IONA ISLAND WASTEWATER TREATMENT PLANT
STAKEHOLDER MEETING (BIRDS & LAGOONS)
APRIL 4, 2019
SUMMARY OF PROCEEDINGS

Summary of Proceedings of the Iona Island Wastewater Treatment Plant (IIWWTP) Stakeholder Meeting (Birds and Lagoons) held April 4, 2019 at the Metro Vancouver Head Office, 25th Floor, Room 2505, 4730 Kingsway, Burnaby, British Columbia.

1. Welcome

Jeff Cutler, Principal, space2place, as Facilitator, called the Meeting to order at 1:00 p.m. by welcoming participants and initiating a roundtable of introductions.

The list of meeting participants is included in Appendix A.

2. IIWWTP Project Definition Phase Overview

Martin Clarke, Project Manager, Policy, Planning and Analysis, Metro Vancouver (MV), provided an overview of the Project Definition Phase of the IIWWTP project and highlighted:

- The regulatory bodies driving the demand for the upgrade of the IIWWTP
- Goals for the Project Definition Phase:
  - Secondary wastewater treatment
  - Resource recovery
  - Community and park integration
- Timeline for the integrative design process including community workshops
- Geotechnical work has been initiated onsite to identify additional constraints on the design process.

Discussion ensued on:

- Location of the site and the potential size of plant's footprint
- Decommissioning the existing plant
- Support for treatment technology beyond secondary levels:
  - Options will be presented for advanced treatment technologies
  - If tertiary level treatment is not selected as the final option, the site will be built for future adaptation of advanced technologies
- Defining the levels of treatment:
  - Primary treatment utilizes gravity to settle out solids
  - Secondary treatment incorporates biological treatment to obtain a lower level of suspended solids and biodegradable organic matter in the effluent
  - Tertiary treatment is focused on removing a higher level of constituents from the wastewater
  - Advanced technologies target the removal of Emerging Substances of Concern (ESOCs), such as pharmaceuticals and plastics
- Biological Nutrient Recovery (BNR) is being investigated
- Budget related questions:

    - Will descriptions of the costs for the various technologies be made public?
    - Will the current budget allow for tertiary treatment?
- The outfall will continue to be used for secondary treatment and stormwater management
- Sea-level rise planning:
    - A study of alternative locations for the new plant identified the Iona Island site as the optimal location
    - Climate change is a key driver for this project
    - The project budget will address flood protection and the effect of flooding on the ecology of the site.

3. Iona Island Sludge Lagoons Decommissioning

Dave Keeney, Project Engineer, Residuals Management, MV, explained the process to create space on the site during the transition from the existing plant to construction of the new plant and highlighted:

- Biosolids will be excavated from the lagoons
- Lagoons will be clear by 2023
- Biosolids drying beds will be cleared by 2024
- Use of two different methods of removing biosolids from the lagoons:
    - The two northern lagoons will have a barge that will dredge the bottom of the lagoon to a centrifuge location for offsite trucking
    - The two southern lagoons will be drained and biosolids will be trucked off-site
    - The lagoons will not be refilled and may be preloaded, depending on the plant design.

Discussion ensued on:

- Lagoons:
    - Depth of the lagoons is five metres
    - If the new plant design does not utilize the existing lagoon land, the lagoons could be filled with freshwater
    - There will be intermittent restrictions to public access while biosolids are being removed from the southern lagoons due to safety concerns relating to increased truck traffic
    - Cleaning of the northern lagoons will likely not restrict public access
    - Dredging will not disturb the surface of the lagoons
    - The lagoons could be replaced with treatment wetlands
    - There is a wetland specialist on the engineering team
- Biosolids:
    - Beneficial uses of the dried biosolids matter
    - There will be digesting onsite during plant construction
- Park design:
    - A preliminary plant design will be prepared by the end of 2020
    - Schematic drawings will identify the integration of park areas
- Birds:
    - Onsite monitoring of the birds is currently underway and will continue throughout the process:
        - Two bald eagle nests have been identified and there is an Eagle Nest Management Plan in place

    - Ducks have been there for 50 years and there is no perceived impact
  - The design should not have large open water areas or grassy areas which are attractive to geese and are a hazard to airport operations:
    - Water areas rimmed with trees and shrubs reduces the potential for use by geese
    - Geese are a major concern due to their ability to gain altitude and when they migrate south, it is directly through the airport flight path
    - Ducks and shorebirds are not a problem for aircraft
    - Wetland areas fed by water from the plant would be a good solution.

4. Habitat/ Ecological Overview

Nick Page, Biologist, Raincoast Applied Ecology, led the review of a presentation titled "Ecological Systems and Opportunities" and noted:

- Regulatory constraints relating to the site
- Important habitats on land and within the broader marine environment of the Fraser River
- The opportunity to create, enhance and restore ecological processes
- The cultural aspect of biodiversity in the area has a high value
- Opportunities might include restoring habitat connectivity.

Discussion ensued on:

- The different constraints throughout the site
- Extensive stands of invasive cattails are in the area
- Future use of the outfall and changes to the outfall are a separate project from the plant project.

5. Discussion

Mr. Cutler invited participants to share comments relating to this site and the IIWWTP project.

Discussion ensued on:

- Gary Searing (YVR) noted there is a need to minimize site features known to attract geese:
  - Minimize large grassy areas
  - Flat green roofs away from predators will attract nesting geese
  - Reduce size of open water areas. Concerned if lagoons are directly converted into open ponds. YVR supports reducing the size of ponds into smaller cells.
  - Tree planting around the edge of open water helps reduce use by geese
  - Use of native plants
- Creation of an endowment:
  - A means of providing sustainability of research programs for this important ecological site
  - Acknowledgement of the contribution made by volunteers in developing a diverse data set for the area
  - Funding to support collaborative research with universities
- Funding to support staffing for programming rather than for building maintenance
- Opportunity to showcase the ecological collaboration between YVR, Sea Island Conservation Area and Iona Island stakeholders

- Establishment of infrastructure:
  - Observation platform
  - Interpretative centre:
    - Meeting room
    - Wet lab
    - Theatre
    - Indoor/outdoor space for educational groups
    - Glass room to see the banding process
    - Motus Wildlife Tracking tower
  - This location would complement other bird sanctuaries in the region
  - Other models for consideration:
    - Lesser Slave Lake Bird Observatory is built around a key stopover site
    - Point Pelee (in Ontario)
- Park requirements:
  - No dogs
  - Gates and fencing
  - Paid entry to some areas
  - Educational signage regarding the feeding of birds
  - Bird blinds with plenty of shrubbery
  - Difficulty of maintaining shallow waters due to vegetative growth
- Constraints of the site, such as geotechnical aspects for building and engineering requirements for climate change, may outweigh some ecological opportunities
- Buildings and plant infrastructure:
  - The re-creation of habitat should extend to the building structures
  - Light pollution - All buildings should be “dark sky” compliant
  - Birding by Ear programs would be affected by noise pollution:
    - Treatment plants are quite passive and most noise in the area would be from airplanes and Canadian Coast Guard vessels
- Foreshore rehabilitation:
  - Accessing increased freshwater has huge implications for fish
  - The legacy of the jetty and the causeway which altered the ecology
  - Opportunities to encourage resilient systems within the tidal marshes to manage sea level rise
  - This is an opportunity to restore the function and relationship with Fraser River
  - Nutrient management will shift in the wetlands and there will be salinity changes
- Inclusion of additional stakeholders:
  - Suggestion that Mr. Page’s presentation on ecological overview also be provided to the Lower Mainland Flood Management Strategy (Fraser Basin Council)
  - With regard to the foreshore, there are existing collaborations with BC Ministry of Forests, Lands, Natural Resource Operations and Rural Development, Environment Canada, Fisheries and Oceans Canada, Port of Vancouver, and Transport Canada (YVR)
  - Suggestion to include Fraser Basin Council, Ducks Unlimited, Ministry of Environment & Climate Change Strategy
  - Suggestion for Fisheries and Oceans Canada to participate in stakeholder meetings

- Request for a publicly accessible document explaining the various treatment levels.

6. Closing Remarks

Mr. Cutler thanked the Workshop participants for their contributions during this phase of the IIWWTP project.

The Workshop concluded at 3:03 p.m.

APPENDIX A – PARTICIPANT LIST

Participants:

Erik Balke	Ministry of Forests, Lands, Natural Resource Operations and Rural Development – South Coast Conservation Land Management Program
Sean Boyd	Environment Canada
James Casey	Bird Studies Canada
Christina Frey	YVR
Catherine Jardine	Bird Studies Canada
Myles Lamont	TerraFauna Wildlife Consulting, WildResearch
Joan Lopez	Nature Vancouver
Anne Murray	Delta Naturalists' Society
Bev Ramey	Nature Vancouver, BC Nature
Gary Searing	YVR

Regrets:

Dan Buffet	Ducks Unlimited
Colin Clasen	Nature Vancouver
Neil Fletcher	Ducks Unlimited/BCWF
Jude Grass	Nature Vancouver
Melissa Hafting	Youth Bird Coordinator
Andrew Huang	WildResearch
Monica Pearson	Ministry of Forests, Lands, Natural Resource Operations and Rural Development – South Coast Fish and Aquatic Wildlife Resources

Staff and Resources:

Martin Clarke	Metro Vancouver
Jeff Cutler	space2place
Dave Keeney	Metro Vancouver
Houston Marsh	Metro Vancouver
Nick Page	Raincoast Applied Ecology
Robyn Worcester	Metro Vancouver
Lena Zordan	Metro Vancouver
Roberta Pak	Recording Secretary, Mosaic Writing Group