CITY OF VANCOUVER

ADMINISTRATIVE REPORT

Report Date:	April 17, 2019
Contact:	Daniel Roberge
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RTS No.:	12952
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Meeting Date:	May 15, 2019

TO: Standing Committee on Policy and Strategic Priorities

FROM: General Manager, Engineering Services

SUBJECT: Iona Wastewater Treatment Plant - Project Update

RECOMMENDATION

That Council support the City of Vancouver's Engineering Services' staff involvement in the definition and preliminary design workshops undertaken by Metro Vancouver and their consultants.

REPORT SUMMARY

Metro Vancouver is currently planning for the Iona Wastewater Treatment Plant upgrades from primary to secondary treatment (the "Project"), to be implemented by 2030, as per Provincial regulations. The Project aims to achieve three objectives:

1. Upgrade the plant to secondary treatment;
2. Integrate the new plant with Iona Beach Regional Park and the surrounding environment; and
3. Explore resource recovery opportunities.

The Project is currently in the definition and preliminary design phase. The Project cost is anticipated to be in the order of $2 billion, of which the City of Vancouver rate payers would be responsible for paying a significant portion. As such, alignment between early planning decisions and the City of Vancouver's interests is critical.

The purpose of this report is to provide an opportunity for Metro Vancouver staff to share information about the Project and for the City of Vancouver staff to recommend that Council support the City's participation in the definition and preliminary design phase of the Project.

COUNCIL AUTHORITY/PREVIOUS DECISIONS

There is no applicable Council Authority or previous decisions relevant to this report.

CITY MANAGER'S/GENERAL MANAGER'S COMMENTS

The City Manager supports approval of the recommendation.

REPORT

Background and Context

The Province of British Columbia approved the Metro Vancouver Liquid Waste Management Plan in 2011. As a condition of approval and by no later than 2030, the Province requires upgrading the Iona Island Wastewater Treatment Plant in alignment with requirements of the Federal Wastewater Systems Effluent Regulation. The Project aims to achieve three objectives:

1- Upgrade the plant to secondary treatment;
2- Integrate the new plant with Iona Beach Regional Park and the surrounding environment; and
3- Explore resource recovery opportunities.

The estimated cost for the Project is likely to be in the order of $2 billion, of which a substantial portion will be funded by the City of Vancouver's sewer utility rate payers through levies from Metro Vancouver. The Project Definition Phase was initiated by Metro Vancouver in 2018 and will continue through to the end of 2020. Technical work and an engagement process with stakeholders and First Nations are currently underway. Metro Vancouver's total budget for this phase is $16,500,000, and this budget amount has been reflected in the rate increase forecasted by Metro Vancouver over the coming five years.

Key City of Vancouver staff within the Engineering Services Department will be participating in a series of workshops organized by Metro Vancouver's Project team and their consultants as part of the Project Definition Phase. A Project Definition Report will summarize the findings and parameters of the Project.

Metro Vancouver has committed to undertake meaningful engagement with potentially impacted stakeholders and First Nations, and to obtain input on the three Project objectives.

The various stakeholder groups that Metro Vancouver will engage with include but are not limited to: local government staff and elected officials, residential and business neighbours of the plant, environmental groups, regulators and other government agencies; recreational users of Iona Beach Regional Park, and commercial and recreational Fraser River users.

Fourteen First Nations have been identified on the Provincial Consultative Areas Database and in accordance with Metro Vancouver's corporate process for Information

Sharing and Engagement with First Nations for Construction Projects. Metro Vancouver will provide these First Nations with information on the Project and the opportunity to provide feedback on their respective interests.

Metro Vancouver will also work closely with the Musqueam Indian Band since their reserve lands are located in close proximity to the Iona Island Wastewater Treatment Plant.

Implications and Risks

Financial

The scope and financial implications of the upgrade for the Iona Wastewater Treatment plant are significant to City of Vancouver rate payers. While the specific implications to utility rates are yet to be fully articulated, they are expected to result in important rate increases in the coming decades.

The Iona Wastewater Treatment Plant's capital costs are currently estimated to be in the order of $2 billion inclusive of contingency. An updated estimate will be developed during the course of 2020.

Based on the Project objectives listed above, Metro Vancouver has determined that the Project entails renewal of the existing facilities and site, and an upgrade of the treatment level. Only a minor portion of the Project's investments is intended to service growth. As such, the Project costs will be allocated as follows:

- *Renewal and upgrade portion:* Over 90% of the total costs will be charged through Metro Vancouver's Liquid Waste Levies, which will be charged to the members of the Greater Vancouver Sewers and Drainage. These levies are allocated based on Metro Vancouver's Cost Apportionment By-Law (283, 2014) as follows[1]:
    - 70% distributed across all members of the Greater Vancouver Sewers and Drainage District (GVS&DD);
    - 30% will be charged to the sewerage area benefiting from the plant: the Vancouver Sewerage Area (VSA). The City of Vancouver contributes approximately 91% to the VSA's flow into the plant.
- *Growth-driven portion:* Less than 10% of the total costs, funded through Development Cost Charges (DCCs)

The Project financing is arranged through the Municipal Finance Authority with an amortization term of 15 years. The debt servicing costs of the project will also flow through the Liquid Waste Levy.

Metro Vancouver's current Five-Year Financial Plan forecasts rate increases that include Project-related work planned for the respective years are as follows:

[1] Allocations are subject to validation upon finalization of the project scope and preliminary design.

Table 1 - Metro Vancouver's Liquid Waste Levy: Forecasted Increase

Year	2019	2020	2021	2022	2023
Levy Increase	7.9%	6.0%	3.3%	5.0%	2.4%

The portion of the rate associated with the Project is modest given the costs incurred relate primarily to studies and staffing. More substantial increases will be reflected in the period between 2024 and until 2045, at which point the bulk of the costs and debt charges associated with the Project have been discharged.

Currently, Metro Vancouver's financial plan and corresponding rates have not anticipated any federal or provincial infrastructure funding. This is to ensure that Metro Vancouver has the financial capacity to complete this Project regardless of the participation of the other levels of government. If and when federal and/or provincial funding is secured, the levies and rate increases will be adjusted accordingly.

The most recent example of provincial and federal government contribution is the North Shore Secondary plant (construction underway) whereby each of the federal and provincial governments funded approximately one third of the construction costs.

Technical

The City of Vancouver's participation in the Project Definition Phase will help support alignment between the Project and the City's long-term objectives related to wastewater service planning, greenest city goals, climate adaptation, and environmental protection. Some of the City of Vancouver's key priorities include:

- The Project's design and the delivery approach to offer the best value for money for rate payers;
- Consideration for the scalability of the infrastructure should the flow into the plant increase over the coming decades; and
- Consideration for potential future upgrades to tertiary treatment levels to address a broader range of pollutants.

Governance

The Metro Vancouver Liquid Waste Committee advises the Metro Vancouver Board on major decisions related to wastewater. Staff recommends that the City of Vancouver Council maintain a member on the Metro Vancouver Liquid Waste Committee, given the focus of the committee's work on matters related to the Iona plant upgrade, the update of the ILWMP and ongoing Combined Sewer Overflow (CSO) mitigation strategies and plans.

Further, the City of Vancouver Engineering Services' key senior staff continues to participate in regular meetings organized by Metro Vancouver to report on project progress and risks.

Environmental

The increase in the treatment performance of the Iona Wastewater Treatment Plant will help reduce wastewater pollution, as well as help further protect aquatic habitats and health in the Fraser River and Burrard Inlet.

Risks

Key Project risks reported by Metro Vancouver include:

- Geotechnical and soil risks, including settlement and interactions amongst the plant, soil, foreshore, and park.
- Land rights, title and acquisition risks

CONCLUSION

Given the magnitude of the Project and the financial, environmental, and policy implications for the City of Vancouver, as well as other emerging wastewater initiatives relevant to the City of Vancouver in the coming years, staff recommends that Council supports the recommendations of this report.

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Iona Island Wastewater Treatment Plant

PROJECT DEFINITION PHASE

Fred Nenninger
DIRECTOR, POLICY, PLANNING & ANALYSIS
LIQUID WASTE SERVICES

Vancouver Council Meeting – May 15, 2019

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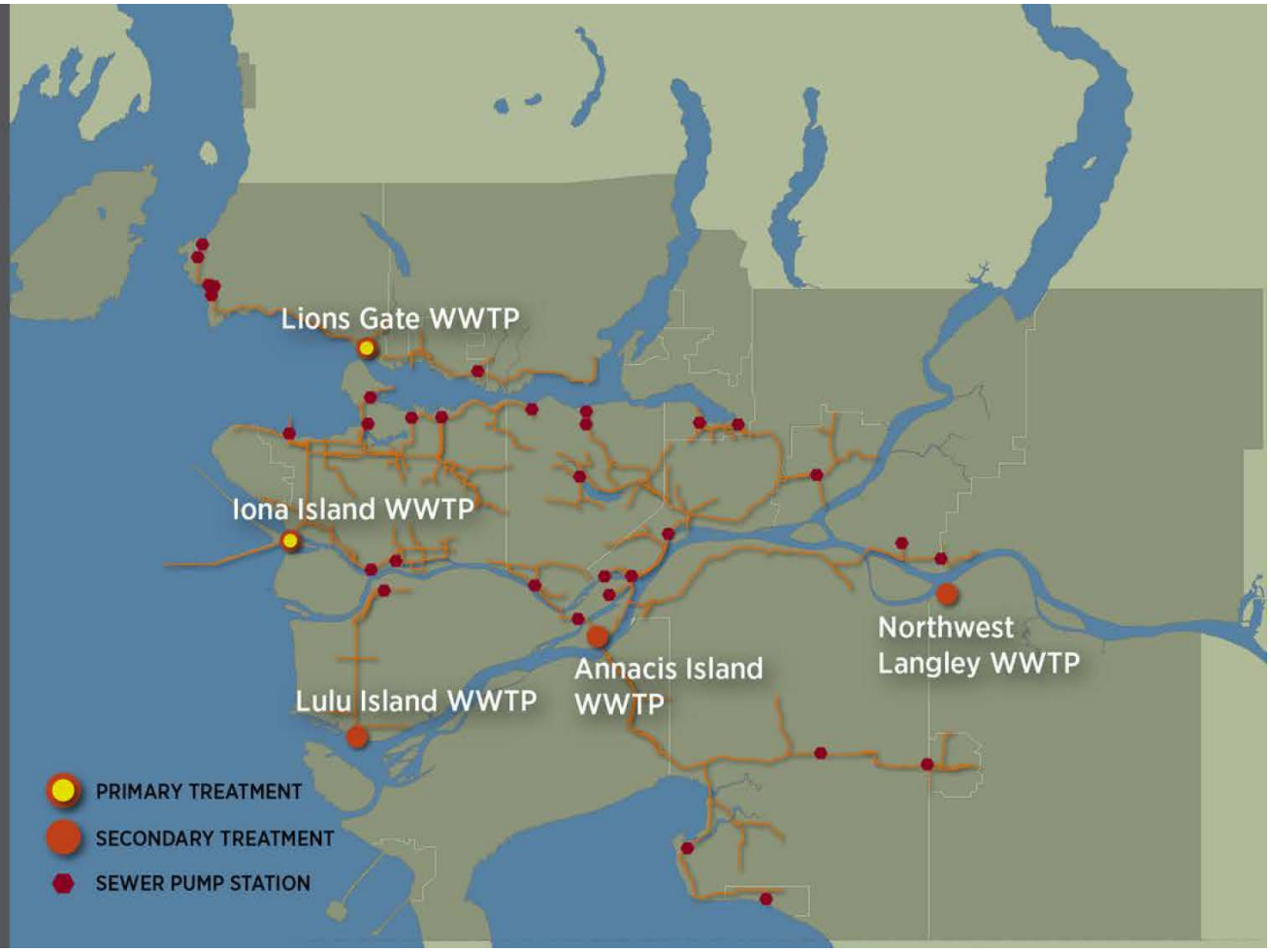
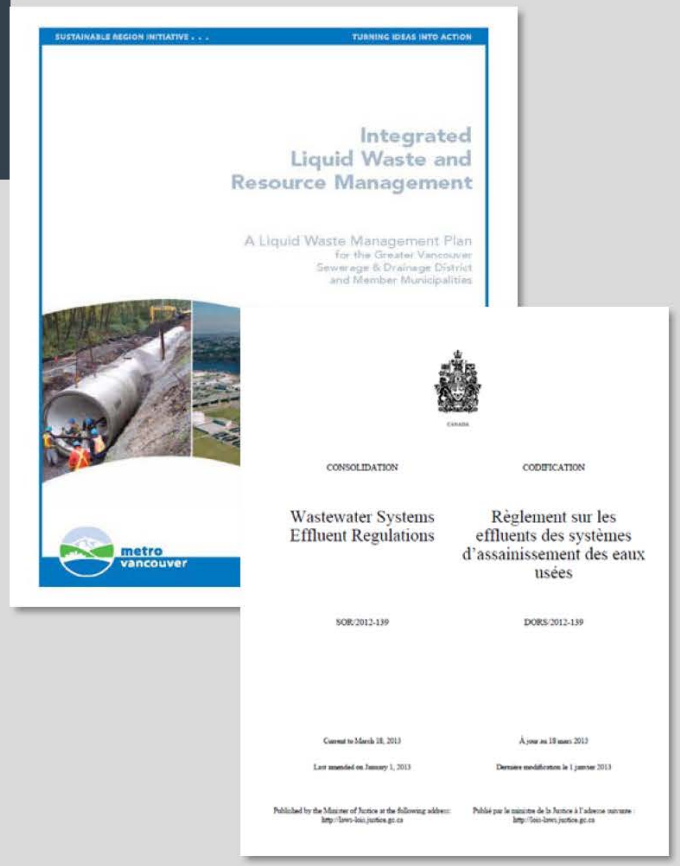
Metro Vancouver Wastewater Treatment Plants



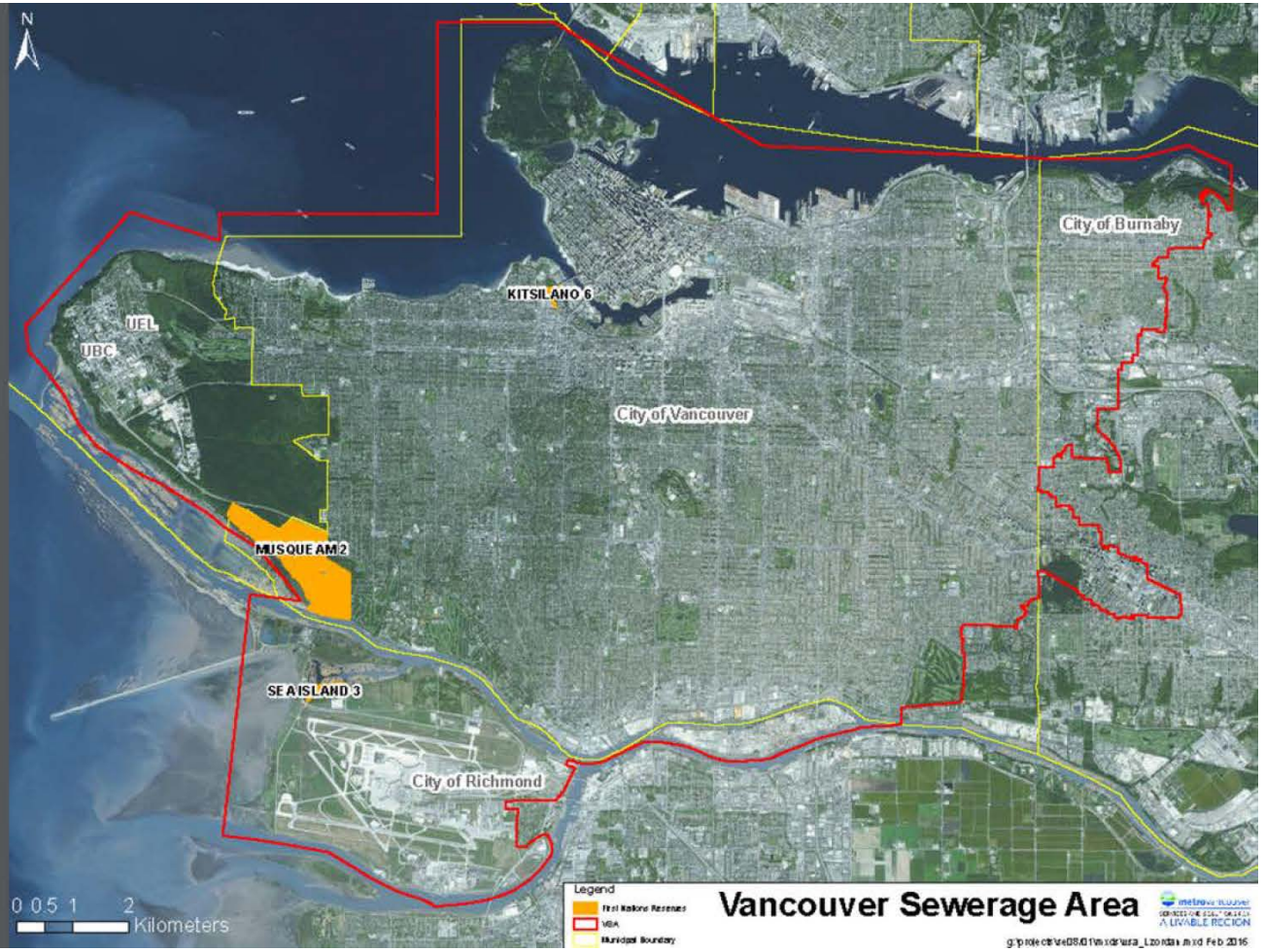
Iona Island Secondary WWTP Regulatory Drivers

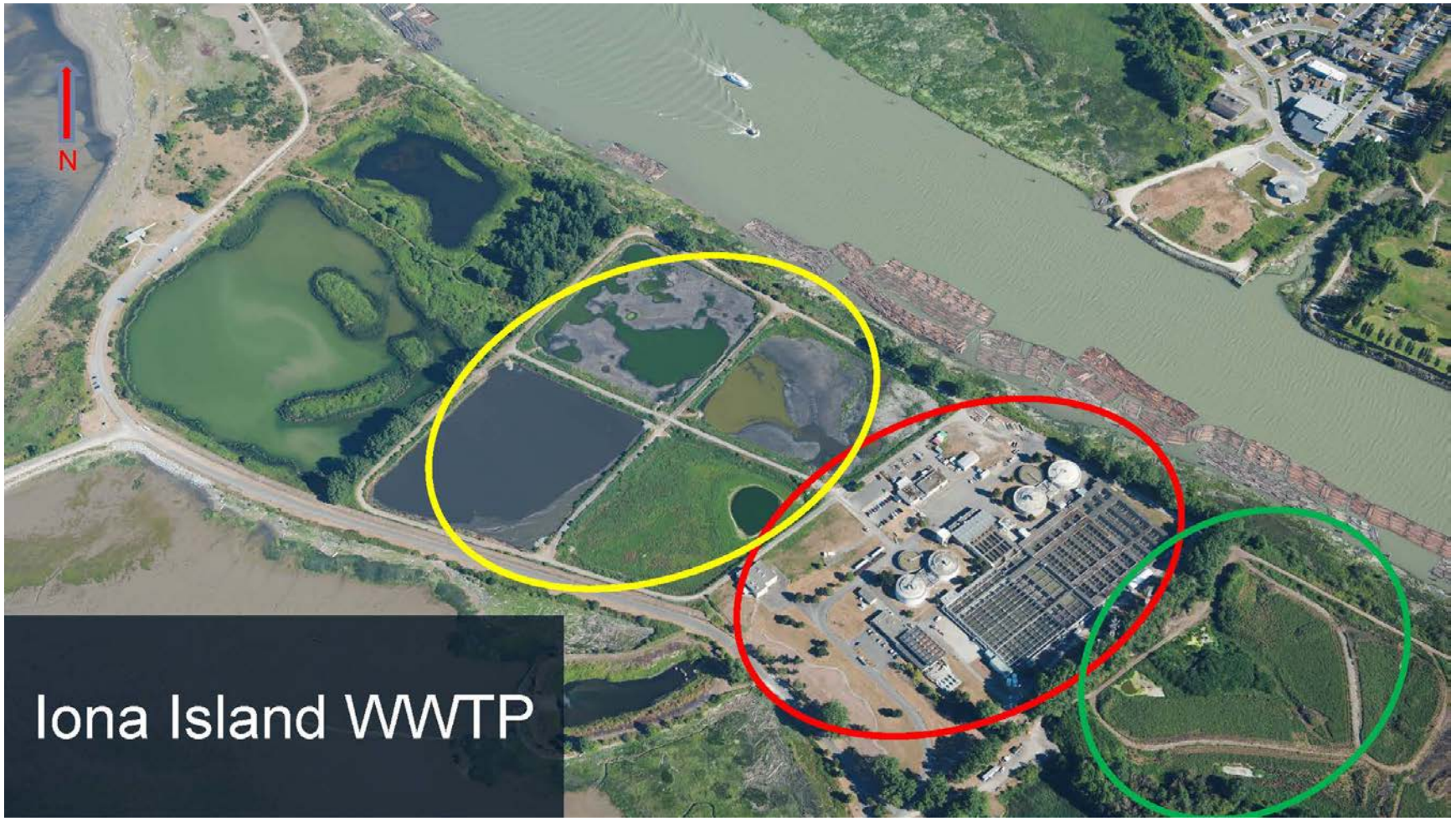
- Metro Vancouver's *Integrated Liquid Waste and Resource Management Plan*
- Government of Canada's *Wastewater Systems Effluent Regulations*

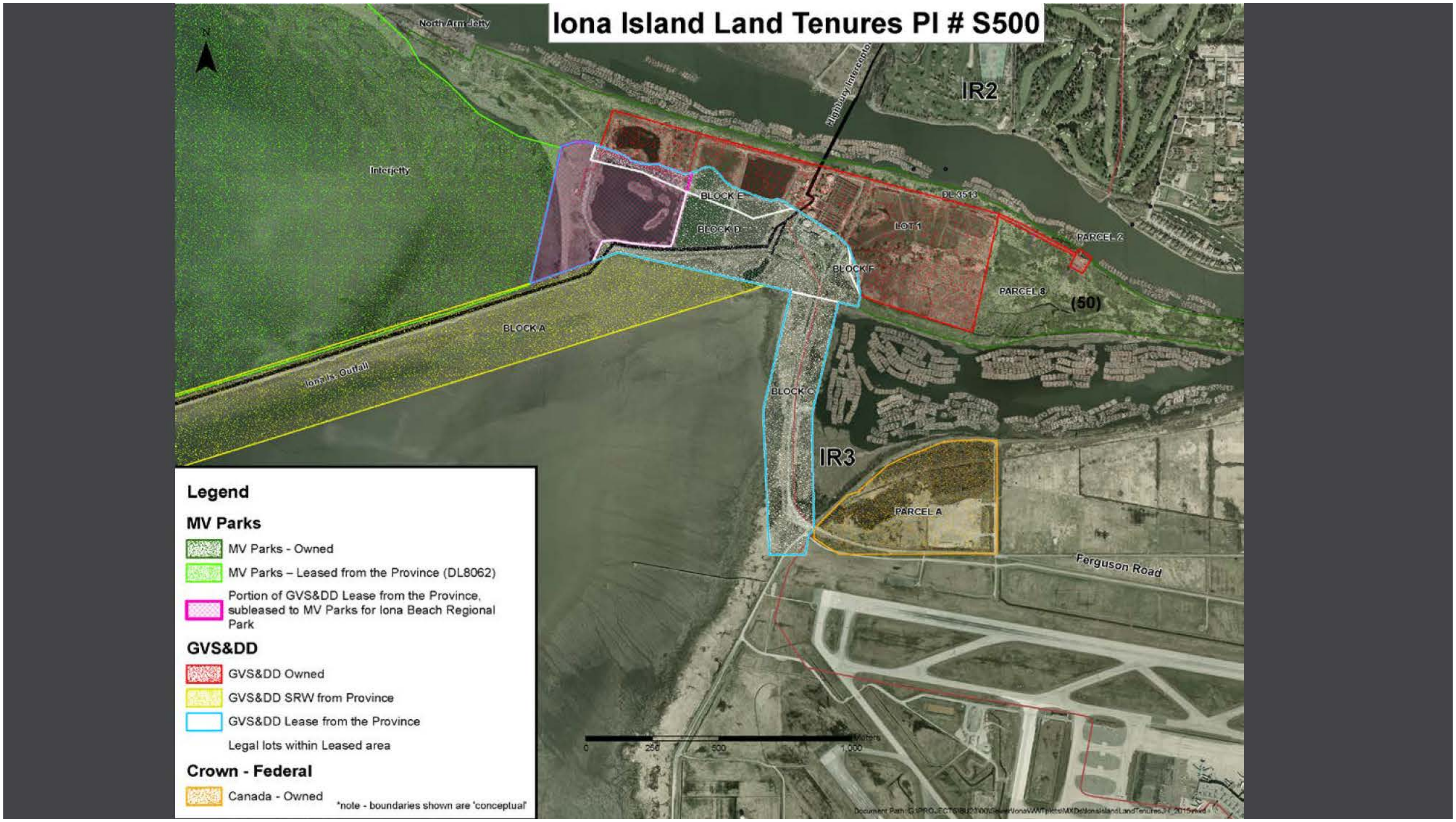


Vancouver Sewerage Area

Vancouver, Burnaby, Richmond, UBC, UEL, Squamish Nation & Musqueam Indian Band




N
Iona Island WWTP


Iona Island Land Tenures PI # S500
North Arm Jetty
IR2
Interjetty
BLOCK E
BLOCK D
DL 3513
LOT 1
PARCEL 2
BLOCK F
PARCEL 8
(50)
BLOCK A
Iona Is. Outfall
BLOCK C
IR3
PARCEL A
Ferguson Road
Legend
MV Parks
MV Parks - Owned
MV Parks – Leased from the Province (DL8062)
Portion of GVS&DD Lease from the Province, subleased to MV Parks for Iona Beach Regional Park
GVS&DD
GVS&DD Owned
GVS&DD SRW from Province
GVS&DD Lease from the Province
Legal lots within Leased area
Crown - Federal
Canada - Owned
*note - boundaries shown are 'conceptual'
0
250
500
1,000
Meters

Iona Island WWTP Project Phases & Timeline

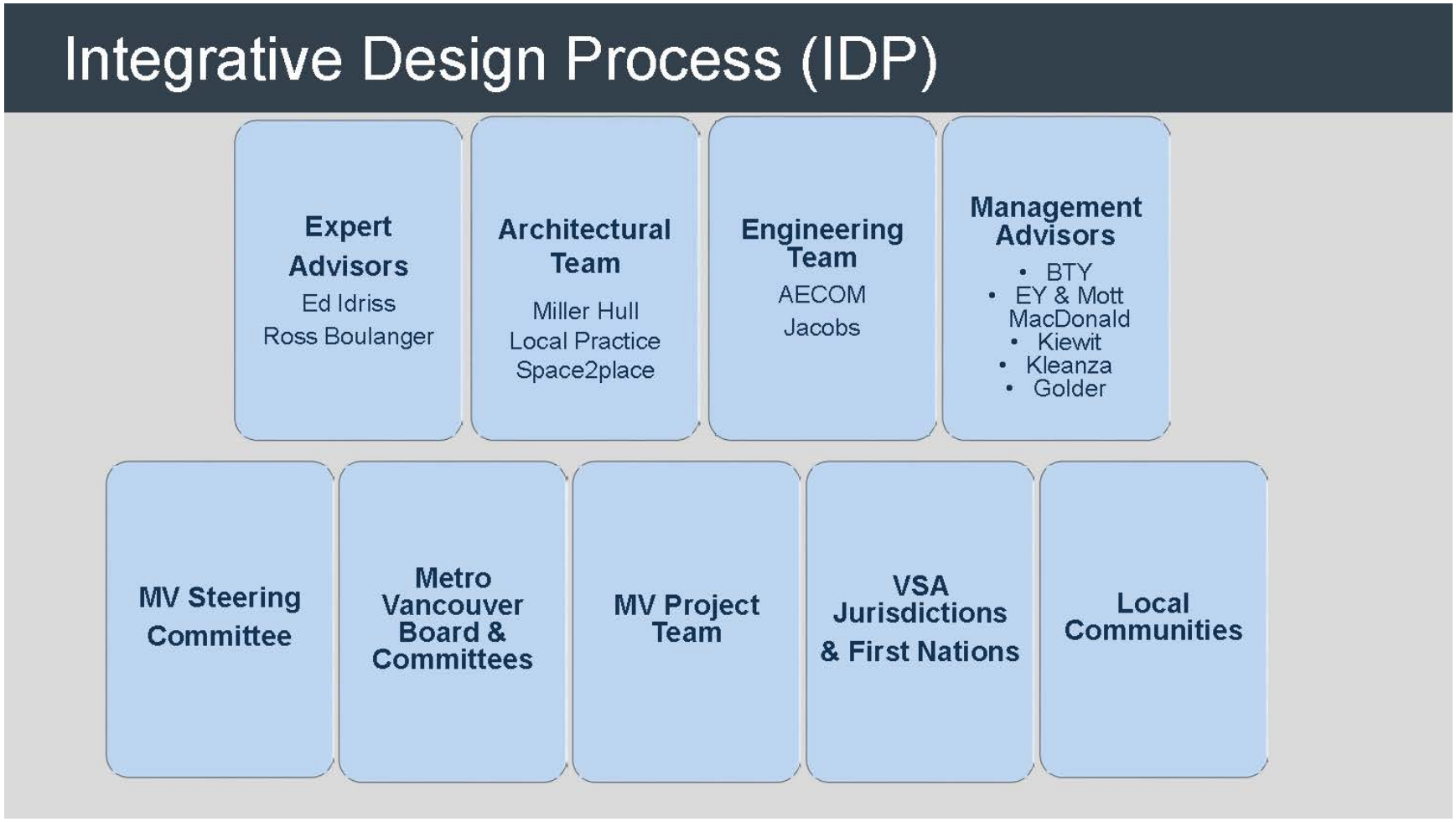
Iona Island Secondary WWTP
Project Goals

- Secondary Wastewater Treatment
- Resource Recovery
- Community and Park Integration

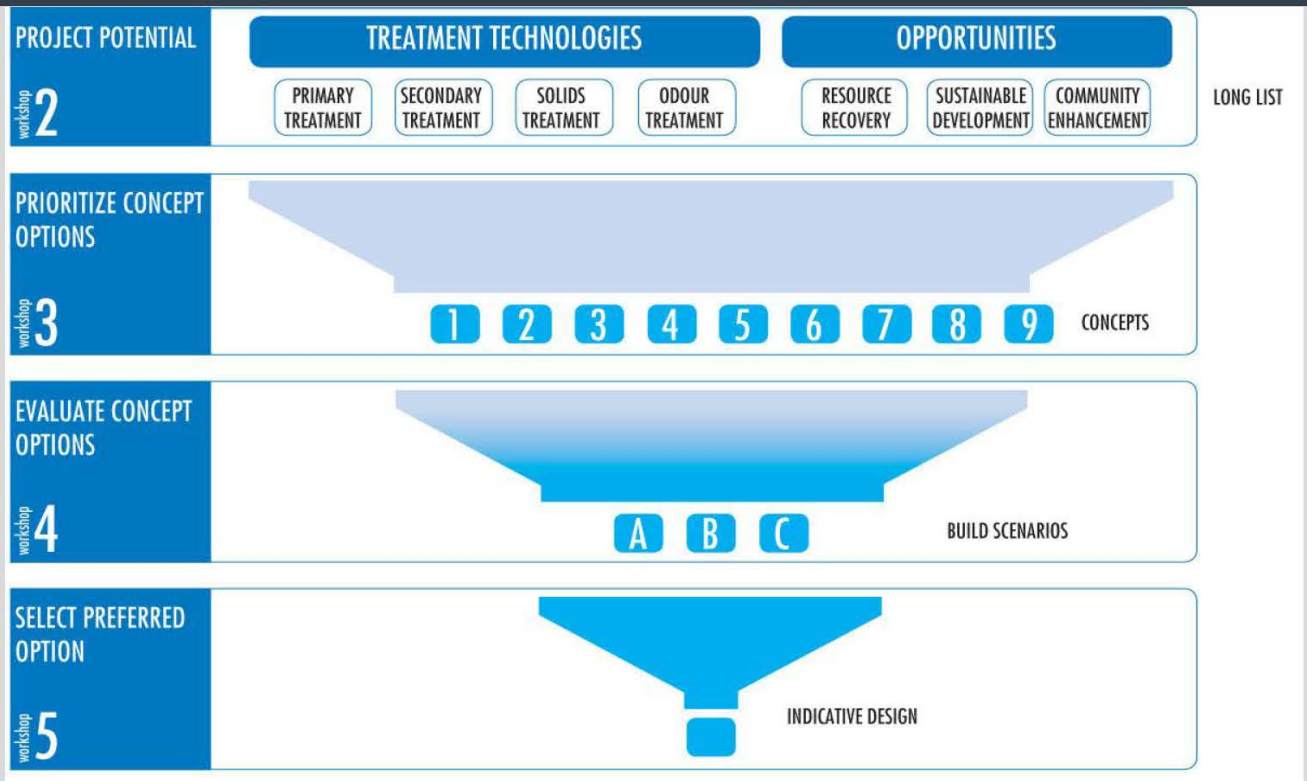
The Project Definition Phase Deliverable

A report that will:

- Provide an indicative design
- Provide a project schedule for detailed design and construction
- Provide the detailed design and construction cost-estimate
- Recommend procurement method(s)


Integrative Design Process (IDP)
Expert Advisors
Ed Idriss
Ross Boulanger
Architectural Team
Miller Hull
Local Practice
Space2place
Engineering Team
AECOM
Jacobs
Management Advisors
• BTY
• EY & Mott MacDonald
• Kiewit
• Kleanza
• Golder
MV Steering Committee
Metro Vancouver Board & Committees
MV Project Team
VSA Jurisdictions & First Nations
Local Communities

Project Definition Process



Integrative Design Process Workshops

Workshop	Theme	Preliminary Dates
IDP Workshop #2	Objective Hierarchy and Evaluation	January 21-22, 2019
IDP Workshop #3	Plant Concepts Integration	April, 2019
IDP Workshop #4	Plant Concept Evaluation and Screening	July, 2019
IDP Workshop #5	Plant Preferred Concept Selection	October, 2019
IDP Workshop #6	Preferred Plant Indicative Design	March, 2020
IDP Workshop #7	PDR Draft Review	July, 2020
IDP Workshop #8	PDR Final Presentation	


Stakeholders and First Nations
Plus:
• Local governments
• Environmental groups
• Regional Park visitors
• River users
• other First Nations
13
Map data ©2017 Google, Imagery ©2017 CNES / Airbus, DigitalGlobe, IMTCAN, Landsat / Copernicus, Province of British Columbia

MV engagement objectives

- Promote community engagement
- Provide opportunities for input
- Work with First Nations
- Ensure transparency and accountability

Community Engagement

4 community workshops that will feed into the IDP process.

Individual meetings with stakeholder groups that have specific interests or concerns.

Online input via our website.

Community Workshop #1

January 9, 2019 Key Input Themes

- Protection of estuary and wetlands
- Beach, wildlife and bird habitat
- Educational opportunities and partnerships
- World-class treatment and resource recovery


Thank you
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