IIWWTP – ETAP Meeting Summary
December 8, 2022 – 9:30am – 12:30pm
Meeting Platform: Zoom Meeting

Summary of Iona Island Wastewater Treatment Plant (IIWWTP) Projects Ecological Technical Advisory Panel (ETAP) Meeting No. 2 - Multi-Criteria Decision Analysis (MCDA) Proposed Evaluation Criteria and Scale Workshop for the xʷəyeyət/Iona Island Foreshore Ecological Restoration Projects held December 8th, 2022 via Zoom videoconference.

Welcome

Michelle Candido, Senior Engagement Specialist, External Relations, Metro Vancouver (MV), called the Meeting to order at 9:30 a.m., and welcomed participants.

The list of meeting staff and resources is included on page 7.

Ms. Candido commenced the presentation and highlighted:

- Agenda:

Agenda Items
• Overview • Structured Decision Making • Design Criteria • Evaluation Scales • Breakout Session A • Break • Breakout Session B • Breakout Session C • Discussion and Next Steps

- Session purpose:
    - Introduce structured decision making method that will apply to the foreshore ecological projects, and
    - Present the design criteria and corresponding measurement scale to evaluate three alternative designs for the Causeway Breach Area projects, and
    - Seek input from ETAP panelists on the project feasibility, biophysical/ecological, community experience and stewardship design criteria.

1. **Overview of foreshore ecological restoration projects**
    - Introduces areas of focus: Areas 1, 8, 10 and 11, referred to as Causeway Breach Area.

Margaret Scott from Advisian continued the presentation:

- Introduction of the six elements of quality decision-making:
    - Relevant decision framing
    - Generating alternatives
    - Relevant and reliable information
    - Understanding consequences and trade-offs
    - Logical analysis
    - Facilitating decisions/commitment to action
- Overview of MCDA process
    - The framing for the ecological restoration projects was completed during the project definition phase, including defining the ecological priorities and concept designs for the ecological restoration projects.
    - The MCDA process is an extension of the project definition phase.
    - MV has drafted a set of design criteria in order to evaluate whether or not the Causeway Breach Area alternative designs meet the design objectives, which were discussed during the spring ETAP meeting. Input received from this meeting were incorporated into the current criteria and draft descriptions for the evaluation scale.
    - Today's objective is to discuss the definition of the evaluation scale.
    - Next steps: prepare alternative designs to be evaluated and then score the designs using the criteria, modelling tools, etc.

2. **Design Objectives and Criteria:**
    - Overview of IIWWTP Projects ecological priorities
    - Foreshore specific ecological projects objectives:
        - Integrating the ecological priorities and ensuring projects will be designed in a feasible way for long term success.
    - Overview of design criteria categories:
        - Project feasibility
        - Biophysical/ecological
        - Community experience
        - xʷməθkʷəy̓əm/ Musqueam cultural continuity
        - Stewardship design
    - We will not be discussing xʷməθkʷəy̓əm/ Musqueam cultural continuity criteria today, this will be a separate conversation with xʷməθkʷəy̓əm/ Musqueam.
    - Quick overview of criteria that will be discussed in the breakout rooms.

3. **MCDA Scoring Scale**
    - Ranges from high risk/low benefit to low risk/high benefit on a 5-point scale based on risks and opportunities discussion with ETAP attendees.
    - Aims to define best and worst case for each design criteria with an appropriate interval.

- Ideally, criteria are achievable but scores will differ between the design alternatives. If all designs score the same on one criteria, that criteria could be removed since it is no longer affecting the final ranking.
- Weighting of the criteria categories will also be reviewed within the overall evaluation.

4. Breakout Rooms Feedback

Participants joined three breakout room sessions. Each group discussed the four design criteria categories: project feasibility, biophysical/ecological or community benefits and stewardship criteria. Participant comments and feedback for each breakout room session are summarized below.

4.1 Project Feasibility Breakout Room Summary of Feedback:

- For 'stability' of Sturgeon Bank, we need to acknowledge that it is a dynamic system. Suggestion was made to reword criteria to evaluate time to equilibrium.
- Bridge complexity – we should consider the visual impact of the bridge, for example:
    - The design of the bridge could create a great welcoming to the Island, and
- Bridge aesthetics to be discussed with xʷməθkʷəy̓əm/ Musqueam Should also consider that small span is not necessarily highest benefit, should consider size of bridge in relation to the size of breach.
    - Suggestion to decouple bridge and breach size. For example, a large bridge and small breach may be desired if this allows the breach to "self-size" by providing room to meander and come to a natural equilibrium.
    - Consider effect of breach size on flow rate, and effect on fish passage, scouring, etc.
- Consider beneficial re-use of materials
- Wording considerations, differentiate start of construction of breach and construction of the WWTP
- For bird deterrence, no change isn't necessarily a benefit

4.2 *Biophysical/Ecological Breakout Room Summary of Feedback:*

- Consider including high risk/high benefit and low risk/low benefit scales
- Discussion around sediment replenishment and what is considered as low risk, high benefit scenario. Sediment deposition is low risk, high benefit scenario from an ecological perspective. But also need to consider sea level rise, and impacts to IR3 and YVR.
    - Consider effects of sediment replenishment on IR3 and to look into scenarios of sediment going back into McDonald slough during storm events.
    - Effect of sediment replenishment on YVR should also be considered. This area is thought to be in sediment deficit relative to a more naturally functioning coastal setting regionally. A longer-term vision in terms of sea level rise, landform creation and the relation to the local sediment budget should be considered.
- Change to salinity could be beneficial or detrimental depending on what impacts are being considered.
    - Need to consider what change to salinity is beneficial, what measure of salinity is being considered and whether certain areas or species would be targeted.

  - Change in salinity is not necessarily considered as high risk, but some change to salinity would be considered highly beneficial for the environment.
  - Need to consider log storage and salinity: what is considered a benefit?
- Nature-based approach is preferred for shoreline protection, but need to consider the usage of words:
  - It is important to define what nature-based solutions are including benefits and risks; some features can be considered 'nature based' but also can include engineered structures
  - Suggestion to distinguish nature-based from indigenous knowledge, and to incorporate indigenous ways of knowing.
- A suggestion of creating microhabitats has been made to help account for conflicting interests (absence versus presence of fish predation)
- Emphasis on importance of defining ecosystem resiliency and consideration of its time frame as there are different opinions on what scale is appropriate for the criterion
- Some of the titles of criteria may not be entirely reflective of how they were defined. For instance, coastal birds should be changed to shorebirds.

4.3 Community Experience & Stewardship Breakout Room Summary of Feedback:

- Some clarity could be improved from definition of criteria and worst/best case scenarios.
- Some criteria were unclear as to what the desired outcome is. Suggestion that risk is not the appropriate wording should consider using values or desired outcomes.
- Suggestion to split out risk and benefit for each design criteria. Should they be evaluated separately and then brought back together? This will require some internal review.
- Looking for clarification regarding whether or not we want pedestrian passage in the breach channel.
  - Suggestion to change wording for clarity (discourage pedestrian passage, etc.)
- For recreational vessel passage, this criterion may be confusing as to who the benefit is to.
  - Will need to consider xʷməθkʷəy̓əm/ Musqueam, YVR, and public desired outcomes.
- Discussion as to whether we should use regular or seasonal flooding events as a criterion.
  - Suggestion that a measure of 'probability of a significant event' is more appropriate.
  - Discussion of impact of flooding on community experience, flooding plays a role on other criteria, will need to do extensive modelling of the impacts of flooding and look into the probability of future events. Suggestion that flooding may not be an appropriate community benefit criterion
- Confusion as to whether woody debris capture is desired or something we would like to avoid.
- Interest in the scale of sediment replenishment that we are talking about and how this category differs from Sturgeon Bank stability and self-sustaining design categories?

5. Discussion

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

Issue, Comment, Question	Metro Vancouver (MV)
General	
Do you have a map which shows the location of the VENUS infrastructure?	We do not have one in this meeting but we do have a map of where the VENUS project was permitted to be placed along the south side of IIWWTP outfall jetty.
Metro Vancouver should consider maintaining the ecological condition of raptor habitat as a criterion.	Comment noted, captured in ecological priorities.
Is written feedback desired?	Yes. All feedback should be sent to Michelle Candido at Metro Vancouver (Michelle.candido@metrovancouver.org).
Project Feasibility	
Will there be trade-offs between different ecological restoration projects? Will we be coming up with a best package of projects rather than evaluating the projects individually?	MV recognizes the projects are complementary and intends to continue to design and evaluate the ecological restoration projects holistically. For example, Project Areas 1, 8, 10, 11 are hydrodynamically linked and are being designed and evaluated as one area, Causeway Breach Area projects..
What if MV does not receive funding or if future MV board decide to allocate funding elsewhere? If this is the case, which projects should be undertaken first?	All the ecological restoration projects were endorsed by Metro Vancouver's Greater Vancouver Sewerage and Drainage District Board as part of the overall IIWWTP Projects. MV is working towards completing all of the projects, and is seeking funding through our partnerships and other government programs.
MV must consider Areas 10 and 11 as hydro-dynamically related.	Comment noted. Areas 01, 08, 10 and 11 are being designed and evaluated as one area, Causeway Breach Area projects.

Next Steps

Partner with xʷməθkʷəy̓əm/ Musqueam on opportunities for the Causeway Breach Area Projects designs and to update MCDA process

- Prepare initial weighting scheme, and design alternatives
- Review weighting scheme and alternative designs at next ETAP meeting.
- What we have completed to date:
    - Field programs to understand the existing conditions and to understand potential opportunities and impacts
    - Numerical modeling (2D and 3D hydrodynamic model, wave model)

APPENDIX A – PROJECT STAFF AND ETAP CONTRIBUTORS

Metro Vancouver:

- Nelson Szeto
- Michelle Candido
- Lea Elliott
- Jeff Fitzpatrick
- Sylvia Pendl
- Emily Bickel
- Ella Farrell

Consultants

- Margaret Scott (Advisian)
- Ben Wheeler (Advisian)
- Helen Ambrose (Advisian)
- Evgeniya (Jane) Yangel (Advisian)
- Tijana Vulic (Associated Engineering)
- Jason Wegman (PWL Partnership)
- Kait McGeary (PWL Partnership)

ETAP contributors:

- Kayla Phillips – Musqueam
- Gadwyn Gan – Musqueam
- Natasha Wilbrink – South Coast Conservation Management Coordinator
- Dave Scott – Raincoast Conservation Foundation
- James Casey – Birds Canada
- Matthew Discusso – City of Richmond
- Warren Mills – City of Richmond
- Rebecca Seifert - DFO
- David Bradbeer – YVR
- Simon Robinson - YVR
- Dr. Danika van Proosdij – Saint Mary's University
- Shawn Chartrand – Simon Fraser University
- Kim Keskinen – Vancouver Fraser Port Authority