September 6, 2019

TO: Park Board Chair and Commissioners

FROM: General Manager – Vancouver Board of Parks and Recreation

SUBJECT: Metro Vancouver Backup Power Facility - Sunset Beach Park

RECOMMENDATION

A. THAT the Vancouver Park Board authorize Metro Vancouver to proceed with the detailed design and construction of a new backup generator facility for the Jervis Pump Station, located in Sunset Beach Park; and

B. THAT the Vancouver Park Board direct staff to prepare and execute construction licence agreements and legal right of way documents to outline the construction, future use and access to the pump station, to the satisfaction of the General Manager, Vancouver Board of Parks and Recreation, and Legal Services.

REPORT SUMMARY

Metro Vancouver is proposing upgrades to their Jervis Pump Station which is located in Sunset Beach Park. In the event of a power failure, the pump station is vulnerable to sewage back-ups and spills. The purpose of the proposed upgrades is to equip the pump station with a back-up generator system housed in an expanded building to supply emergency power in case of a power outage. The project in turn ensures important regional infrastructure is well-managed and resilient, that risk of sewage spills into English Bay is minimized, and that the expanded facility complements the world class park destination it occupies.

Being located in one of the Park Board's destination beach parks, staff have been working closely with Metro Vancouver to ensure the optimal location, integration and design of the new facility to support park uses, Metro Vancouver has also engaged with stakeholders and the public to understand public issues and potential impacts, and to mitigate these during the facility design. Staff will continue to work with Metro Vancouver through the engagement, detailed design, permitting and construction phases to protect and enhance park lands and user experience. Staff will also prepare and execute licence and right of way agreements to outline construction and future use and access to the facility.

POLICY

As per the Vancouver Charter, the Park Board has exclusive jurisdiction and control over park land use in the City of Vancouver, including any structures, programs and activities, fees, and improvements that occur within designated parks.

On June 24, 2019 the Board approved a motion titled "Gas and Diesel Generator Pollution Elimination Strategy" the strategy developed will be inclusive of potential exceptions necessary for safety and emergency concerns like this backup generator proposal.

BACKGROUND

Metro Vancouver collects and treats wastewater for over 2.5 million residents in the region. This involves operation and maintenance of over 500 kilometres of sewers, 33 pump stations and five wastewater treatment plants. The primary goals of this regional system are to protect public health and the environment, use wastewater as a resource, and optimize treatment costs.

Seven pump stations in the Vancouver Sewerage Area (VSA) do not have a backup power system. Two of these stations, Jervis and Chilco Pump Stations, are located in Vancouver parks (see Figure 1). Both Jervis Pump Station in Sunset Beach Park and Chilco Pump Station near the edge of Stanley Park are critical in moving wastewater from the City of Vancouver to the Iona Island Wastewater Treatment Plant. During power outages, the pump stations stop pumping sewage which has the potential to back up and spill into English Bay and Burrard Inlet respectively. Consequently, Metro Vancouver has proposed installation of a standby generator and the associated equipment in new backup power facilities at the Jervis and Chilco Pump Stations to provide a reliable power source during outages and minimize the risk of wastewater spills.

Figure 1: Metro Vancouver's Vancouver Sewerage Area (VSA) map

Initial feasibility assessments and conceptual designs for both sites were completed in 2015, resulting in Metro Vancouver's preferred backup power location adjacent to the entrance of the Jervis Pump Station. The facility at Chilco Pump Station requires further analysis due to the prominence and sensitivity of the site at the entrance to Stanley Park. Consequently, Metro Vancouver has focused on advancing the design for Jervis Pump Station with the intent of reporting back to the board once discussions for Chilco have concluded. Metro Vancouver has hired a consultant to undertake the facility design and finalize the backup power requirements for the new system at the Jervis Pump Station. Staff collaborated with Metro Vancouver's consultants on the architectural and landscape design of the facility.

Metro Vancouver is also developing a similar project to install a backup generator at the Chilco Pump Station, located in Stanley Park. Conceptual design and placement study for Chilco Pump Station is ongoing and staff will report back for Board consideration once the concept design is complete.

DISCUSSION

This section outlines the steps taken by Metro Vancouver to determine the location and design of the proposed facility and to ensure stakeholder and public concerns are addressed in the development of the project.

Facility Location and Footprint

A number of sites around the existing Jervis Pump Station were considered for the backup power facility. The options were assessed with input from staff and a preferred location was chosen within the green space adjacent to the existing Jervis Pump Station. This location provides opportunities to seamlessly integrate the new enclosures for the generator into the Causeway embankment and to integrate with the existing Jervis Pump Station building while minimizing green space impacts. It also minimizes the amount of excavation needed to construct the foundations for the equipment.

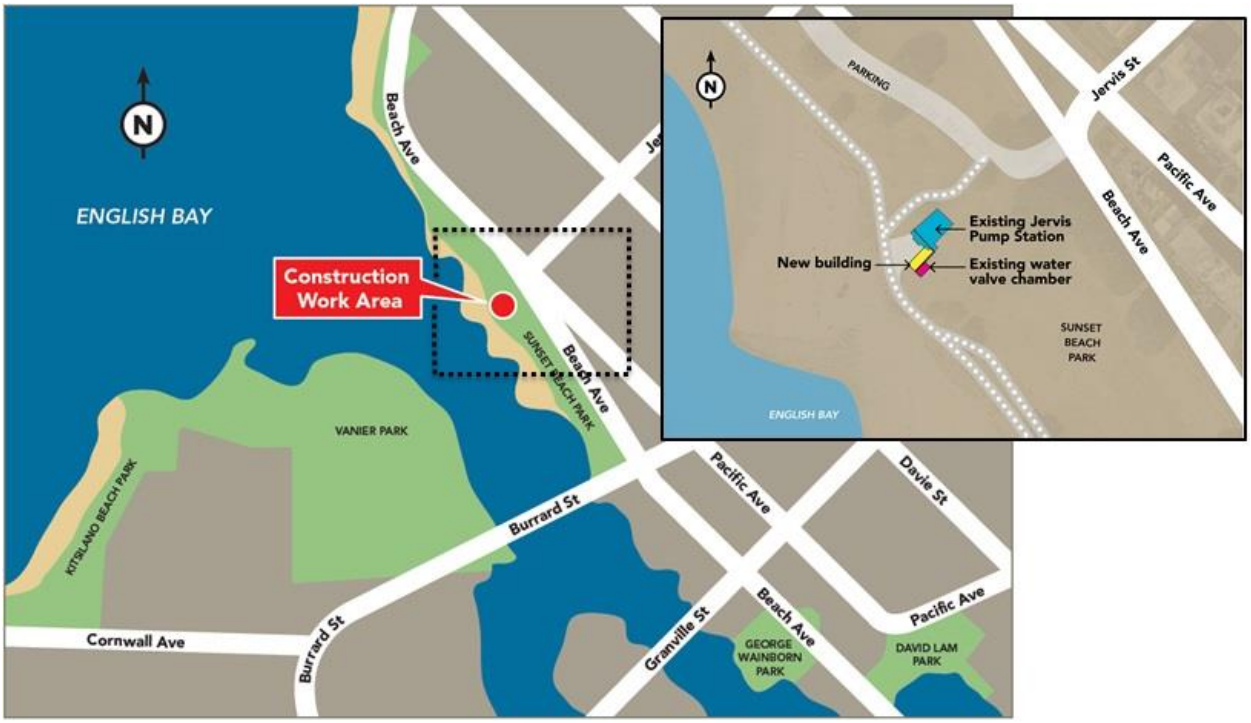


Figure 2: Location of the new backup generator building at Jervis Pump Station (Sunset Beach Park)

In the event of a power disruption, a 500kW generator unit will be used to run pumps and the process equipment in the existing pump station. The generator and associated equipment, including a diesel fuel storage tank, two fans, an air handling unit, a heater and a sound attenuation system will be enclosed inside a new building. The generator building will be located at grade, and will have a footprint of approximately 4.7 metres by 11.7 metres with a height of 3.5 metres. The backup generator facility will be located within a flood plain. Consequently, the

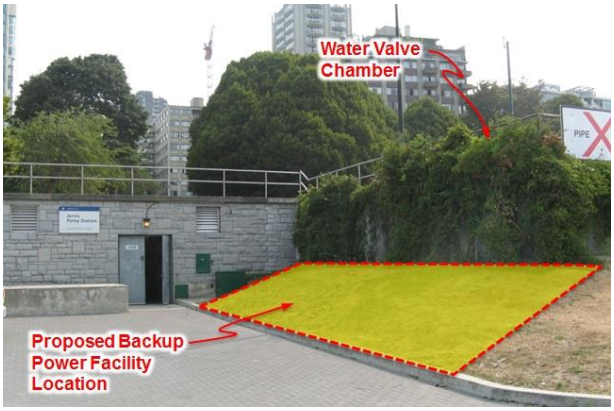
structure, including all access points, has been designed to remain operational in the event of a flood.

Noise attenuation design is adopted to mitigate the noise impact. It is anticipated that the operating sound level will be close to 60 dBA at the seawall pathway which will match the average daytime ambient noise level in the park. A comparison of the anticipated sound levels from the facility to common noise levels is provided in Appendix A. Again the generator is a backup power supply and will only be operated during power disruptions

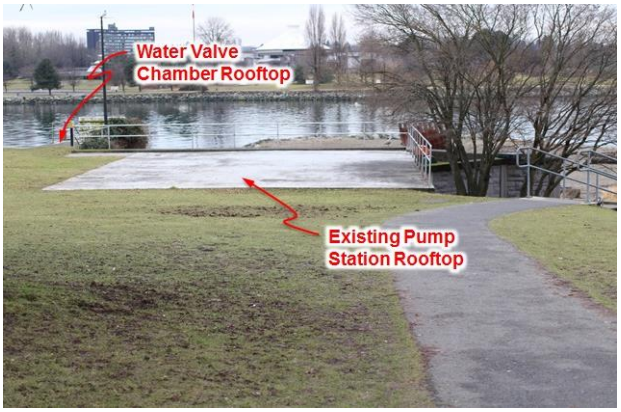
The building design will use a combination of materials and textures that draw on their site context and blend into existing structures and surrounding park environment. The materials and finishes will be selected in consultation with Park Board operation staff to ensure ease of maintenance. The proposed design also includes improvements to the existing pump station and water chamber buildings as well as landscaping surrounding the site to improve visitor experience and blend the new building into the park context.

Metro Vancouver has also proposed a number of new features at Jervis Pump Station which will promote the use of the rejuvenated pump station rooftop and the adjacent area while ensuring that the space remains open and flexible to accommodate multiple uses. Other park amenities such as benches, a water fountain, and a staircase on the east side of the pump station will be also included in the complete design. Finally, the project will also provide electrical infrastructure to allow addition of lighting features in the future. The total design and construction of this park improvement work, implemented by Metro Vancouver, will cost approximately $400,000.

Figure 3 and Figure 4 below show the existing and future appearances of the facility and the surrounding landscape.



(a) East side of the pump station (looking north)



(b) Pump station rooftop (looking south)

Figure 3: Existing Jervis Pump Station building and rooftop

(a) East side of the pump station (looking north)

(b) Pump station rooftop (looking southwest)

Figure 4: Architectural rendering of the concept design for Jervis Pump Station

Community Engagement

Metro Vancouver started their engagement process with stakeholders early in the design process to ensure input could be integrated into the building and landscape design concepts. Potentially impacted and interested stakeholder groups have been identified and are continuously informed about the project as the designs at both sites progress. These groups included residents of the area, tourists, local businesses, and visitors to the seawall, Stanley Park and Sunset Beach.

Outreach and public engagement for the Jervis Pump Station facility took place from June 20 to July 1, 2018. During this period, Metro Vancouver hosted two tent-in-the-park events, on June 28 and 29, during which they engaged with 98 visitors on the seawall and explained the project purpose, proposed design and possible construction impacts. To support the engagement process, Metro Vancouver also distributed factsheets to surrounding businesses and residents, placed newspaper advertisements, developed a project webpage and online survey as well as provided opportunities for input via email or telephone.

During the engagement process, Metro Vancouver received a wide variety of comments and questions. Overall, the participants expressed strong support for the project and the need to prevent further wastewater back-ups and spills. Participants also provided a list of priorities for consideration during the detailed design phase, including:

- blend in the design into the natural landscape, avoid bright colours, and replace any vegetation that is lost with the same or greater;
- ensure greater safety and cleanliness of the area;
- maximize flexibility of the public space on the rooftop to allow visitors to enjoy the view and take part in other recreational activities; and
- ensure minimal disruption to seawall traffic during construction (although all felt a short detour would be acceptable especially in off-peak season).

For a complete list of outreach activities and materials as well as list of issues and responses, please see Jervis Pump Station Upgrade Engagement & Consultation Report.

First Nations Engagement

Metro Vancouver initiated engagement with the First Nations rights holders in early 2018. In March 2018, Metro Vancouver sent letters to the Musqueam Indian Band, Squamish Nation,

and Tsleil-Waututh First Nation to notify them about the project at both sites. These letters extended an opportunity to contact the project manager or meet with Metro Vancouver staff for more information about the project. An update letter was issued in February 2019 to share the results of the Archeological Overview Assessment and the conceptual building designs for the Jervis Pump Station site and to ask for feedback. A reminder letter was sent in April 2019. No comments were received from the 3 First Nations.

Metro Vancouver will carry out further engagement with the Nations during detailed design to ensure input from the Nations is incorporated into the final design. Staff will not finalize the construction licence agreements until Metro Vancouver has demonstrated thorough review and approval by Musqueam, Squamish, and Tsleil-Waututh First Nations.

As per Metro Vancouver's Crown Regulatory Process, 12 other First Nations were also identified as potentially having an interest in the project. In February 2019, a project introduction letter about the Jervis Pump Station was sent and input was requested. A follow up letter was sent in April 2019. No comments were received.

Strategic Alignment

This project helps fulfill on the Board's VanPlay Goals (Report 2, "10 Goals to Shape the next 25 Years", 2018);

- *Protect existing parks and recreation spaces from loss, encroachment and densification* - through removal of the plain concrete roof of the Jervis Pump Station and adding landscaping and enhanced park functionality

- *Foster a system of parks and recreation spaces that are safe and welcoming to all* – this collaboration between Metro Vancouver and Vancouver Park Board in planning, design and construction will result in a more enjoyable and comfortable landscape for park use around the facility at Jervis Pump Station

The Jervis Pump station design approach takes into account the development of West End Waterfront Master Plan by ensuring that it is self-contained within Metro Vancouver's existing footprint and that the rooftop spaces are designed to be flexible and extendible to accommodate future changes.

Construction Schedule and Impact Mitigation

Construction of the generator at Jervis Pump Station is targeted to begin in the fall of 2020 and to complete in mid-2021, and Metro Vancouver will endeavor to avoid disruption to park special events and peak visitation. A temporary construction access road to the west of the facility site will be used to facilitate transport of material and equipment to the site. This access adopts the closest parking lot to the site to eliminate disturbance to the seawall path. The location of the temporary construction access is provided in Appendix B. During construction, signage will be provided at bike paths and walkways, if detours are required. Traffic control will be used to ensure safety of seawall and beach users. Also, noise generated during construction will adhere to the City of Vancouver Noise Bylaw. Access and staging areas for construction will be determined by staff and outlined in a construction licence agreement.

NEXT STEP

Upon Park Board approval, Metro Vancouver will immediately begin detailed design of the facility. Detailed design will include additional input from staff, local First Nations, the public and other stakeholders.

Metro Vancouver holds a Statutory Right of Way (SRW) for the Jervis Pump Station. Upon completion of the detailed design and First Nations engagement and prior to construction, Staff will prepare and execute all necessary Agreements, including the aforementioned construction licence agreement and revisions to the existing SRW, to the satisfaction of the Park Board General Manager and City of Vancouver Legal Services.

SUMMARY

Protecting and enhancing water quality in False Creek is a key priority of the Park Board, City of Vancouver and Metro Vancouver. The new backup power facility for the Jervis Pump Station is a critical regional infrastructure that will provide reliable power to the pump station and eliminate wastewater discharge into English Bay in the event of a power outage. Metro Vancouver has worked closely with staff to mitigate impacts on the surrounding park by minimizing the facility footprint and using materials that blend in with existing facilities and site features. In addition, as part of the project, Metro Vancouver plans to revitalize the landscaping and other park amenities in the vicinity of the backup power facility and the pump station. Metro Vancouver and its consultant will continue to work collaboratively with Vancouver Park Board on the detailed design and construction of the project.

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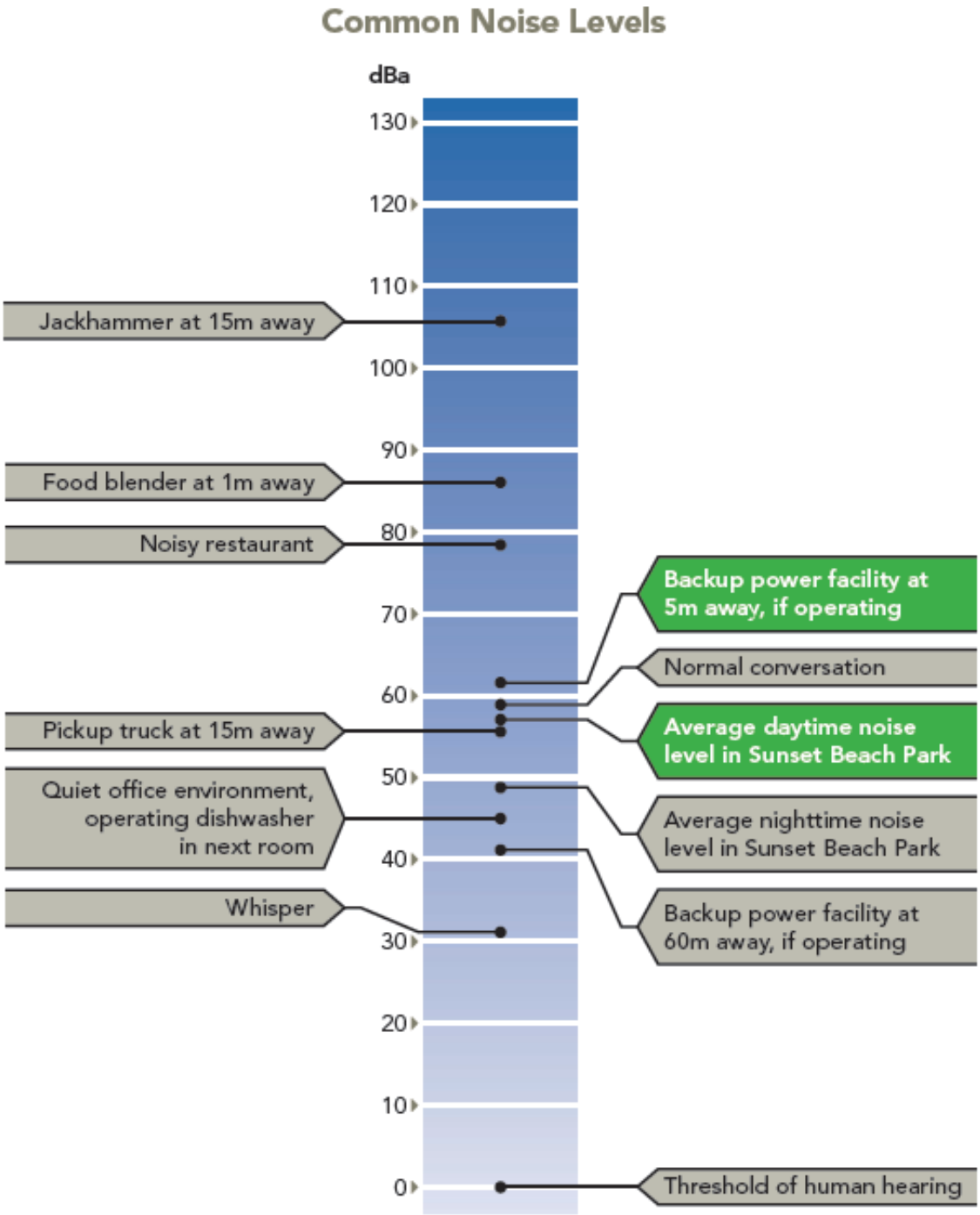
Noise Comparison Chart **APPENDIX A**



Proposed Construction Access **APPENDIX B**