTHER BUSINESS

J. BUSINESS ARISING FROM DELEGATIONS

K. RESOLUTION TO CLOSE MEETING

Note: The Board must state by resolution the basis under section 90 of the Community Charter on which the meeting is being closed. If a member wishes to add an item, the basis must be included below.

That the GVS&DD Board close its regular meeting scheduled for September 28, 2018 pursuant to the Community Charter provisions, Section 90 (1) (e), (g), and (i) as follows:

“90 (1) A part of a board meeting may be closed to the public if the subject matter being considered relates to or is one or more of the following:

(e) the acquisition, disposition or expropriation of land or improvements, if the board or committee considers that disclosure could reasonably be expected to harm the interests of the regional district;

(g) litigation or potential litigation affecting the regional district; and

(i) the receipt of advice that is subject to solicitor-client privilege, including communications necessary for that purpose.”

L. RISE AND REPORT (Items Released from Closed Meeting)

M. ADJOURNMENT/CONCLUSION

That the GVS&DD Board adjourn/conclude its regular meeting of September 28, 2018.
GREATER VANCOUVER SEWERAGE AND DRAINAGE DISTRICT
BOARD OF DIRECTORS

Minutes of the Regular Meeting of the Greater Vancouver Sewerage and Drainage District (GVS&DD) Board of Directors held at 10:47 a.m. on Friday, July 27, 2018 in the 28th Floor Boardroom, 4730 Kingsway, Burnaby, British Columbia.

MEMBERS PRESENT:
Port Coquitlam, Chair, Director Greg Moore
Vancouver, Vice Chair, Director Raymond Louie
Burnaby, Director Sav Dhaliwal
Burnaby, Director Colleen Jordan
Coquitlam, Director Craig Hodge
Coquitlam, Director Richard Stewart
Delta, Director Lois Jackson
Delta, Director Bruce McDonald
Electoral Area A, Director Maria Harris
Langley City, Director Rudy Storteboom
Langley Township, Director Charlie Fox
Langley Township, Director Bob Long
Maple Ridge, Director Nicole Read
New Westminster, Director Jonathan Coté
North Vancouver City, Director Darrell Mussatto
North Vancouver District, Director Richard Walton
Pitt Meadows, Director John Becker
Port Moody, Director Mike Clay
Richmond, Director Malcolm Brodie
Richmond, Director Harold Steves
Surrey, Director Bruce Hayne
Surrey, Director Linda Hepner
Surrey, Alternate Director Mary Martin for Dave Woods
Surrey, Director Barbara Steele
Surrey, Director Judy Villeneuve
Vancouver, Director Adriane Carr
Vancouver, Director Heather Deal
Vancouver, Director Kerry Jang
Vancouver, Director Andrea Reimer
Vancouver, Director Gregor Robertson
Vancouver, Director Tim Stevenson
West Vancouver, Director Michael Smith
White Rock, Director Wayne Baldwin
Commissioner Carol Mason (Non-voting member)

MEMBERS ABSENT:
Burnaby, Director Derek Corrigan
Surrey, Director Tom Gill

STAFF PRESENT:
Janis Knaupp, Legislative Services Coordinator, Board and Information Services
Chris Plagnol, Corporate Officer

A. ADOPTION OF THE AGENDA

1. July 27, 2018 Regular Meeting Agenda

It was MOVED and SECONDED
That the GVS&DD Board adopt the agenda for its regular meeting scheduled for July 27, 2018 as circulated.

CARRIED
B. ADOPTION OF THE MINUTES

1. June 22, 2018 Regular Meeting Minutes

It was MOVED and SECONDED
That the GVS&DD Board adopt the minutes for its regular meeting held June 22, 2018 as circulated.

CARRIED

C. DELEGATIONS
No items presented.

D. INVITED PRESENTATIONS
No items presented.

E. CONSENT AGENDA

It was MOVED and SECONDED
That the GVS&DD Board adopt the recommendations in the following items presented in the July 27, 2018 Consent Agenda:
1.1 Award of Contract Resulting from RFP No. 18-042: Construction of Douglas Trunk Sewer
1.2 2017 GVS&DD Environmental Management & Quality Control Annual Report
1.3 Award of Phase C1, Engineering Construction Services: RFP No. 14-230 for Installation of Gilbert Trunk Sewer No. 2 – North Section

CARRIED

The recommendations and items referred to above are as follows:

1.1 Award of Contract Resulting from RFP No. 18-042: Construction of Douglas Trunk Sewer

Report dated June 20, 2018 from Roy Moulder, Purchasing and Risk Management Division Manager, Financial Services, and Colin Meldrum, Collection Systems, Project Delivery Division Manager, Liquid Waste Services, advising the GVS&DD Board of the results of Request for Proposal No. 18-042: Construction of Douglas Trunk Sewer, and recommending that the Board award the contract in an amount of up to $13,919,884 (exclusive of taxes) to Ward and Burke Microtunnelling Ltd.

Recommendation:
That the GVS&DD Board authorize:

a) award of a contract for an amount of up to $13,919,884 (exclusive of taxes) to Ward and Burke Microtunnelling Ltd. resulting from RFP No. 18-042 for the Construction of Douglas Trunk Sewer; and

b) the Commissioner and the Corporate Officer to execute the contract.

Adopted on Consent
1.2  **2017 GVS&DD Environmental Management & Quality Control Annual Report**

**Recommendation:**
That the GVS&DD Board receive for information the report dated June 11, 2018, titled “2017 GVS&DD Environmental Management & Quality Control Annual Report”.

*Adopted on Consent*

1.3  **Award of Phase C1, Engineering Construction Services: RFP No. 14-230 for Installation of Gilbert Trunk Sewer No. 2 – North Section**
Report dated June 20, 2018 from Roy Moulder, Purchasing and Risk Management Division Manager, Financial Services, and Colin Meldrum, Collection Systems, Project Delivery Division Manager, Liquid Waste Services, seeking GVS&DD Board authorization to award Phase C1, Engineering Construction Services, in an amount of up to $1,323,390 (exclusive of taxes) to the Phases A and B consultant, AECOM Canada Ltd. (AECOM) for the Installation of Gilbert Trunk Sewer No. 2 – North Section.

**Recommendation:**
That the GVS&DD Board authorize:

a) award of Phase C1, Engineering Construction Services, for an amount of up to $1,323,390 (exclusive of taxes) to the Phase A and B consultant, AECOM Canada Ltd, for the Installation of Gilbert Trunk Sewer No. 2 - North Section; and

b) the Commissioner and the Corporate Officer to execute the required documentation.

*Adopted on Consent*

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**F. ITEMS REMOVED FROM THE CONSENT AGENDA**
No items presented.

**G. REPORTS NOT INCLUDED IN CONSENT AGENDA**
No items presented.

**H. MOTIONS FOR WHICH NOTICE HAS BEEN GIVEN**
No items presented.

**I. OTHER BUSINESS**
No items presented.

**J. BUSINESS ARISING FROM DELEGATIONS**
No items presented.
K. RESOLUTION TO CLOSE MEETING

It was MOVED and SECONDED
That the GVS&DD Board close its regular meeting scheduled for July 27, 2018 pursuant to the Community Charter provisions, Section 90 (1) (e) as follows:

“90 (1) A part of a board meeting may be closed to the public if the subject matter being considered relates to or is one or more of the following:

(e) the acquisition, disposition or expropriation of land or improvements, if the board or committee considers that disclosure could reasonably be expected to harm the interests of the regional district.”

CARRIED

L. RISE AND REPORT (Items Released from Closed Meeting)
No items presented.

M. ADJOURNMENT/CONCLUSION

It was MOVED and SECONDED
That the GVS&DD Board adjourn its regular meeting of July 27, 2018.

CARRIED
(Time: 10:47 a.m.)

CERTIFIED CORRECT

________________________________________  __________________________________________
Chris Plagnol, Corporate Officer           Greg Moore, Chair
To: Utilities Committee

From: Mark Ferguson, Director, Project Delivery, Liquid Waste Services

Goran Oljaca, Director, Engineering & Construction, Water Services

Date: August 24, 2018

Meeting Date: September 20, 2018

Subject: Pavement Restoration for Sewer and Water Main Installations Policy

RECOMMENDATION

That the GVS&DD Board approve the Pavement Restoration for Sewer and Water Main Installations Policy as presented in the report dated August 24, 2018, titled “Pavement Restoration for Sewer and Water Main Installations Policy”.

That the GVWD Board approve the Pavement Restoration for Sewer and Water Main Installations Policy as presented in the report dated August 24, 2018, titled “Pavement Restoration for Sewer and Water Main Installations Policy”.

PURPOSE

To obtain GVS&DD and GVWD Board approval of an updated policy which establishes new standards for pavement restoration when municipal roads are impacted by GVS&DD and GVWD sewer and water main installations.

BACKGROUND

On July 31, 1992, the Boards of the Greater Vancouver Sewerage and Drainage District (GVS&DD) and Greater Vancouver Water District (GVWD) each endorsed separate resolutions to confirm the continued practice of restoring municipal roads disturbed by sewer and water installations in substantial conformance with the standards set out in the master municipal specifications:

“That the Greater Vancouver Sewerage and Drainage District continue its present practice of restoring municipal roads disturbed by sewer and water installations in substantial conformance with the standards set out in the Master Municipal specifications of the Association of Professional Engineers and Geoscientists of the Province of British Columbia.”

and;

“That the Greater Vancouver Water District continue its present practice of restoring municipal roads disturbed by sewer and water installations in substantial conformance with the standards set out in the Master Municipal specifications of the Association of Professional Engineers and Geoscientists of the Province of British Columbia.”

The practice approved by the respective Boards in 1992 has provided consistent policy direction to Metro Vancouver over the years when undertaking sewer and water main projects. The practice followed by Metro Vancouver has been to restore municipal roads, which have been disturbed by construction, by paving the width of the trench plus 200mm from the broken edge of the trench in
accordance with the Master Municipal Construction Documents (MMCD) Drawing G5, Pavement Restoration.

In recent years, requests for the GVS&DD and GVWD to undertake additional paving which exceeds the requirements set out in MMCD and Board policy have been increasing.

**PAVEMENT RESTORATION POLICY**

The *Greater Vancouver Sewerage and Drainage District Act* and the *Greater Vancouver Water District Act* oblige the Corporation to repair or restore roads impacted by construction. However, the Acts do not set out specific parameters with respect to restoration requirements.

The practice over many years has been to follow the Master Municipal specifications of the Association of Professional Engineers and Geoscientists of BC, Master Municipal Construction Documents (MMCD) Drawing G5, Pavement Restoration. As noted above, this practice has been to restore municipal roads which have been disturbed by construction by paving the trench width plus 200mm from the broken edge of the trench.

This existing GVS&DD and GVWD pavement restoration practice has had limitations over the years due to the fact that it does not include details such as the extent of paving when the edges of the trench repair are located in a wheel path or the amount of asphalt orphaned on the edge of the road. Staff have reviewed the MMCD standards, the current Metro Vancouver practice and the standards being applied by municipalities and regional authorities and have prepared a draft policy for consideration titled *Pavement Restoration for Sewer and Water Main Installations Policy*, with an accompanying Pavement Restoration sketch, that captures the evolving changes in pavement restoration.

The draft Board Policy updates the previous Board direction by including additional details on paving standards and clearly identifies the amount of restoration to be completed as part of regional utility projects. Table 1 below summarizes the comparison of existing standards and new additions of road restoration standards.

<table>
<thead>
<tr>
<th>Road Restoration Standard Authority</th>
<th>General</th>
<th>Temporary Asphalt Thickness</th>
<th>Permanent Asphalt Thickness</th>
<th>Asphalt Restoration Extension from Trench Line</th>
<th>Asphalt Restoration when in Wheel Path</th>
<th>Asphalt Restoration when Trench Line is adjacent to Curb Line</th>
</tr>
</thead>
<tbody>
<tr>
<td>MMCD (Section 31 23 01)</td>
<td>Restore disturbed surfaces to prior condition</td>
<td>50 mm</td>
<td>75 mm – 150 mm (match existing thickness)</td>
<td>200 mm back from edge of trench line</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Existing GVS&amp;DD and GVWD Policy</td>
<td>Restore disturbed surfaces to</td>
<td>50 mm</td>
<td>75 mm – 150 mm (match existing thickness)</td>
<td>200 mm back from edge of trench line</td>
<td>N/A</td>
<td>Extend to curb line when repair is within 0.75 m</td>
</tr>
</tbody>
</table>

Greater Vancouver Sewerage & Drainage
Under the proposed policy, the GVS&DD and GVWD will establish a consistent practice of undertaking paving to the curb line or lane line as part of road restoration works, including extending paving to the curb line when a repair is within 1.2 m.

REAC AND RAAC COMMENTS
The Regional Engineers Advisory Committee (REAC) and Regional Administrative Advisory Committee (RAAC) considered and endorsed the Pavement Restoration for Sewer and Water Main Installations Policy at their meetings on July 6 and 19, 2018, respectively. Committee members provided the following comments on the Policy:

- Full lane-width paving should be the default (versus extending a cut line to a lane centre line)
- Increase upper bound of permanent asphalt thickness from 150mm to 190mm
- Match new asphalt type with existing

The attached Policy incorporates the input from REAC and RAAC.

ALTERNATIVES
1. That the GVS&DD Board approve the Pavement Restoration for Sewer and Water Main Installations Policy as presented in the report dated August 24, 2018, titled “Pavement Restoration for Sewer and Water Main Installations Policy”.

Greater Vancouver Sewerage & Drainage
That the GVWD Board approve the *Pavement Restoration for Sewer and Water Main Installations Policy* as presented in the report dated August 24, 2018, titled “Pavement Restoration for Sewer and Water Main Installations Policy”.

2. That the Utilities Committee receive this report for information and provide alternate direction to staff.

FINANCIAL IMPLICATIONS

If the policy is approved as presented with the additional restoration requirements, it is anticipated that the annual costs for GVS&DD and GVWD linear projects will increase by approximately $600,000 and $1,500,000, respectively. This represents project cost increases of 1.1% and 2.4% for each District, respectively.

SUMMARY / CONCLUSION

The GVS&DD and GVWD Acts obligate the Corporation to repair or restore streets impacted by construction. In July 1992 the Board adopted a Pavement Restoration Policy which is still in place and provides general direction and consistency for Metro Vancouver projects but does not address specific restoration details. Staff have prepared a policy for consideration titled *Pavement Restoration for Sewer and Water Main Installations Policy* which includes updated standards that are consistent with the Master Municipal Construction Documents, standard industry restoration practices, and is endorsed by REAC and RAAC.

It is recommended the GVS&DD and GVWD Boards approve the *Pavement Restoration for Sewer and Water Main Installations Policy* as presented under alternative one.

Attachment

1. *Pavement Restoration for Sewer and Water Main Installations Policy*
PAVEMENT RESTORATION FOR SEWER AND WATER MAIN INSTALLATIONS

Effective Date:
Approved by: GVS&DD and GVWD Boards

PURPOSE
To establish standards and provide consistency for pavement restoration when municipal roads are impacted and disturbed by Greater Vancouver Sewerage and Drainage District (GVS&DD) sewer main installation projects and Greater Vancouver Water District (GVWD) water main installation projects.

This policy applies to regional sewer and water main installations within the paved surface of municipal roadways of affected GVS&DD and GVWD members.

DEFINITIONS
“Corporation” means either the Greater Vancouver Sewerage and Drainage District incorporated under the Greater Vancouver Sewerage and Drainage District Act, or the Greater Vancouver Water District incorporated under the Greater Vancouver Water District Act.

POLICY
The Greater Vancouver Sewerage and Drainage District Act and the Greater Vancouver Water District Act oblige the Corporation to repair or restore roads which are impacted by sewer and water main installation projects. Applicable sections of the GVS&DD Act and GVWD Act are as follows:

GVS&DD Act – Section 27(2)

Whenever the Corporation shall dig up any street, it shall, so far as practicable, restore the same to as good a condition as the same was in before such digging began; and the Corporation shall at all times indemnify and save harmless the several municipalities within which such streets are situated against all damage which may be recovered against them respectively by reason of anything done or omitted by the Corporation, and shall reimburse them for all expenses which they may incur by reason of any defect or want of repair of any street caused by the construction of any of the sewers, drains, or other works, or by the maintaining or repairing of the same.

GVWD Act – Section 35

In carrying out the installation, construction, alteration, or repair of any of the works or system, or any part thereof, pursuant to any of the powers hereinbefore conferred, the Corporation shall make reasonable satisfaction to any municipality or owner of property or occupier of any such lands and property so used, enjoyed, or entered upon for any damage done or suffered thereby, and the Expropriation Act applies.
This policy provides specific parameters on restoration standards that the GVS&DD and GVWD will follow when undertaking projects that impact municipal roads. The standards set out in this policy are intended to ensure that restoration works meet a consistent industry standard for all member jurisdictions.

**PAVEMENT RESTORATION STANDARD**

Paved surfaces of municipal roadways impacted by GVS&DD and GVWD regional sewer and water main installations shall be restored in accordance with the Master Municipal Construction Documents (MMCD) and standard industry restoration practices as shown in the table below and in more detail on the attached GVS&DD and GVWD drawing, *S-3001 C-0068 Section Pavement Restoration*.

**Road Restoration Standards**

<table>
<thead>
<tr>
<th>Road Restoration Standard Authority</th>
<th>General</th>
<th>Temporary Asphalt Thickness</th>
<th>Permanent Asphalt Thickness</th>
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<td>75 mm – 150 mm (match existing thickness)</td>
<td>200 mm back from edge of trench line</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>GVS&amp;DD and GVWD Standard</td>
<td>Restore disturbed surfaces to prior condition</td>
<td>50 mm</td>
<td>75 mm – 190 mm (match existing thickness)</td>
<td>200 mm back from edge of trench line</td>
<td>Extend repair to curb line or lane line (grind &amp; overlay extension)</td>
<td>Extend to curb line when repair is within 1.2 m (grind &amp; overlay extension)</td>
</tr>
</tbody>
</table>

The GVS&DD and GVWD will establish a consistent practice of undertaking paving to the curb line or lane line, as part of road restoration works, including extending paving to the curb line when a repair is within 1.2 m.

In addition to the standard set out above, under special circumstances, such as concrete pavement or pavement that is less than 5 years old, pavement restoration will be addressed on a project specific basis.

**Attachment**

1. Engineering Standards – Section Pavement Restoration (District File S-3001; Document Code C-0068)
PAVEMENT RESTORATION

NOTES:
1. EXTEND THE WIDTH OF THE PERMANENT REPAIR TO THE CURB LINE OR INDIVIDUAL LANE LINE IF THE EDGE OF THE REPAIR WOULD BE LOCATED IN THE WHEEL PATH FOR TRAVELLING VEHICLES.
2. EXTEND THE WIDTH OF THE PERMANENT REPAIR TO THE CURB LINE IF THE EDGE OF THE REPAIR WOULD BE LOCATED WITHIN 1.2 METRE OF THE CURB LINE.
3. MATERIAL THICKNESS AND SPECIFICATIONS TO BE CONFIRMED BY ENGINEER OF RECORD.
   USE ASPHALT MIX DESIGN AS RECOMMENDED BY MEMBER JURISDICTION.
4. WHERE THICKNESS OF EXISTING ASPHALT IS SUFFICIENT, GRIND, TACK COAT AND OVERLAY.
To: Utilities Committee

From: Tom Sadleir, Acting Public Involvement Program Manager, Liquid Waste Services

Date: September 7, 2018  Meeting Date: September 20, 2018

Subject: Northwest Langley Wastewater Treatment Project – Engagement Results

RECOMMENDATION
That the GVS&DD Board receive for information the report dated September 7, 2018 titled “Northwest Langley Wastewater Treatment Project – Engagement Results”.

PURPOSE
To communicate the results of public and First Nations engagement on the Northwest Langley Wastewater Treatment Project during the Project Definition Phase.

BACKGROUND
On October 27, 2017, the GVS&DD Board received a report, “Northwest Langley Wastewater Treatment Project – Project Definition Phase Update”, which outlined the public and First Nations engagement program for the project. On May 25, 2018, the GVS&DD Board endorsed tertiary treatment (advanced secondary plus disk filters) to be carried forward into the Project Definition Report. The engagement results reported here will inform the Indicative Design report to be presented at the October 11, 2018 Utilities Committee meeting.

The four components of the Northwest Langley Wastewater Treatment Project are:
- Northwest Langley Wastewater Treatment Plant – on-site expansion of the plant, located in the Township of Langley, to serve 230,000 people
- Golden Ears Pump Station and Storage Tank – a new pump station and sanitary sewer overflow storage tank in Maple Ridge
- Fraser River Crossing – two new pipes under the Fraser River to carry wastewater from the new pump station in Maple Ridge to the treatment plant
- Outfall – a new outfall pipe to carry treated water from the expanded treatment plant to the Fraser River.

ENGAGEMENT ACTIVITIES AND PARTICIPATION
Community open houses, workshops and other face-to-face meetings were used to introduce the projects and solicit feedback. The following face-to-face meetings took place between June 2016 and July 2018:

<table>
<thead>
<tr>
<th>Community Open Houses (3)</th>
<th>Maple Ridge (15 participants)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Township of Langley (25 participants)</td>
</tr>
<tr>
<td></td>
<td>Barnston Island - Electoral Area A (5 participants)</td>
</tr>
</tbody>
</table>
Meetings with Member Jurisdictions - elected officials and staff (13)

- Maple Ridge (5)
- Township of Langley (4)
- Pitt Meadows (2)
- Electoral Area A – Barnston Island (2)

Meetings with First Nations (5)

- Katzie First Nation

Workshops (3)

- Katzie First Nation
- Marine users (Fraser River)
- Fraser Riverkeeper, Watershed Watch and Friends of the Katzie Slough

Plant Tours (3)

- Township of Langley council
- Katzie and Kwantlen First Nations
- Fraser Riverkeeper, Watershed Watch and Friends of the Katzie Slough

Community-to-Community Forum

- Kwantlen First Nation

The following communications tools were used to introduce the projects, notify area residents and businesses of community open houses, and solicit feedback:

- Post card delivered to over 14,000 residents and businesses (Maple Ridge, Pitt Meadows, Township of Langley, Barnston Island) and distributed to project database (160)
- Reached out via email, letter, phone and social media to: community/business associations (5), river users (29), environmental non-governmental organizations (20), agricultural associations (7)
- Notice of geotechnical investigations in the Fraser River to municipalities, Katzie First Nation and, area residents and businesses (2,000)
- Newspaper advertisements: Maple Ridge News (2), Langley Times (2)
- Letter to 16 First Nations
- Targeted Facebook posts (3,500 impressions)
- Tweets (23)
- Project webpages

**ENGAGEMENT RESULTS**

Feedback was received from municipalities, Katzie First Nation and other First Nations, residents and businesses near the projects, environmental non-governmental organizations and Fraser River users. A brief summary of engagement activities and findings is presented in Attachment 1: (Graphic Engagement Summary: “What we did and what we heard”). A full summary is provided in Attachment 2 (Northwest Langley Wastewater Treatment Project Engagement Summary: June 2016 – July 2018).

The following themes emerged during Project Definition Phase engagement:

**Water quality and treatment level**

- Concern with water quality in the Fraser River
- Concern with the impact of a much larger plant on water quality in the Fraser River
- Desire for the new plant to be designed with tertiary level of wastewater treatment
- Desire for the water released into the Fraser River to be as clean as possible
• Desire to reduce sewage overflows into the Fraser River and Katzie Slough
• Concern with potential impact of plant expansion/outfall location on drinking water and agricultural irrigation on Barnston Island
• Interest in environmental mitigation for project impacts to the Fraser River
• Desire for monitoring of the health of the Fraser River before, during and after construction of the projects

Fish, fish habitat and fishing activities
• Desire to minimize the impact of the projects on fish (salmon, eulachon and sturgeon), fish habitat and fishing activities
• Desire to minimize the impact of discharged ammonia and other contaminants on fish, fish habitat and fishing activities
• Concern that outfall location options fall within traditional Katzie First Nation fishing areas
• Concern that drift fishing nets will snag on outfall diffusers
• Concern for the safety of fish in the immediate area of the outfall

Odour
• Desire that no odour be experienced by area residents
• Desire for strong odour controls at the new treatment plant and pump station/storage tank

Geotechnical investigations in the Fraser River
• Desire that Metro Vancouver provide adequate notification (72 hours) to Fraser River users of the work planned in the river
• Desire for Metro Vancouver to work with Katzie First Nation to avoid impacts to their fishing program

Navigation on the Fraser River
• Concern that Parsons Channel outfall location could worsen existing challenges with sediment deposition and navigation
• Concern that Parsons Channel outfall location could negatively impact commercial navigation routes, log boom towing, and fishing operations

Traffic and other projects in the area
• Desire for Metro Vancouver to minimize traffic disruption during construction of the pump station and storage tank in Maple Ridge
• Desire for Metro Vancouver to schedule work in consultation with municipal projects (e.g. Township of Langley trunk sewer twinning near the treatment plant)

A complete listing of the issues raised during engagement with Metro Vancouver staff responses to those issues is provided in Attachment 2 (Northwest Langley Wastewater Treatment Project Issue-Response Table: Project Definition).

ALTERNATIVES
This is an information report. No alternatives are presented.
FINANCIAL IMPLICATIONS
The cost of engagement for the project is included in annual GVS&DD budgets.

SUMMARY / CONCLUSION
Between June 2016 and July 2018, Metro Vancouver engaged on the Northwest Langley Wastewater Treatment Project with municipalities, Katzie First Nation and other First Nations, residents and businesses near the projects, environmental non-governmental organizations and Fraser River users. Events included community open houses, workshops, meetings and plant tours. These activities were supported by a range of communication tools. Themes that emerged during engagement focused on: water quality and treatment level; fish, fish habitat and fishing activities; odour; geotechnical investigations; navigation on the Fraser River; and, traffic management.

Attachments
1. Graphic Engagement Summary: “What we did and what we heard”
2. Northwest Langley Wastewater Treatment Project Engagement Summary: June 2016 – July 2018 and Issue-Response Table: Project Definition
Engagement is a key component in planning for the Northwest Langley Wastewater Treatment Projects. It is an opportunity to connect with First Nations, residents, businesses, community groups and others who may be interested in or impacted by the projects.

What we did

- **160** organizations contacted
- **3** workshops
- **16** First Nations letters
- **3** plant tours
- **14,000** residents and businesses
- **4** newspaper advertisements
- **3,500** Facebook post impressions
- **18** meetings
- **23** Tweets

What we heard

- Protect or improve water quality in the Fraser River
- Minimize impact on fish, habitat and fishing activities
- Eliminate or reduce odour
- Minimize outfall location impacts
- Provide a pipe crossing that is resistant to earthquakes
- Minimize construction impacts on traffic
Metro Vancouver is undertaking the Northwest Langley Wastewater Treatment Projects to continue to protect public health and the environment in a growing region. The map below shows the four projects and their respective locations.

**Engagement principles**

- Build and maintain trust and positive working relationships
- Recognize community input is integral for project development
- Provide meaningful opportunities for participation
- Report back to stakeholders and demonstrate how their input has been considered

**Contact Us**

Metro Vancouver Information Centre: 604-432-6200

Email: icentre@metrovancouver.org

Website: www.metrovancouver.org

and search “Northwest Langley WWTP”
Northwest Langley Wastewater Treatment Projects
Engagement Summary
(June 2016 – July 2018)

July 23, 2018

Greater Vancouver Sewerage & Drainage
1. OVERVIEW

Report Purpose
This report provides a summary of engagement activities and findings for the Northwest Langley Wastewater Treatment Projects, from June 2016 – July 2018.

Project Description
The Northwest Langley Wastewater Treatment Plant, which currently serves 30,000 people in Langley, will be expanded on the same site to serve 230,000 people, including residents and businesses in Maple Ridge and Pitt Meadows across the Fraser River. Several other projects will support the treatment plant expansion. Eventually the plant will be expanded serve 700,000 people.

Untreated wastewater from Maple Ridge and Pitt Meadows currently flows to the Annacis Island Wastewater Treatment Plant. To divert the flows to Northwest Langley Wastewater Treatment Plant, a new pump station is required north of the Fraser River, along with two pipes under the Fraser River connecting the pump station in Maple Ridge to the treatment plant. A new storage tank will temporarily store wastewater to reduce or eliminate overflows during storms.

The projects are:

Golden Ears Pump Station and Storage Tank: a new pump station and storage tank in Maple Ridge near Golden Ears Way and 113B Avenue.

Fraser River Crossing: two new pipes under the Fraser River to carry wastewater from the new pump station in Maple Ridge to the treatment plant in the Township of Langley.

Northwest Langley Wastewater Treatment Plant Expansion: expansion of the existing wastewater treatment plant in the Township of Langley.

Outfall Pipe: a new outfall pipe to carry treated water from the plant to the Fraser River.

Figure 1: Overview of Projects
2. **ENGAGEMENT PROGRAM**

**Interest Holders**
The Northwest Langley Wastewater Treatment Projects are a series of interconnected projects covering a large geographical area near the Golden Ears Bridge on both sides of the Fraser River. There are numerous potentially impacted and interested groups with a range of interests in one or more of the projects:

<table>
<thead>
<tr>
<th>Impacted and Interested Groups</th>
<th>Projects (key areas of interest)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Member Jurisdictions</strong></td>
<td></td>
</tr>
</tbody>
</table>
| City of Maple Ridge                                   | • Pump Station/Storage Tank (located in a high visibility location in Maple Ridge – construction impacts, aesthetics)  
| Maple Ridge residents and businesses                  | • Treatment Plant (across the river – odour)                                                  
|                                                       | • River Crossing (land portion and tunnel portal located in Maple Ridge – construction impacts) |
| **Township of Langley**                               |                                                                                                |
| Langley residents and businesses                      | • Treatment Plant (odour, construction impacts, access to Northwest Langley Industrial Area)  |
| **City of Pitt Meadows**                              |                                                                                                |
| Pitt Meadows residents and businesses                 | • Pump Station/Storage Tank (located in a high visibility location close to Pitt Meadows – construction impacts, aesthetics)  
|                                                       | • Treatment Plant (across the river, odour)                                                  |
| **Electoral Area A (Barnston Island)**                |                                                                                                |
| Barnston Island residents and businesses              | • Outfall (Fraser River water quality)                                                         
|                                                       | • Treatment Plant (odour)                                                                     |
| **First Nations (see Appendix A for full list)**      |                                                                                                |
| Katzie First Nation                                   | • Three reserves (IR #1, IR #2, IR #3) in close proximity to projects                         
|                                                       | • Traditional fishing areas in Fraser River                                                    |
|                                                       | • Outfall (location, Fraser River water quality, impact on fish, fish habitat and fishing)     |
|                                                       | • Treatment Plant (treatment level, odour)                                                     |
| Kwantlen First Nation and 14 other First Nations/Tribal Councils | • Traditional fishing areas in Fraser River                                                 |
|                                                       | • Outfall (Fraser River water quality, impact on fish, fish habitat and fishing)               |
|                                                       | • Treatment Plant (treatment level, Fraser River water quality)                                |
| **Environmental Non-Governmental Organizations (see Appendix A for full list)** |                                                                                           |
| Groups with a Fraser River/waterways focus            | • Outfall (Fraser River water quality, impact on fish, fish habitat and fishing)               |
| Groups with a fisheries focus                         | • Treatment Plant (treatment level, Fraser River water quality)                                |
| **Fraser River Users (see Appendix A for full list)**  |                                                                                                |
| Commercial marine operators                           | • Outfall location (potential impact to commercial marine operations)                         |
| Commercial and recreational fishing license holders    | • Treatment Plant (treatment level, Fraser River water quality, odour)                          |
| Foreshore leaseholders and Water lot license holders   |                                                                                                |
| **Agriculture (see Appendix A for full list)**        |                                                                                                |
| Barnston Island farms                                 | • Outfall location (potential impact to agricultural operations who draw water from the Fraser River) |
| Agricultural associations in the project area and downstream | • Treatment Plant (treatment level, Fraser River water quality, odour)                         |
3. ACTIVITIES AND PARTICIPATION

Given the many potentially impacted or interested groups and the range of their possible interests, Metro Vancouver provided a range of forums to discuss the project and get feedback. Community open houses, workshops and other face-to-face meetings were used to introduce the projects and solicit feedback. These events were supported using a variety of communications tools.

The following face-to-face meetings took place June 2016 to July 2018.

Community Open Houses (3)
- Maple Ridge (15 participants)
- Township of Langley (25 participants)
- Barnston Island - Electoral Area A (5 participants – of 40 island residents)

Meetings with Member Jurisdictions - elected officials and staff (13)
- Maple Ridge (5)
- Township of Langley (4)
- Pitt Meadows (2)
- Electoral Area A – Barnston Island (2)

Meetings with First Nations (5)
- Katzie First Nation

Community-to-Community Forum (1)
- Kwantlen First Nation

Workshops (3)
- Katzie First Nation
- Fraser River users
- Fraser Riverkeeper, Watershed Watch and Friends of the Katzie Slough

Plant Tours (3)
- Township of Langley council
- Katzie and Kwantlen First Nations
- Fraser Riverkeeper, Watershed Watch and Friends of the Katzie Slough

Additional details on these face-to-face meetings and the feedback received can be found in Section 4: Feedback.

The following communications tools were used to introduce the projects, notify area residents and businesses of community open houses, and solicit feedback:
- Post card delivered to over 14,000 residents and businesses (Maple Ridge, Pitt Meadows, Township of Langley, Barnston Island)
- Post card distributed to project database (160)
- Reached out via email, letter, phone, social media to: community/business associations (5), river users (29), environmental non-governmental organizations (20), agricultural associations (7)
- Notice of geotechnical investigations in the Fraser River to marine users, Katzie First Nation and residences and businesses (2,000) within 500 metres of the work
- Newspaper advertisements: Maple Ridge News (2), Langley Times (2)
- Letter to 16 First Nations

Greater Vancouver Sewerage & Drainage
• Targeted Facebook posts (3,500 impressions)
• Tweets (23)
• Project webpages, here.

4. FEEDBACK

Feedback was collected through meeting notes, open house feedback forms and correspondence.

Member Jurisdictions

City of Maple Ridge

<table>
<thead>
<tr>
<th>Date</th>
<th>Event Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>January 4, 2017</td>
<td>Meeting with Maple Ridge staff to introduce project and identify issues</td>
</tr>
<tr>
<td>March 13, 2017</td>
<td>Meeting with Maple Ridge senior staff to discuss pump station/storage tank location options</td>
</tr>
<tr>
<td>April 6, 2017</td>
<td>Meeting with Maple Ridge senior staff to discuss pump station/storage tank location</td>
</tr>
<tr>
<td>May 2, 2017</td>
<td>Presentation to Maple Ridge Council Workshop to introduce projects and identify issues</td>
</tr>
<tr>
<td>June 27, 2017</td>
<td>Meeting with Maple Ridge and Pitt Meadows communications and planning staff to present consultation and communications strategy</td>
</tr>
</tbody>
</table>

Feedback received:
• Concern with the possible loss of industrial land to develop
• Preference for situating the storage tank and pump station on the existing Metro Vancouver site near the Golden Ears Bridge
• Metro Vancouver must employ strong odour control at the pump station/storage tank and the new treatment plant
• Support for a strong engagement program to keep residents informed and involved

Township of Langley

<table>
<thead>
<tr>
<th>Date</th>
<th>Event Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>October 5, 2016</td>
<td>Township of Langley Council tour of treatment plant</td>
</tr>
<tr>
<td>March 20, 2017</td>
<td>Meeting with Township of Langley senior staff to introduce projects and identify issues</td>
</tr>
<tr>
<td>October 26, 2017</td>
<td>Meeting with Township of Langley staff to provide project update and confirm permits required</td>
</tr>
<tr>
<td>January 23, 2018</td>
<td>Meeting with Township of Langley staff to provide project update and discuss permits, sewer connections and flood level requirements</td>
</tr>
<tr>
<td>May 27, 2018</td>
<td>Meeting with Township of Langley staff to provide project update and discuss permits</td>
</tr>
</tbody>
</table>

Feedback received:
• Requested a traffic management plan for treatment plant construction
• Consider and address treatment plant odour complaints from local residents
• Consider archaeological issues in the area of the treatment plant
• Schedule construction around eagle nesting windows
- Schedule must work with Township’s trunk sewer twinning in the area of the treatment plant, with construction set to begin in summer 2018
- Concern with potential impacts to the existing dike system
- Interest in partnering to develop green space near the treatment plant site

City of Pitt Meadows

<table>
<thead>
<tr>
<th>Date</th>
<th>Event Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>March 13, 2017</td>
<td>Meeting with Pitt Meadows senior staff to introduce projects and identify interests</td>
</tr>
<tr>
<td>June 27, 2017</td>
<td>Meeting with Maple Ridge and Pitt Meadows communications and planning staff to present consultation and communications strategy</td>
</tr>
</tbody>
</table>

Feedback received:
- Minimize traffic disruption during construction of pump station/storage tank
- Interest in outfall location
- Minimize construction noise and vibration
- Minimize odour experienced by residents and businesses (complaints are currently received at the City from residents)
- Reduce sewage overflows into the Katzie Slough

Electoral Area A (Barnston Island)

<table>
<thead>
<tr>
<th>Date</th>
<th>Event Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>December 18, 2017</td>
<td>Meeting with Electoral Area A planners to introduce projects and identify land uses on Barnston Island and related interests</td>
</tr>
<tr>
<td>February 7, 2018</td>
<td>Meeting with Electoral Area A Director Maria Harris, to introduce projects, identify interests, and share information materials planned for February 21, 2018 Community Open House on Barnston Island</td>
</tr>
</tbody>
</table>

Feedback received:
- Barnston Island residents are interested in sanitary sewer service
- Concern with the impact of a much larger plant on water quality in the Fraser River, in particular with the outfall so close to Barnston
- Residents will expect the same odour control standard set by the new North Shore plant
- Potential impact of plant expansion/outfall location on drinking water from wells
- Potential impact of plant expansion/outfall location on agricultural operations (water drawn from river and wells for irrigation)
- Provide information to residents on what construction will look and sound like (for the river crossing, treatment plant and outfall)
- Need to explain rationale for moving treatment of Maple Ridge and Pitt Meadows wastewater to Northwest Langley (i.e. to a more sensitive up-river location)

First Nations

In line with Metro Vancouver’s Information Sharing Process, letters were sent to 16 First Nations/Tribal Councils (see Appendix A) on July 7, 2017 introducing the projects, identifying Metro Vancouver’s lead consultant (CH2M), inviting comment and offering meetings.

Responses from First Nations were received requesting GIS files, interest in archaeological and environmental studies, seeking a referrals fee, and deferring review of the projects. Katzie First Nation provided feedback
related to the development of the Northwest Langley Wastewater Treatment Projects through face-to-face meetings with the project team.

**Meetings with Katzie First Nation**

All meetings were held with Chief and Council at the band administration office.

<table>
<thead>
<tr>
<th>Date</th>
<th>Event Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>June 23, 2016</td>
<td>Meeting to introduce the projects and identify areas of interest to the Katzie First Nation</td>
</tr>
<tr>
<td>April 4, 2017</td>
<td>Meeting to provide an update on the projects and receive feedback</td>
</tr>
<tr>
<td>October 23, 2017</td>
<td>Meeting to provide an update on the projects and receive feedback</td>
</tr>
<tr>
<td>December 12, 2017</td>
<td>Five-hour workshop to:</td>
</tr>
<tr>
<td></td>
<td>- discuss treatment level, outfall location, impact to fish and fish habitat, odour and other topics of interest to the Katzie First Nation</td>
</tr>
<tr>
<td></td>
<td>- learn more about Katzie First Nation</td>
</tr>
<tr>
<td></td>
<td>- present and solicit feedback on geotechnical exploration in the Fraser River</td>
</tr>
<tr>
<td></td>
<td>- tour Northwest Langley Wastewater Treatment Plant</td>
</tr>
<tr>
<td>April 19, 2018</td>
<td>Meeting to introduce projects to newly elected chief</td>
</tr>
<tr>
<td>July 12, 2018</td>
<td>Meeting to discuss geotechnical investigations in the Fraser River and Katzie’s fishing program</td>
</tr>
</tbody>
</table>

Feedback received:
- Concern that increased volume of wastewater will harm the Fraser River
- Design the plant with tertiary/highest level of wastewater treatment regardless of cost
- Minimize the impact of the projects on water quality in the Fraser River and fish (salmon, eulachon and sturgeon)
- Minimize the impact of discharged ammonia and other contaminants on fish, fish habitat and fishing activities
- Outfall location options all fall within traditional fishing areas
- Concern that drift fishing nets will snag on outfall diffusers
- Concern with odour from new pump station/storage tank and the expanded treatment plant
- Request for capacity funding to review project reports
- Interest in procurement opportunities including involvement in archaeological and environmental studies
- Interest in the opportunity for greenway connection
- Desire for geotechnical investigations in the Fraser River to be scheduled/sequenced to avoid Katzie fishing activities.

**Meeting with Kwantlen First Nation**

Councillor Knott joined the December 12, 2017 tour of the Northwest Langley Wastewater Treatment Plant. The project team also attended a Community-to-Community Forum with Kwantlen First Nation July 5, 2018.

Feedback received:
- Interest in environmental mitigation for project impacts to the Fraser River
Residents and businesses located near the projects

<table>
<thead>
<tr>
<th>Date</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>August/September 2017</td>
<td>Project introduction and open house notification (newspaper ads, mail drop to 14,000 residents and businesses, distribution to database, targeted Facebook posts, tweets, and project webpages)</td>
</tr>
<tr>
<td>September 26, 2017</td>
<td>Community Open House: Maple Ridge – Hammond Elementary School – to introduce projects and identify interests</td>
</tr>
<tr>
<td>September 27, 2017</td>
<td>Community Open House: Township of Langley – Gordon Greenwood Elementary School – to introduce projects and identify interests</td>
</tr>
<tr>
<td>February 21, 2018</td>
<td>Community Open House for Barnston Island residents and farm operators to introduce projects and identify interests</td>
</tr>
</tbody>
</table>

Feedback received:

- Concern with the current level of odour coming from the plant and how this odour may persist and/or increase with the new projects:
  - burnt toast and sulfur smell emanates from the plant
  - odour is strong when traveling over the Golden Ears Bridge
  - odour from the treatment plant reaches a business near the Fraser River in Maple Ridge
  - odour frequency and severity in the Hammond area of Maple Ridge has increased over the last 20 years
  - concern with the way odour complaints are currently handled by Metro Vancouver
- Minimize odour from the new pump station/storage tank and the wastewater treatment plant expansion
- Employ a high level of wastewater treatment
- Water released into the Fraser River should be as clean as possible
- Concern for the safety of fish in the area of the outfall
- Concern for fishers snagging nets on the outfall
- Concern for the impact on sturgeon who feed near the shore just west of the south end of the Golden Ears Bridge
- Conduct environmental monitoring in the area of the outfall
- Concern with outfall option east of Golden Ears Bridge in the centre of the Fraser River as the area experiences heavy marine traffic and is near a popular swimming area
- Concern with impact of current levels of effluent (specifically nitrates) on Barnston Island vegetation and concern with impact of a significant increase in effluent volume
- Desire for water quality samples from the Fraser River near Barnston Island
- Concern with impact to Barnston Island groundwater with increase in effluent
- Support for the restoration of the shoreline and shallow sub-tidal habitats, including:
  - fish and pollinator habitat enhancement, walkways and connectivity of trails, interpretive
elements and public access, community education programs, and berry picking

- Traffic management plan must accommodate cyclists that use 113B Avenue
- Questions about the composition of the odour masking agent and whether there are associated long-term negative human health impacts
- Facilities should be constructed to survive an earthquake and there should also be an emergency preparedness plan

Environmental Non-Governmental Organizations (ENGOs)

<table>
<thead>
<tr>
<th>Date</th>
<th>Event Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>July 18, 2017</td>
<td>Emails to ENGOs with a fisheries or Fraser River/waterways focus (see Appendix A for list) introducing projects, soliciting comment and offering a meeting</td>
</tr>
<tr>
<td>August 1, 2017</td>
<td>Meeting with representatives of BC Riverkeeper, Watershed Watch, Friends of the Katzie Slough to introduce projects and identify interests</td>
</tr>
<tr>
<td>August 21, 2017</td>
<td>BC Riverkeeper and Watershed Watch tour of treatment plant</td>
</tr>
</tbody>
</table>

Feedback received from ENGOs:

- Monitoring of the health of the Fraser River must take place before, during and after construction of the projects
- Want to see publically accessible real-time monitoring of water quality in the Fraser River to gauge the impact of sanitary sewer overflows on the river
- Seek an end to sanitary sewer overflows into the Katzie Slough
- Suggestions for ecological enhancement in the area of the new pump station/storage tank, including a green roof for the pump station, a bioswale and rain garden near the existing Katzie Pump Station, and interpretive elements at environmentally restored areas in and around the Katzie Slough.
- Effluent discharged into the Fraser River must be as clean as possible

Fraser River users

<table>
<thead>
<tr>
<th>Date</th>
<th>Event Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>November 15, 2017</td>
<td>Meeting with members of Council of Marine Carriers and other marine users to determine river use and identify issues related to outfall construction and geotechnical exploration in the Fraser River (see Appendix A for list of invitees)</td>
</tr>
</tbody>
</table>

Feedback received:

- The river in the area of the project is active 24 hours a day, year round, with log boom operations and towing, and commercial and First Nations fishing, tug and recreational operations
- Locate the outfall in the main channel to avoid worsening existing challenges with sediment deposition and navigation in Parsons Channel
- Parsons Channel outfall could negatively impact commercial navigation routes, log boom towing, and fishing operation
- Regardless of location, outfall presents challenges to commercial and First Nations fisheries (e.g. chum salmon nets snagging on diffusers and manifolds)
- Locate outfall close to shore to avoid log boom collisions (booms are deep) and decrease potential impacts to fishing
- Consider locating outfall just east of Golden Ears Bridge
- Re: Geotechnical exploration in the Fraser River:
  - Communication and notification plan must include appropriate notice and proper lighting of instream works
  - 24/7 work can be accommodated with advance notice and good lighting
  - Getting vessels out of the way at lower tides will be challenging
  - Requested information on type of rig that will be used to dig test holes

5. NEXT STEPS

All feedback received from impacted and interested groups will be considered by Metro Vancouver as it develops the Northwest Langley Wastewater Treatment Projects. Staff is submitting a Project Definition Report to Utilities Committee in September 2018. A separate engagement report will provide a summary of engagement activities and findings to date, including a table of the issues raised during engagement and Metro Vancouver responses indicating how those issues have been or will be addressed.
Appendix A

Metro Vancouver sent correspondence to the following groups to inform them of the Northwest Langley Wastewater Treatment Projects, solicit feedback, and offer a meeting:

### First Nations

- Cowichan Tribes
- Halalt First Nation
- Katzie First Nation
- Kwantlen First Nation
- Lake Cowichan First Nation
- Lyackson First Nation
- Penelakut Tribe
- Seabird Island Band
- Semiahmoo First Nation
- Shxw’ow’hamel First Nation
- Soowahlie First Nation
- Sto:lo Nation
- Sto:lo Tribal Council
- Stz'uminus First Nation
- Tsleil-Waututh Nation

### Environmental Non-Governmental Organizations

- Allouette River Management Society
- BC Federation of Fly Fishers
- British Columbia Federation of Drift Fishers
- CEED Centre
- Coquitlam River Watershed Roundtable
- Fraser River Sturgeon Conservation Society
- Fraser Riverkeeper
- Fraser Valley Angling Guides Association
- Fraser Valley Salmon Society
- Friends of the Katzie Slough
- Georgia Strait Alliance
- Kanaka Education and Environmental Partnership Society
- Pacific Salmon Foundation
- Pacific Streamkeepers Federation
- Rivershed Society of BC
- Steelhead Society of BC
- The Trails Society of British Columbia
- Watershed Watch Salmon Society
- Yorkson Watershed Enhancement Society

### Fraser River Users

- Catherwood Towing
- Council of Marine Carriers
- Forrest Marine Ltd.
- Fraser River Pile and Dredge
- Harken Towing
- Hodder Tugboat Co. Ltd.
- JJM Construction Ltd.
- LaFarge Canada
- Ledcor
- Mainland Sand & Gravel
- Mercury Launch & Tug LTD.
- North Arm Transportation
- North Arm Transportation
- Pacific Towing
- Port of Vancouver
- Quadrant Towing
- Quality Towing
- River Pilots
- S&R Sawmills
- Saam Smit Canada Inc.
- Samson Tugboats
- Seaspan
- Transport Canada
- Trident Navigation Ltd.
- TyPlan Planning and Management
- Valley Towing
- Vancouver Pile and Dredge
- Vancouver Pile Driving

### Agriculture

- Barnston Island Herbs
- Delta Farmers’ Institute
- Delta Farmland and Wildlife Trust
- Langley Environmental Partners Society
- Langley Sustainable Agriculture Foundation
- Maple Ridge/Pitt Meadows Agricultural Association
- Painted River Farms (Barnston Island)
<table>
<thead>
<tr>
<th>#</th>
<th>Category</th>
<th>Source</th>
<th>Comment/Question/Issue</th>
<th>Metro Vancouver Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Rationale</td>
<td>Meeting with Electoral Area A Director - February 7, 2018</td>
<td>Need to explain rationale for moving treatment of Maple Ridge and Pitt Meadows wastewater to Northwest Langley (i.e. to a more sensitive up-river location)</td>
<td>Generally, it is more cost effective to treat wastewater as close as possible to where it is generated. Current regulations mandate that wastewater be treated to a level that will not harm the receiving environment.</td>
</tr>
<tr>
<td>2</td>
<td>Operations - Existing</td>
<td>Open House - Maple Ridge - September 26, 2017</td>
<td>How does sewage currently get to Annacis?</td>
<td>Wastewater from Maple Ridge and Pitt Meadows is currently pumped approximately 25km to Annacis Island WWTP through the Maple Ridge Forcemain and North Surrey Interceptor.</td>
</tr>
<tr>
<td>3</td>
<td>Cost</td>
<td>Meeting with the Township of Langley - March 20, 2017</td>
<td>How will the cost be portioned out?</td>
<td>Treatment plant costs (Tier 2) are shared by the Fraser Sewerage Area and the entire region. Pipeline and pump station costs (Tier 1) are shared only by the Fraser Sewerage Area.</td>
</tr>
<tr>
<td>4</td>
<td>Water Quality and Treatment Level</td>
<td>Meeting with Katzie First Nation - June 23, 2016</td>
<td>What will the level of treatment be?</td>
<td>On April 25, 2018, the GVS&amp;DD Board endorsed Tertiary (advanced secondary plus disk filters) as the level of treatment carried forward into the Project Definition Report.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Meeting with Fraser Riverkeeper and Watershed Watch - August 1, 2017</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Water Quality and Treatment Level</td>
<td>Meeting with Katzie First Nation - April 4, 2017</td>
<td>Preference for tertiary treatment to reduce effects on fish and the environment.</td>
<td>On April 25, 2018, the GVS&amp;DD Board endorsed Tertiary (advanced secondary plus disk filters) as the level of treatment carried forward into the Project Definition Report.</td>
</tr>
<tr>
<td>6</td>
<td>Water Quality and Treatment Level</td>
<td>Open House - Langley - September 27, 2017</td>
<td>Concern for water quality discharged by outfall in Fraser River</td>
<td>On April 25, 2018, the GVS&amp;DD Board endorsed Tertiary (advanced secondary plus disk filters) as the level of treatment carried forward into the Project Definition Report.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Meeting with Fraser Riverkeeper and Watershed Watch - August 1, 2017</td>
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<tr>
<td>7</td>
<td>Water Quality and Treatment Level</td>
<td>Workshop with Katzie First Nation - December 12, 2017</td>
<td>Design the plant with tertiary/highest level of wastewater treatment regardless of cost. Preference for Filtered Effluent treatment process option.</td>
<td>On April 25, 2018, the GVS&amp;DD Board endorsed Tertiary (advanced secondary plus disk filters) as the level of treatment carried forward into the Project Definition Report.</td>
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<tr>
<td>8</td>
<td>Water Quality and Treatment Level</td>
<td>Open House - Langley - September 27, 2017</td>
<td>Be proactive and foresee what regulations will be imposed.</td>
<td>On April 25, 2018, the GVS&amp;DD Board endorsed Tertiary (advanced secondary plus disk filters) as the level of treatment carried forward into the Project Definition Report. This treatment technology provides capacity to manage future regulatory changes and treatment of some emerging substances of concern.</td>
</tr>
<tr>
<td>9</td>
<td>Water Quality and Treatment Level</td>
<td>Open House - Langley - September 27, 2017</td>
<td>We should make it right, don’t just do the minimum today.</td>
<td>On April 25, 2018, the GVS&amp;DD Board endorsed Tertiary (advanced secondary plus disk filters) as the level of treatment carried forward into the Project Definition Report. This treatment level will exceed regulatory requirements.</td>
</tr>
<tr>
<td>10</td>
<td>Water Quality and Treatment Level</td>
<td>Meeting with City of Pitt Meadows - March 13, 2017</td>
<td>Will the new WWTP be a secondary treatment plant?</td>
<td>On April 25, 2018, the GVS&amp;DD Board endorsed Tertiary (advanced secondary plus disk filters) as the level of treatment carried forward into the Project Definition Report.</td>
</tr>
<tr>
<td>11</td>
<td>Water Quality - Treatment Level</td>
<td>Open House - Langley - September 27, 2017</td>
<td>Is it okay to swim in the river?</td>
<td>Discharge from the outfall will meet the water quality guidelines for recreational use.</td>
</tr>
<tr>
<td>12</td>
<td>Water Quality and Treatment Level</td>
<td>Open House - Maple Ridge - September 26, 2017, Workshop with Katzie First Nation - December 12, 2017</td>
<td>Preference for higher level of treatment in Parsons Outfall (to “clean up” the river for families, fewer contaminants)</td>
<td>The Project Definition Report recommends the Parsons Channel outfall. On April 25, 2018, the GVS&amp;DD Board endorsed Tertiary (advanced secondary plus disk filters) as the level of treatment carried forward into the Project Definition Report.</td>
</tr>
<tr>
<td>13</td>
<td>Water Quality and Treatment Level</td>
<td>Workshop with Katzie First Nation - December 12, 2017</td>
<td>Effluent and resulting water quality need to be better than existing conditions</td>
<td>On April 25, 2018, the GVS&amp;DD Board endorsed Tertiary (advanced secondary plus disk filters) as the level of treatment carried forward into the Project Definition Report. This treatment level provides a higher quality of effluent than the current plant and will exceed regulatory requirements.</td>
</tr>
<tr>
<td>14</td>
<td>Water Quality and Treatment Level</td>
<td>Workshop with Katzie First Nation - December 12, 2017</td>
<td>Meeting regulations is not enough – “This is our water and our land”.</td>
<td>On April 25, 2018, the GVS&amp;DD Board endorsed Tertiary (advanced secondary plus disk filters) as the level of treatment carried forward into the Project Definition Report. This treatment level will exceed regulatory requirements.</td>
</tr>
<tr>
<td>15</td>
<td>Water Quality - Treatment Level</td>
<td>Open House - Barnston Island - February 21, 2018</td>
<td>Concern with the impact of a much larger plant on water quality in the Fraser River, in particular with the outfall so close to Barnston</td>
<td>The proposed discharge rate to the river is higher than the current plant; however, the quality of the effluent is significantly improved. The Environmental Impact Study will identify what changes, if any, may result for the increased discharge rate.</td>
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<tr>
<td>16</td>
<td>Water Quality - Treatment Level</td>
<td>Open House - Barnston Island - February 21, 2018</td>
<td>Concern with impact to Barnston Island groundwater with increase in effluent. Request for water quality samples from the Fraser River nearby.</td>
<td>Water quality data is available and was used in the predesign study for NLWWTP. The Environmental Impact Study will present ambient water quality data from nearby Barnston Island.</td>
</tr>
<tr>
<td>17</td>
<td>Water Quality - Treatment Level</td>
<td>Meeting with Fraser Riverkeeper and Watershed Watch - August 1, 2017</td>
<td>Effluent discharged into the Fraser River must be as clean as possible.</td>
<td>On April 25, 2018, the GVS&amp;DD Board endorsed Tertiary (advanced secondary plus disk filters) as the level of treatment carried forward into the Project Definition Report. This treatment level provides a higher quality of effluent than the current plant and will exceed regulatory requirements.</td>
</tr>
<tr>
<td>18</td>
<td>Water Quality - Treatment Level</td>
<td>Workshop with Katzie First Nation - December 12, 2017</td>
<td>Concern over the significant increase in the volume of the effluent and its impact on the river.</td>
<td>The proposed discharge rate to the river is higher than the current plant, however, the quality of the effluent is significantly improved. The Environmental Impact Study will identify what changes, if any, will result from the increased discharge rate.</td>
</tr>
<tr>
<td>19</td>
<td>Water Quality - Overflows</td>
<td>Open House - Langley - September 27, 2017</td>
<td>Will there ever be raw sewage discharged into the river?</td>
<td>Construction of the treatment plant and sewage storage tank will greatly reduce overflows into the Fraser River.</td>
</tr>
<tr>
<td>20</td>
<td>Modelling - Fraser River</td>
<td>Meeting with City of Pitt Meadows - March 13, 2017</td>
<td>Are river hydraulics are being modelled?</td>
<td>Yes, future phases of the project include hydrodynamic modeling of the river.</td>
</tr>
<tr>
<td>21</td>
<td>Water Quality - Monitoring</td>
<td>Meeting with Fraser Riverkeeper and Watershed Watch - August 1, 2017</td>
<td>Does MV look at data at the mouth of the Fraser River?</td>
<td>As part of the Fraser River Ambient Monitoring Program, Metro Vancouver collects data at the mouth of the river to monitor water quality, sediment quality, and fish tissue chemistry, community structure and health.</td>
</tr>
<tr>
<td>22</td>
<td>Water Quality - Monitoring</td>
<td>Meeting with Fraser Riverkeeper and Watershed Watch - August 1, 2017</td>
<td>Monitoring of the health of the Fraser River must take place before, during and after construction of the projects.</td>
<td>Monitoring will be required as part of the provincially approved Integrated Liquid Waste and Resource Management Plan. Metro Vancouver will continue monitoring in the Fraser River before, during, and after the project is complete.</td>
</tr>
<tr>
<td>23</td>
<td>Water Quality - Monitoring</td>
<td>Meeting with Fraser Riverkeeper and Watershed Watch - August 1, 2017</td>
<td>Request for publically accessible real-time monitoring of water quality in the Fraser River to gauge the impact of sanitary sewer overflows on the river.</td>
<td>Metro Vancouver currently provides real-time reporting to the health authorities, the Ministry of Environment, and municipalities. Serious consideration is being given to providing real-time flow monitoring to the public, after determining what information would be meaningful and accurate for the public. Overflows are driven by weather and often volume estimates are determined afterward. To provide real-time information about quality and quantity is not feasible as this information is not available in real time.</td>
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</tbody>
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| 24 | Fish, Fish Habitat and Fishing | Meeting with Katzie First Nation - June 13, 2016  
Meeting with Katzie First Nation - April 4, 2017  
Workshop with Katzie First Nation - December 12, 2017 | Concern with the impact of current & future projects on water quality (higher discharge/flow, discharged ammonia and other contaminants) in the Fraser River and fish (salmon, eulachon and sturgeon). Fish appear to avoid contaminated areas in the river. Concern with the effects of the new plant on fish and fish habitat. | On April 25, 2018, the GVS&DD Board endorsed Tertiary (advanced secondary plus disk filters) as the level of treatment carried forward into the Project Definition Report. The government has created national guidelines for WWTP's, setting maximum levels for ammonia discharges into water (CCME Guidelines). The Environmental Impact Study will assess the potential effects of the new plant on fish and fish habitat. |
| 25 | Fish, Fish Habitat and Fishing | Meeting with Katzie First Nation - April 4, 2017 | Concern for negative financial impacts to Katzie FN as a result of current & future projects affecting Katzie’s current ways of accessing resources (i.e. fish). Request for funding. | Metro Vancouver currently does not provide capacity funding to individuals, government agencies or First Nations. Metro Vancouver will work with Katzie (completing studies, workshop issues, and answering questions) so they can understand the impact of the project and make informed decisions. Metro Vancouver is also exploring procurement opportunities with the Katzie Development Limited Partnership |
| 26 | Fish, Fish Habitat and Fishing | Workshop with Katzie First Nation - December 12, 2017 | Concern with the effects of the new plant on fish and fish habitat. | The Environmental Impact Study is assessing the potential effects of the proposed discharge on fish and fish habitat and will be completed in the second quarter of 2019. |
| 27 | Fish, Fish Habitat and Fishing | Meeting with Katzie First Nation - June 13, 2016 | Katzie First Nation members are no longer able to fish in places they had traditionally fished when growing up, as fish appear to avoid contaminated areas in the river. | Mitigation measures to protect the aquatic environment and fish are being developed and will be advanced with detailed design and confirmation of construction methods. Mitigation measures include timing project construction to reduce impacts to the aquatic environment and isolating instream works where possible. Water quality monitoring programs will also be implemented for construction and operation phases.  
The GVS&DD Board endorsed Tertiary (advanced secondary plus disk filters) as the level of treatment carried forward into the Project Definition Report. This treatment level provides a higher quality of effluent than the current plant and will exceed regulatory requirements. An Environmental Impact Study is further examining potential effects of the project on the aquatic environment. |
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<tr>
<td>28</td>
<td>Fish, Fish Habitat and Fishing</td>
<td>Open House - Maple Ridge - September 26, 2017</td>
<td>Concern for the impact on sturgeon who feed near the shore just west of the south end of the Golden Ears Bridge.</td>
<td>Mitigation measures to protect white sturgeon are being developed and will be advanced with detailed designs and confirmation of construction methods. Mitigation measures include timing project construction to reduce impacts to the aquatic environment and isolating instream works where possible. Water quality monitoring programs will also be implemented for construction and operation phases. The GVS&amp;DD Board endorsed Tertiary (advanced secondary plus disk filters) as the level of treatment carried forward into the Project Definition Report. This treatment level provides a higher quality of effluent than the current plant and will exceed regulatory requirements.</td>
</tr>
<tr>
<td>29</td>
<td>Odour</td>
<td>Meeting with City of Pitt Meadows - March 13, 2017</td>
<td>Minimize odour from the new pump station/storage tank and the wastewater treatment plant expansion</td>
<td>All odourous areas will be covered and air in those areas will be collected and treated. Generally, odour should not be detectable by at nearby residences and businesses.</td>
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<td></td>
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<td>Meeting with City of Maple Ridge, March 13, 2017</td>
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<td>Open House - Maple Ridge - September 26, 2017</td>
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<td>Open House - Maple Ridge - September 27, 2017</td>
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<tr>
<td>30</td>
<td>Treatment Plant - Odour</td>
<td>Email - Joe Mulligan - November 22, 2017</td>
<td>Will there be some odour at the wastewater treatment plant, as it is only being minimized not eliminated?</td>
<td>All odourous areas will be covered and air in those areas will be collected and treated. Generally, odour should not be detectable by at nearby residences and businesses.</td>
</tr>
<tr>
<td>31</td>
<td>Treatment Plant - Odour</td>
<td>Email - Joe Mulligan - November 22, 2017</td>
<td>What is the toxicity of the treated air that will be vented?</td>
<td>The potential toxicity of the air released from plant operations will be addressed in a Health Risk Assessment as part of the design of the plant. A Toxic Air Contaminants emission inventory will quantify the toxicity of treated air and all other non-treated emission sources, and the initial Health Risk Assessment will be conducted to determine the health risk levels. The design of the plant must address the findings of the Health Risk Assessment, typically through adjusting treatment.</td>
</tr>
<tr>
<td>32</td>
<td>Treatment Plant - Odour</td>
<td>Meeting with City of Pitt Meadows - March 13, 2017</td>
<td>How will odour be monitored? Will it be seasonally, qualitative or quantitative data collection?</td>
<td>This will be determined as the project progresses. MV has an in-house odour monitoring program for the existing treatment plant.</td>
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<tr>
<td>33</td>
<td>Treatment Plant - Odour</td>
<td>Meeting with Electoral Area A Director - February 7, 2018</td>
<td>Residents will expect the same odour control standard set by the new North Shore plant</td>
<td>The odour control level recommended in the Project Definition Report will be the same as the North Shore Wastewater Treatment Plant.</td>
</tr>
<tr>
<td>34</td>
<td>Treatment Plant - Odour</td>
<td>Workshop with Katzie First Nation - December 12, 2017</td>
<td>Would prefer money be spent on treatment and outfall rather than on odour control</td>
<td>Noted. On April 25, 2018, the GVS&amp;DD Board endorsed Tertiary (advanced secondary plus disk filters) as the level of treatment carried forward into the Project Definition Report. This treatment level will exceed regulatory requirements.</td>
</tr>
<tr>
<td>35</td>
<td>Treatment Plant - Odour</td>
<td>Meeting with Katzie First Nation - June 23, 2016</td>
<td>Concern with the current level of odour coming from the plant and how this odour may persist and/or increase with the new projects.</td>
<td>All odourous areas will be covered and air in those areas will be collected and treated. Generally, odour should not be detectable at nearby residences, businesses or on the bridge.</td>
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<td></td>
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<td>Meeting with the Township of Langley - October 26, 2017</td>
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<td>Open House - Maple Ridge - September 26, 2017</td>
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<tr>
<td>36</td>
<td>Treatment Plant - Odour</td>
<td>Open House - Maple Ridge - September 26, 2017</td>
<td>Concern for odour when going over Golden Ear Bridge.</td>
<td>All odourous areas will be covered and air in those areas will be collected and treated. Generally, odour should not be detectable at nearby residences, businesses or on the bridge.</td>
</tr>
<tr>
<td>37</td>
<td>Treatment Plant - Odour</td>
<td>Open House - Maple Ridge - September 26, 2017</td>
<td>Concerned about odour from the plant - we live on the river.</td>
<td>All odourous areas will be covered and air in those areas will be collected and treated. Generally, odour should not be detectable at nearby residences, businesses or on the bridge.</td>
</tr>
<tr>
<td>38</td>
<td>Treatment Plant - Odour</td>
<td>Open House - Maple Ridge - September 26, 2017</td>
<td>Only concern is the odour control technology and how it is managed.</td>
<td>All odourous areas will be covered and air in those areas will be collected and treated. Generally, odour should not be detectable at nearby residences, businesses or on the bridge.</td>
</tr>
<tr>
<td>39</td>
<td>Treatment Plant - Traffic Management</td>
<td>Township of Langley – 2017 Engagement Summary</td>
<td>Concern with traffic disruption. Request a traffic management plan for treatment plant construction.</td>
<td>Metro Vancouver is working with Tol to manage traffic flow in the area surrounding the treatment plant. Traffic Management Plans are required from contractors working at NLWWTP and worker parking will be accommodated within the treatment plant site.</td>
</tr>
<tr>
<td>40</td>
<td>Treatment Plant - Biosolids</td>
<td>Meeting with Katzie First Nation - June 23, 2016</td>
<td>What happens with biosolids coming out of the wastewater treatment plant?</td>
<td>Biosolids are rich in organic matter and nutrients and therefore make an excellent fertilizer. Metro Vancouver recycles biosolids to land by making a landscaping soil, fertilizing rangeland, and reclaiming mines, gravel pits and landfills. Biosolids currently stockpiled at Northwest Langley are being used to reclaim a gravel pit in Abbotsford.</td>
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<tr>
<td>41</td>
<td>Treatment Plant - Schedule</td>
<td>Open House - Maple Ridge - September 26, 2017</td>
<td>Timeline for construction of treatment plant is too far into the future.</td>
<td>Project Schedule is considered realistic. Accelerating the schedule will increase cost.</td>
</tr>
<tr>
<td>42</td>
<td>Treatment Plant - Schedule</td>
<td>Meeting with Township of Langley - March 20, 2017</td>
<td>What’s the timeline for the entire regional plan including conveying south ToL flows to the WWTP?</td>
<td>Diverting wastewater from the rest of the ToL will be considered into the future. The first expansion will accommodate flows from the existing ToL catchment area, Maple Ridge, and Pitt Meadows until 2041. Further diversion within the region will be evaluated in the second stage of expansion.</td>
</tr>
<tr>
<td>43</td>
<td>Treatment Plant - Power</td>
<td>Open House - Maple Ridge - September 26, 2017</td>
<td>Plant should have standby power</td>
<td>The plant will have standby power to run the major processes.</td>
</tr>
<tr>
<td>44</td>
<td>Treatment Plant - Ground Improvements</td>
<td>Meeting with the Township of Langley - October 26, 2017</td>
<td>How much soil would be needed for ground improvements?</td>
<td>Generally the entire treatment plant will need some form of ground improvements.</td>
</tr>
<tr>
<td>45</td>
<td>Treatment Plant - Ground Improvements</td>
<td>Meeting with the Township of Langley - October 26, 2017</td>
<td>Bedford Channel is a good source of sand. It could be dredged for use at the site and would be a community benefit. The site is near Fort Langley upstream of the site. Kwantlen First Nation holds the license for the dredge material.</td>
<td>Noted. Thank you for this information. Metro Vancouver will be exploring this opportunity with Kwantlen First Nation.</td>
</tr>
<tr>
<td>46</td>
<td>Treatment Plant - Foreshore Opportunities</td>
<td>Plant tour - Kwantlen First Nation - December 12, 2017</td>
<td>What habitat enhancement is planned for the project?</td>
<td>Metro Vancouver design will include habitat enhancement for the foreshore seismic setback area.</td>
</tr>
<tr>
<td>47</td>
<td>Treatment Plant - Foreshore Opportunities</td>
<td>Open House - Langley - September 27, 2017</td>
<td>Support for the restoration of the shoreline and shallow sub-tidal habitats, including: fish and pollinator habitat enhancement, walkways and connectivity of trails, interpretive elements and public access, community education programs, and berry picking.</td>
<td>Metro Vancouver plans to create or enhance wildlife habitats and improve public access along the river in the project area. Metro Vancouver will present proposed designs at future stakeholder and First Nations meetings and at a future open house.</td>
</tr>
<tr>
<td>48</td>
<td>Treatment Plant - Foreshore Opportunities</td>
<td>Open House - Langley - September 27, 2017</td>
<td>Work with Township around recreational water uses.</td>
<td>Metro Vancouver has completed a Project Definition Report, which includes several options/alternatives for how to develop the foreshore. These will be reviewed with the Township, residents and businesses at a public event as the project progresses.</td>
</tr>
<tr>
<td>49</td>
<td>Treatment Plant - Foreshore Opportunities</td>
<td>Open House - Langley - September 27, 2017</td>
<td>Start an education program to educate the public about what to put down the drain &amp; in garbage - chemicals etc.</td>
<td>Metro Vancouver educates residents and businesses regarding the proper disposal of solid and liquid waste. Metro Vancouver’s Source Control Program and the Sewer Use Bylaw regulate what can go down the drain.</td>
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<tr>
<td>50</td>
<td>Treatment Plant - Flood Level</td>
<td>Open House - Langley - September 27, 2017</td>
<td>What is the flood level?</td>
<td>The flood construction level is 7.6m.</td>
</tr>
<tr>
<td>51</td>
<td>Treatment Plant - Flood Level</td>
<td>Meeting with Township of Langley - March 20, 2017</td>
<td>How will this WWTP impact the existing dike system? Tol has recently upgraded the dikes (2009) from west of the WWTP plant to east of the GE Bridge.</td>
<td>Metro Vancouver will be raising the treatment plant site to 7.6m, higher than the design flood. The site will be tied into the existing dike to maintain flood protection up to the existing dike crest level - approximately 6m.</td>
</tr>
<tr>
<td>52</td>
<td>Treatment Plant - Existing - Odour</td>
<td>Meeting with City of Pitt Meadows - March 13, 2017</td>
<td>Odour complaints are currently received by municipalities from residents.</td>
<td>Noted. Any odour complaints received can be forwarded to Metro Vancouver to be logged and investigated.</td>
</tr>
<tr>
<td>53</td>
<td>Treatment Plant - Existing - Odour</td>
<td>Open House - Maple Ridge - September 26, 2017</td>
<td>Concern that odour frequency and severity in the Hammond area of Maple Ridge has increased over the last 20 years</td>
<td>The new plant will include covers for all major odour emitting processes and an odour control system so that there is minimal odour at the fence line of the property.</td>
</tr>
<tr>
<td>54</td>
<td>Treatment Plant - Existing - Odour</td>
<td>Facebook post - Lära Cooley - September 14, 2017</td>
<td>Concern with the way odour complaints are currently handled by Metro Vancouver</td>
<td>When odour complaints are received, plant operations at the time the odour was detected are reviewed to establish any abnormal systems. A third-party odour assessment is immediately activated to provide on-site odour assessments at NLWWTP and other pre-established receptors near the complainant's location. Wind speed and direction are used to establish the potential odour and a report summarizing the assessment establishes the likelihood of the treatment plant being the source of the odour. If the complainant has provided contact information, they will be contacted to discuss the report findings.</td>
</tr>
<tr>
<td>55</td>
<td>Treatment Plant - Existing - Odour</td>
<td>Facebook post - Lära Cooley - September 14, 2017</td>
<td>Require more direct method of reporting levels when odour problems arise</td>
<td>On-line instrumentation is currently being trialed at several WWTP’s to assess on-site odours in real time. This information is then fed into a model using real time atmospheric conditions to assess the impact of the on-site odour assessments on locations outside the fenceline.</td>
</tr>
<tr>
<td>56</td>
<td>Treatment Plant - Existing</td>
<td>Open House - Barnston Island - February 21, 2018</td>
<td>Concern with impact of current levels of effluent (specifically nitrates) on Barnston Island vegetation.</td>
<td>The preliminary assessment of water quality impacts indicates that the concentration of nitrates in the effluent are predicted to be less than irrigation water use water quality guidelines.</td>
</tr>
<tr>
<td>57</td>
<td>Treatment Plant - Environment</td>
<td>Meeting with the City of Pitt Meadows - March 13, 2017</td>
<td>Will there be an environmental report?</td>
<td>An Environmental Impact Study report is being prepared, Stage 1 (of 2) will be submitted to the Ministry of the Environment during 3rd quarter 2018.</td>
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<tr>
<td>58</td>
<td>Treatment Plant - Foreshore</td>
<td>Workshop with Katzie First Nation - December 12, 2017</td>
<td>Would like to see river habitat improved – introduce side channels</td>
<td>Several opportunities are being considered along the foreshore area of the treatment plant site. These opportunities include habitat restoration, a foreshore park, walking and biking trails, a treatment marsh, and other educational and community amenities.</td>
</tr>
<tr>
<td>59</td>
<td>Treatment Plant - Environment</td>
<td>Workshop with Katzie First Nation - December 12, 2017</td>
<td>It is important that MV prioritizes the environment over project costs.</td>
<td>Board endorsement of the more expensive tertiary treatment, which will produce cleaner effluent than the regulations require, indicates the Board support for environmental protection.</td>
</tr>
<tr>
<td>60</td>
<td>Treatment Plant - Environment</td>
<td>Workshop with Katzie First Nation - December 12, 2017</td>
<td>Will the Environment Impact Study and the determination of Effluent Discharge Objectives provide baseline conditions in the river?</td>
<td>Yes, the Environmental Impact Study report will provide a summary of baseline/ambient conditions in the river.</td>
</tr>
<tr>
<td>61</td>
<td>Treatment Plant - Environment</td>
<td>Meeting with Katzie First Nation - April 4, 2017</td>
<td>Request opportunity to review terms of environmental studies before MV consultants conduct them. Katzie could provide valuable information on how and when to conduct these studies.</td>
<td>Agreed.</td>
</tr>
<tr>
<td>62</td>
<td>Treatment Plant - Emergency</td>
<td>Open House - Langley - September 27, 2017</td>
<td>Has there been discussion on emergency preparedness? What is the plan if we lose infrastructure?</td>
<td>Emergency preparedness is a key part of the design of these facilities. The focus will be to ensure the plant will continue operating regardless of the emergency.</td>
</tr>
<tr>
<td>63</td>
<td>Treatment Plant - Emergency</td>
<td>Open House - Langley - September 27, 2017</td>
<td>Facilities should be constructed to survive an earthquake and there should also be an emergency preparedness plan.</td>
<td>The new plant will be designed to withstand a severe earthquake. An emergency preparedness plan will be developed as part of the plant design process.</td>
</tr>
<tr>
<td>64</td>
<td>Treatment Plant - District Energy</td>
<td>Meeting with Fraser Riverkeeper and Watershed Watch - August 1, 2017</td>
<td>Are you looking at district energy?</td>
<td>District Energy was evaluated as an opportunity for the plant but was not carried forward into the pre-design as the cost-benefit analysis dismissed this as a viable option.</td>
</tr>
<tr>
<td>65</td>
<td>Treatment Plant - Cumulative Effects</td>
<td>Workshop with Katzie First Nation - December 12, 2017</td>
<td>Concern with the growing population in the area and the cumulative impact of that growth on the Fraser River</td>
<td>The Environmental Impact Study will consider potential cumulative impacts from the proposed discharge on the Fraser River.</td>
</tr>
<tr>
<td>66</td>
<td>Treatment Plant - Flood Level</td>
<td>Meeting with the Township of Langley - October 26, 2017</td>
<td>MV will have to work with the Inspector of Dikes for any development of the dike. The dike ties into a municipal road.</td>
<td>Noted. Metro Vancouver may need to pull back the dike as part of the enhancement work and will coordinate with the Dike Authority.</td>
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<tr>
<td>67</td>
<td>Treatment Plant - Foreshore Opportunities</td>
<td>Open House - Langley - September 27, 2017</td>
<td>Interest in a boat launch as a community amenity.</td>
<td>Several opportunities are being considered along the foreshore area of the treatment plant site. These opportunities include habitat restoration, a foreshore park, walking and biking trails, a treatment marsh, and other educational and community amenities.</td>
</tr>
<tr>
<td>68</td>
<td>Treatment Plant - Foreshore Opportunities</td>
<td>Meeting with Township of Langley - October 26, 2017</td>
<td>ToL has trails along 102b Avenue and 208th street (part of TransCanada Trail), but would like to connect west with trails in Surrey. A shared parking area and potential node could be developed and integrated with MV site development.</td>
<td>Several opportunities are being considered along the foreshore area of the treatment plant site. These opportunities include habitat restoration, a foreshore park, walking and biking trails, a treatment marsh, and other educational and community amenities.</td>
</tr>
<tr>
<td>69</td>
<td>Treatment Plant - Foreshore Opportunities</td>
<td>Meeting with Fraser Riverkeeper and Watershed Watch - August 1, 2017</td>
<td>Does the green buffer on the side of the river connect to the Greenway Strategy?</td>
<td>Several opportunities are being considered along the foreshore area of the treatment plant site. These opportunities include habitat restoration, a foreshore park, walking and biking trails, a treatment marsh, and other educational and community amenities.</td>
</tr>
<tr>
<td>70</td>
<td>Treatment Plant - Foreshore Opportunities</td>
<td>Meeting with Township of Langley - October 26, 2017</td>
<td>MV's South Fraser Greenway Plan and Experience the Fraser Concept Plan should be reviewed alongside the ToL OCP and the NW Langley Community Plan. May be an opportunity to develop green space near the treatment plant site.</td>
<td>Several opportunities are being considered along the foreshore area of the treatment plant site. These opportunities include habitat restoration, a foreshore park, walking and biking trails, a treatment marsh, and other educational and community amenities. They will be discussed with the ToL before progressing.</td>
</tr>
<tr>
<td>71</td>
<td>Treatment Plant - Birds</td>
<td>Meeting with the Township of Langley - October 26, 2017</td>
<td>There are several Eagle’s nests in the area, and a bird nesting window which have impacted ToL projects (dike construction).</td>
<td>Metro Vancouver is aware of the eagle nest and is following necessary measures to ensure the required buffer zone around the nest to minimize disruption. A bird nesting survey and amphibian salvage are completed prior to commencing any major works.</td>
</tr>
<tr>
<td>72</td>
<td>Treatment Plant - Biosolids</td>
<td>Open House - Maple Ridge - September 26, 2017</td>
<td>Potential health concerns (toxins) related to biosolids.</td>
<td>Research shows that, when managed properly, biosolids application to land is a safe and beneficial use of organic matter. Metro Vancouver has been involved in numerous studies over the life of the biosolids program and continues to conduct and support research to ensure the ongoing safety of projects and keep up with advances in the science around biosolids.</td>
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<tr>
<td>73</td>
<td>Treatment Plant - Biosolids</td>
<td>Meeting with Katzie First Nation - October 23, 2017</td>
<td>Is it possible to use MV biosolids in food gardens.</td>
<td>Soil made from Class A biosolids (currently produced at Metro Vancouver’s Annacis Island Wastewater Treatment Plant) meets all of the regulatory requirements for use in food gardens.</td>
</tr>
<tr>
<td>74</td>
<td>Treatment Plant - Air Quality</td>
<td>Open House - Langley - September 27, 2017</td>
<td>Concern with particulate from emissions as a result of burning methane for power generation at the plant.</td>
<td>The biogas will be treated at the plant to remove most particulate prior to discharge to atmosphere. This treatment will follow provincial regulatory requirements.</td>
</tr>
<tr>
<td>75</td>
<td>Treatment Plant - Archaeology</td>
<td>Meeting with Township of Langley - October 26, 2017</td>
<td>Consider archaeological issues in the area of the treatment plant.</td>
<td>Metro Vancouver has been working with the Katzie Development Limited Partnership to address and monitor any archaeological issues or sensitive areas to ensure a complete understanding of the sites.</td>
</tr>
<tr>
<td>76</td>
<td>River Crossing</td>
<td>Meeting with Fraser Riverkeeper and Watershed Watch - August 1, 2017</td>
<td>Will there be any displacement of contaminated soils (during river tunnelling)?</td>
<td>Contaminated soils are not expected to be encountered at the specified depths at which the tunnel will be installed (up to 45 m beneath the river bed). The onshore portion of the tunnelling (entry and exit pits) may require disposal of soil and these soils would be tested and disposed of appropriately.</td>
</tr>
<tr>
<td>77</td>
<td>River Crossing</td>
<td>Open House - Langley - September 27, 2017</td>
<td>What are the measures taken to prevent pipe breakage in the Fraser River Crossing?</td>
<td>The type of tunnelling technology proposed (horizontal directional drilling) is suited for the geotechnical conditions. There will be testing in place to ensure there are no breaks in the pipe during construction. Regular maintenance and inspection will prevent pipe deterioration.</td>
</tr>
<tr>
<td>78</td>
<td>River Crossing</td>
<td>Open House - Maple Ridge - September 26, 2017</td>
<td>Katzie FN were considering a road out near HDD entry pit, under the bridge and onto G.E. off ramp</td>
<td>Noted. Thank you for this information. Metro Vancouver is working with municipalities to manage traffic flow in the areas surrounding all project components. Traffic Management Plans are required from contractors.</td>
</tr>
<tr>
<td>79</td>
<td>River Crossing</td>
<td>Meeting with City of Pitt Meadows - March 13, 2017</td>
<td>Concern with construction noise/vibration of HDD.</td>
<td>Metro Vancouver is committed to working with its member municipalities to ensure all work is in accordance to city noise by laws. There will be vibration monitoring if needed during construction activities.</td>
</tr>
<tr>
<td>80</td>
<td>River Crossing</td>
<td>Meeting with Council of Marine Carriers - November 15, 2017</td>
<td>How will the crossing be installed?</td>
<td>Horizontal directional drilling is the proposed technology for the tunnel crossing. The technology will be confirmed by geotechnical investigations and an engineering study.</td>
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<tr>
<td>81</td>
<td>Pump Station and Storage Tank - Location</td>
<td>Meeting with the City of Maple Ridge - April 6, 2017</td>
<td>CoMR supports situating the SSO tank and PS on the existing GVS&amp;DD site. It appears to be the most favourable, as it is lower in cost and preserves industrial land.</td>
<td>The pump station and storage tank location has been confirmed on the existing GVS&amp;DD site in the cloverleaf of the Golden Ears Bridge.</td>
</tr>
<tr>
<td>82</td>
<td>Pump Station and Storage Tank - Location</td>
<td>Meeting with Katzie First Nation - April 4, 2017</td>
<td>Katzie First Nation (KFN) is not supportive of the TransLink parcel due to disjointed systems. KFN is indifferent with respect to the two remaining parcels.</td>
<td>Noted. Thank you for this information. The pump station and storage tank location has been confirmed on the existing GVS&amp;DD site in the cloverleaf of the Golden Ears Bridge.</td>
</tr>
<tr>
<td>83</td>
<td>Pump Station and Storage Tank - Odour</td>
<td>Open House - Maple Ridge - September 26, 2017</td>
<td>What is the odour masking agent to be used at the pump station and storage tank made of?</td>
<td>The masking agent is essential oils, which similar to essential oils in your house, mask the scent of strong odours.</td>
</tr>
<tr>
<td>84</td>
<td>Pump Station and Storage Tank - Odour</td>
<td>Open House - Maple Ridge - September 26, 2017</td>
<td>Concern with long-term impact of odour-masking agent on public health.</td>
<td>The majority of the odour will be handled by activated carbon, with the masking agent in small amounts a few times per year during extreme wet weather.</td>
</tr>
<tr>
<td>85</td>
<td>Pump Station and Storage Tank - Odour</td>
<td>Open House - Maple Ridge - September 26, 2017</td>
<td>Concern that the tank will be used more frequently than MV claims, resulting in odour.</td>
<td>The tank will be used during heavy rainfall events that normally would result in sanitary sewer overflows. There will be an odour control system in place, and routine maintenance will help minimize any odours.</td>
</tr>
<tr>
<td>86</td>
<td>Pump Station and Storage Tank - Traffic Management</td>
<td>Open House - Maple Ridge - 2017-10-26</td>
<td>Concern for cyclists using 113B Ave. Traffic management plan must accommodate cyclists that use this route.</td>
<td>Noted. Metro Vancouver is working with municipalities to manage traffic flow in the areas surrounding the project. Traffic Management Plans are required from contractors.</td>
</tr>
<tr>
<td>87</td>
<td>Pump Station and Storage Tank - Traffic Management</td>
<td>Meeting with the City of Pitt Meadows - March 13, 2017</td>
<td>Minimize traffic disruption during construction of pump station/storage tank</td>
<td>Metro Vancouver is working with municipalities to manage traffic flow in the areas surrounding the project. Traffic Management Plans are required from contractors.</td>
</tr>
<tr>
<td>88</td>
<td>Pump Station and Storage Tank - Katzie Slough</td>
<td>Meeting with Fraser Riverkeeper and Watershed Watch - August 1, 2017</td>
<td>Katzie are currently doing a hydrological study of the Slough.</td>
<td>Noted. Thank you for this information.</td>
</tr>
<tr>
<td>89</td>
<td>Pump Station and Storage Tank - Katzie Slough</td>
<td>Meeting with Fraser Riverkeeper and Watershed Watch - August 1, 2017</td>
<td>Support for reconnecting the slough to the Fraser River. Historically, before dikes, during high tide, the water in the slough would connect back to the Fraser River.</td>
<td>Noted. Thank you for this information.</td>
</tr>
<tr>
<td>90</td>
<td>Pump Station and Storage Tank - Katzie Slough</td>
<td>Meeting with Fraser Riverkeeper and Watershed Watch - August 1, 2017</td>
<td>We [Watershed Watch] have applied to DFO to do two years of studies; there are currently two students doing studies looking at sediment in the slough.</td>
<td>Noted. Thank you for this information.</td>
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<tr>
<td>91</td>
<td>Pump Station and Storage Tank - Katzie Slough</td>
<td>Meeting with the City of Maple Ridge - April 6, 2017</td>
<td>Opposition to MV utilizing Translink property adjacent to FN lands west of GE Bridge due to plans for Katzie Slough habitat enhancement.</td>
<td>The pump station and storage tank location has been confirmed on the existing GVS&amp;DD site in the cloverleaf of the Golden Ears Bridge.</td>
</tr>
<tr>
<td>92</td>
<td>Pump Station and Storage Tank - Katzie Slough</td>
<td>Meeting with City of Pitt Meadows - March 13, 2017</td>
<td>There is special interest to bring life back into the Katzie Slough. The City would like to be involved in the Environmental compensation (restoration) work in relation to the Slough (both in Pitt Meadows and Maple Ridge).</td>
<td>Noted. Thank you for this information.</td>
</tr>
<tr>
<td>93</td>
<td>Pump Station and Storage Tank - Katzie Slough</td>
<td>Meeting with City of Pitt Meadows - March 13, 2017</td>
<td>Water quality tests shows that in Aug. 2016 there was E. Coli in the Katzie Slough.</td>
<td>There have been no sewer overflows to the Katzie Slough since November 2015. Possible other sources of e.coli include excrement from warm blooded animals such as birds and dogs.</td>
</tr>
<tr>
<td>94</td>
<td>Pump Station and Storage Tank - Katzie Slough</td>
<td>Meeting with Fraser Riverkeeper and Watershed Watch - August 1, 2017</td>
<td>The most important things are to ensure anything added to Katzie Slough is as clean as possible, and that monitoring takes place before, during and after.</td>
<td>Katzie Slough would only be used to overflow as the last resort. Construction of the storage tank will greatly reduce overflows at the downstream 225th Street pump station and should eliminate any overflows to Katzie Slough.</td>
</tr>
<tr>
<td>95</td>
<td>Pump Station and Storage Tank - Katzie Slough</td>
<td>Meeting with City of Pitt Meadows - March 13, 2017</td>
<td>We used to get notifications of an SSO, we haven’t received any in a while.</td>
<td>There have been no sewer overflows to the Katzie Slough since November 2015.</td>
</tr>
<tr>
<td>96</td>
<td>Pump Station and Storage Tank - Katzie Slough</td>
<td>Meeting with City of Pitt Meadows - March 13, 2017</td>
<td>Seek an end to sanitary sewer overflows into the Katzie Slough.</td>
<td>Katzie Slough would only be used to overflow as the last resort. Construction of the storage tank will greatly reduce overflows at the downstream pump station and should eliminate any overflows to Katzie Slough.</td>
</tr>
<tr>
<td>97</td>
<td>Pump Station and Storage Tank - Interpretive Elements</td>
<td>Meeting with Fraser Riverkeeper and Watershed Watch - August 1, 2017</td>
<td>Request for interpretive signage and place names to convey historical uses of Katzie Slough (e.g. travel route, growing fruit)</td>
<td>Noted. Metro Vancouver is exploring interpretive features for the pump station and storage tank.</td>
</tr>
<tr>
<td>98</td>
<td>Pump Station and Storage Tank - Interpretive Elements</td>
<td>MV meeting with Fraser Riverkeeper and Watershed Watch - 8/1/2017</td>
<td>Do you have any other examples where you’ve added interpretive elements?</td>
<td>Interpretive elements were recently used in the new Sapperton Pump Station. The front of the building will be glass so that the public can see the working equipment. The site will also be connected to the community by bike paths.</td>
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<tr>
<td>99</td>
<td>Pump Station and Storage Tank</td>
<td>Workshop with Katzie First Nation - December 12, 2017</td>
<td>Katzie does not agree with the archaeological significance assigned to certain sites in Metro Vancouver’s Archaeological Overview Assessment (AOA); other sites may be missing – additional assessment is required.</td>
<td>Metro Vancouver has been working with the Katzie Development Limited Partnership to address and monitor any archaeological issues or sensitive areas to ensure a complete understanding of the sites.</td>
</tr>
<tr>
<td>100</td>
<td>Pump Station and Storage Tank</td>
<td>Meeting with City of Pitt Meadows - March 13, 2017</td>
<td>What are some of the risks associated with having a temporary measure for SSO and sewage conveyance vs. a permanent solution?</td>
<td>The new Golden Ears Pump Station will convey flows to the expanded treatment plant. In the interim, Katzie Pump Station will continue to pump flows to Annacis, and the new storage tank will be utilized during high rainfall events. By having the storage tank operational early, the risk of sanitary sewer overflows will be reduced.</td>
</tr>
<tr>
<td>101</td>
<td>Pump Station and Storage Tank</td>
<td>Meeting with City of Pitt Meadows - March 13, 2017</td>
<td>Concern with having to pump overflows out of the slough.</td>
<td>Katzie Slough would only be used to overflow as the last resort. Construction of the storage tank will greatly reduce overflows at the downstream pump station and should eliminate any overflows to Katzie Slough.</td>
</tr>
<tr>
<td>102</td>
<td>Pump Station and Storage Tank</td>
<td>Open House - Maple Ridge - 2017-10-26</td>
<td>Concern for flow in the river causing the tank to get reversed.</td>
<td>The engineering design team will design the infrastructure so that the storage tank will discharge back into the sewer network.</td>
</tr>
<tr>
<td>103</td>
<td>Pump Station and Storage Tank</td>
<td>Meeting with City of Pitt Meadows - March 13, 2017</td>
<td>Why can’t we dump from the SSO tank straight into the river instead of 225 and the slough?</td>
<td>The wastewater from the storage tank will be pumped to the Northwest Langely Wastewater Treatment Plant so that it can be treated to meet the effluent requirements.</td>
</tr>
<tr>
<td>104</td>
<td>Pump Station and Storage Tank</td>
<td>Katzie FN - Kwantlen FN Workshop - 12/12/2017</td>
<td>How deep will the storage tank and pump station be?</td>
<td>The storage tank and pump station will be approximately six to seven metres deep.</td>
</tr>
<tr>
<td>106</td>
<td>Pump Station and Storage Tank</td>
<td>Meeting with Fraser Riverkeeper and Watershed Watch - August 1, 2017</td>
<td>Suggestions for ecological enhancement in the area of the new pump station/storage tank, including a green roof for the pump station, a bioswale and rain garden near the existing Katzie Pump Station, and interpretive elements at environmentally restored areas in and around the Katzie Slough.</td>
<td>The engineering design team includes environmental staff, architects and an art consultant to assist Metro Vancouver with the design of the site and to identify opportunities for environmental enhancements.</td>
</tr>
<tr>
<td>107</td>
<td>Overflows</td>
<td>Meeting with Fraser Riverkeeper and Watershed Watch - August 1, 2017</td>
<td>What regulations do you follow in the event of an overflow?</td>
<td>Metro Vancouver follows the BC 'Spill Reporting Regulation' under the Environmental Management Act and the federal regulation for 'Deposit Out of the Normal Course of Events' under the Fisheries Act.</td>
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<td>108</td>
<td>Outfall - Water Quality</td>
<td>Open House - Barnston Island - February 21, 2018</td>
<td>Concern with the impact of plant expansion/outfall location on drinking water from wells and agricultural operations on Barnston Island.</td>
<td>The Environmental Impact Study will present ambient water quality data from nearby Barnston Island. The risk to Barnston Island groundwater quality from the proposed plant discharge is low.</td>
</tr>
<tr>
<td>109</td>
<td>Outfall - River Navigation</td>
<td>Meeting with Council of Marine Carriers - November 15, 2017</td>
<td>Concern with impacts to navigation and dredging as a result of sediment build-up around outfall. Recommend hydraulics. Also recommend locating the outfall in the main channel.</td>
<td>The proposed location of the outfall is not expected to impact sediment transport in Parsons Channel. Future phases of engineering will include a hydraulic model to assess the potential risk of sediment accumulation at the diffuser. The diffuser location for either outfall option is outside of the Port Authority’s navigation channel and safety buffer and is not expected to impact dredging activities.</td>
</tr>
<tr>
<td>110</td>
<td>Outfall - Pipe Location</td>
<td>Workshop with Katzie First Nation - December 12, 2017</td>
<td>Money should not be a factor in determining outfall location.</td>
<td>Financial consideration is one of many factors used when determining the location of an outfall.</td>
</tr>
<tr>
<td>111</td>
<td>Outfall - Navigation</td>
<td>Meeting with Council of Marine Carriers - November 15, 2017</td>
<td>Concern that Parsons Channel outfall could negatively impact commercial navigation routes, log boom towing, and fishing operations</td>
<td>Impacts to river users, marine vessels, commercial operations, fishing operations, and navigation routes are being considered in the determination of outfall location and design. Metro Vancouver will present proposed designs and mitigation measures at future meetings with marine users.</td>
</tr>
<tr>
<td>112</td>
<td>Outfall - Navigation</td>
<td>Meeting with Council of Marine Carriers - November 15, 2017</td>
<td>RE: Outfall Parsons Channel Option: Concern with hitting diffuser manifolds: Some vessels that use Parsons Channel draw 12-14 feet of water and hit the bottom often.</td>
<td>Impacts to river users, marine vessels, commercial operations, fishing operations, and navigation routes will be considered in the determination of outfall location and design. The top of the diffuser risers will be approximately 16 ft below the minimum water level.</td>
</tr>
<tr>
<td>113</td>
<td>Outfall - Navigation</td>
<td>Meeting with Council of Marine Carriers - November 15, 2017</td>
<td>RE: Outfall Main Channel Option: Concern with log booms hitting diffuser manifolds. Preference for diffuser closer to shore (Barnston Island or the sandbar).</td>
<td>The proposed location of the outfall diffuser is south of the navigation channel and safety buffer and outside of the water lots. The water depth at this location provides approximately 5m of clearance during low water.</td>
</tr>
<tr>
<td>114</td>
<td>Outfall - Location</td>
<td>Workshop with Katzie First Nation - December 12, 2017</td>
<td>All options for outfall locations highly impact Katzie traditional fishing areas for different families.</td>
<td>Noted. Metro Vancouver will continue to meet with Katzie to discuss mitigation measures for the two outfall options to ensure Katzie’s continued access to their traditional fishing grounds.</td>
</tr>
<tr>
<td>115</td>
<td>Outfall - Location</td>
<td>Meeting with Council of Marine Carriers - November 15, 2017</td>
<td>Concern that this project creates additional navigational challenges for vessels (loaded barges, log booms, etc.) leaving the navigation channel frequently to access north and south shores in Parsons Channel.</td>
<td>Impacts to river users, marine vessels, commercial operations, fishing operations, and navigation routes are being considered in the determination of outfall location and design. Metro Vancouver will present proposed designs and mitigation measures at future meetings with marine users.</td>
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<tr>
<td>116</td>
<td>Outfall - Location</td>
<td>Meeting with Council of Marine Carriers - November 15, 2017</td>
<td>Concern for impacts to navigation and dredging as a result of sediment build-up around outfall. Recommends hydraulics. Also recommends locating the outfall in the main channel.</td>
<td>The proposed location for the outfall is not expected to impact sediment transport in Parsons Channel. Future phases of engineering will include a hydraulic model to assess the potential risk of sediment accumulation at the diffuser. The diffuser is located outside of the navigation channel and safety buffer and is not expected to impact dredging activities.</td>
</tr>
<tr>
<td>117</td>
<td>Outfall - Location</td>
<td>Meeting with Council of Marine Carriers - November 15, 2017</td>
<td>Locate outfall upstream of the bridge, or in line with the Golden Ears Bridge.</td>
<td>Due to challenges associated with construction risk and river depth, the outfall option upstream of the Golden Ears Bridge is no longer being considered. The two most feasible outfall options have been carried forward into the Project Definition Report: Parsons Channel and Main Channel. In that report, Parsons Channel is recommended.</td>
</tr>
<tr>
<td>118</td>
<td>Outfall - Location</td>
<td>Open House - Maple Ridge - September 26, 2017</td>
<td>Concern for outfall pipe location east of Golden Ears Bridge: popular swimming location, lots of residents in this area.</td>
<td>Due to challenges associated with construction risk and river depth, the outfall option upstream of the Golden Ears Bridge is no longer being considered.</td>
</tr>
<tr>
<td>119</td>
<td>Outfall - Location</td>
<td>Meeting with Council of Marine Carriers - November 15, 2017</td>
<td>Locate outfall close to shore to avoid log boom collisions (booms are deep) and decrease potential impacts to fishing</td>
<td>The possible locations of the outfall are in locations that provide sufficient water depth over the diffuser; and is outside of the river navigation channel and water lots. Metro Vancouver will present proposed designs and mitigation measures (e.g., for fishing nets) at future meetings with marine users.</td>
</tr>
<tr>
<td>120</td>
<td>Outfall - Location</td>
<td>Meeting with Council of Marine Carriers - November 15, 2017</td>
<td>Would like to see hydrological modeling to confirm there is no impact on sediment. Frequent dredging, particularly in the south channel.</td>
<td>The proposed outfall location is not expected to impact sediment transport in Parsons Channel. Future phases of engineering will include a hydraulic model to assess the potential risk of sediment accumulation at the diffuser. The diffuser is located outside of the river navigation and safety channel and is not expected to impact dredging activities.</td>
</tr>
<tr>
<td>121</td>
<td>Outfall - Location</td>
<td>Meeting with Council of Marine Carriers - November 15, 2017</td>
<td>Water lots in the river are considered 'no-go' zones</td>
<td>The outfall diffuser will be located outside of the water lots.</td>
</tr>
<tr>
<td>122</td>
<td>Outfall - Location</td>
<td>Meeting with Council of Marine Carriers - November 15, 2017</td>
<td>Concern for outfall location worsening accumulation of sediment, particularly at the end of Barnston Island. Could impact navigation and VFPA dredging requirements. Recommend hydraulics around the outfall.</td>
<td>The proposed outfall location is not expected to impact sediment transport in Parsons Channel. Future phases of engineering will include a hydraulic model to assess the potential risk of sediment accumulation at the diffuser. The diffuser is located outside of the marine safety channel and is not expected to impact dredging activities.</td>
</tr>
<tr>
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<tr>
<td>123</td>
<td>Outfall - Location</td>
<td>Workshop with Katzie First Nation - December 12, 2017</td>
<td>Interest in the depths of the two channels and the dispersion in each.</td>
<td>The minimum water depths in the Main Channel are approximately 10-12 m and 5-7 m in Parsons Channel. Both locations meet the regulated minimum dilution requirements.</td>
</tr>
<tr>
<td>124</td>
<td>Outfall - Fishing</td>
<td>Meeting with Katzie First Nation - June 13, 2016 Meeting with Council of Marine Carriers - November 15, 2017</td>
<td>Concern with new outfall negatively impacting fishing activities (nets catch on outfall diffusers).</td>
<td>Metro Vancouver is evaluating design options to prevent nets snagging or catching on the diffusers during fishing activities.</td>
</tr>
<tr>
<td>125</td>
<td>Outfall - Fishing</td>
<td>Workshop with Katzie First Nation - December 12, 2017</td>
<td>All options for outfall locations highly impact Katzie traditional fishing areas for different families.</td>
<td>Noted. Metro Vancouver will continue to meet with Katzie to discuss mitigation measures for the two outfall options to ensure Katzie’s continued access to their traditional fishing grounds.</td>
</tr>
<tr>
<td>126</td>
<td>Outfall - Fishing</td>
<td>Workshop with Katzie First Nation - December 12, 2017</td>
<td>Concern that drift fishing nets snag on current &amp; future outfall diffusers (weighted nets are $1200). Snags result in torn pieces of net affixed to the snap killing fish (ghost nets). In the past the Samson 5 cleared the river of potential snags (deadheads, rootwood)</td>
<td>Metro Vancouver is evaluating design options to prevent nets snagging or catching on the diffusers during fishing activities.</td>
</tr>
<tr>
<td>127</td>
<td>Outfall - Fishing</td>
<td>Workshop with Katzie First Nation - December 12, 2017</td>
<td>Katzie has 200 licenced fishers (primarily drift fishing with nets ¼ the size of commercial operations)</td>
<td>Noted. Metro Vancouver is evaluating design options to prevent nets snagging or catching on the diffusers during fishing activities.</td>
</tr>
<tr>
<td>128</td>
<td>Outfall - Fishing</td>
<td>Workshop with Katzie First Nation - December 12, 2017</td>
<td>Katzie depends on fish from the Fraser River. Declining numbers of fish highly impact Katzie FN.</td>
<td>On April 25, 2018, the GVS&amp;DD Board endorsed Tertiary (advanced secondary plus disk filters) as the level of treatment carried forward into the Project Definition Report. This treatment level will exceed regulatory requirements intended to protect the aquatic enviroment and fish.</td>
</tr>
<tr>
<td>129</td>
<td>Outfall - Fishing</td>
<td>Meeting with Council of Marine Carriers - November 15, 2017</td>
<td>Regardless of location, outfall presents challenges to commercial and First Nations fisheries (e.g. chum salmon nets snagging on diffusers and manifolds)</td>
<td>Metro Vancouver is evaluating design options to prevent nets snagging or catching on the diffusers during fishing activities.</td>
</tr>
<tr>
<td>130</td>
<td>Outfall - Existing - Fish</td>
<td>Workshop with Katzie First Nation - December 12, 2017</td>
<td>Wonder if decreased sockeye and chinook salmon runs in recent years are in part attributable to the existing outfall/effluent.</td>
<td>Metro Vancouver intends to design the facility to meet or exceed regulatory guidelines for the protection of the aquatic environment and fish. An Environmental Impact Study is examining potential effects of the project on the aquatic environment.</td>
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<tr>
<td>131</td>
<td>Fishing</td>
<td>Workshop with Katzie First Nation - December 12, 2017</td>
<td>Fisheries window ends in February (eulachon harvested in February; chinook salmon early April)</td>
<td>Noted. Thank you for this information.</td>
</tr>
<tr>
<td>132</td>
<td>Outfall - Construction</td>
<td>Open House - Langley - September 27, 2017</td>
<td>Concern with impacts to dredging from November to March.</td>
<td>The outfall diffuser will be located outside of the marine safety channel and should not impact the navigation channel dredging activities. Construction activities will aim to avoid interference with dredging activities.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Meeting with Council of Marine Carriers - November 15, 2017</td>
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</tr>
<tr>
<td>133</td>
<td>Outfall - Location</td>
<td>Open House - Langley - September 27, 2017</td>
<td>Preference for Main Channel outfall pipe location because it is further down stream.</td>
<td>Two outfall options have been carried forward into the Project Definition Report; one option in the Main Channel and one option in Parsons Channel.</td>
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<td></td>
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<td>Meeting with Council of Marine Carriers - November 15, 2017</td>
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<tr>
<td>134</td>
<td>Outfall - Location</td>
<td>Meeting with Katzie First Nation - October 23, 2017</td>
<td>Katzie prefers Main Channel location (longer outfall) to achieve higher levels of dispersion.</td>
<td>Both the proposed Parsons Channel and Main Channel locations meet the regulated minimum dilution requirements.</td>
</tr>
<tr>
<td>135</td>
<td>Working with other projects</td>
<td>Meeting with Township of Langley - October 26, 2017</td>
<td>MV should be aware of other projects in the area (e.g. Kinder Morgan pipeline).</td>
<td>Noted. Thank you for this information.</td>
</tr>
<tr>
<td>136</td>
<td>Operation - Noise</td>
<td>Meeting with City of Pitt Meadows - March 13, 2017</td>
<td>Noise of infrastructure operations will be important to residents and businesses.</td>
<td>Noise will be minimal during normal operating conditions. The SSO tank will be used only during heavy rainfall events.</td>
</tr>
<tr>
<td>137</td>
<td>Odour</td>
<td>Email - Joe Mulligan - November 22, 2017</td>
<td>Concern the odour control system will not be effective in eliminating odour.</td>
<td>There may be some odour immediately outside of the pump station and storage tank, but it should not be detectable by nearby residents or businesses given the level of odour treatment and its location in the traffic island. For the wastewater treatment plant, the odour control measures will be much stronger than what is currently in place. It may be slightly detectable, over the background odour, to industrial businesses in the area, though less than what is there now, and shouldn't be detectable to residential communities.</td>
</tr>
<tr>
<td>138</td>
<td>Marine Geotechnical Investigations -</td>
<td>Meeting with Council of Marine Carriers - November 15, 2017</td>
<td>Concern for increase in vessel traffic leaving navigation channel when accessing north and south shores in Parsons Channel.</td>
<td>The marine geotechnical investigation work has now been completed. A staging plan, including notification, was developed and shared with Katzie First Nation and marine users in order to mitigate impacts. This work was completed quickly and smoothly.</td>
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<td></td>
<td>Navigation</td>
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<tr>
<td>139</td>
<td>Marine Geotechnical</td>
<td>Meeting with Township of Langley - March 20, 2017</td>
<td>Concern with impacts to recreational and other river users. River in project area is active 24 hours a day, year round, with log boom operations and towing, commercial and First Nations fishing, tug and recreational operations</td>
<td>The marine geotechnical investigation work has now been completed. A staging plan, including notification, was developed and shared with Katzie First Nation and marine users in order to mitigate impacts.</td>
</tr>
<tr>
<td></td>
<td>Investigations</td>
<td>Meeting with Council of Marine Carriers - November 15, 2017</td>
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</tr>
<tr>
<td>140</td>
<td>Marine Geotechnical</td>
<td>Meeting with Council of Marine Carriers - November 15, 2017</td>
<td>River users require information on the type of rig that will used for the marine geotechnical investigations, a communication and notification plan that provides appropriate notice (up to 72 hours for activity), 4 days notice to start a project, 2 weeks notice for water, and adequate lighting of instream works.</td>
<td>The marine geotechnical investigation work has now been completed. A staging plan, including notification, was developed and shared with Katzie First Nation and marine users in order to mitigate impacts.</td>
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<td>Investigations</td>
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<tr>
<td>141</td>
<td>Marine Geotechnical</td>
<td>Meeting with Council of Marine Carriers - November 15, 2017</td>
<td>Concern that even with advanced notice, low tides may prohibit vessels from being moved from project area.</td>
<td>The marine geotechnical investigation work has now been completed. A staging plan, including notification, was developed and shared with Katzie First Nation and marine users in order to mitigate impacts.</td>
</tr>
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<td>investigations</td>
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<tr>
<td>142</td>
<td>Marine Geotechnical</td>
<td>Meeting with Council of Marine Carriers - November 15, 2017</td>
<td>Concern with impacts to log booms in Main Channel, and recommends MV supply a tug to mitigate risks</td>
<td>The marine geotechnical investigation work has now been completed. A staging plan, including notification, was developed and shared with Katzie First Nation and marine users in order to mitigate impacts.</td>
</tr>
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<td>investigations</td>
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<tr>
<td>143</td>
<td>Marine Geotechnical</td>
<td>Meeting with Council of Marine Carriers - November 15, 2017</td>
<td>Have you touched base with the Port re: hydrology in the area of the investigations?</td>
<td>Metro Vancouver is working closely with the Vancouver Fraser Port Authority on the marine geotechnical investigation, the river crossing, and the outfall.</td>
</tr>
<tr>
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<td>investigations</td>
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<tr>
<td>144</td>
<td>Marine Geotechnical</td>
<td>Workshop with Katzie First Nation - December 12, 2017</td>
<td>Interest in depth and width of boreholes</td>
<td>The depth and width of the boreholes were 50m and 30cm respectively.</td>
</tr>
<tr>
<td></td>
<td>investigations</td>
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<tr>
<td>145</td>
<td>Marine Geotechnical</td>
<td>Workshop with Katzie First Nation - December 12, 2017</td>
<td>Provide Katzie with the geotechnical investigations communications and notification plan</td>
<td>The marine geotechnical investigation work has now been completed. A staging plan, including notification, was developed and shared with Katzie First Nation and marine users in order to mitigate impacts. This work was completed quickly and smoothly.</td>
</tr>
<tr>
<td>#</td>
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<tr>
<td>146</td>
<td>Construction Noise</td>
<td>Meeting with City of Pitt Meadows - March 13, 2017</td>
<td>Concern with construction noise impacts to residents and business owners</td>
<td>Metro Vancouver is committed to working with its member municipalities to ensure all work is in accordance to city noise by laws.</td>
</tr>
<tr>
<td>147</td>
<td>Procurement</td>
<td>Meeting with Katzie First Nation - October 23, 2017</td>
<td>Interest in procurement opportunities including involvement in archaeological and environmental studies</td>
<td>Metro Vancouver’s procurement policy allows the project team to work directly with Katzie to explore these opportunities.</td>
</tr>
<tr>
<td>148</td>
<td>Community Engagement</td>
<td>Meeting with Fraser Riverkeeper and Watershed Watch - August 1, 2017</td>
<td>What are chances we could get a tour of the treatment plant?</td>
<td>Metro Vancouver organized a tour for these groups on August 21, 2017.</td>
</tr>
<tr>
<td>149</td>
<td>Community Engagement</td>
<td>Meeting with Fraser Riverkeeper and Watershed Watch - August 1, 2017</td>
<td>How do you advertise open houses?</td>
<td>Open houses were advertised in local newspapers, by postal mail drop, on Metro Vancouver’s website, and through relevant social media and Facebook groups.</td>
</tr>
<tr>
<td>150</td>
<td>Community Engagement</td>
<td>Meeting with the Township of Langley - March 20, 2017</td>
<td>Has there been First Nations Consultation? Kwantlen has previously approached ToL to discussion deposition in the Fraser.</td>
<td>Metro Vancouver has engaged with Katzie and Kwantlen First Nations throughout the Project Definition Phase to minimize impacts of the projects to their communities and cultural practices and to explore procurement opportunities. 14 other First Nations were also informed of the projects.</td>
</tr>
<tr>
<td>151</td>
<td>Community Engagement</td>
<td>Meeting with the Township of Langley - March 20, 2017</td>
<td>Are we expecting the same level of public consultation as there was with Lions Gate WWTP?</td>
<td>Metro Vancouver works to create opportunities for meaningful engagement with the public on large infrastructure projects. Engagement programs are tailored to each project, its location, and the range of stakeholders potentially impacted or interested in the project.</td>
</tr>
<tr>
<td>152</td>
<td>Community Engagement</td>
<td>Meeting with the City of Maple Ridge - March 13, 2017</td>
<td>Support for a strong engagement program to keep residents informed and involved</td>
<td>Metro Vancouver will continue to work with member municipalities and provide opportunities for area residents to receive information and ask questions as the projects develop.</td>
</tr>
<tr>
<td>153</td>
<td>Community Engagement</td>
<td>Workshop with Katzie First Nation - December 12, 2017</td>
<td>Katzie takes a long-term view and opposes any development detrimental to Katzie that is developed without the involvement of Katzie.</td>
<td>Metro Vancouver will continue to work closely with Katzie First Nation as the projects are developed. To date, Metro Vancouver has held six meetings/workshops with Katzie chief, council and staff to discuss the projects.</td>
</tr>
<tr>
<td>154</td>
<td>Community Engagement</td>
<td>Workshop with Katzie First Nation - December 12, 2017</td>
<td>Interest in whether we are talking to local municipalities</td>
<td>Metro Vancouver has met with Township of Langley, City of Maple Ridge, City of Pitt Meadows and Electoral Area A (Barnston Island) to introduce and discuss the projects. Correspondence and meetings with these jurisdictions through all phases of the Northwest Langley Wastewater Treatment Projects.</td>
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<tr>
<td>#</td>
<td>Category</td>
<td>Source</td>
<td>Comment/Question/Issue</td>
<td>Metro Vancouver Response</td>
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<tr>
<td>155</td>
<td>Community Engagement</td>
<td>Meeting with Katzie First Nation - October 23, 2017</td>
<td>Considering the scope of the project and the level of technical expertise needed to provide input, Katzie requires capacity funding from Metro Vancouver. Katzie would need to hire their own consultants to understand this project, which is located in the middle of Katzie’s core traditional territory.</td>
<td>Metro Vancouver continues to identify procurement opportunities for Katzie First Nation on the Northwest Langley Wastewater Treatment Projects. To date, Katzie Development Limited Partnership has been engaged to undertake archaeological work. Metro Vancouver does not provide reimbursement to any individual, organization, government or First Nation/Tribal Council for this engagement process.</td>
</tr>
<tr>
<td>156</td>
<td>Community Engagement</td>
<td>Meeting with Electoral Area A Director - February 7, 2018</td>
<td>Request for information to provide residents on what construction will look and sound like (for the river crossing, treatment plant and outfall)</td>
<td>Metro Vancouver will continue to assess potential construction impacts on neighbouring communities for all of the projects, and will provide notification to residents and businesses well in advance of construction.</td>
</tr>
<tr>
<td>157</td>
<td>Working with other projects</td>
<td>Meeting with Township of Langley - October 26, 2017</td>
<td>Schedule must work with Township’s trunk sewer twinning in the area of the treatment plant, with construction set to begin in summer 2018</td>
<td>Noted. Metro Vancouver has been coordinating with Township of Langley (ToL) Engineering about the location of the influent pump station and how the location will impact this project.</td>
</tr>
<tr>
<td>158</td>
<td>Sanitary Sewer Service</td>
<td>Open House - Barnston Island - February 21, 2018</td>
<td>Interest in sanitary sewer service.</td>
<td>Barnston Island is outside of the sewerage area and the urban containment boundary. Therefore, current policy prevents servicing this area.</td>
</tr>
</tbody>
</table>
To: Utilities Committee

From: Roy Moulder, Division Manager, Purchasing and Risk Management, Financial Services
       Paul Wilting, Project Manager, Northwest Langley Wastewater Treatment Project, Liquid Waste Services

Date: August 22, 2018

Meeting Date: September 20, 2018

Subject: Award of a Contract Resulting from Request for Proposal (RFP) No. 18-189: Project Management & Technical Services for Northwest Langley Wastewater Treatment Plant Project

RECOMMENDATION
That the GVS&DD Board authorize:

a) award of a contract in the amount of up to $4,890,502 (exclusive of taxes) to Opus International Consultants (Canada) Ltd. for Project Management and Technical Services resulting from RFP No. 18-189: Northwest Langley Wastewater Treatment Project, Project Management and Technical Services; and

b) the Commissioner and the Corporate Officer to execute the contract.

PURPOSE
This is to advise the GVS&DD Board of the results of RFP No. 18 - 189: Project Management & Technical Services for Northwest Langley Wastewater Treatment Plant Project, and to recommend award of the contract in the amount of up to $4,890,502 (exclusive of taxes) to Opus International Consultants (Canada) Ltd.

BACKGROUND
Pursuant to the GVS&DD Officers and Delegation Bylaw No. 284, 2014 (Bylaw) and the Procurement and Real Property Contracting Authority Policy (Policy), procurement contracts which exceed a value of $5 million require the approval of the Board of Directors. Further, the Policy states that contracting authority for multi-phase contracts is determined based on the anticipated total value of the services to be provided over all phases.

This report is being brought forward to the Utilities Committee to consider a recommendation to the GVS&DD Board to award a contract for the Project Management and Technical Services for the Northwest Langley Wastewater Treatment Project.

PROJECT DESCRIPTION
The Northwest Langley Wastewater Treatment Project is a program that will divert all wastewater generated in the cities of Pitt Meadows and Maple Ridge, across the Fraser River to an upgraded wastewater treatment plant in the Township of Langley. This request for proposal is for the project management and technical services to assist Metro Vancouver staff in the supervision of the many design and construction contracts associated with this project. The consulting team will be responsible for:

- implementing schedule and budget tracking and controls,
• writing and managing the treatment plant design RFP,
• assisting Metro Vancouver staff in managing the other contracts, and
• providing expert technical advice.

This assignment will only cover the first 4 years of this 8-year project, with future work being retendered when the scope is more clearly defined.

As a result of Request for Qualifications (RFQ) No. 18-155 that was publicly advertised on Metro Vancouver’s and BC Bid websites, three experienced firms were shortlisted and invited to respond to Request for Proposal (RFP) No. 18-189 for project management and technical services. The proposal closed on July 17, 2018 and three firms submitted proposals as follows:

<table>
<thead>
<tr>
<th>Proponent</th>
<th>Rank</th>
<th>Score</th>
<th>Proposal Price (exclusive of taxes)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Opus International Consultants (Canada) Ltd.</td>
<td>1</td>
<td>74.7</td>
<td>$5,218,334</td>
</tr>
<tr>
<td>Colliers Project Leaders</td>
<td>2</td>
<td>72.0</td>
<td>$4,784,412</td>
</tr>
<tr>
<td>CDM Smith Canada ULC</td>
<td>3</td>
<td>69.8</td>
<td>$6,971,602</td>
</tr>
</tbody>
</table>

The proposals were evaluated and scored by four members of the Liquid Waste Services Department and the Purchasing and Risk Management Division staff evaluated and scored the financial and commercial terms.

Opus International Consultants (Canada) Ltd., who have been recently purchased by WSP, proposed a combined team that has been identified as the highest ranked proponent. Their proposal demonstrated a good understanding of the project scope and key issues. Opus International has partnered with Carollo Engineering to provide project management, project controls, and some of the subject matter experts. The combined team can be tailored to meet the varied needs of this project.

Following the proposal evaluation, a meeting was held with Opus International Consultants (Canada) Ltd. on August 24, 2018 to confirm the scope of work, allocation of resources, project schedule, and deliverables. Through this dialogue with the consultant, the group was able to identify some project efficiencies and agree on a reduction in price. The revised price for the anticipated work is $4,890,502 (exclusive of taxes).

ALTERNATIVES
1) That the GVS&DD Board authorize:
   a) award of a contract in the amount of up to $4,890,502 (exclusive of taxes) to Opus International Consultants (Canada) Ltd. for Project Management and Technical Services resulting from RFP No. 18-189: Project Management & Technical Services for Northwest Langley Wastewater Treatment Plant Project; and
   b) the Commissioner and the Corporate Officer to execute the contract.

2) That the GVS&DD Board terminate RFP No. 18-189: Northwest Langley Wastewater Treatment Project, Project Management and Technical Services, and direct staff to report back to the GVS&DD Board with options for an alternate course of action.
FINANCIAL IMPLICATIONS
If the GVS&DD Board approves Alternative 1, a contract will be awarded to Opus International Consultants (Canada) Ltd. in the amount of up to $4,890,502 (exclusive of taxes). The proposal submitted by Opus International Consultants (Canada) Ltd. is the highest ranked proposal and is within the budget allocated for the project.

SUMMARY / CONCLUSION
As part of the Northwest Langley Wastewater Treatment Project, Request for Proposal No. 18-189 was issued for Project Management and Technical Services, and Opus International Consultants (Canada) Ltd. was identified as the highest ranked compliant proposal. It is recommended that the GVS&DD Board authorize the Commissioner and the Corporate Officer to award and execute a contract for the Project Management and Technical Services to Opus International Consultants (Canada) Ltd. in the amount of up to $4,890,502 (exclusive of taxes).
To: Utilities Committee

From: Roy Moulder, Division Manager, Purchasing and Risk Management, Financial Services  
Jeff Chan, Division Manager, Wastewater Treatment Plants, Project Delivery,  
Liquid Waste Services

Date: July 20, 2018  
Meeting Date: September 20, 2018

Subject: Amend Construction Contract from Tender No. 15-021 and Construction Engineering Service Contract from RFP No. 12-016 for Iona Island Wastewater Treatment Plant Solids Handling Upgrade

RECOMMENDATION
That the GVS&DD Board:

a) amend construction contract (ITT No. 15-021) with Maple Reinders Inc. to include an additional $3,950,000 (exclusive of taxes) for the Iona Island Wastewater Treatment Plant Solids Handling Upgrade Project – Digester Mixing;

b) amend construction engineering services contract (RFP No. 12-016) with CH2M Hill Canada Limited to include an additional $1,600,000 (exclusive of taxes) for the Iona Island Wastewater Treatment Plant Solids Handling Upgrade Project; and

c) authorize the Commissioner and the Corporate Officer to execute the contract amendments.

PURPOSE
This report is to request authorization by the GVS&DD Board to amend: 1) Construction contract awarded from Invitation to Tender (ITT) No. 15-021, to Maple Reinders Inc. for the Iona Island Wastewater Treatment Plant (IIWWTP) Solids Handling Upgrade Package 3 – Digester Mixing Project in the amount of $3,950,000 (exclusive of taxes), and 2) Construction Engineering Services contract awarded from RFP No. 12-016 to CH2M Hill Canada Limited in the amount of up to $1,600,000 (exclusive of taxes) for the IIWWTP Solids Handling Upgrade Project. Amendments to these contracts are required to complete additional work scope to the fourth and final digester in the contract, which was not anticipated when the contract was awarded.

BACKGROUND
Pursuant to the GVS&DD Officers and Delegation Bylaw No. 284, 2014 (Bylaw) and the Procurement and Real Property Contracting Authority Policy (Policy), procurement contracts which exceed a value of $5 million require the approval of the GVS&DD Board of Directors.

This report is being brought forward to complete additional digester repairs as part of the current construction of the IIWWTP Solids Handling Upgrade, which were not anticipated at the detailed design stage, and not included in the original contract award. This additional necessary work was only discovered when construction work started and digesters were removed from service, cleaned, and accessible for internal inspection. The additional construction work also requires additional Construction Engineering Services to ensure construction complies with the design. Both contract
Amend Construction Contract from Tender No. 15-021 and Construction Engineering Service Contract from RFP No. 12-016 for Iona Island Wastewater Treatment Plant Solids Handling Upgrade

Utilities Committee Regular Meeting Date: September 20, 2018

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amendments require GVS&DD Board authorization, as this work results in cumulative change order values exceeding $5M to both contracts.

PROJECT DESCRIPTION

The IIWWTP Solids Handling Upgrade project is required to improve the solids handling capacity to ensure continued compliance with the Plant’s Operational Certificate issued by the Ministry of the Environment. The project is comprised of a total of six construction contracts with a current total budget of $57,400,000. Currently, $52,500,000 of work has been completed or is underway and the only remaining active construction contract is ITT No. 15-021 for Digester Mixing.

Construction Services

ITT No. 15-021 was awarded in June 2015 in the amount of $9,915,300 to Maple Reinders after GVS&DD Board approval. The scope of the original contracted work and the unforeseen conditions encountered resulting in additional work are summarized in the table below:

<table>
<thead>
<tr>
<th></th>
<th>Scope of Original Contract</th>
<th>Additional Unforeseen Work</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Digester 1</td>
<td>✓</td>
<td>Provisional Item</td>
<td>Additional work requires approval by GVS&amp;DD Board (the subject of this report)</td>
</tr>
<tr>
<td></td>
<td>Roof Repairs</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Gas Proof Liner</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Floor Repairs</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Roof Repairs</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Digester 2</td>
<td>✓</td>
<td>Provisional Item</td>
<td>Completed and in operation since February 2018</td>
</tr>
<tr>
<td></td>
<td>Roof Repairs</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Gas Proof Liner</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Floor Repairs</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Roof Repairs</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Digester 3</td>
<td>✓</td>
<td>Provisional Item</td>
<td>Construction scheduled to start August 2018</td>
</tr>
<tr>
<td></td>
<td>Roof Repairs</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Gas Proof Liner</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Floor Repairs</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Roof Repairs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Digester 4</td>
<td>✓</td>
<td>Provisional Item</td>
<td>95% complete; start-up and commissioning is underway</td>
</tr>
<tr>
<td></td>
<td>Roof Repairs</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Gas Proof Liner</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Floor Repairs</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Roof Repairs</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1 Includes: pump buildings for each digester, installation of new mixing system, piping, electrical, HVAC and instrumentation and controls.

During construction, the contractor experienced several unanticipated issues with deteriorating asset condition of the roofs and floors of Digesters 2, 3 and 4 that were not included in the contract’s base scope of work. These included:

- Replacing the gas-proof liner due to failure of the initial gas tightness test as per BC Safety Authority requirements;
- Extra work associated with extensive roof repairs in order to ensure successful gas and water tightness including additional concrete topping, and additional surface preparation; and
- Engineering solutions to address valve failures in the floor structure to minimize risk of structural failure due to buoyancy associated with high groundwater.

Greater Vancouver Sewerage & Drainage
This additional work could not be identified during design since the digesters were in service and could not be drained and inspected prior to the completion of design. The engineering solutions to the problems in Digesters 2, 3 and 4 were managed financially with change orders to the contract.

All of the digesters are of similar vintage, and all were refurbished approximately 20 years ago to the same specifications, and are all operated under the same conditions. As such, it is expected that Digester 1 will require similar upgrades to those required for Digesters 2, 3 and 4. All digesters must be operational in order to meet Operating Certificate requirements.

Estimates have been prepared to complete the final digester, Digester 1, including extensive repairs to the digester roof system, as well as the floor structure similar to those undertaken in Digester 2. This work will add an additional 14 months of construction to the work scope, and is estimated to cost an additional $3,950,000 (exclusive of taxes), bringing the total anticipated contract value, with Maple Reinders at completion, to $17,371,767 (exclusive of taxes). This cumulative amount of change orders exceeds $5M and requires GVS&DD Board approval.

Consulting Engineering Services
RFP No. 12-016 for Engineering Services in the amount of $3,583,161 was awarded to CH2M Hill Canada Limited in August 2012. Subsequently, contract amendments were reported to the Performance and Audit Committee on April 2016 for new phases of work plus change orders. The current value of the contract is $8,301,247 (exclusive taxes). An additional amount of up to $1,600,000 (exclusive of taxes) is anticipated to be required for additional engineering design work plus the necessary field services for the additional 14 months construction associated with Digester 1. This cumulative amount of change orders exceeds $5M and requires GVS&DD Board approval.

The current GVS&DD Board approved budget for the Solids Handling Upgrade project is $57,400,000. Subsequent to the problems associated with the Digesters, a project budget amendment has been included in the 2019 capital budget in part, to complete the project. This budget amendment also includes for minor works to address additional process improvements related to the grit and screenings facility.

Amendments to Maple Reinders Inc. and CH2M Hill Canada Limited contracts, totaling $5,550,000, will result in a total project value of $59,900,000.

ALTERNATIVES
1) That the GVS&DD Board:
   a) amend construction contract (ITT No. 15-021) with Maple Reinders Inc. to include an additional $3,950,000 (exclusive of taxes) for the Iona Island Wastewater Treatment Plant Solids Handling Upgrade Project – Digester Mixing;
   b) amend construction engineering services contract (RFP No. 12-016) with CH2M Hill Canada Limited to include an additional $1,600,000 (exclusive of taxes) for the Iona Island Wastewater Treatment Plant Solids Handling Upgrade Project; and
   c) authorize the Commissioner and the Corporate Officer to execute the contract amendments.
2) That the GVS&DD Board terminate the construction contract to Maple Reinders Inc. and terminate the construction engineering services contract to CH2M Hill Canada Limited after completion of Digester No. 3 and direct staff to report back to the GVS&DD Board with options for an alternate course of action.

FINANCIAL IMPlications
If the GVS&DD Board approve Alternative 1, the construction contract awarded to Maple Reinders Inc. will be amended by $3,950,000 (exclusive of taxes) and the construction engineering services contract awarded to CH2M Hill Canada Limited will be amended by $1,600,000 (exclusive of taxes), resulting in an amended budget of up to $59,900,000 (exclusive of taxes).

Alternative 2 will result in a delay to the project schedule, will be subject to further escalation costs, a risk of higher contract costs through retendering, and increase the risk of further project delays due to a new contractor and consultant being unfamiliar with project requirements.

SUMMARY / CONCLUSION
A construction contract resulting from Tender No. 15-021 was issued for Iona Island Wastewater Treatment Plant Solids Handling Upgrade Package 3 – Digester Mixing Project to Maple Reinders Inc. A contract resulting from RFP No. 12-016 was issued for Engineering Consulting Services for the IIWWPT Solids Handling Upgrade Project to CH2M Hill Canada Limited. Amendments are required to both contracts to facilitate the completion of the upgrade project. As construction nears completion, staff have identified that the total anticipated combined value of both contracts will exceed the GVS&DD Board approved project budget. This is the result of additional work required to address construction, design and contract issues with the digester floors and roofs, and the contract duration extending by an additional year and a half. Additional engineering fees are also required for completion of this project.

It is recommended that the GVS&DD Board authorize the amendment of: 1) Construction Contract 15-021, to Maple Reinders Inc. for the IIWTP Solids Handling Upgrade Package – Digester Mixing Project in the amount of $3,950,000 (exclusive of taxes); and 2) Construction Engineering Services in the amount of up to $1,600,000 (exclusive of taxes) to CH2M Hill Canada Limited, and 3) to authorize the Commissioner and Corporate Officer to execute the contract amendments.

25626675
To: Utilities Committee

From: Fred Nenninger, Director, Policy, Planning & Analysis, Liquid Waste Services

Date: September 10, 2018  
Meeting Date: September 20, 2018


RECOMMENDATION
That the GVS&DD Board request the Minister of Environment & Climate Change Strategy to extend the comprehensive review cycle of the Integrated Liquid Waste and Resource Management Plan (ILWRMP) from eight to ten years and direct staff to post notification of the request in newspapers and on the Metro Vancouver website.

PURPOSE
To seek the Board’s approval to submit a request to the Minister of Environment & Climate Change Strategy to extend the ILWRMP comprehensive review cycle. Extending the ILWRMP’s comprehensive review cycle will allow for the review and updating of the plan to be aligned with the outcomes of key initiatives related to the Iona Island Wastewater Treatment Plant secondary treatment upgrades, sewer overflow management, and climate change actions.

BACKGROUND
The ILWRMP is the Liquid Waste Management Plan for the GVS&DD and its members. Liquid Waste Management Plans are used in the Environmental Management Act for complex liquid waste systems for the issuance of wastewater treatment plant Operational Certificates, as well as to define actions for local government liquid waste systems that align with Ministry of Environment & Climate Change Strategy objectives. Once approved by the Minister of Environment & Climate Change Strategy, a Liquid Waste Management Plan becomes the regulatory instrument under the Environmental Management Act.

The ILWRMP was endorsed by the GVS&DD Board in 2010 and by GVS&DD members before it was approved by the Minister of Environment in 2011. Under Action 3.5.7 of the plan, Metro Vancouver and its members are currently required to undertake a comprehensive review of the plan every eight years. Through the Environmental Management Act, Section 24 (4), only the Minister of Environment & Climate Change Strategy can modify an approved Liquid Waste Management Plan, and therefore, grant an extension to the plan’s comprehensive review cycle.

CURRENT TASKS AND THE ILWRMP REVIEW
Over the next two years, Metro Vancouver is undertaking the following three initiatives whose outcomes will inform and influence the updating of the ILWRMP:
• **The Iona Island Wastewater Treatment Plant Secondary Upgrades:** The completion of the indicative design will identify technology options, define upgrade performance objectives and siting requirements. Parallel with this process, Metro Vancouver is working with its members, first nations, and senior governments to further identify and address their interests associated with the upgrade project.

• **Sewer Overflow Management:** Metro Vancouver is working with its GVS&DD members to improve efforts that will lead to reduced sewer overflows through two different initiatives. Firstly, new work with the Cities of Burnaby, New Westminster and Vancouver is determining how combined sewer separation efforts can be more beneficial in combined sewer elimination and what roles green infrastructure should play in their elimination. Secondly, collaboration among staff is identifying cost-effective options and opportunities that will reduce rainwater inflow and groundwater infiltration into sanitary sewers, and thereby, reduce the occurrence of wet weather related overflows from Metro Vancouver’s sanitary sewers.

• **Climate 2050:** Metro Vancouver continues to develop its program to transition the region to a low carbon emissions future as well as to identify, mitigate and adapt its services to climate change impacts. Specific liquid waste strategies and actions continue to be identified and developed through to 2020. The updating of the *ILWRMP* through the comprehensive review can be aligned with strategies and actions to address the challenges of climate change as identified in the Climate 2050 work being undertaken in 2019 and 2020.

Metro Vancouver’s and GVS&DD members’ *ILWRMP* implementation progress and status is reported biennially to the Ministry of Environment & Climate Change Strategy. The last biennial report submitted to the Ministry covered the period 2015 to 2016. The Ministry has not raised any concerns on the plan’s implementation.

**ALTERNATIVES**
1. That the GVS&DD Board request the Minister of Environment & Climate Change Strategy to extend the *ILWRMP’s* comprehensive review cycle from eight to ten years and direct staff to post notification of the request in newspapers and on the Metro Vancouver website.

2. That the Board not request an extension of the *ILWRMP’s* comprehensive review cycle and direct staff to undertake the comprehensive plan review commencing in 2019.

**FINANCIAL IMPLICATIONS**
The only financial and resource implication to these alternatives is associated with the timing of the *ILWRMP’s* comprehensive review and the allocation of staff and resources for the review.

Alternative 1 complies with the requirements of *ILWRMP* and allows for new information and direction to be considered in the plan’s comprehensive review and update in 2021. This will permit a better informed comprehensive review of the plan by allowing time to further advance key initiatives and align with their outcomes.
Alternative 2 requires the comprehensive review of the *ILWRMP* commencing in 2019, and will result in the plan being updated without knowing the outcomes of important initiatives regarding the Iona Island Wastewater Treatment Plan secondary upgrades, sewer overflow management, and Climate 2050.

**OTHER IMPLICATIONS**
The development of the *ILWRMP* contained a significant engagement process to obtain input from member municipalities, First Nations, regulators, and stakeholders. A significant engagement process is anticipated for the plan’s comprehensive review.

**SUMMARY / CONCLUSION**
The *ILWRMP* was endorsed by the GVS&DD Board in 2010 and by GVS&DD members before it was approved by the Minister of Environment in 2011. Under Action 3.5.7 of the plan, Metro Vancouver and its members are currently required to undertake a comprehensive review of the plan every eight years. Through the *Environmental Management Act*, Section 24 (4), only the Minister of Environment & Climate Change Strategy can modify an approved Liquid Waste Management Plan, and therefore, grant an extension to the plan’s comprehensive review cycle.

Extending the comprehensive review cycle by two years will ensure that the *Integrated Liquid Waste and Resource Management Plan* review and update will be able to consider the outcomes from work being completed over the next two years. This extension will better align the reviewed and updated plan with important initiatives that include the Iona Island Wastewater Treatment Plan Secondary Upgrade, sewer overflow management, and Climate 2050 actions.

Staff recommend Alternative 1.

**Reference**
1. *Integrated Liquid Waste and Resource Management Plan*
RECOMMENDATION
That the GVS&DD Board receive for information the report dated September 10, 2018, titled “Abandoned Waste – 2018 Waste in its Place Regional Campaign Results.”

PURPOSE
To update the GVS&DD Board on the 2018 Waste in its Place regional campaign to reduce instances of abandoned waste, which took place in the spring of 2018.

BACKGROUND
Abandoned waste is a regional issue, with environmental, health and social impacts. The financial burden is also significant; local governments spend around $5 million annually for abandoned waste clean-up and bulky items pick-up programs for mattresses and furniture. In 2017, following Board direction and in collaboration with Members, Metro Vancouver developed and launched the first phase of a regional abandoned waste education and awareness program to help reduce instances of abandoned waste. This program expanded in 2018 to a full-scale regional campaign with increased media and advertising opportunities. This report provides an overview of the 2018 Waste in its Place regional campaign results, as identified in the 2018 Zero Waste Communications Program and Committee Work Plan.

2018 WASTE IN ITS PLACE REGIONAL CAMPAIGN
The main elements of the 2018 Waste in its Place regional campaign ran from April 9 to June 10. In its second year, the program continued to encourage residents to move past their rationalizations for illegally dumping material while educating them on legal disposal methods and programs. By helping residents understand their options, the campaign increased the likelihood that household items would be disposed of correctly.

Campaign Elements and Approach
The 2018 campaign used communications materials and tools developed from research conducted with Members and the public to identify regional priorities, public attitudes and behaviour related to abandoned waste. The 2018 campaign was primarily targeted towards those identified as most likely to dispose of household items incorrectly: multi-family dwelling residents aged 18-34. The following tactics were used to discourage abandoned waste and generate awareness of legal dumping options:

- Targeted digital advertising, including YouTube pre-roll videos, social media, online display and search advertising.
- Transit advertising, including SkyTrain station posters and interior and exterior bus signage.
- Radio and print advertising, to create awareness among non-English speaking audiences who otherwise may not be exposed to the campaign’s messaging.

Examples of campaign creative are provided in Attachment 1.

**Collaboration with Members**

Metro Vancouver shared campaign details and creative materials with Member-communications staff and Municipal Waste Reduction Coordinators during the campaign’s development and prior to launch. All creative materials and collateral were made available to Members to share through their own communication channels. Members also contributed photography of municipality-specific landmarks and areas, for customization to match the campaign creative and use in localized opportunities. Examples of creative customized for Member use are included in Attachment 1.

**Evaluation**

Metro Vancouver used various indicators to evaluate the campaign, including tracking webpage and digital metrics and assessing the reach of media placements. The wasteinisplace.ca campaign webpage received 12,827 page views during the 2-month duration of the 2018 campaign. Webpage users spent nearly three minutes on the site per session, an indication that they were engaged with the content. About 4,000 residents used the site to obtain information on Members’ legal disposal programs, with the City of Vancouver the most selected (1,620 times), followed by the City of Surrey (466 times) and the City of Burnaby (417 times). Additionally, the campaign webpage was effective in directing its audience to other related Metro Vancouver resources; many users proceeded to metrovancouverrecycles.org for more information on disposal options.

The digital advertising elements of the campaign were responsible for nearly half of all webpage visits, and exposed residents to campaign messaging. Digital promotions — comprising social media, online display and search advertising and YouTube videos — reached approximately 1.1 million people. This resulted in:
- participation on social media platforms, including 5,936 click-throughs to the website and 1,292 engagements (likes, shares, comments);
- 214,000 YouTube views, with an above-average rate of viewing videos to completion; and
- banner ads triggered by the top keywords “apartments for rent,” “craigslist,” “Kijiji” and “Vancouver rentals,” indicating that campaign advertising was reaching residents likely in the process of disposing of large items or moving.

Transit advertising appeared at locations and on routes in areas with high densities of multi-family housing, where illegal dumping is more likely to occur. In total, 440 ads in SkyTrain stations and on buses exposed residents to the campaign, with added value obtained from bonus placements and ads that remained posted beyond the campaign dates. Messaging also featured in 308 radio ads on four stations, as well as in half-page sponsored articles in ethnic publications.

A regional post-campaign survey was conducted to assess residents’ recall of the campaign and its influence on their behaviour. Survey results showed that 13% of residents remembered seeing the campaign, with awareness highest among residents aged 18 to 34 (the campaign’s target audience, and those most likely to dump illegally). Transit advertising (interior and exterior bus signage, and...
SkyTrain station posters) had the highest recall. Of those who saw the campaign advertising, 36% reported that they were less likely to dispose of unwanted household items in public spaces.

**ALTERNATIVES**
This is an information report. No alternatives are presented.

**FINANCIAL IMPLICATIONS**
The 2018 Waste in its Place regional campaign budget is $175,000, supported under the Zero Waste Communications Program of the 2018 General Government budget, and managed by the External Relations Department.

**SUMMARY / CONCLUSION**
Abandoned waste is a regional issue, with environmental, health and social impacts. The financial burden is also significant; local governments spend around $5 million annually for abandoned waste clean-up and bulky items pick-up programs for mattresses and furniture. Metro Vancouver’s 2018 Waste in its Place regional campaign used communications materials and tools, based on research conducted with Members and public, to raise awareness of legal disposal options and to discourage abandoned waste. The campaign ran from April 9 to June 10 and featured digital advertising (YouTube pre-roll videos, social media and online display and search advertising), transit advertising (SkyTrain station posters and interior and exterior bus signage) and ethnic radio and print. All materials promoted the wasteinitplace.ca webpage, which highlights regional disposal options and municipal programs and was viewed 12,827 times during the campaign’s 2-month duration. A regional post-campaign survey showed that 13% of residents remembered seeing the campaign, with transit advertising responsible for the highest recall. Of those who saw the campaign advertising, 36% reported that they were less likely to dispose of unwanted household items in public spaces.

**Attachment**
2018 Waste in its Place Regional Campaign Communications Materials

6516361
Examples of transit advertising (bus exteriors and interiors and SkyTrain platform posters).

Online banner ads
15-second PSA video

6-second PSA video

Customized creative examples for Member use (City of Pitt Meadows digital billboard, City of Delta poster, Township of Langley and City of North Vancouver social media graphics)

Greater Vancouver Sewerage & Drainage
Campaign social media examples

Member social media post examples
Ethnic print examples
To: Zero Waste Committee

From: Paul Henderson, General Manager, Solid Waste Services

Date: September 13, 2018          Meeting Date: September 20, 2018

Subject: Update to Funding Model for Paid Recycling Services at Transfer Stations

RECOMMENDATIONS
That the GVS&DD Board direct staff to report back with a strategy that examines the current recycling fee structure for clean wood, green waste/yard trimmings, gypsum and mattresses and that works toward achieving full cost recovery for these materials.

PURPOSE
The purpose of this report is to propose the development of a strategy that examines the current system of paid recyclables (clean wood, green waste/yard trimmings, gypsum and mattresses) and that explores options towards achieving full cost recovery of both operating and fixed costs associated with managing these recyclable materials.

BACKGROUND
On May 17, 2018, the Zero Waste Committee requested that staff bring forward a report on recycling services at transfer stations, including information on funding for paid recyclables.

At its September 2015 meeting, the GVS&DD Board (Board) approved the Zero Waste Committee recommendation to implement a transfer station strategy and adopted the following resolution:

    Provision of dedicated recycling services at Metro Vancouver transfer stations only when requested and funded by communities served by the transfer stations.

Subsequently in June 2016, the Board approved a funding model for dedicated recycling services at the North Shore Transfer Station and Coquitlam Transfer Station. The Board historically approved an approach where recycling fees are set lower than garbage tipping fees and, if required, are supported through garbage tipping fees, with the goal to encourage recycling through a financial incentive.

In response to questions from the Zero Waste Committee, and recognizing that garbage tipping fees are partially funding recycling fees, this report proposes bringing forward a strategy for the Board’s consideration that will examine the current recycling fee structure for paid recyclables and explore options to move towards full cost recovery of both operating and fixed costs associated with managing these recyclable materials.

RECYCLING SERVICES AT TRANSFER STATIONS
All Metro Vancouver transfer stations accept paid recyclables (clean wood, green waste/yard trimmings, gypsum and mattresses) on a partial cost-recovery basis that ensures recycling fees are lower than garbage fees. In addition, some transfer stations accept a variety of free recyclables at recycling depots co-located with the transfer stations at the request (and cost) of municipalities served by the transfer stations.
Paid Recyclables
Recycling fees are set on a partial cost-recovery basis, with the difference funded by garbage tipping fees. Currently, recycling fees cover the operational costs of managing the paid recyclables, but do not contribute to the fixed costs of facility operations. Mattress fees do not cover the full operational cost of processing the mattresses. The cost to process mattresses has increased in the last two years because local options to recycle mattresses are limited. The recycling fee for mattresses has been kept low to help reduce the potential for illegal dumping. No transaction fee (set at $5 per load for garbage and gypsum loads) is charged for green waste or clean wood.

The following table lists primary paid recyclables received at Metro Vancouver transfer stations and the associated recycling fee. Recycling fees are set as part of the Tipping Fee Bylaw.

<table>
<thead>
<tr>
<th>Materials</th>
<th>Recycling Fee</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clean Wood</td>
<td>$95/tonne</td>
</tr>
<tr>
<td>Green Waste</td>
<td>$95/tonne</td>
</tr>
<tr>
<td>Gypsum – New</td>
<td>$150/tonne</td>
</tr>
<tr>
<td>Mattresses</td>
<td>$15 per mattress</td>
</tr>
</tbody>
</table>

The estimated contribution to the cost of paid recyclables from garbage tipping fees across at Metro Vancouver disposal facilities is $2.5 million per year roughly half of which is related to mattress recycling. Metro Vancouver has communicated with the Province of British Columbia on the importance of implementing an extended producer responsibility program for mattresses and bulky furniture to ensure producers are responsible for recycling these materials.

The following table shows the quantity of paid recyclables received at Metro Vancouver transfer stations along with the associated revenues and costs. Paid recyclables represent about 10% of the material received at transfer stations.

<table>
<thead>
<tr>
<th>Paid Recyclables Annual Quantity (tonnes)</th>
<th>Annual Revenue</th>
<th>Annual Cost</th>
<th>Garbage Tipping Fees Contribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>60,000</td>
<td>$5.5 million</td>
<td>$8.0 million</td>
<td>$2.5 million</td>
</tr>
</tbody>
</table>

Tipping fees for municipal single-family and public works garbage contributes about 20% or $500,000 per year of the $2.5 million because municipal single family and public works garbage makes up about 20% of all of the garbage in the regional system. This recycling program cost is included in the Generator Levy component of the tipping fee.

Recycling Depots at Transfer Stations
Metro Vancouver recycling depots are located before the transfer station weigh scales and allow customers to drop off recyclable materials for free. Recycling depots are in place at the North Shore Transfer Station and Coquitlam Transfer Station and are planned for both the replacement Coquitlam Transfer Station and the new Surrey Recycling and Waste Drop-Off Facility. The recycling depots accept a wide range of recyclable materials including metal, paper, plastic, glass, and other extended producer responsibility materials such as electronics, batteries, paint and pesticides.
The funding model approved by the Board in June 2016 apportions the annual costs for constructing, maintaining, administering and operating the depot on a population basis to participating municipalities. These costs are net of revenues for recyclables and extended producer responsibility materials. Charges to participating municipalities are included in the Tipping Fee Bylaw. Municipalities are charged estimated costs annually with any adjustments between estimates and actuals made in the following year.

ALTERNATIVES
1. That the GVS&DD Board direct staff to report back with a strategy that examines the current recycling fee structure for clean wood, green waste/yard trimmings, gypsum and mattresses and that works toward achieving full cost recovery for these materials.

2. That the Zero Waste Committee receive the report dated September 13, 2018, titled “Update to Funding Model for Paid Recycling Services at Transfer Stations” for information and provide alternate direction.

FINANCIAL IMPLICATIONS
If the Board approves alternative 1, staff will prepare a strategy for the Board’s consideration that examines the current recycling fee structure for paid recyclables (clean wood, green waste/yard trimmings, gypsum and mattresses) with the objective of working towards a model that achieves full cost recovery for paid recyclables. The strategy will examine a range of options from the current partial cost-recovery model, to an increased level of cost recovery model and finally, to a full cost-recovery model.

Under alternative 2, the Zero Waste Committee may wish to direct staff to focus on a particular option of either full cost recovery or an increased partial cost-recovery model. For example, under a new increased cost recovery option, the Committee may wish to explore how garbage tipping fees can continue to be used to cover partial costs of receiving paid recyclable materials, but that limits user fee increases to ensure that the recycling of these materials is promoted and does not lead to negative outcomes such as an increase in illegal waste disposal. Currently approximately $2.5 million per year is recovered from Metro Vancouver garbage tipping fees to offset the cost of receiving paid recyclables.

SUMMARY / CONCLUSION
The Zero Waste Committee requested that staff provide information on funding for paid recycling activities at transfer stations. Materials such as green waste, clean wood, gypsum and mattresses are recycled at a fee. Recycling fees are currently set on a partial cost-recovery basis, with the deficit made up through garbage tipping fees. Partially funding paid recyclables through garbage tipping fees has been used to help encourage recycling of these materials and to help reduce illegal dumping. Based on recent feedback from the Zero Waste Committee, staff recommend proceeding with alternative 1 and bring back a strategy that examines the current recycling fee structure for clean wood, green waste/yard trimmings, gypsum and mattresses and that works towards achieving full cost recovery for these materials.
To: Zero Waste Committee

From: Karen Storry, Senior Project Engineer, Solid Waste Services

Date: September 13, 2018

Meeting Date: September 20, 2018

Subject: Reuse in Metro Vancouver

RECOMMENDATION
That the GVS&DD Board receive for information the report dated September 13, 2018, titled “Reuse in Metro Vancouver”.

PURPOSE
To provide an update on reuse initiatives in the region, including services at Metro Vancouver transfer stations, and advise the Board that a new metric is being developed to help quantify the amount of reuse in the region.

BACKGROUND
At its meeting on June 14, 2018, the Zero Waste Committee requested more information on reuse initiatives, including services at Metro Vancouver transfer stations. Reuse is a key element of the waste management hierarchy and a focus of Metro Vancouver’s solid waste efforts. This report provides an overview of reuse initiatives and advises the Board that a new reuse metric is under development for inclusion in future Recycling & Solid Waste Management Summaries.

REUSE IN METRO VANCOUVER
Reuse is the second of the “5R Hierarchy of Resource Management” after waste reduction. Metro Vancouver’s approved Integrated Solid Waste and Resource Management Plan follows this 5R Hierarchy and identifies measures for increasing reuse opportunities under Strategy 2.1, including investigating barriers and bringing forward potential ways of increasing reuse.

Metro Vancouver provides reuse services at its transfer stations and undertakes research and programs that support reuse of a wide range of materials across the region. In addition, businesses, non-profits, universities, community groups and other governments invest in the reuse economy.

Metro Vancouver Regional District Reuse Initiatives
Salvaged Materials Market Study (2014/2015)
Metro Vancouver conducted a pilot project to assess the feasibility of expanding collection of used materials at Metro Vancouver’s transfer stations. The study focused on four material categories commonly observed at regional facilities, that were considered most likely to be reused (Table 1). Under the pilot, dedicated staff were added at the transfer stations to accept materials for reuse.
Table 1: Materials at Transfer Stations with the Highest Potential for Reuse

<table>
<thead>
<tr>
<th>Material Category</th>
<th>Common Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Building Materials</td>
<td>Cabinetry, flooring, plumbing fixtures</td>
</tr>
<tr>
<td>Furniture</td>
<td>Coffee tables, chairs, mirrors, book cases</td>
</tr>
<tr>
<td>Household Items</td>
<td>Toys, bicycles, small appliances</td>
</tr>
<tr>
<td>Wood</td>
<td>Pallets, fences, flooring, offcuts</td>
</tr>
</tbody>
</table>

The pilot project demonstrated benefits but also found these key challenges:
- value of items collected was less than the cost of staff time and resources to collect them;
- a full-time traffic controller was required to manage additional traffic; and
- material destined for disposal is less likely to be prepared for transport in a way that lends itself to remain damage-free and reusable.

Following the pilot, Metro Vancouver expanded opportunities for reuse drop-off at transfer stations without the addition of staff to monitor reuse collection. Provisions were included in the 2017 contracts for all of the transfer stations to encourage the contractors to maximize reuse opportunities.

Collection of Reusable Items at Metro Vancouver Transfer Stations (2015-2017)

Metro Vancouver transfer stations accept materials for reuse including books, used clothing and furniture. Quantities collected from 2015-2017 are shown in Table 2. With the change in the transfer station operations contracts in 2017 to encourage reuse, more materials are being collected.

Table 2: Tonnes of Reuse Materials Collected at Regional Transfer Stations

<table>
<thead>
<tr>
<th></th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reuse Trailer (mostly furniture)</td>
<td>12.5</td>
<td>22.3</td>
<td>24.3</td>
</tr>
<tr>
<td>Used Books</td>
<td>n/a</td>
<td>n/a</td>
<td>172</td>
</tr>
<tr>
<td>Used Clothing</td>
<td>n/a</td>
<td>n/a</td>
<td>33.1</td>
</tr>
</tbody>
</table>

Examples of Other Metro Vancouver Reuse Activities

- Metro Vancouver is a partial funder of, and participant in, the National Industrial Symbiosis Program which is a pilot in the Metro Vancouver and greater Edmonton regions. Expert facilitators host workshops with invited businesses to facilitate connections between businesses with specific unwanted materials or items and businesses that can make use of them.

- Metro Vancouver, through its involvement in the National Zero Waste Council’s Food Working Group, has been active in developing guidelines that should increase the recovery or rescue of safe and nutritious foods that would otherwise be disposed. In May 2018, the report *Guidelines to Minimize Wasted Food and Facilitate Food Donations* was released for use by current and potential donors in the food supply chain and organizations that are recipients of these donations.

- Metro Vancouver, through the National Zero Waste Council and local initiatives, is exploring opportunities to transition to a circular economy in the region and Canada. A circular economy disrupts the take-make-dispose economy by placing a new emphasis on designing waste out of products and reusing, repurposing and recycling materials already in use rather than extracting new virgin resources.
• Metro Vancouver has, in collaboration with other agencies and NGOs, studied and is developing strategies to further increase the reuse of clothing and reduce the disposal of clothing. This will require addressing social barriers. Research indicates that about 25% of people knowingly dispose of clothes because of perceived convenience or a lack of knowledge. Also, while many North Americans do donate their used clothing, most people consistently replace them with new goods rather than buying used clothing for themselves.

Examples of Emerging Trends in Reuse
Traditional second-hand retailers are long-established, but are increasingly challenged in accumulating, storing and making readily available an inventory of used goods. A range of other platforms continue to expand across the region:
• various on-line buy-sell sites, e.g. Craigslist, Kijiji
• online bartering sites that encourage exchanges of goods, e.g. Bunz
• online clothing and used sporting goods retailers (typically in conjunction with bricks and mortar locations)
• tool lending libraries, e.g. Vancouver Tool Library and Thingery
• refurbishing companies, e.g. appliance repair/refurbishing
• food redistribution initiatives, e.g. food banks, Quest Food Exchange and FoodMesh
• community gathering places, e.g. Urban Repurpose, Textiles Fix-It and Repair Matters
• The Share Reuse Repair Initiative, led by the non-profit One Earth, is a new collaboration of local public, community and private sector members to prototype promising new solutions, and support existing efforts for sharing, reusing and repairing in the region.

Quantifying Reuse in the Region
Metro Vancouver’s Annual Recycling & Solid Waste Management Summaries do not quantify reuse activities in the region as reuse is not simple to quantify and reuse organizations are distributed broadly across the marketplace. Following the Zero Waste Committee members’ questions on reuse at the June 14, 2018 Zero Waste Committee meeting, Metro Vancouver is developing ways to estimate reuse activities in the region with the goal of reporting on these activities as part of the annual summaries.

ALTERNATIVES
This report is for information. No alternatives are presented.

FINANCIAL IMPLICATIONS
Metro Vancouver’s initiatives to increase reuse are carried out within existing budgets for Solid Waste Services, External Relations and the National Zero Waste Council.

SUMMARY / CONCLUSION
Reuse is an important component of the waste management hierarchy and Metro Vancouver’s Integrated Solid Waste and Resource Management Plan. Metro Vancouver has implemented a series of actions to encourage reuse including providing reuse opportunities at transfer stations and promoting reuse with partners. Metro Vancouver is also developing a new metric to help track reuse, to be included in the annual Recycling & Solid Waste Management Summaries.
To: Zero Waste Committee  
From: Andrew Marr, Director, Solid Waste Planning, Solid Waste Services  
Date: September 13, 2018  
Meeting Date: September 20, 2018  
Subject: Construction and Demolition Reuse and Recycling in Metro Vancouver

RECOMMENDATION
That the GVS&DD Board receive for information the report dated September 13, 2018, titled “Construction and Demolition Reuse and Recycling in Metro Vancouver”.

PURPOSE
To provide an update on initiatives that Metro Vancouver and others have taken to increase reuse and recycling of construction and demolition waste in the region.

BACKGROUND
Although diversion rates for construction and demolition waste are higher than other sectors, large quantities of construction and demolition materials, particularly wood waste, continue to be disposed of in the region. At its June 14, 2018 meeting, the Zero Waste Committee requested information on construction and demolition material reuse and recycling practices in the region.

CONSTRUCTION AND DEMOLITION WASTE IN METRO VANCOUVER
Municipal Solid Waste includes waste from three main sectors: residential (single-family and multi-family); light industrial, commercial, and institutional; and construction and demolition. Residential and industrial, commercial and institutional wastes are handled mostly at regional disposal facilities, whereas the majority of construction and demolition waste is managed at private transfer stations and landfills. Strategy 2.4 of Metro Vancouver’s Integrated Solid Waste and Resource Management Plan targets the demolition, land clearing and construction sector for increased reuse and recycling.

Construction and demolition waste quantities fluctuate annually depending on activity in the building industry, ranging from 300,000 to 400,000 tonnes per year over the last several years. Table 1 shows the approximate composition of construction and demolition waste recycled and disposed in 2016.

Table 1: Construction and Demolition Materials Recycled and Disposed in 2016

<table>
<thead>
<tr>
<th>Material Category</th>
<th>Recycled (thousands of tonnes - estimated)</th>
<th>Disposed (thousands of tonnes - estimated)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Concrete</td>
<td>530</td>
<td>13</td>
</tr>
<tr>
<td>Asphalt</td>
<td>173</td>
<td>32</td>
</tr>
<tr>
<td>Wood</td>
<td>208</td>
<td>198</td>
</tr>
<tr>
<td>Gypsum</td>
<td>48</td>
<td>&lt;1</td>
</tr>
<tr>
<td>Metals</td>
<td>30</td>
<td>7</td>
</tr>
<tr>
<td>Cardboard and Paper</td>
<td>36</td>
<td>5</td>
</tr>
<tr>
<td>Other</td>
<td>12</td>
<td>95</td>
</tr>
<tr>
<td>TOTAL</td>
<td>1037</td>
<td>351</td>
</tr>
</tbody>
</table>

Greater Vancouver Sewerage & Drainage
Recycling rates have been over 70% for construction and demolition waste for at least the last decade, driven by concrete, asphalt and wood recycling. Concrete is crushed and the resulting aggregate is used in new concrete. Most asphalt is recycled into new asphalt mixes and wood materials are primarily processed into fuel. A portion of the wood that is painted, treated or manufactured (e.g. contains high levels of adhesives) is frequently disposed because it is not suitable for fuel use for many fuel users. Gypsum (if asbestos-free) is recycled into new gypsum products.

Metro Vancouver and Members’ Initiatives to Increase Diversion of Construction and Demolition Waste

Initiatives include:

- an online recycling and reuse directory (includes building materials) at MetroVancouverRecycles.org;
- financial support for the National Industrial Symbiosis Program, which actively facilitates material exchanges between businesses with unwanted materials or items (including used construction and demolition materials) and businesses that can make use of them;
- regulation of private construction and demolition processing facilities and publishing diversion rates achieved at those facilities, to increase transparency and to encourage best practices;
- regulatory and educational programs such as the City of Vancouver’s Green Demolition Bylaw;
- technical assistance to member municipalities introducing demolition recycling requirements, including a sample municipal bylaw developed by Metro Vancouver;
- the Clean Wood Disposal Ban which encourages separation of clean wood for recycling.
- a study of options for increasing construction and demolition waste processing capacity in the region;
- a study on opportunities to improve the management of residential construction and demolition hazardous material, which could, among other goals, increase construction and demolition waste diversion through reduced contamination;
- collaboration with industry, academia and others through the BC Municipal Solid Waste Research Collaborative on topics such as options for treated wood;
- participation in the National Zero Waste Council’s Construction, Renovation and Demolition Working Group including pilot projects on increasing the use of high content reclaimed asphalt pavement and concrete and increasing wood waste diversion through better management practices in the value chain; and
- review of options to update the regulatory framework for construction and demolition material management.

Private Sector Initiatives to Increase Diversion of Construction and Demolition Waste

The region is home to over two dozen licensed private recycling facilities for metals, concrete, asphalt, gypsum and wood. Other initiatives include:

- composting of land-clearing and clean wood waste;
- deconstruction of residential and commercial buildings;
- collection and resale of used building materials;
- use of construction and demolition waste as alternative fuels;
• Canada Green Building Council’s work to change industry standards, develop best design practices and guidelines, advocate for green buildings and develop educational tools to support its members in implementing sustainable design and construction practices; and
• various green building certification programs encouraging better construction and demolition waste management and improved building design that uses fewer resources throughout their usable life. Examples of these certification programs include LEED (Leadership in Energy & Environmental Design), The Living Building Challenge, and Envision (which is specifically for public infrastructure projects).

ALTERNATIVES
This report is for information. No alternatives are presented.

FINANCIAL IMPLICATIONS
Metro Vancouver’s initiatives to increase diversion of construction and demolition wastes are carried out within existing budgets for Solid Waste Services, External Relations and the National Zero Waste Council.

SUMMARY / CONCLUSION
Overall, construction and demolition materials have a high level of recycling in the region. Concrete is recycled at a particularly high rate. Additional diversion opportunities continue to emerge for wood products. Metro Vancouver and its members have initiated a range of initiatives to encourage construction and demolition materials reuse and recycling. Metro Vancouver staff are reviewing additional actions that could be implemented at a regional level and staff will report back on new initiatives as more information is available.

25771125

Greater Vancouver Sewerage & Drainage
To: GVS&DD Board of Directors  
From: Zero Waste Committee  
Date: September 20, 2018  
Meeting Date: September 28, 2018  
Subject: Extended Producer Responsibility Program Update  

ZERO WASTE COMMITTEE RECOMMENDATION  
That the GVS&DD Board:  
a) receive for information the report dated September 12, 2018, titled “Extended Producer Responsibility Program Update”; and  
b) write a letter to the Ministry of Environment and Climate Change Strategy advocating for an Extended Producer Responsibility Program for mattresses.

At its September 20, 2018 meeting, the Zero Waste Committee considered the attached report titled “Extended Producer Responsibility Program Update”, dated September 12, 2018. The Committee subsequently amended the recommendation as presented above in underline style.

Attachment:  
“Extended Producer Responsibility Program Update”, dated September 12, 2018  

26869913 FINAL
To: Zero Waste Committee

From: Andrew Doi, Environmental Planner, Solid Waste Services

Date: September 12, 2018

Meeting Date: September 20, 2018

Subject: Extended Producer Responsibility Program Update

RECOMMENDATION

That the GVS&DD Board receive for information the report dated September 12, 2018, titled “Extended Producer Responsibility Program Update”.

PURPOSE

To provide the GVS&DD Board with an update of the Extended Producer Responsibility programs which have conducted consultation on their Extended Producer Responsibility plan renewals in 2018.

BACKGROUND

The BC Recycling Regulation requires each Extended Producer Responsibility program to undertake a 5-year review and to conduct consultation on items the program proposes to change within or add to its plan. The requirement for consultation provides the opportunity for stakeholders, including local governments, to submit feedback on the operation and performance of the programs. In consultation with member municipal staff, Metro Vancouver staff have provided feedback on a number of Extended Producer Responsibility programs undergoing 5-year reviews in 2018. This report provides an overview of feedback provided to the Extended Producer Responsibility programs and the Ministry of Environment and Climate Change Strategy so far in 2018.

SUMMARY OF EXTENDED PRODUCER RESPONSIBILITY PROGRAM SUBMISSIONS

Six Extended Producer Responsibility programs have published renewed Extended Producer Responsibility plans for comment and have undertaken consultation activities in 2018 so far. This is an unusually high number of Extended Producer Responsibility plan renewal consultations within a short period of time (March 29 to July 6), and is partly due to a program which received approval to renew its plan early (packaging and paper products), and two programs which made significant changes to previously submitted plans (household batteries, and used oil and antifreeze).

Metro Vancouver staff, in cooperation with member municipal staff, submitted comments after participating in each Extended Producer Responsibility program consultation. In some cases, member jurisdictions also submitted individual comments on behalf of their own community. A list of Extended Producer Responsibility plan renewals and summary of key comments are presented in the table below.
<table>
<thead>
<tr>
<th>Program</th>
<th>Consultation Term</th>
<th>Key Comments from Metro Vancouver and member municipal staff</th>
</tr>
</thead>
</table>
| Recycle BC (Residential packaging and papers) | Mar. 29 – May 14  | • Streetscape: Plan requires further clarity to explain the scope and costs impacts of the streetscape collection proposal.  
• Level Playing Field: Protocols and timelines for adding new multi-family and depot collectors should be included in the plan, in a manner similar to curbside collection.  
• Performance Measures: A number of new performance measures were recommended including the tonnes of recycled material and non-recyclable material. |
| Canadian Beverage Association    | Apr. 6 – May 19   | • Program Costs: Plan requires clarification regarding the program’s approach to not use eco-fees.  
• Other Extended Producer Responsibility Programs: Plan requires clarification regarding which Extended Producer Responsibility program will report the capture of light bulbs and used oil from decommissioned vending machines and beverage refrigerators. |
• Data Collection: Plan requires clarification of data collection for reused tires and tires sent to the garbage. |
| Encorp Pacific                  | May 8 – Jun. 22   | • Recovery Rate: Plan requires further explanation about Encorp’s performance target setting, specifically related to the new plan target, which is nearly 5% below the target in the previous plan.  
• Recovery Rate: Plan requires clarification about the decline in annual recovery rate since 2013. |
| BC Used Oil Management Association | May 28 – Jun. 30 | • Collection: Plan should consider separate performance reporting for commercial and consumer collection.  
• Consumer Access: Submission identifies the member jurisdictions which need improved access to DIY oil collection.  
• Program Incentives: Plan should consider studying collection costs to determine appropriate incentive levels. |
| Call2Recycle (Household batteries) | May 28 – Jul. 6  | • Collection Target: Although program performance has improved significantly over the past few years, batteries continue to be identified in waste composition studies.  
• Collection System: Plan requires clarification of incentives for collection, and in particular about any potential sorting of household batteries at local government facilities. |

**ALTERNATIVES**
This is an information report. No alternatives are presented.
FINANCIAL IMPLICATIONS
Some Extended Producer Responsibility programs offer financial incentives for collectors of program materials, including municipal curbside and multi-family collection, and local government recycling depots, transfer stations and landfills. Any proposed changes to incentive rates may impact potential revenues for local government facilities, affecting annual budgets.

SUMMARY / CONCLUSION
The BC Recycling Regulation requires Extended Producer Responsibility programs to review Extended Producer Responsibility plans every 5 years. In 2018, six plans were updated, including BC Used Oil Management Association, Call2Recycle, Canadian Beverage Association, Encorp Pacific, Recycle BC, and Tire Stewardship BC. Metro Vancouver and member municipal staff participated in several program consultations and submitted feedback regarding program changes and performance.
To: Finance and Intergovernment Committee

From: Peter Navratil, General Manager, Liquid Waste Services
Jennifer Crosby, Program Manager, Management Systems, Liquid Waste Services

Date: September 13, 2018
Meeting Date: September 21, 2018

Subject: Asset Management for Liquid Waste Services Policy

RECOMMENDATION
That the GVS&DD Board approve the Asset Management for Liquid Waste Services Policy as presented in the report dated September 13, 2018, titled “Asset Management for Liquid Waste Services Policy”.

PURPOSE
To present to Finance and Intergovernment Committee and GVS&DD Board for consideration the Asset Management for Liquid Waste Services Policy which will establish asset management principles and a framework to balance asset performance, risk and cost to deliver liquid waste services with the goal of maximizing the lifecycle of Liquid Waste Services (LWS) assets.

BACKGROUND
Included in the 2018 Finance and Intergovernment Committee work plan are a number of key policy initiatives that are intended to provide guidance, direction and consistency to the organization in the management of its core services. This report provides an update on the work underway across the organization to develop a series of Asset Management Policies for all Metro Vancouver functions as part of an overall asset management program and focuses specifically on the progress to date in the development of an Asset Management Policy for the Liquid Waste function.

To support the implementation of the asset management program, a formalized policy for Liquid Waste assets has been prepared for consideration. The adoption of an asset management policy is an appropriate next step for the Committee and Board to consider that will provide a clear and consistent framework of asset management principles that balances asset performance, risk and the cost that supports the long term provision of liquid waste services.

This report brings forward a proposed policy for Committee and Board consideration.

ASSET MANAGEMENT IN LIQUID WASTE SERVICES
Building new infrastructure and maintaining the existing assets in a state of good repair is critical to the success of Liquid Waste Services. Good infrastructure stewardship enables the utility to provide quality and affordable services to the community. Metro Vancouver liquid waste infrastructure is a public investment with a replacement value of approximately $15 billion.

Metro Vancouver (GVS&DD) has been acquiring, managing and disposing of assets to deliver services since its inception as a utility. Due to the vast quantity of data to be tracked and managed, the
collection and updating of data and information on the assets has varied across business units, with
assets being recorded using various tools, including work planning software and spreadsheets. An
organizational need was recognized to implement a formal, systematic process of deploying,
operating, maintaining and disposing of assets cost effectively to manage the vast quantity of data
within the system, and to develop a system that will apply consistent asset management principles
across all Metro Vancouver legal entities.

Liquid Waste Services staff have been developing asset risk assessments, customer levels of service
metrics, asset performance metrics, condition assessment frameworks and asset management plan
reporting tools. In addition, a process has been initiated to identify gaps and priorities to improve
asset data collection and information systems and to link these to short term budgeting and long
term financial planning activities.

Asset management is an integrated approach involving all levels of the organization that translates
the organization’s objectives into asset related decisions, plans and activities using a risk based
approach in order to maximize benefits, reduce risks and provide the desired performance of assets
in a sustainable manner over their full life cycle, considering both current and future needs. Asset
related decision-making is evidence based and supports the delivery of clearly defined performance
measures.

PROPOSED ASSET MANAGEMENT POLICY
The proposed Asset Management for Liquid Waste Services Policy contains the following key areas
that will guide the management of assets within the Greater Vancouver Sewerage & Drainage District:

- Asset Management Principles
- Asset Classes
- Asset Data and Information
- Asset Performance & Likelihood of Failure
- Asset Criticality & Consequence of Failure
- Asset Risk & Lifecycle Management Strategies
- Asset Management Plans
- Continuous Improvement

The principles and evaluation criteria outlined in the proposed Policy will assist staff in implementing
the direction of the GVS&DD Board by ensuring that the appropriate asset management principles
are adopted as a core business model that promotes continuous improvement. The Policy provides
asset management principles that balances asset performance, risk and the cost that supports the
long term provision of liquid waste services. This is a strong mandate and catalyst for business
improvement activities and a basis to develop asset management related objectives that align with
Metro Vancouver’s overarching strategic objectives.

ALTERNATIVES
1. That the GVS&DD Board approve the Asset Management for Liquid Waste Services Policy as
   presented in the report, dated September 13, 2018, titled “Asset Management for Liquid Waste
   Services Policy”.

Greater Vancouver Sewerage & Drainage
2. That the GVS&DD Board receive for information the report dated September 13, 2018, titled “Asset Management for Liquid Waste Services Policy” and provide alternate direction.

**FINANCIAL IMPLICATIONS**

If alternative one is approved, implementation of the Policy can be initiated with existing resources and without additional immediate costs to Metro Vancouver. Over the next 5 years, additional effort will be required to improve the coverage and accuracy of asset data and information, through condition and risk assessments as well as software improvements to manage the wealth of data, streamline current maintenance activities and use that data to guide decisions regarding long-term infrastructure investments. Over the longer term, costs for the asset management program are anticipated to be offset by maximizing the lifespan of assets and avoiding costs for reactive asset repair and replacement.

Under alternative two, the Committee may wish to make changes to the Policy or refer it back to staff for further analysis.

**SUMMARY / CONCLUSION**

The goal of the proposed *Asset Management for Liquid Waste Services Policy* is to balance asset performance, risk, and cost.

This Policy outlines GVS&DD’s commitment and methodology to manage liquid waste assets in a manner that minimizes asset failure risks and impacts to both residents and member jurisdictions while optimizing the life cycle of assets. The Policy will guide Liquid Waste Services to meet asset performance targets within a specified budget and enable evidence based decision making with respect to infrastructure rehabilitation and replacement.

As presented in alternative one, it is recommended that the *Asset Management for Liquid Waste Services Policy* be approved by the GVS&DD Board.

**Attachment:**

*Asset Management for Liquid Waste Services Policy (25784055)*

26523852
ASSET MANAGEMENT FOR LIQUID WASTE SERVICES

Effective Date:
Approved By: GVS&DD Board

PURPOSE
To establish asset management principles and framework to balance asset performance, risk, and cost to deliver liquid waste services.

POLICY
Liquid Waste Services delivers wastewater collection, treatment and drainage services through an extensive and complex portfolio of assets. This policy outlines Metro Vancouver’s commitment and methodology to manage these assets in a manner that minimizes asset failure risks and impact to customers and optimizes the lifecycle value of assets to consistently meet asset performance targets and enable evidence based decision making to continuously provide quality services.

ASSET MANAGEMENT PRINCIPLES
The methodology for managing Liquid Waste Services assets is guided by the following principles:

a) Integrated: a comprehensive approach that examines the combined implications of managing all aspects of the asset life cycle. This includes interdependencies of assets or asset systems

b) Risk-based: manage asset risk relative to defined performance targets and asset criticality and focus expenditures and priorities based on risk and associated cost and benefit

c) Sustainable: a long-term approach to estimating asset investment and activities, which will better enable assets to meet future challenges, including changing demographics, legislative requirements and technological, financial and environmental factors

d) Fiscally Responsible: ensure activities and decisions aim at reducing the life cycle cost of asset ownership, while achieving defined asset performance targets

e) Systematic: a formal, consistent, repeatable and methodical approach to the management of assets

f) Innovative: continuous improvement in Asset Management by examining new tools, technologies, practices and solutions

ASSET CLASSES
This policy is applicable to the management of each Liquid Waste Services asset in the following six asset classes:

- Wastewater Treatment Plants
- Sewers
- Pump Stations
• Odour and Corrosion Control Facilities
• Storage Facilities
• Drainage

ASSET DATA AND INFORMATION

To measure performance of Liquid Waste Services assets, Liquid Waste Services will develop and maintain an Asset Registry with comprehensive and accurate asset data and information. Data will be organized in a structured manner so that it can be stored, analyzed and reported at an adequate level for different business needs. Integrity of the data shall be constantly monitored, updated and maintained to provide accurate asset information.

The Liquid Waste Services Asset Registry will include at a minimum, the following:

• Asset grouping (e.g. utility, asset class)
• Asset location (e.g. facility, sub-facility/process)
• Asset details (e.g. make, model, material, size, install date, expected service life)
• Asset identification (e.g. type, number, description)
• Asset criticality and risk information
• Financial information (e.g. acquisition and disposal costs, estimated replacement cost, Operations & Maintenance costs)
• Asset condition and/or estimated remaining service life

ASSET PERFORMANCE AND LIKELIHOOD OF FAILURE

Liquid Waste Services will manage and renew each asset in accordance with clearly defined asset performance metrics and targets. Asset performance information is used as an indicator of an assets’ likelihood of failure. Liquid Waste Services asset performance categories, key performance indicators and targets are provided in the table below.

Greater Vancouver Sewerage & Drainage
<table>
<thead>
<tr>
<th>Performance Category</th>
<th>Performance Category Description</th>
<th>Key Performance Indicator (KPI)</th>
<th>Performance Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>Condition</td>
<td>Asset physical condition</td>
<td>Condition Grade (see table below)</td>
<td>All assets: Condition is Grade 4 (Poor) or better</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>High criticality assets: Condition is Grade 3 (Fair) or better</td>
</tr>
<tr>
<td>Maintenance Costs</td>
<td>Cost to maintain the asset (e.g. labour, parts)</td>
<td>Annual asset maintenance costs</td>
<td>Annual asset maintenance cost is less than 20% of replacement cost</td>
</tr>
<tr>
<td>Obsolescence</td>
<td>Asset is obsolete; technology is no longer supported and cannot be maintained or replaced</td>
<td>Assets with obsolete technology</td>
<td>No assets with obsolete technology</td>
</tr>
<tr>
<td>Functionality</td>
<td>Current functionality of the asset (e.g. capacity, velocity, safety)</td>
<td>Asset functionality vs as-designed functionality</td>
<td>Asset functioning as-designed</td>
</tr>
</tbody>
</table>

Liquid Waste Services will use a 1 to 5 condition grading system in accordance with the table below. When condition information is not available, an age based remaining service life will be used as a proxy for asset condition. Condition information will be stored in the asset register at a level most practical to capture and maintain the condition data. Liquid Waste Services will develop asset specific descriptions based on the table below to enable assignment of 1-5 condition grades for all assets.

<table>
<thead>
<tr>
<th>Condition Score</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Very Good</td>
</tr>
<tr>
<td>2</td>
<td>Good</td>
</tr>
<tr>
<td>3</td>
<td>Fair</td>
</tr>
<tr>
<td>4</td>
<td>Poor</td>
</tr>
<tr>
<td>5</td>
<td>Very Poor</td>
</tr>
</tbody>
</table>

Liquid Waste Services will consider asset vulnerability in assessing likelihood of failure. Vulnerability is the extent to which the asset or grouping of assets can withstand a potential failure and includes factors such as asset redundancy, asset material, soil type and cathodic protection.
ASSET CRITICALITY AND CONSEQUENCE OF FAILURE

Asset criticality is a measure of the asset’s relative consequence of failure. It is considered in planning asset replacement, rehabilitation, operations and maintenance strategies as well as alternative risk mitigation strategies (e.g. emergency preparedness and response planning). High criticality assets (e.g. river crossings) have the potential for significant impact on services if they fail. Failure of low criticality assets (e.g. portable sump pump) will have low or no impact on services. As there is less tolerance to asset failure for high criticality assets, they will be monitored more frequently and have higher priority for asset inspection and improvement work than medium or low criticality assets. The information outlined in the table below will be considered to determine asset criticality (consequence of failure).

### Consequence of Failure Categories (Criticality)

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Worker and Public Safety</td>
<td>Injuries from physical infrastructure failure</td>
</tr>
<tr>
<td>Ecological &amp; Public Health</td>
<td>Reportable discharge to water (&gt;200L of sewage), WWTP Operating Certificate, Odour, Biosolids Quality</td>
</tr>
<tr>
<td>Social</td>
<td>Loss of use of facility/ property</td>
</tr>
<tr>
<td></td>
<td>Disruption to land/ marine transportation services</td>
</tr>
<tr>
<td>Economic</td>
<td>Asset restoration and supplemental O&amp;M costs</td>
</tr>
<tr>
<td></td>
<td>Economic impact to third parties and penalties</td>
</tr>
</tbody>
</table>

The following criteria are taken into consideration in assessing the relative consequence of failure:

- Population/ number of people affected
- Type of infrastructure/services affected (e.g. hospital, school, park, highway, rail)
- Location of potential failures (e.g. waterways, land use)

ASSET RISK AND LIFECYCLE MANAGEMENT STRATEGIES

Managing risks to assets is essential to maintaining expected Liquid Waste Services service levels and the core focus of Asset Management. Risk is the combination of likelihood and consequence of a failure event occurring:

\[
\text{Risk} = \text{Likelihood} \times \text{Consequence}
\]

Key performance indicators and asset performance targets will be monitored to identify the likelihood of failure of an asset. When asset data and information indicates that an asset is failing to meet performance target(s), Liquid Waste Services staff will identify the relative consequence if the asset fails (asset criticality), assess the risk and identify options to address the risk. Risk mitigation options could include asset replacement, rehabilitation, modified operations and maintenance strategies as well as modified emergency preparedness and response planning.

In evaluating different options, economic, social and environmental benefits will be considered for each option. Total asset life cycle costs including capital investment, expenditures related to operations and maintenance of the asset and decommissioning costs will be considered.
Where infrastructure investment is required, Liquid Waste Services will consider opportunities to address other needs or future requirements (e.g. capacity increase, seismic resiliency improvement, etc.) consistent with integrated infrastructure investment planning and the following service level objectives:

- Eliminate Unauthorized Discharges from the Sewer System
- Minimize Impacts on Human Health and the Environment from Authorized Discharges
- Improve Environmental Stewardship
- Minimize Timeline to recover from a Major Event (including Seismic, Power and Climate Change)

**ASSET MANAGEMENT PLANS**

Liquid Waste Services will have asset management plans to summarize asset performance data and information, including a summary of performance risks. Asset Management Plans will also outline the risk mitigation strategies (including capital investments, operating and maintenance strategies and emergency response strategies) and short and long term projected costs.

Liquid Waste Services will have 11 facility-level Asset Management Plans as follows:

- Lions Gate WWTP
- Iona Island WWTP
- Lulu Island WWTP
- Annacis Island WWTP
- Northwest Langley WWTP
- North Shore Sewerage Area
- Vancouver Sewerage Area
- Lulu Island Sewerage Area
- Fraser Sewerage Area – North
- Fraser Sewerage Area – South
- Drainage System

Asset Management Plans will be updated on a regular schedule (minimum every 5 years). Information from the facility-level Asset Management Plans will be aggregated and summarized to prepare a departmental Liquid Waste Services Asset Management Plan.

**CONTINUOUS IMPROVEMENT**

Liquid Waste Services will examine, monitor, identify and address asset management improvement opportunities to enhance asset management tools, technologies and business practices.

Staff will be properly trained to support asset management activities from assessing asset condition to renewing assets to improve asset performance. Liquid Waste Services will report on improvement activities related to the Liquid Waste Services Asset Management Program.
RECOMMENDATION
That the GVS&DD Board:
a) give first, second and third reading to Liquid Waste Laboratory Equipment Reserve Fund Bylaw No. 316, 2018 being a bylaw to govern the Liquid Waste Laboratory Equipment Reserve; and
b) pass and finally adopt Liquid Waste Laboratory Equipment Reserve Fund Bylaw No. 316, 2018.

PURPOSE
To consider the adoption of a Reserve Fund Bylaw for the Liquid Waste Service’s Laboratory Equipment.

BACKGROUND
On April 27, 2018, the Boards of the MVRD, GVS&DD, GVWD and MVHC approved the Operating, Statutory and Discretionary Reserves Policy covering the establishment and usage of reserves. The Greater Vancouver Sewerage and Drainage District Act, like the Community Charter, requires that all reserves which receive direct contributions through budgeted revenue sources, be governed through bylaw. The Liquid Waste Laboratory Equipment Reserve is one such reserve which does not currently have a bylaw which governs its establishment and usage.

This report introduces the Liquid Waste Laboratory Equipment Reserve Fund Bylaw No. 316, 2018 outlining the authority for contributions and application of funds for Liquid Waste Service’s laboratory equipment acquisition, repair, replacement, upgrade and improvement.

STATUTORY RESERVE FUND
The Liquid Waste Laboratory Equipment Reserve Fund Bylaw No. 316, 2018, Attachment 1, outlines the prescribed uses of funds within the reserve. These are defined as “acquisition, repair, replacement, upgrading or improvement of laboratory equipment used by the Greater Vancouver Sewerage and Drainage District for testing and analysis.” This bylaw is consistent with the Operating, Statutory and Discretionary Reserves Policy.

ALTERNATIVES
1. That the GVS&DD Board:
a) give first, second and third reading to Liquid Waste Laboratory Equipment Reserve Fund Bylaw No. 316, 2018 being a bylaw to govern the Liquid Waste Laboratory Equipment Reserve;
b) pass and finally adopt Liquid Waste Laboratory Equipment Reserve Fund Bylaw No. 316, 2018.
2. That the Board receive for information the report dated September 10, 2018, titled “Liquid Waste Laboratory Equipment Reserve Fund Bylaw No. 316, 2018”.

FINANCIAL IMPLICATIONS
If the Board approves alternative one, the Liquid Waste Laboratory Equipment Reserve would be a Statutory Reserve governed by this bylaw consistent with the framework outlined in the Operating, Statutory and Discretionary Reserves Policy. This framework ensures that reserves are established, used and managed in a prudent and consistent manner.

The approval of alternative two would result in the Liquid Waste Laboratory Equipment Reserve not meeting the definition of a Statutory Reserve thereby limiting the contributions it can receive and leaving its usage undefined.

SUMMARY / CONCLUSION
The Operating, Statutory and Discretionary Reserves Policy adopted by the MVRD, GVS&DD, GVWD and MVHC Boards on April 27, 2018 identified a number of reserves that require governance by bylaw. The recommended approval of the Liquid Waste Laboratory Equipment Reserve Fund Bylaw No. 316, 2018 defining the appropriate use and funding for the Liquid Waste Laboratory Equipment Reserve meets the requirements under the Community Charter.

Attachment: (Doc# 26612718)
Liquid Waste Laboratory Equipment Reserve Fund Bylaw No. 316, 2018

26702925
GREATER VANCOUVER SEWERAGE AND DRAINAGE DISTRICT
BYLAW NO. 316, 2018
A Bylaw to Govern a Reserve Fund for Liquid Waste Laboratory Equipment

WHEREAS the Greater Vancouver Sewerage and Drainage District Act authorizes the Greater Vancouver Sewerage and Drainage District (the “GVS&DD”) Board (the “Board”) to establish by bylaw a reserve fund for a specified purpose;

AND WHEREAS it is considered desirable to establish a reserve fund to set aside funds to provide for costs related to the acquisition, repair, replacement, upgrading or improvements of laboratory equipment used by the GVS&DD for testing and analysis;

NOW THEREFORE the Board of the Greater Vancouver Sewerage and Drainage District enacts as follows:

1. There is hereby established a reserve fund to be known as the “Liquid Waste Laboratory Equipment Reserve”.

2. Money from the current revenue of the GVS&DD, or amounts otherwise assigned by the Board, to the extent to which it is permitted by the Greater Vancouver Sewerage and Drainage District Act, may from time to time be paid into the Liquid Waste Laboratory Equipment Reserve.

3. The money in the Liquid Waste Laboratory Equipment Reserve may be invested in the manner provided by the Metro Vancouver Regional District Corporate Investment Policy, as amended from time to time, until its use is required.

4. Money in the Liquid Waste Laboratory Equipment Reserve, and interest earned on it, must be used only for acquisition, repair, replacement, upgrading or improvements of laboratory equipment used by the GVS&DD for testing and analysis.

5. This bylaw may be cited as the “Liquid Waste Laboratory Equipment Reserve Fund Bylaw No. 316, 2018”.

READ A FIRST, SECOND AND THIRD TIME this _____ day of ____________________, 2018.

PASSED AND FINALLY ADOPTED this _____ day of ____________________, 2018.

_______________________________
Greg Moore, Chair

_______________________________
Chris Plagnol, Corporate Officer
To: Finance and Intergovernment Committee

From: Phil Trotzuk, Chief Financial Officer

Date: September 10, 2018

Meeting Date: September 21, 2018

Subject: Liquid Waste Sustainability Innovation Reserve Fund Bylaw No. 317, 2018

RECOMMENDATION
That the GVS&DD Board:

a) give first, second and third reading to Liquid Waste Sustainability Innovation Reserve Fund Bylaw No. 317, 2018 being a bylaw to govern the Liquid Waste Sustainability Innovation Fund Reserve as a Statutory Reserve; and

b) pass and finally adopt Liquid Waste Sustainability Innovation Reserve Fund Bylaw No. 317, 2018.

PURPOSE
To consider the adoption of a Reserve Fund Bylaw for funding costs associated with the Liquid Waste Sustainability Innovation Fund.

BACKGROUND
On April 27, 2018, the Boards of the MVRD, GVS&DD, GVWD and MVHC approved the Operating, Statutory and Discretionary Reserves Policy covering the establishment and usage of reserves. The Greater Vancouver Sewerage and Drainage Act, like the Community Charter, requires that all reserves which receive direct contributions through budgeted revenue sources, be governed through bylaw. The Liquid Waste Sustainability Innovation Fund Reserve is one such reserve which does not currently have a bylaw which governs its establishment and usage.

This report introduces the Liquid Waste Sustainability Innovation Reserve Fund Bylaw No. 317, 2018 outlining the authority for contributions and application of funds for Liquid Waste Service’s Sustainability Innovation Fund Reserve.

STATUTORY RESERVE FUND
The Liquid Waste Sustainability Innovation Reserve Fund Bylaw No. 317, 2018, Attachment 1, outlines the prescribed uses of funds within the reserve. These are defined as “activities described in the GVS&DD Liquid Waste Sustainability Innovation Fund Policy, as amended from time to time.” This bylaw is consistent with the Operating, Statutory and Discretionary Reserves Policy.

Two of the key criteria of the Liquid Waste Sustainability Innovation Fund Policy are activities that:

- result in a positive contribution, in the form of tangible results and/or measurable benefits, to the sustainability of the region; and
- demonstrate innovation and facilitate action.
ALTNERATIVES
1. That the GVS&DD Board:
   a) give first, second and third reading to *Liquid Waste Sustainability Innovation Reserve Fund Bylaw No. 317, 2018* being a bylaw to govern the Liquid Waste Sustainability Innovation Fund Reserve as a Statutory Reserve;
   b) pass and finally adopt *Liquid Waste Sustainability Innovation Reserve Fund Bylaw No. 317, 2018*.

2. That the GVS&DD Board receive for information the report dated September 10, 2018, titled “Liquid Waste Sustainability Innovation Reserve Fund Bylaw No. 317, 2018”.

FINANCIAL IMPLICATIONS
If the Board approves alternative one, the Liquid Waste Sustainability Innovation Fund Reserve would be a Statutory Reserve governed by this bylaw consistent with the framework outlined in the *Operating, Statutory and Discretionary Reserves Policy*. This framework ensures that reserves are established, used and managed in a prudent and consistent manner.

The approval of alternative two would result in the Liquid Waste Sustainability Innovation Fund Reserve not meeting the definition of a Statutory Reserve thereby limiting the contributions it can receive and leaving its usage undefined.

SUMMARY / CONCLUSION
The *Operating, Statutory and Discretionary Reserves Policy* adopted by the MVRD, GVS&DD, GVWD and MVHC Boards on April 27, 2018 identified a number of reserves that are to be established by bylaw. The recommended approval of the *Liquid Waste Sustainability Innovation Reserve Fund Bylaw No. 317, 2018* defining the appropriate use and funding for the Liquid Waste Sustainability Innovation Fund Reserve meets the requirements under the *Community Charter*.

Attachment:
*Liquid Waste Sustainability Innovation Reserve Fund Bylaw No. 317, 2018* (Doc# 26627163)
WHEREAS the Greater Vancouver Sewerage and Drainage District Act authorizes the Greater Vancouver Sewerage and Drainage District (the “GVS&DD”) Board (the “Board”) to establish by bylaw a reserve fund for a specified purpose;

AND WHEREAS it is considered desirable to establish a reserve fund to set aside funds to provide for costs related to activities described in the GVS&DD Liquid Waste Sustainability Innovation Fund Policy, as amended from time to time;

NOW THEREFORE the Board of the Greater Vancouver Sewerage and Drainage District enacts as follows:

1. There is hereby established a reserve fund to be known as the “Liquid Waste Sustainability Innovation Fund Reserve”.

2. Money from the current revenue of the GVS&DD, or amounts otherwise assigned by the Board, to the extent to which it is permitted by the Greater Vancouver Sewerage and Drainage District Act, may from time to time be paid into the Liquid Waste Sustainability Innovation Fund Reserve.

3. The money in the Liquid Waste Sustainability Innovation Fund Reserve may be invested in the manner provided by the Metro Vancouver Regional District Corporate Investments Policy, as amended from time to time, until its use is required.

4. Money in the Liquid Waste Sustainability Innovation Fund Reserve, and interest earned on it, must be used only for activities described in the GVS&DD Liquid Waste Sustainability Innovation Fund Policy, as amended from time to time.

5. This bylaw may be cited as the “Liquid Waste Sustainability Innovation Reserve Fund Bylaw No. 317, 2018”.

READ A FIRST, SECOND AND THIRD TIME this _____ day of _________________, 2018.

PASSED AND FINALLY ADOPTED this _____ day of _________________, 2018.

_______________________________
Greg Moore, Chair

_______________________________
Chris Plagnol, Corporate Officer