



City of Richmond

Report to Committee

To: General Purposes Committee **Date:** August 25, 2020
From: Peter Russell **File:** 10-6160-04/2020-Vol 01
 Director, Sustainability and District Energy
Re: **Support for BC Salmon Restoration Projects in Sturgeon Bank**

Staff Recommendation

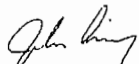

That, as described in the staff report titled "Support for BC Salmon Restoration Projects in Sturgeon Bank," dated August 25, 2020 from the Director, Sustainability and District Energy and the Director, Engineering:

1. The scope of the three projects to be included in the Expression of Interest prepared by the South Coast Conservation Land Management Program for submission to the BC Salmon Restoration and Innovation Fund, be supported; and
2. That in-kind contributions for the projects outlined in the Expression of Interest be endorsed.



Peter Russell
 Director, Sustainability and Dist Energy
 (604-276-4130)

Att. 3

REPORT CONCURRENCE		
ROUTED TO: Engineering	CONCURRENCE <input checked="" type="checkbox"/>	CONCURRENCE OF GENERAL MANAGER 
SENIOR STAFF REPORT REVIEW	INITIALS: CJ	APPROVED BY CAO  (Acting)

Staff Report

Origin

The South Coast Conservation Land Management Program is a partnership program involving the federal and provincial governments, Ducks Unlimited Canada, the Habitat Conservation Trust Foundation and the Nature Trust of BC to coordinate the management of conservation lands in BC, including Sturgeon Bank. The South Coast Conservation Land Management Program was established in 2005 to fill coordination gaps between various levels of government, conservation groups, land use interests and local communities to conserve species and ecosystems at risk. South Coast Conservation Land Management staff assist various stakeholders in navigating the complexities of multi-jurisdictional habitat restoration initiatives. Similar programs exist in different regions of BC. The program is not a regulatory authority and staff do not provide legal expertise or undertake investigative actions related to damage to habitat or violations under the various environmental regulations. It is considered a government entity and is not eligible for some funding opportunities such as the BC Salmon Restoration and Innovation Fund. The program relies on its relationships with non-government organizations such as Ducks Unlimited Canada to secure funding that is intended exclusively for non-government organizations.

The federal and provincial governments announced the BC Salmon Restoration and Innovation Fund in 2019 to encourage independent projects that protect Pacific salmon species and improve the sustainability of the fish and seafood sector in BC. The fund is worth \$142.85 million and is available, through Expression of Interest, only to non-government organizations that intend on completing projects in BC that meet the fund's priorities, including salmon habitat restoration projects.

The South Coast Conservation Land Management Program, in partnership with Ducks Unlimited Canada, the Raincoast Conservation Foundation and the Lower Fraser Fisheries Alliance is preparing an Expression of Interest that includes three potential projects in Sturgeon Bank. Ducks Unlimited Canada will be the lead applicant and the aforementioned agencies will be projects partners. The South Coast Conservation Land Management Program is assembling a list of project supporters for the Expression of Interest. A list of potential supporters includes the University of British Columbia, Metro Vancouver, Environment Canada and the City of Delta.

The City of Richmond has also been asked by the South Coast Conservation Land Management Program to support the Expression of Interest and provide any additional contributions (in-kind and/or financial) that the City deems appropriate by September 15, 2020.

This report supports Council's Strategic Plan 2018-2022 Strategy #1 A Safe and Resilient City:

1.2 Future-proof and maintain city infrastructure to keep the community safe.

1.4 Foster a safe, caring and resilient environment.

This report supports Council's Strategic Plan 2018-2022 Strategy #2 A Sustainable and Environmentally Conscious City:

2.1 Continued leadership in addressing climate change and promoting circular economic principles.

This project is consistent with the following Ecological Network Management Strategy objectives and actions, specifically: Foster community stewardship and education initiatives focused on the Fraser River Estuary and foreshore:

9.7 Work with community partners and non-profit organizations that focus on the Fraser River Estuary to develop Richmond-tailored programming

9.8 Support the provision of information on stewardship opportunities in the estuary

Analysis

The BC Salmon Restoration and Innovation Fund is a contribution program funded jointly by the federal and provincial governments. The fund provides an investment of up to \$142.85 million over 5 years (i.e. until March 31, 2024). The federal government provides 70% of the funding, and the provincial government provides the remaining 30%.

The first intake for the BC Salmon Restoration and Innovation Fund, which focused on innovation, infrastructure and science partnership projects, closed in April 2019. Over 30 projects were successful in 2019. Many of the successful projects were located in the Lower Mainland including the Fraser Valley. No projects were situated in the Fraser River Estuary.

The federal and provincial governments refined the fund's 2020 priorities for the second round of intakes. One priority area for the second intake includes protecting critical salmonid habitats from loss or degradation, and investing in the restoration of critical habitats that have been lost or degraded. Based on this new priority, the South Coast Conservation Land Management Program and its partners decided to focus the Expression of Interest on the Lower Fraser Estuary due to the ongoing degradation to marsh habitat, specifically on Sturgeon Bank.

Sturgeon Bank Recession

Sturgeon Bank encompasses the intertidal, and near shore subtidal lands on the western portions of Sea Island, Lulu Island and a portion of Iona Island in Richmond. A large portion of this area is owned by the province and is a designated Wildlife Management Area. Other landowners in the area include private land (limited), federal land, joint federal-provincial land, Metro Vancouver land, and City land. The City-owned portion of land includes the area commonly referred to as the Grauer Lands that was purchased in partnership with Ducks Unlimited Canada.

Sturgeon Bank is comprised of a salt marsh and a hydrologic bench of sand and mud that extends approximately 6 km from the leading edge of the salt marsh. The leading edge of salt marsh was mapped in the late 1970s, and recent mapping information has identified significant marsh vegetation recession. Provincial mapping information suggests that approximately 160 hectares

of marsh vegetation has died since the 1980s. The Province has been examining potential contributing factors such as erosion, sea level rise, increased salinity, nutrient input loss (due to isolation from the jetties) and herbivory (by geese) that may be responsible for the observable changes in vegetation patterns. Though marsh recession is not fully understood, recent geomorphological assessments indicates that Sturgeon Bank is in a state of disequilibrium with respect to sediment deposits and erosion.

Flood Protection and Habitat Services

Sturgeon Bank supports flood protection for the City and provides critical habitat for local fish and wildlife. The area is identified as a major hub within the City's Ecological Network Management Strategy. All five species of Pacific salmon also utilize marsh habitat in Sturgeon Bank at some point in their life cycle, as well an abundance of non-salmonid fish species, invertebrates and other flora and fauna common to estuary ecosystems.

A healthy Sturgeon Bank is an important part of mitigating flood risk for the City, as it protects the dike from wind-generated waves. With future sea level rise, the protection afforded to Richmond by this feature may be considerably reduced. The Council-endorsed, Flood Protection Management Strategy and Dike Master Plans Phase 1 and 2 recognize the important wave attenuation benefits that Sturgeon Bank provides. The plans recommend key actions to mitigate sea level rise, including potentially installing breakwater islands.

In addition, at the April 22, 2013 Regular Council Meeting, Council endorsed staff to coordinate with the Port of Vancouver and the Department of Fisheries and Oceans to identify potential areas to create habitat and provide wave dissipation for the southern west dike. The City's Flood Protection Management Strategy also identifies the initiative to pursue senior government grant opportunities to assist in funding this type of project. This staff report supports both of these objectives.

Proposed Projects

The Expression of Interest that will be submitted to the BC Salmon Restoration and Innovation Fund by Ducks Unlimited Canada proposes three potential projects, all currently at the conceptual stage of design, including:

1. **Sturgeon Bank Sediment Enhancement Pilot Project** – The pilot study will be managed by the the Provincial South Coast Conservation Land Management Program and proposes to introduce sediment from the Fraser River to the southern portion of Sturgeon Bank, within Richmond's municipal boundary (Attachment 1). As proposed, the project would seek to install a temporary, floating pipeline from that would pump river sand to offshore intertidal areas, from a dredge vessel anchored at the South Arm Jetty for three years. Clay berms would be installed to hold pumped sediments. The natural tide cycle would then be responsible for dispersing the sediment in the area. If successful, the results would increase the elevation of the marsh, and regenerate healthy tidal marsh conditions.

2. **North Arm Jetty Breaches** – The North Arm Jetty was constructed in 1916 to aid in navigation similar to the South Jetty. Both structures have altered the natural movement of sediment and wildlife from the Fraser River to Sturgeon Bank. This project would be managed by Raincoast Conservation Foundation and would have a similar scope as the South Arm Jetty breaches, constructed in 2019 to restore fish passages for juvenile salmonids and improve sediment transport from the South Arm to Sturgeon Bank. The original scope for the South Arm Jetty Project included three breaches on the South Arm of the Fraser River and up to three breaches on the North Arm. The Raincoast Conservation Foundation received a different grant for the work and did not complete the North Arm breaches due to insufficient funds in 2019. This proposal includes the scope of work to finish the remaining breaches in the North Arm. If approved, Raincoast Conservation Foundation would construct one to three, 15 metres-wide breaches along the North Jetty, northwest of Iona Island, within (or near) the City’s municipal boundaries (Attachment 2). This project also seeks to compliment the proposed environmental upgrades to the Iona Island Wastewater Treatment Facility, currently being pursued by Metro Vancouver.

3. **Alaksen National Wildlife Area Tidal Marsh Restoration** – The Alaksen National Wildlife Area is located on the northern extent of Westham Island, south of Gary Point Park in the City of Delta. The 300 hectare wildlife refuge was established by the federal government in 1972 to protect important wintering habitat and migratory staging areas along the Pacific flyway. This project would be led by Ducks Unlimited Canada and would build upon existing habitat restoration work they are completing at Woodward Island, Frenchies Island and Gunn-Williamson Slough. If the Expression of Interest is successful, Ducks Unlimited Canada would seek to restore ecological connectivity by breaching a historical dike that was installed for agricultural purposes (Attachment 3).

All three projects are in the concept stage of design and if the Expression of Interest is successful, additional stages and analysis will be conducted to further define the scope of work. Each project would also require additional environmental permitting, including additional stakeholder engagement, which staff have identified as a possible barrier to the implementation of the Sturgeon Bank Sediment Enhancement Pilot Project. However, staff recommend supporting these concepts plans. Staff also recommend that the City provide in-kind contributions for the Expression of Interest based on the potential benefits a successful pilot would provide.

Financial Impact

Staff recommend providing an in-kind contribution of staff time equivalent to \$60,000 over three years, for technical support, if the Expression of Interest is successful. If endorsed, staff’s time would be funded through existing budgets.

Future opportunities may arise for additional contributions if the Expression of Interest is successful. Staff may return to Council to seek endorsement for financial support for additional similar projects at a later date based on the outcomes of the projects.

Conclusion

Sturgeon Bank provides critical wildlife habitat and valuable flood risk mitigation for the City. The South Coast Conservation Land Management Program is coordinating local stakeholder support, on behalf of Ducks Unlimited Canada, in support of a submission to the BC Salmon Restoration and Innovation Fund and has requested a letter from the City in support of the Expression of Interest by September 15, 2020. Staff recommend supporting the Expression of Interest and further recommend endorsement that in-kind contribution equivalent to \$60,000 (over three years) in technical support. Staff will provide regular updates to Council, if endorsed, including the success of the Expression of Interest.



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Manager, Engineering Planning
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- Attachments: Proposed Sturgeon Bank Sediment Enhancement Pilot Project
Proposed North Arm Jetty Breach Project
Proposed Alaksen National Wildlife Area Tidal Marsh Restoration Project

Richmond Proposed Sturgeon Bank Sediment Enhancement Project



GP - 227

Strait of Georgia

Stevenson North Jetty

GARRY POINT

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Proposed North Arm Jetty Breaches



Potential Breach Locations



GP - 228

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Date: August 25, 2020
Name: GP228
Scale: 0 445 890 1,780 Meters

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Richmond Proposed Alaskan National Wildlife Area Tidal Marsh Restoration



Richmond, BC 2020
Name: K100001
0 330 660 1,320 Meters
R:\Engineering Planning\Shared\Map\Map\Project\BC Fund\RTC\Alaskan\NWA\TidalMarshRest.pdf

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