IONA ISLAND WASTEWATER TREATMENT PLANT
ONLINE STAKEHOLDER WORKSHOP (Birds, Lagoons & Community Integration)
MAY 13, 2020
SUMMARY

Summary of the Iona Island Wastewater Treatment Plant (IIWWTP) Project Stakeholder Workshop focused on birds, lagoons and community integration (Workshop) held May 13, 2020 via videoconference.

1. Welcome

Lena Zordan, Policy Coordinator, MV, called the Workshop to order at 1:05 p.m. and welcomed participants.

The list of Workshop participants is included in Appendix A.

2. Project Definition Review and Update

Martin Clarke, Senior Engineer and Project Manager, Metro Vancouver (MV), provided an overview of the Project Definition Phase of the IIWWTP Project and highlighted:

- Overall project timeline
- Current liquid and solid waste treatment streams at the IIWWTP
- A biosolids dewatering facility is under construction and will be operational in 2021
- Main goals of the IIWWTP:
  - Wastewater treatment
  - Community and park integration
  - Resource recovery
- IIWWTP design considerations to be included in the Indicative Design (ID).

Mr. Clarke introduced Lea Elliott, Senior Policy Analyst, MV, who is planning the ecological restoration projects for the IIWWTP collaboratively with MV Regional Parks staff.

3. Community Engagement

Lena Zordan, Policy Coordinator, MV, provided an update on community engagement:

- Meetings with interested stakeholders/groups have occurred over the past 18 months
- Values and wants identified through community engagement
- Next steps in community engagement and the Project Definition Phase.

4. Resource Recovery and Wastewater Treatment Options

Rick Bitcon, Senior Engineer, AECOM, led the presentation on resource recovery and wastewater treatment options and highlighted:

- Key features and resource recovery opportunities of:
  - Treatment Concept 1 – Base Secondary
  - Treatment Concept 2 – Tertiary Disk Filtration
  - Treatment Concept 3 – Tertiary Membrane Bioreactor (MBR)

- MV is considering a pilot program to test technologies for treating constituents of emerging concern (CECs). The pilot program will commence in the next five years
- MV is conducting research into presence of micro-constituents in the Strait of Georgia
- Preferred option is Tertiary Disk Filtration (Concept 2) with the incorporation of some features of Concept 1
- Potential products from the IIWWTP:
  - Reclaimed water
  - Effluent heat recovery
  - Renewable natural gas
  - Biocrude
  - Nutrients
  - Biosolids.

5. Lagoons and Decommissioning Schedule

Dave Keeney, Project Engineer, MV, provided an update on the lagoons and decommissioning schedule:

- Filling of the lagoons will cease in 2021
- Cleaning the lagoons, via excavation, will commence in summer 2020
- The objective of clearing the biosolids drying beds by the end of 2024 to allow for construction of the new IIWWTP
- In winter 2020, the lagoons will begin clearing via dredging
- Overall lagoon cleaning schedule and associated access restrictions.

6. Iona Island Ecological Priorities

Robyn Worcester, Natural Resource Management Specialist, MV, led a presentation on the Iona Island ecological priorities and noted:

- The importance of Iona Island to the region
- The current state of Iona Island creates a challenge for the migration of salmon, particularly Chinook salmon
- The IIWWTP Project includes removing of barriers and re-establishing aquatic connectivity
- Ecological priorities:
  - Restore fish habitat
  - Improve water quality
  - Enhance terrestrial ecosystems
  - Protect bird habitat
- Park connection opportunities:
  - Enhance park ecology
  - Improve circulation, connections and visitor experience
  - Opportunities for education, recreation programming
  - Park expansion (access to more area)
  - Sea level rise and climate change mitigation
  - New partnerships and community connections.

7. Design Concepts and Habitat Enhancement Opportunities

Jeff Cutler, Landscape Architect, space2place, provided an overview of design concepts and incorporation of habitat enhancement opportunities:

- Concept for the preferred option Architectural Scheme One that includes:
  - Tidal marsh/channels connected to the Fraser River
  - Freshwater wetlands fed with high-quality effluent from the plant
  - Trail network throughout the site
  - Boardwalk through the tidal marsh
  - Construction of breaches in the Fraser River North Arm and through the outfall jetty and McDonald Slough
  - Enhancement of tidal areas through sediment augmentation
  - Increase the elevation of the roadway to five metres to protect against future sea level rise
- The plant layout has been designed to not encroach on valuable marine habitat
- Proposed priorities and phasing of 20 ecological opportunities
- Artist renderings of:
  - Southern intertidal wetland
  - Knolls and freshwater wetlands
  - Tidal channels, freshwater wetlands and the IIWWTP
  - Southern view from the Musqueam Indian Band reserve.

8. Discussion

The following table summarizes responses to questions and comments expressed by participants, organized by topic, throughout the Workshop.

Issue, Comment, Question	Response
Community Engagement	
The estuary is important in an international flyway context. What engagement has MV undertaken with international bodies e.g. Pacific Bird Habitat Joint Venture and Western Hemisphere Shorebird Reserve Network?	The two groups you mentioned have not been specifically contacted from an engagement perspective. The focus has been on engaging local organizations to understand their perspectives regarding ecological priorities and the design of bird habitat. MV understands the priorities of the international bodies and can reflect them in the design.
Is there the opportunity for YVR to liaise, outside of these sessions, to identify and mitigate potential bird hazards presented by the chosen design?	MV has been coordinating with YVR throughout the preliminary design process and will continue to do so.

Issue, Comment, Question	Response
MV must engage separately with WildResearch regarding the significant impacts of the IIWWTP design on its long-term research.	The intent is to maintain the riparian forest and the space for the research program. MV will engage with WildResearch regarding specific concerns as the design progresses and a Park Management Plan gets underway after 2020 to align with the project delivery scheduling
I suggest that there be a further meeting focused solely on the wildlife enhancement included in the plan.	MV will continue to engage with interested groups as the design progresses.
Wastewater Treatment	
Has MV has contacted the General Manager of the new tertiary treatment plant in Orange County, California, to learn about the treatment technology utilized and the small footprint of the plant?	The project team is generally familiar with the Orange County plant and visited the Brightwater plant in King County, Washington, which has a high level of treatment. The engineering consultant team has done significant research into tertiary treatment technology. The IIWWTP will be designed with a small footprint.
I am pleased to see that Treatment Concepts 2 and 3 include tertiary treatment. Could you provide detail about the differences between the tertiary treatment in Concepts 2 and 3?	Concept 3 utilizes Membrane Bioreactor (MBR) technology that results in a slightly higher level of treatment than is obtained with disk filters. Concept 3 requires significantly more energy and is costly because the membranes must be replaced every 10 years and also utilizes more chemicals. The IIWWTP will be future-proofed to allow for advanced treatment and new technologies to be implemented when available and required. Also, MV intends to carry out pilot testing of various technologies to treat constituents of emerging concern (CECs), which will be used to evaluate various technologies before implementing them at IIWWTP.

Issue, Comment, Question	Response
The Orange County plant uses a reverse osmosis process and ultraviolet light to provide the highest level of tertiary treatment currently available. The Brightwater plant treatment does not appear to be as thorough as the Orange County plant.	The design team has been tasked with designing the IIWWTP to meet regulatory requirements to provide a minimum of secondary treatment. However, the design team also looked at advanced treatment options. The recommended concept provides tertiary treatment using disk filters. MV's vision for the long term is that treated effluent will be part of a regional reclaimed water system. The treatment system at the Orange County plant is energy intensive and expensive and produces a residual stream that will require further treatment. The cost to build a plant like this would be hundreds of millions more and the cost to operate it would be tens of millions of dollars per year more.
Will a trade-off or consequence table that weighs the different objectives of treatment level, costs, energy consumption and disposal be shared?	Structured decision-making and objective hierarchy processes were used by the project team. When complete, by January 2021, the Project Definition Report (PDR) will include a consequence table and objectives hierarchy.
Lagoons	
Will the dredged lagoon be part of the IIWWTP footprint?	The existing sludge lagoons will not be part of the footprint of the new IIWWTP. The area will be managed as part of the Regional Park. The area to the east of the lagoons is reserved for future advanced treatment.
It would be wonderful if some kind of wetland could be provided in the lagoon area.	We have been working on the spatial layout of Iona Island. The next phase of work will be the consideration of the sequencing of the provision of wetland habitat in the area of the lagoons.
When does the jurisdiction of the lagoon site transfer from the Greater Vancouver Sewerage and Drainage District (GVS&DD) to MV Parks?	There will not be a transfer of jurisdiction. The liquid waste treatment will be managed by MV Liquid Waste and the recreational areas will be managed by MV Parks.

Issue, Comment, Question	Response
IIWWTP Design	
What is the footprint of the new IIWWTP compared to the current plant?	As the new plant will include replacing existing infrastructure at IIWWTP its footprint will be two to three times larger than the existing plant, excluding the lagoons.
Will a visitor/education centre be incorporated into the IIWWTP?	There is an interpretive strategy being developed for the site. A staffed visitor centre is not planned. MV Parks will develop a Park Management Plan for Iona Beach Regional Park and new park areas.
How will light and air pollution in the airspace above the IIWWTP be addressed?	Light and noise will be minimized and have been incorporated into the preliminary design of the IIWWTP, as raised by Musqueam Indian Band and others. Air pollution control technologies will be used to address regional air quality requirements.
Will road traffic become an issue for people who want to access the Iona Island recreational area during sludge removal from the site and construction?	The sludge removal will result in approximately five truckloads per day. The overall plan for construction and ongoing traffic on Ferguson Road is being discussed by the Project team, City of Richmond and YVR. There is consideration being given to barging some construction material to Iona Island to reduce truck traffic.
Ecological Priorities and Design	
Where will WildResearch's Iona Island Bird Observatory building be located?	We will engage with WildResearch to identify the best location for that building. We expect WildResearch and other partners will have more facilities as a result of the project. There will also be a public meeting space provided at the new IIWWTP.

Issue, Comment, Question	Response
Will dogs and visitors be allowed throughout the site?	The designs include space for trails that will be developed as the Project progresses. MV will ensure that protected areas for nesting birds and other animals are maintained in the park.
Do you anticipate increasing the parking for buses that will bring visitors to Iona Island?	There will be an opportunity to increase parking capacity, when the cycle path is improved, and to the west of the new Plant. We will consider bus parking and drop off areas within the new layout. The carrying capacity of Iona Beach Regional Park will be explored as part of the Park Management Plan, similar to any new park.
There must be a staffed visitor centre and a bird banding centre included in the long-term plan.	Staffed visitor centres are not typical in Metro Vancouver's regional parks. There is a need to integrate the perspectives of numerous stakeholders into Iona Island and the Regional Park.
I am concerned that an area of highly sensitive bird habitat, that was previously restricted, will be open to the public. Can Iona Island can be modelled after the Reifel Bird Sanctuary to restrict public access into the bird habitat?	This is a very preliminary design and MV Parks will ensure that there will be significant areas of good quality wildlife habitat. The new park design will provide inclusive space that can be accessed by all park users thereby enhancing equitable public space for everyone in the region. Iona Beach Regional Park will be managed like all other regional parks. We will be relying on partners to help educate park users on responsible bird watching behaviour and etiquette.
Will ticket sales be considered to provide funding for the management and ongoing maintenance of the Iona Beach Regional Park?	Iona Beach Regional Park will be managed in the same way as other regional parks and there will not be a charge for admission.

Issue, Comment, Question	Response
Habitat Enhancement Opportunities	
What is the schedule for the detailed design of the habitat elements?	There will be multiple projects nested within the overall IIWWTP Project. The early enhancement opportunities that make sense to undertake before and during the construction of the new plant have been identified, subject to future modification. However, the phasing plan is in progress.
I suggest the development of an overall strategy to ensure a wildlife planning focus is continued in the future. I am concerned with developing Iona Island as a park given its close proximity to the city and YVR.	The design of the plant and park integration has been led with a systematic and precautionary ecological approach that aligns with Regional Parks mandate – to protect and connect. Accommodation of park areas for people will be through low impact pathways and boardwalks, including features such as viewing platforms and bird blinds, while preserving sensitive areas and natural assets. This will be embedded in the PDR. The mandate of regional parks to protect ecological areas has not changed.
I suggest that modelling of coastal processes be undertaken early in the process to determine the appropriate location of sediment augmentation.	The plan is for the studies to occur in the near term to inform the detailed design of the foreshore elements.
The federal Minister of Environment's mandate letter included a focus on nature-based solutions to climate change. The IIWWTP could be a candidate for federal funding.	MV is in discussions with the federal government regarding IIWWTP Project funding.
Any habitat change that is close the airport is of concern to YVR. How much of the habitat work is included in the concept design that will be presented for approval [to the Liquid Waste Committee and GVS&DD Board] in July 2020?	Some ecological projects could be undertaken before plant construction. The next stage of the work will be to develop a phasing plan and schedule for ecological projects. The elements of the report to the GVS&DD Board and Liquid Waste Committee have not yet been determined but will likely include most, if not all, the ecological projects included in the presentation provided today.

Issue, Comment, Question	Response
General	
Do the 2030 federal and provincial regulatory deadlines have anything to do with the *Impact Assessment Act* deadlines?	The 2030 deadline requires the IIWWTP to provide secondary treatment to meet effluent quality requirements as described in Metro Vancouver's provincially-approved *Integrated Liquid Waste and Resource Management Plan*, and the Government of Canada's *Wastewater Systems Effluent Regulations*.

9. Closing Remarks

Ms. Zordan thanked the Workshop participants for their input and contributions and provided a reminder of the online public meetings scheduled for May 19 and 21, 2020. Additional input on this phase of engagement can also be submitted to MV until June 8, 2020.

The Workshop concluded at 3:30 p.m.

APPENDIX A – PARTICIPANT LIST

Participants:

D. G. Blair	Stewardship Centre for BC and Green Shores Program
Chloe Boynton	Canadian Wildlife Service, Pacific Region
David Bradbeer	Vancouver Airport Authority (YVR)
Deborah Carlson	West Coast Environmental Law
James Casey	Bird Studies Canada
Ceri Chong	Tourism Richmond
Colin Clasen	Nature Vancouver
Alan Duncan	City of Vancouver
Andrew Huang	Canadian Wildlife Service, Pacific Region, and WildResearch
Catherine Jardine	Bird Studies Canada
Myles Lamont	WildResearch / TerraFauna Wildlife Consulting
Anne Murray	Delta Naturalists' Society, BC Nature Important Bird Area Program
Bev Ramey	Nature Vancouver
Simon Robinson	Vancouver Airport Authority (YVR)

Staff and Resources:

Rick Bitcon	AECOM
Martin Clarke	Metro Vancouver
Chris Chong	Metro Vancouver
Jeff Cutler	space2place
Lea Elliott	Metro Vancouver
Carlos Hunte	Metro Vancouver
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Sarah Primeau	space2place
Robyn Worcester	Metro Vancouver
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Carol Lee	Recording Secretary, Mosaic Writing Group