



REQUEST FOR PROPOSALS CS 05-09

**SHELLEY RIVERBANK EROSION PROTECTION –
ENGINEERING SERVICES**

ADDENDUM NO. 3

An inquiry was received to review the McElhanney Consulting Services 2007 Summary Report for the Emergency River Bank Stabilization at Shelley, B.C.

The report is attached to this Addendum. The drawings referred to in the Report are available for viewing at Regional District of Fraser-Fort George, Service Centre, 155 George Street, Prince George BC, between the hours of 8:00 a.m. to 5:00 p.m., Monday to Friday, excluding Statutory holidays.



FRASER BASIN COUNCIL

**Emergency River Bank Stabilization
Shelley, BC**

Summary Report

Submitted to

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Our File: 2341-01363-0



1.1 Project Synopsis

Shelley is a small residential community located on the left bank of the Fraser River approximately 10 km northeast of the city of Prince George, BC. In January, 2007, unusual ice accumulation in the Fraser River resulted in a shift of its thalweg, directing high flow rates against the left bank. The unusual flow eroded the river bank resulting in the loss of 5 to 8 m (horizontal measurement) of property affecting two residences and leaving unstable, near vertical banks extending approximately 85 m along the affected property.



Figure 1 – Eroded Bank in Late March, 2007

The eroded banks undermined two out-buildings and several trees as shown in the photo above. In March, 2007, the Fraser Basin Council received \$240,000 in emergency funding to mitigate the erosion. An inter-agency meeting took place on March 29, 2007 and was attended by representatives of the Fraser Basin Council, Regional district of Fraser-Fort George, BC Ministry of Environment, BC Ministry of Transportation, the Shelley Residents' Committee and McElhanney Consulting Services Ltd. No representatives of the federal Department of Fisheries and Oceans were available to attend the meeting.

Availability of funding was contingent on works being completed before May 15, 2007, leaving a limited time window for design and construction. The construction component was therefore sole-sourced to the contractor having a gravel pit closest to the community and the work proceeded on a time and materials basis using provincial "blue book" rates for equipment.



GeoNorth Engineering Ltd. conducted a visual inspection of the eroded bank on April 2 and McElhanney Consulting Services Ltd. used this as well as a ground surface survey to prepare preliminary drawings for the construction of the works.

The available funding was not sufficient to permit full mitigation of the slope with riprap and the construction was therefore limited to the installation of a riprap dyke along the foot of the eroded slope and trimming along the top of the bank. The top of the dyke was constructed to the approximate mean annual flood level which was approximately 1 to 2 m below the top of the existing bank. This component of the work was completed over the period from April 10 to April 16, 2007. A permit for the works under the BC Water Act was issued on April 12, 2007.



Figure 2 – Eroded Bank Prior to Stabilization Work

The photo above shows the condition of the bank at the beginning of the construction and the photo on the next page shows the completed dyke. Several existing trees had toppled into the Fraser River as a result of being undermined by the erosion on the bank.



Figure 3 – Riprap Dyke After First Phase of Construction

In mid-April, the Fraser Basin Council received an additional \$100,000 in funding to apply to the stabilization project. The additional funding permitted the installation of riprap to the full height of the slope, seeding along the top of the bank, and the installation of two groins and live pole plantings to address concerns expressed by DFO.

On April 30, 2007, McElhanney Consulting Services met with the contractor to review the procedures applicable to the next phase of the construction. The second phase of the construction took place over the period from May 7 to May 11, 2007 with a final inspection being conducted on May 10, 2007.

Figure 4 is a photo of the finished bank stabilization in late June, 2007. Vegetation is getting reestablished on the top of the bank and the live poles are beginning to bud.



Figure 4 – Stabilized Bank at Shelley

1.2 Project Data

Project Coordination: Fraser Basin Council
Regional District of Fraser-Fort George

Civil Works Consultant: McElhanney Consulting Services Ltd.

Geotechnical Consultant: GeoNorth Engineering Ltd.

Environmental Consultant: Triton Environmental Consultants Ltd.

Contractor: Kode Contracting Ltd.



1.3 Closure

This Summary Report has been prepared by McElhanney Consulting Services Ltd. for the benefit of the Fraser Basin Council. The information and data contained herein represent MCSL's best professional judgement in light of the knowledge and information available to MCSL at the time of preparation. Except as required by law, this report and the information and data contained herein are to be treated as confidential and may be used and relied upon only by the client, its officers and employees.

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McElhanney Consulting Services Ltd.

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