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CITY OF **VANCOUVER**

ADMINISTRATIVE REPORT

CITY OF VANCOUVER

Report Date: September 16, 2008
Contact: Lynn Belanger
Phone No.: 604.940.3201
RTS No.: 07663
VanRIMS No.: 08-2000-20
Meeting Date: September 30, 2008

TO: Vancouver City Council

FROM: General Manager of Engineering Services

SUBJECT: Vancouver Landfill Pump Station Controls Upgrade Project – Increase in Scope

RECOMMENDATIONS

A. THAT, the Vancouver Landfill Pump Station Controls Upgrade Project (the "Project") scope be revised to include improvements as detailed in this report and the Project budget be increased from $250,000 to $625,000; the additional budget of $375,000 to be funded by an increase in the loan from the Capital Financing Fund.

B. THAT Council approve increasing the scope of the existing consulting contract with Stantec Consulting Ltd. to include additional professional services to implement the improvements needed for the Landfill's pump station controls upgrades in the amount of $39,500 (the "Contract Amendment"), including disbursements and excluding GST, with funding to be provided by the budget established pursuant to Recommendation A.

C. THAT the Contract Amendment be on terms satisfactory to and approved by the General Manager of Engineering Services and the Director of Legal Services, and that the General Manager of Engineering Services be authorized to sign such Contract Amendment on behalf of the City.

D. THAT no legal rights or obligations will be created or arise by Council's approvals hereunder unless and until the Contract Amendment is signed and delivered by the General Manager of Engineering Services.

COUNCIL POLICY

Consulting contract amendments exceeding $30,000 require Council authorization.

SUMMARY

The City of Vancouver owns and operates the Vancouver Landfill (the "Landfill") located in Delta. In June 2005, Vancouver City Council approved a number of capital projects for the Landfill, which included funding for upgrades to the leachate pump station controls.

In June 2008, Vancouver City Council approved the award of the contract for professional services for the Vancouver Landfill Pump Station Controls Upgrade Project to Stantec Consulting Ltd. at an estimated cost of $67,833. The scope of work for this Project is to conduct professional services for upgrades to the control system and standby power supply system for the Landfill's leachate collection system to minimize the potential for failure of the systems during emergency operations. Also included was an analysis of the existing leachate pumping system in terms of electrical, mechanical, civil and environmental components to ensure that the existing system meets the long term needs in advance of designing a new control system.

In their August 2008 report, "City of Vancouver Landfill Pump Station Controls Upgrade Station Assessment Report", Stantec Consulting Ltd. recommended a number of improvements to ensure the effective, long term operation of the leachate pump station. Vancouver is obligated to protect the environment as stipulated in the Landfill's Operational Certificate, issued by the Ministry of Environment, as well as the 1989 Tripartite Agreement between Vancouver, the Corporation of Delta and the Greater Vancouver Sewerage & Drainage District.

The cost for the design and implementation of these improvements is estimated at $375,000, bringing the total Project budget to $625,000 which exceeds the approved Project budget of $250,000. Additionally, the increase in scope for Stantec Consulting Ltd. to implement these improvements is $39,500 requiring Council authorization for award.

PURPOSE

This report seeks authorization on the revised Project scope and revised total Project budget of $625,000 for the Vancouver Landfill Pump Station Controls Upgrade Project, and authority to enter into the Contract Amendment to increase the scope of the professional consulting services being provided by Stantec Consulting Ltd. by $39,500, including disbursements but excluding GST.

BACKGROUND

The City of Vancouver owns and operates the Vancouver Landfill (the "Landfill") located in Delta at 5400 72nd Street. On June 16, 2005, Vancouver City Council approved a number of capital projects for the Landfill (RTS No. 05067, Vancouver Landfill Capital Projects), which included funding for upgrades to the leachate pump station controls at an estimated cost of $200,000.

On May 15, 2007, Vancouver City Council approved an increase to the original Project budget in the amount of $50,000 (RTS No. 06711, Vancouver Landfill Electrical and Communications Upgrading Project) to allow for a 25% increase in construction costs. This increase was recommended based on the evaluation of tenders and subsequent award to Houle Electric Ltd. to complete the construction of the power line relocation portion of the Electrical and Communications Upgrading project.

On June 10, 2008, Vancouver City Council approved the award of the contract for professional services for the Vancouver Landfill Pump Station Controls Upgrade Project to Stantec Consulting Ltd. ("Stantec") at an estimated cost of $67,833 (RTS No. 07455, Award of Contract for RFP PS08060 (the "RFP") – Vancouver Landfill Pump Station Controls Upgrade). The scope of work for this Project is to conduct professional services for upgrades to the control system and standby power supply system for the Landfill's leachate collection system to minimize the potential for failure of the systems during emergency operations. Also included was an analysis of the existing leachate pumping system in terms of electrical, mechanical, civil and environmental components to ensure that the existing system meets the long term needs in advance of designing a new control system.

Vancouver is obligated to protect the environment as stipulated in the Landfill's Operational Certificate, issued by the Ministry of Environment, as well as the 1989 Tripartite Agreement between Vancouver, the Corporation of Delta and the Greater Vancouver Sewerage & Drainage District. Upgrades to the leachate pump station are required to ensure long term effective operation of the station in this regard.

DISCUSSION

In their August 2008 report, "City of Vancouver Landfill Pump Station Controls upgrade Station Assessment Report", Stantec recommended a number of improvements to ensure the effective, long term operation of the leachate pump station. Improvements that are recommended for implementation are described below:

Two New Variable Frequency Drives ("VFDs")
The addition of VFDs to the two larger of the four existing pumps is recommended to allow these pumps to provide more operational flexibility while optimizing energy consumption. The flexibility is needed due to the relatively small wet well to avoid frequent pump cycling during higher rainfall events.

Addition of a New Standby Generator
The current capacity of the on-site standby generator is marginal for supporting the leachate pump station. Problems are mainly due to other demands on the on-site standby generator resulting in insufficient motor starting capability at times. To ensure continued reliability of the system during power outages, a separate standby generator and transfer switch are highly recommended.

Improvements to Existing Piping Arrangements

In response to the Corporation of Delta's Planned Forcemain Upgrades this fall, changes in the layout of piping to the forcemains and associated backflow prevention instrumentation are proposed. These changes will result in increased flow through the proposed twinned forcemains which is particularly beneficial during high rainfall events to ensure continued environmental protection.

Prefabricated Electrical and Control Building

The addition of new equipment highlights the need to address a number of issues, including potential safety risks for staff working in rainy conditions, climate control to protect and preserve the equipment and rodent access and damage, through the supply of a prefabricated electrical and control building. This option will allow preparation of the building and controls off site, minimizing the downtime required during the cut over and reducing the risk to the environment.

Table 1 summarizes the associated costs of the above items.

Table 1. Summary of Costs of Improvement Items

Item	Estimated Cost
2 variable frequency drives	$80,000
1 standby generator	$80,000
Piping improvements	$25,000
Prefabricated building	$150,000
Total Costs of Improvements	$335,000

In order to implement these improvements to the pump station works, Stantec has identified an increase in their professional services of $39,500, including disbursements and excluding GST. Table 2 summarizes the current total estimated Project costs.

Table 2. Detailed Breakdown of Total Project Costs

Item	Consulting Cost	Estimated Construction Cost
Controls Upgrades	$67,833	$180,000
Improvements	$39,500	$335,000
Total Item Costs	$107,333	$515,000
Total Project Costs	$622,333	

Stantec's analysis of the existing leachate pumping system identified a number of system improvements required to ensure this system meets the long terms needs of the Landfill in advance of designing a new control system. These improvements and the associated professional services necessary to implement these improvements result in an increase to the Project budget of $375,000, increasing the estimated total Project budget to $625,000.

ALTERNATIVES/OPTIONS

Rather than approving the recommendations of this report, Council could decide to have staff continue with only the controls upgrades and associated equipment. However, these upgrades do not ensure the long term effective operation of the leachate pump station and protection of the environment in the event of high intensity rainfall events. This increases the risk of the City being out of compliance with the Landfill's Operational Certificate.

FINANCIAL IMPLICATIONS

In June 2005, Council approved three projects with an estimated total cost of $4,755,000 to be funded from a loan from the Capital Financing Fund, with repayment by users of the Landfill through tipping fees applicable to Greater Vancouver Regional District, Delta and Vancouver users. One of the projects was for powerline relocation and emergency power and controls upgrades at an estimated cost of $980,000, including $200,000 for the controls upgrades portion. In May 2007, the electrical and communications upgrade contract was awarded and the project budget was increased from $980,000 to $1,461,899 (now including $250,000 for the controls upgrades).

Based on the consultant's recommendations and subject to Council approval, the scope for the controls upgrades is being expanded to include additional improvements with an increase in the Project budget from $250,000 to $625,000. The additional cost of $375,000 will be funded by an increase in the loan from the Capital Financing Fund with the same repayment term for this loan. This will result in an additional cost to landfill users of $0.04 per year for 10 years.

ENVIRONMENTAL IMPLICATIONS

These improvements to the Pump Station Controls Upgrade Project are required to ensure the Landfill continues to meet its environmental protection obligations to the Ministry of Environment in accordance with the Landfill's Operational Certificate MR-01611, as well as to the Corporation of Delta and the Greater Vancouver Sewerage & Drainage District under the 1989 Tripartite Agreement.

CONCLUSION

The General Manager of Engineering Services recommends approval of the $375,000 increase in the Pump Station Controls Upgrade Project budget to address the necessary improvements to the pump station, which includes a Contract Amendment to increase the scope of Stantec's consulting services of $39,500, including disbursements and excluding GST, for additional professional services required to implement these improvements.

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