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**REPORT TO CAPITAL REGIONAL DISTRICT BOARD  
MEETING OF WEDNESDAY, AUGUST 10, 2022**

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**SUBJECT**     **Island View Beach Regional Park – Drainage Ditch Study**

**ISSUE SUMMARY**

To report back on the results of a drainage ditch study for Island View Beach Regional Park.

**BACKGROUND**

At its October 27, 2021 meeting, the Regional Parks Committee received a staff report providing an update on the delivery of the annual Mosquito Population Management and Control Program (control program) at Island View Beach Regional Park (IVBRP). The control program is a partnership with the District of Central Saanich (Central Saanich), the Tsawout First Nation and the Capital Regional District (CRD). The CRD covers control program costs for IVBRP.

The October 2021 staff report noted that the flapper gate on the Tsawout First Nation lands was not working properly in 2021 due to a log jam, which allowed seawater to flood the Tsawout salt marsh through its system of drainage ditches. Concurrently, in 2021, there was an increase in reported nuisance mosquitos in and around IVBRP. On September 21, 2021, Central Saanich sent a letter to the CRD Board stating that Council passed a motion at its September 20 meeting requesting the CRD contribute \$15,000 towards a feasibility study for the replacement of the Tsawout flapper gate.

The Central Saanich letter also stated that “the management of Island View Beach ditches resulted in (a) situation which did not adequately control and abate mosquito breeding in the engineered ditches within the Regional Park” and it tied the inflow and infiltration of sea water into the IVBRP ditch system to the condition of the Tsawout First Nation flapper gate.

As a result, staff recommended to the Regional Parks Committee that \$15,000 be allocated to the District of Central Saanich towards the feasibility study and that staff undertake a study of the IVBRP drainage ditch system and share the results with Central Saanich and the Tsawout First Nation. The recommendation was approved at the November 10, 2021 CRD Board meeting.

The CRD subsequently made \$15,000 of funding available to Central Saanich to apply towards the Tsawout First Nation flapper gate replacement feasibility study. Staff also proceeded to award a contract to GreatPacific Engineering & Environment (GreatPacific) to undertake the IVBRP drainage ditch study (Appendix A).

CRD staff identified that the purpose of the study was to characterize and assess the drainage ditch system and to provide advice on maintaining the system over the next 10 to 20 years to maintain its functionality, while also taking into account climate change and key park values.

The project timelines necessitated GreatPacific to complete a compressed field work program during April 2022. GreatPacific’s final report (June 30, 2022) recognizes that the collected data and observations provide a snapshot in time of park conditions. The report conclusions identify that there are opportunities to improve the ditch network to reduce standing water and drainage; that the Central Saanich tidal gate located in IVBRP does not consistently prevent seawater from

entering the ditching network; that regrading of specific areas of the ditching system would prevent some isolated ponding at low tides; and that some vegetation management would benefit accessibility and reduce restrictions within the ditching system. Additionally, it was noted that the adjacent Tsawout lands include some large inundated areas containing saline water and that some overland flow was observed between the two ditching systems during periods of high tides.

The GreatPacific report also noted that based on a time period over the next 20 years, sea level rise is predicted to be in the order of 0.15 m, which could pose an incremental reduction in the hydraulic performance of the drainage system under its existing configuration/size. Changes to the ditch system function and associated ditch maintenance have the potential to change the existing wetland ecology, including for species at risk. The report advises that the potential effects of future actions should be assessed and evaluated as part of the decision-making process.

## **IMPLICATIONS**

### *Operational Implications*

CRD staff have been implementing recommendations in the GreatPacific report as a part of the annual ditch maintenance activities (Appendix B). As of mid-July, 168 hours of staff time have been spent on removing logs, debris and vegetation blocking ditch sections, cutting back overhanging branches, and clearing one side of the ditches to increase access for mosquito control contractor staff. In August, staff will utilize heavy equipment to complete the ditch clearing activities. Completion of the 2022 ditch maintenance program will require a second round of vegetation management before the end of the growing season. It is estimated that over 300 hours of staff time will be spent on IVBRP ditch maintenance activities in 2022.

Duka Environmental Services (Duka) has prepared a summary document of the 2022 mosquito control program (Appendix C). The document includes a graphic portraying the total volumes of VectoBac applied annually for each of the partners between 2019 and 2021. The total volume of VectoBac required at IVBRP has ranged from 10 to 25% of the total treatments required for all three partner areas. The nuisance mosquito *Aedes dorsalis* develops in saltwater habitats, the predominant habitat of the Tsawout First Nation salt marsh. The majority of adult mosquitos collected at IVBRP and adjacent properties over the past several years has been *Aedes dorsalis*, but the predominant species of mosquito larvae collected at IVBRP is *Aedes sticticus*. The data indicates that based on the predominant habitat type and areal extent, the *Aedes dorsalis* mosquito primarily originates from the Tsawout salt marsh.

### *Intergovernmental Implications*

The CRD prioritizes maintenance of good relationships with adjacent landowners. It regularly works with Central Saanich and the Tsawout First Nation to address nuisance mosquitos and to maintain the drainage ditch system. The CRD will collaborate with Central Saanich and the Tsawout First Nation to address priority action items in the GreatPacific report.

### *Alignment with Existing Plans & Strategies*

IVBRP operates under a 1989 management plan that provides direction on maintaining the ditch system and the mosquito control program. A planning process was undertaken between 2011 and 2017 to update the 1989 management plan. During the management planning process, the CRD Board approved policy direction to monitor the effectiveness of the control program and the ditches in reducing mosquito habitat and to assess their impact on the coastal wetland habitat.

*Financial Implications*

Costs for the annual mosquito control program, contracted ditch monitoring/reporting activities and yearly ditch maintenance by staff and contractors is included in the CRD’s Regional Park core budget. Costs for implementing any approved actions arising out of the GreatPacific drainage ditch study will be considered during annual budgeting and capital planning cycles.

*Environmental & Climate Implications*

IVBRP is home to several species at risk. These species have developed to exploit the characteristics of a dune ecosystem and natural coastal wetland. As inundation by saltwater has been reduced over the years by ditching and drainage, the ecosystem now supports freshwater wetland species. Any changes to the ditch system function and ongoing maintenance may affect ecosystem functions and associated species. An environmental assessment will be needed to fully understand the implications of any proposed changes.

**CONCLUSION**

In November 2021, the CRD Board approved a recommendation to provide \$15,000 towards a feasibility study to replace the Tsawout First Nation flapper gate, to undertake a study of the IVBRP drainage ditch system and report back on it, and to share the results with the District of Central Saanich and the Tsawout First Nation. The CRD provided the requested funding to the District of Central Saanich for the feasibility study and staff contracted with GreatPacific to assess the IVBRP drainage ditch system. The GreatPacific report characterizes and assesses the ditch system and provides management advice for maintaining its functionality over the next 10 to 20 years. The report has been provided to the District of Central Saanich and Tsawout First Nation, and the CRD will work with these partners to address priority actions identified in the report. CRD staff will spend more than 300 hours at IVBRP in 2022 completing ditch maintenance activities.

**RECOMMENDATION**

There is no recommendation. This report is for information only.

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Concurrence:	Larisa Hutcheson, General Manager, Parks & Environmental Services
Concurrence:	Robert Lapham, MCIP, RPP, Chief Administrative Officer

**ATTACHMENTS**

- Appendix A: GreatPacific Engineering & Environment – 2022 IVBRP Drainage Ditch Study
- Appendix B: CRD Regional Parks – 2022 IVBRP Drainage Ditch Maintenance Activities
- Appendix C: Duka Environmental Services – 2022 IVBRP Summary of Conditions