



CITY OF VANCOUVER

ADMINISTRATIVE REPORT

Report Date: June 8, 2006
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Meeting Date: June 27, 2006

TO: Vancouver City Council
FROM: General Manager, Engineering Services
SUBJECT: Musqueam Creek Remediation Project

RECOMMENDATION

THAT Council approve funding for the remediation work at Musqueam Creek in the amount of \$219,000, re-allocated from the 2006 Waterworks Capital for Distribution Main Replacement Program. The works are to be completed in cooperation with the Musqueam Band. The funds will be used to finance Musqueam Band labour, City supplied materials, and consultant site management.

GENERAL MANAGER'S COMMENTS

The General Manager of Engineering Services RECOMMENDS the approval of the foregoing.

CITY MANAGER'S COMMENTS

The City Manager RECOMMENDS the approval of the foregoing.

COUNCIL POLICY

There is no applicable Council policy.

PURPOSE

This report seeks Council approval to implement the remediation works in Musqueam Creek at a cost of \$219,000.

BACKGROUND

In November 2004, a City water main ruptured near the intersection of 41st Ave and Marine Drive. The water that discharged from the main flowed across a pedestrian pathway in Musqueam Park and into Musqueam Creek. The resulting flood waters deposited significant sands and gravels into Musqueam Creek, burying portions of coho salmon spawning grounds.

Musqueam Creek is the last wild salmon bearing stream in Vancouver, and the Musqueam people value this creek greatly for its environmental value and cultural importance. Beyond being a fish bearing stream, the creek provides the Musqueam with plants that are harvested for traditional uses.

Over the last 100 years, the development of the land surrounding the creek has affected how the creek functions. Beginning in 1997, significant stewardship efforts have been carried out by the Musqueam Band through a partnership with the David Suzuki Foundation and the Musqueam Ecosystem Conservation Society (MECS). Stewardship projects have included instream habitat construction, riparian habitat enhancement, and significant community engagement to build awareness of the creek's ecological and cultural value. Since the watermain rupture, MECS has been actively involved in reviewing proposed works and has been the liaison between the City and the Musqueam Band Fishery Office.

In December 2004, Council approved the hiring of a consultant to examine the damage and develop a remediation plan. The City engaged Envirowest Consultants to complete these works. Envirowest has proposed a series of habitat enhancement measures and an egg transplant program to mitigate the damage from the flood. Staff have presented a draft of this proposal to the Musqueam Band Fishery office and received a positive response. A final draft is currently being completed in order to incorporate input from the Musqueam. The proposed works will be submitted to DFO and Ministry of Environment for their review and acceptance.

DISCUSSION

Remediation Plan

The damage to the creek was two fold. First, the initial flood of water and the sediment transported by the flooding caused the eggs that were laid in the creek to be silted over or washed downstream. Second, the sediment that was transported down the creek has filled pools and covered spawning gravels making it difficult for the salmon to spawn.

The concept designs have approximately seven sites identified for improvement. These improvements include the installation of woody debris and boulder placements to provide structures in the creek that will create pools and riffles that encourage spawning. The woody debris would also provide shade and shelter from predators that will help the juvenile fish and enhance the population of insects that the fish feed on.

This work must be completed during the summer months when the creek has the lowest flows. The work will primarily be done by hand by work crews brought in by MECS via the Musqueam Band. Most of the work will be completed by hand due to the relative inaccessibility of the creek to heavy equipment. This work will take approximately two months to complete. The labour component for this work is being arranged through the Musqueam Band office. This provides an opportunity to give experience to band members in working in the fish habitat and foster improved stewardship of the creek.

The total cost of the remediation project is estimated to be:

Design	\$35,500
Construction	\$137,000
Reporting and Monitoring	\$39,500
Community Outreach	\$7,000
Total	\$219,000

Once the in-stream works are complete, a second phase of stock enhancement may occur. If approved by the DFO Transplantation Committee and the Musqueam Fishery Office, it is proposed that temporary egg boxes be used over a period of four years to add additional fish stock to the creek in order to jump start the population. There would be an additional four years of monitoring after the stock enhancement is completed in order to ascertain the effectiveness of the program. The introduction of eggs from another creek is being reviewed and may not be supported by the DFO and the Musqueam Fisheries Office due to the unique gene pool of the Musqueam Creek salmon.

Other Measures

Staff have reviewed the infrastructure in the area forming the catchment for the creek and has identified some water system components where failure could potentially increase risk to the creek. A plan is being developed to replace these components over the next 10 years as part of our regular infrastructure replacement program. Sewers Branch has worked with MECS in the past to identify sources of contamination from drains into the Musqueam watershed. The Sewers Branch will be starting an Integrated Storm Water Management plan for the Musqueam Creek catchment in 2007.

FINANCIAL IMPLICATIONS

Staff believe that the proposed budget transfer of \$219,000 from the Distribution Main Replacement Capital Program to fund the Musqueam Creek Remediation Project is appropriate as the need of this capital replacement work is a result of a water distribution main failure. The proposal does not have a financial impact on Waterworks Operating Budget. The proposal has no significant impact on the Distribution Main Replacement Capital Program.

COMMUNICATIONS PLAN

An outreach program is being developed in cooperation with the Musqueam Ecosystem Conservation Society. The program will communicate to the community and park users the scope of work being completed and the timeline for the project. The program's second purpose is to foster appreciation for the creek, understanding of its cultural value and inspire stewardship of the creek.

The outreach will include pre-construction communication through a press release, local newspaper article, and signage erected at the remediation site for the duration of the project. A brochure that focuses on the natural history and cultural history of the creek ecosystem is also proposed to educate the public about the importance of Musqueam Creek.

CONCLUSION

A watermain at West 41st Street and Southwest Marine Drive ruptured in November, 2004, causing a flood which flowed across Musqueam Park and transported sand and gravels from a path into Musqueam Creek. A study done in consultation with the Musqueam Band recommended that certain remediation be done. This report proposes the implementation of a creek remediation plan in order to repair and enhance fish habitat that was affected by the flood. Funding for this work is proposed to be found in the Waterworks Distribution Main Replacement Capital Program.

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