REGIONAL DISTRICT OF NANAIMO

STAFF REPORT

TO:	Regional District of Nanaimo Board	**MEETING:**	December 4, 2018
FROM:	Shelley Norum Wastewater Program Coordinator	**FILE:**	5330-20-FCPCC EXPAN

SUBJECT: Vancouver Island University Partnership for Odour Monitoring at French Creek Pollution Control Centre

RECOMMENDATION

That the Board endorse the Vancouver Island University Partnership for Odour Monitoring at the French Creek Pollution Control Centre.

SUMMARY

The Regional District of Nanaimo (RDN) will partner with the Vancouver Island University (VIU) Applied Environmental Research Laboratories to implement a state of the art odour monitoring program that will use specialized technology to fingerprint French Creek Pollution Control Centre's (FCPCC) current odour emissions and develop recommendations to improve air quality, reduce odour complaints related to FCPCC, and enhance the overall quality of life for neighbouring residents and visitors.

Through this partnership, the RDN's contribution of $20,000 will be matched by a $20,000 grant from VIU's Regional Initiatives Fund. VIU will also provide an in-kind contribution of faculty and staff time valued at $21,100, and RDN engineering and operations staff will contribute an estimated 80 hours to this project.

BACKGROUND

FCPCC accepts and treats wastewater from 27,000 people and businesses in Qualicum Beach, Parksville, and regional service areas. The RDN FCPCC Expansion and Odour Upgrade Project, which is in the detailed design phase, is planning to expand the treatment plant to provide additional capacity for a growing population.

Odours are a common challenge for wastewater treatment facilities, especially those adjacent to public areas. FCPCC is located next to residential areas, public parks, the Island Highway, and recreational amenities. As a result, the RDN periodically receives odour complaints related to FCPCC. Therefore, the FCPCC Expansion and Odour Upgrade Project must provide sufficient odour control upgrades for both the existing plant and the new works.

Odour monitoring is necessary to inform the design of the FCPCC Expansion and Odour Upgrade Project and provide a baseline for comparison after the improvements are constructed. The RDN will partner with VIU's Applied Environmental Research Laboratories to develop and implement an odour monitoring program and fingerprint FCPCC's current odour emissions. The proposed program will use VIU's advanced instrumention to identify the potential sources and concentrations of odours associated with the wastewater treatment facility and the surrounding community. Program activities are identified in the VIU Research team's application to the VIU Regional Initiatives Fund Committee, provided in Attachment 1.

Specifically, this monitoring program will:

- Use mobilized mass spectrometry instrumentation to analyze molecular fingerprints associated with specific odour-producing substances;
- Map chemical concentrations of a set of target compound classes including reduced sulfur compounds, amines, hydrocarbons and volatile fatty acids. Mapping will be done both at the FCPCC and in the surrounding neighborhood;
- Analyse the odourants associated with human activities and natural sources including wastewater treatment, green waste production, agriculture, as well as natural marine and freshwater sources;
- Assess the seasonal variability in odour sources and regional distributions; and
- Recommend potential odour control measures.

The proposed monitoring program will run from January 2019 to April 2020 and will include several multi-day sampling campaigns in spring, summer, fall and winter. Mobile and stationary sampling will be conducted at and around FCPCC.

The monitoring project team will include three research scientists, several undergraduate research students, and RDN engineering and operations staff. The team is committed to engaging with the community and using the research to advise policy and improve conditions at and around the treatment plant.

This partnership with VIU's Applied Environmental Research Laboratories will:

- support student learning and provide training opportunities in the applied sciences;
- enhance relationships the university;
- provide useful information not readily attainable through other means; and
- support long-term sustainability initiatives and responsible land-use planning.

Program results will inform the the design of the upgrades and produce recommendations to improve air quality, reduce odour complaints related to FCPCC, and enhance the overall quality of life for neighbouring residents and visitors.

ALTERNATIVES

1. That the Board endorse the Vancouver Island University Partnership for Odour Monitoring at the French Creek Pollution Control Centre.

2. Provide alternate direction to staff.

FINANCIAL IMPLICATIONS

The RDN's financial contribution towards this project is $20,000. This will be matched by a $20,000 grant from VIU's Regional Initiatives Fund. Combined, the financial contributions will support costs related to operations, analytics, student stipends; supplies and maintenance; travel and food expenses; reporting; and public communication. In addition to the financial contributions, VIU will provide an in-kind contribution valued at $21,100 for faculty and staff time; vehicle use; instrumentation use; and office space. RDN engineering and operations staff will also contribute an estimated 80 hours of time to this project.

Sufficient funds for the RDN's financial contribution to this work are available and identified in the current 2018 RDN Capital Budget for FCPCC – Stage 4 Upgrades.

STRATEGIC PLAN IMPLICATIONS

Focus On Relationships- We Look For Opportunities To Partner With Other Branches Of Government/Community Groups To Advance Our Region

The partnership will enhance the relationship with VIU and qualifies the work for the VIU Regional Initiatives Fund which provides matching contributions from VIU and the Province of British Columbia.

Focus On The Environment- We Will Have A Strong Focus On Protecting And Enhancing Our Environment In All Decisions

Results of the odour monitoring program will inform the design of the infrastructure upgrades at FCPCC and will ultimately result in improved air quality. The program also promotes long-term sustainability initiatives and responsible land-use planning.

Shelley Norum
snorum@rdn.bc.ca
November 26, 2018

Reviewed by:

- Sean De Pol, Director, Water and Wastewater Services
- R. Alexander, General Manager, Regional and Community Utilities
- P. Carlyle, Chief Administrative Officer

Attachment:

1. Research Initiatives Fund Odour Mapping Proposal 2018