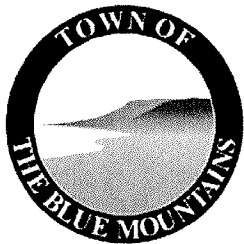


**STAFF REPORT:**      **Engineering & Public Works Department**



**REPORT TO:**            **Council**  
**MEETING DATE:**      **July 12, 2010**  
**REPORT NO.:**          **EPW.10.081**  
**SUBJECT:**             **Beaver River Bridge Resurfacing Contract  
2 (2010-21-T-EPW) – Contract Contingency  
Increase**  
  
**PREPARED BY:**      **Reg Russwurm, Director of Engineering and  
Public Works**

### **A. Recommendations**

THAT Council receive Report EPW.10.081 entitled “Beaver River Bridge Resurfacing Contract 2 (2010-21-T-EPW) – Contract Contingency Increase”, and;

THAT Council approve increasing the Capital Budget for the Beaver River Bridge Rehabilitation by \$120,000 from \$2,558,331 to \$2,678,331 and;

THAT Council approve increasing the contract contingency amount for the Beaver River Bridge Resurfacing Contract 2 (2010-21-T-EPW) by \$145,000 from \$80,000 to \$225,000.

### **B. Background**

The tender for Beaver River Bridge Resurfacing – Contract 2 (2010-21-T-EPW) was closed on Thursday, May 6, 2010 and awarded to Miller Paving Ltd. in the amount of \$1,457,961.00 excluding GST as recommended in Report EPW.10.054 (attached). Within the contract there is a \$80,000 contingency allowance.

There recently has been two claims made by the Contractor totalling \$92,000 which exceeds the available contingency that Staff can allocate. At the same time as considering an increase in the contract contingency for the two claims described below, a review of an appropriate contingency allowance is warranted.

The first claim is for the traffic lights at the intersection of Bruce Street and Highway #26. These lights need to be synchronized together with the temporary lights installed to the West of the bridge and the pedestrian crossing lights to the East of the bridge. This work was not included in the original contract because unfortunately Staff was lead to believe this work had been done when the pedestrian lights were originally constructed. The pedestrian lights had always been anticipated to be used as traffic control for the bridge work. The cost provided by the Contractor is \$32,000 to run temporary wiring, set a pole, provide hardware and have paid duty officers directing traffic during the work

which is expected to take two days. A Change Order for payment by time & material with an upset of \$32,000 has been authorised by the Director of Engineering and Public Works. This work is expected early in the week of July 12, 2010. The Ainley Group has been instructed to carefully review all costs and work plan to determine if any cost savings are available.

The second and larger claim of the two submitted by Miller Paving Ltd. is for the removal, transportation, and disposal of asbestos containing ductwork found in the north sidewalk. The Ainley Group was aware that there may be a possibility that these ducts could contain asbestos. Prior to tendering, Bell Canada was contacted to confirm if in fact the ducts were asbestos and were told that in their history Bell has never installed asbestos ducts. Therefore, an item was not included in the tendered contract to consider these ducts to contain asbestos. Unfortunately, based on the testing by Miller Paving Ltd., the ducts have been confirmed to contain asbestos and, according to the Ministry of Labour and the Ministry of the Environment regulations have to be removed, transported, and disposed of as per MOL/MOE regulations. The cost provided by the Contractor at this time is \$60,000. The workplan and cost are currently under review and negotiations with the Contractor. For the safety of the workers, area residents and travelling public, the asbestos containing ductwork must be appropriately handled. Staff have also instructed the Consultant to negotiate a cost sharing arrangement with Bell.

The Ainley Group has been asked to reconsider what an appropriate level of contract contingency should be for the bridge reconstruction given the events to date. A figure of \$225,000 has been proposed and Staff concur to recommend increasing the contract contingency amount by \$145,000 from \$80,000 to \$225,000. This represents an increase percentagewise from 6% to 16% in the contingency allowance which is an appropriate amount for a relatively complex reconstruction project.

Within Report EPW.10.054, the overall multi-year project budget was set at \$2,558,331. Given the increase in contract contingency and by reducing the project contingency from \$50,000 to \$25,000, the Staff recommend increasing the Capital Budget for the Beaver River Bridge Rehabilitation by \$120,000 from \$2,558,331 to \$2,678,331. These figures are explained further under Section E. Budget Impact.

### **C. The Blue Mountains' Strategic Plan**

Town's Strategic Plan Goal # 2 "Addressing the Town's Municipal Infrastructure needs" is in part satisfied by the recommended action.

### **D. Environmental Impacts**

Green house gases will be produced as part of the construction activities. The Contractor will be required to participate in the Town's anti-idling initiative and appropriate measures will be taken to protect the river. Any hazardous materials identified on site will be removed using best practices.

**E. Budget Impact**

The discussion within this section is much like that presented in Report EPW.10.054 which recommended awarding the contract. The values in the tables that have been changed from Report EPW.10.054 are highlighted for ease of understanding the modifications.

In March 2007, the Town received a grant of \$720,000 from the Ministry of Transportation (MTO) Connecting Link Program for use towards the final design and construction of the works. The Town applied for and received all funds for costs for works completed in 2009 under Contract 1 and for earlier design work. The Town applied for and received top up funding for 2010 works in the amount of \$1,029,000. The total funding available for the works in 2010 is \$1,950,400 as developed in Table 1 below. Included in this amount is Town contribution for banner poles, flag poles, river illumination/laser lighting, pedestrian railing and similar solely Town cost works to enhance the bridge.

The funding available for the 2010 Works (Contract #2) is as follows:

<b>TABLE 1 – Available Funding</b>	
2010 MTO Connecting Link funding (MTO)	\$1,029,000
2007 MTO Lump Sum Contribution (MTO)	\$720,000
<b>Subtotal MTO Committed Funding</b>	<b>\$1,749,000</b>
2010 Beaver River Bridge Capital Budget (from Roads Capital Reserves)	\$201,400
<b>Total Funding/Contributions For 2010 Works</b>	<b>\$1,950,400</b>

The construction cost for the 2010 Works (Contract #2) is presented below.

<b>TABLE 2 – Construction Costs</b>	
Contract 2 Construction Cost (MTO's share)	\$1,382,661
Contract 2 Construction Cost (Town's share)*	\$75,300
Contract 2 Contingency Increase (\$225k - \$80k)	\$145,000
Materials Testing	\$30,000
Engineering**	\$205,000
Advertising	\$5,000
Project Contingency (reduced by \$25k)	\$25,000
<b>Total 2010 Construction Costs</b>	<b>\$1,867,961</b>

\*Note: A portion of this cost will be submitted for MTO funding.

\*\*Note: Approximately \$133,000 of the \$337,570 Engineering Costs have already been reimbursed through the MTO funding program.

In Table 3, the 2010 Capital Project budget summary shows that there is sufficient funding available however it must be noted that Table 4 demonstrates that there are insufficient committed funds from the MTO in 2010 and that the Town will need to frontend \$43,661 if the entire contract value including the \$225,000 contingency allowance is expended.

<b>TABLE 3 – 2010 Capital Budget Position</b>	
Total 2010 Town & MTO Funding/Contributions	\$1,950,400
Total 2010 Construction Costs	\$1,867,961
<b>Surplus</b>	<b>\$82,439</b>

<b>TABLE 4 – Potential Town Frontend Funding</b>	
<b>Total 2010 Construction Costs</b>	<b>\$1,867,961</b>
Less Town Share	\$75,300
<b>MTO Funded Works</b>	<b>\$1,792,661</b>
Less Committed MTO Funding for 2010 Works	\$1,749,000
<b>Potential Town Frontend Funding *</b>	<b>\$43,661</b>

\*The Town as part of this budget increase may need to frontend up to \$43,661, however Town will have an opportunity to apply for top-up funding through a 2011 Connecting Link Funding request.

The overall multi-year project budget

<b>TABLE 5 – Overall Multi-year Project Budget</b>	
2009 & 2010 Construction Costs (Contract 1 as refunded by MTO)	\$810,370
2010 Construction Costs (Contract 2)	\$1,867,961
<b>Total Multi-Year Construction Costs</b>	<b>\$2,678,331</b>
Total Multi-Year Beaver River Bridge Budget (EPW.10.054)	\$2,558,331
<b>Multi-Year Budget Deficit</b>	<b>\$120,000</b>

Given the importance of this project and the need to have an appropriate contingency value, Staff recommend that the Capital Budget for the Beaver River Bridge Rehabilitation Project be increased by \$120,000 from \$2,558,331 to \$2,678,331.

**F. Attached**

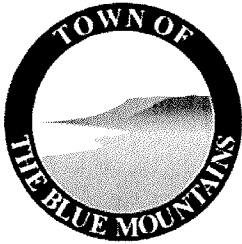
1. Report EPW.10.054 - "Beaver River Bridge Resurfacing Contract 2 – Award of Tender (2010-21-T-EPW) and Consultant Fee Increase", without Attachment, May 11, 2010

Respectfully submitted,

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Reg Russwurm  
Director of Engineering and Public Works

**STAFF REPORT:**      Engineering and Public Works Department



**REPORT TO:**            Infrastructure and Recreation Committee  
**MEETING DATE:**      May 11, 2010  
**REPORT NO.:**         EPW.10.054  
**SUBJECT:**             Beaver River Bridge Resurfacing Contract 2 –  
Award of Tender (2010-21-T-EPW) and  
Consultant Fee Increase  
  
**PREPARED BY:**       Tom Gray, Engineering Design Technologist on  
behalf of Tender Award Committee

**A. Recommendations**

THAT Council receive Report EPW.10.054 entitled “Beaver River Bridge Resurfacing Contract 2 – Award of Tender (2010-21-T-EPW) and Consultant Fee Increase”, and;

THAT Council approve increasing the Capital Budget for the Beaver River Bridge Rehabilitation by \$430,131 from \$2,128,200 to \$2,558,331, and;

THAT Council approve the award of Beaver River Bridge Resurfacing Contract 2 (2010-21-T-EPW) to Miller Paving Ltd. in the amount of \$1,457,961.00 excluding GST, and;

THAT the Mayor and the Clerk be authorized to execute the Contract Documents for Beaver River Bridge Resurfacing - Contract 2 (2010-21-T-EPW), and;

THAT Council approve increasing the upset fee estimate for The Ainley Group to provide final design and contract administrative services for the Beaver River Bridge resurfacing by \$54,380.00 from \$283,190.00 to \$337,570.00.

**B. Background**

**Consultant Fee Increase**

The Town retained The Ainley Group in July 2008 to complete the design and contract administrative engineering services related to the resurfacing of the Beaver River Bridge. The upset fee estimate was approved at \$177,130 within report EPW.08.75.

During the design period a detailed inspection of the structure of the bridge revealed further deficiencies that necessitated work outside of the original project scope as contemplated by the Ainley Group and Staff. The following work was recommended to be completed in addition to the original work:

- Replacement of bearing pads
- Abrasive blast cleaning and re-coating of steel girders and piers
- Repair structural damage to pier cross member
- Repairs to concrete on abutments

In October 2008, the Town applied for funding to the Ministry of Transportation as part of their Connecting Link Program. The application included addressing the additional deficiencies. In July 2009, the MTO approved the funding including the additional structural work. Due to the late announcement of the MTO Connecting Link funding, it was not possible to complete the design and tender all the bridge works to be completed for the 2009 construction season. In discussions with MTO Staff on how to carry over the funding to next year's construction season, it was recommended to issue two separate tenders. One tender for the underside of deck work was prepared for construction within the MTO's 2009 financial year end reporting deadline of February 2010, and another tender has been issued to construct the top of deck works within the MTO's 2010 financial year. When Council approved Report EPW.09.095, the engineering and contract administration fee was increased from **\$177,130** to **\$283,190** for additional engineering and contract administration fees related to the need to provide two separate contracts and the above noted deficiencies.

During the construction of Contract 1 for the underside of deck works, it was determined that the west bridge deck was in extremely poor condition. The condition was so poor that partial depth concrete removal and repair was deemed not feasible and a detailed inspection found that full depth removal and replacement of concrete and rebar was required. This work could not be carried out as part of Contract 1 as it would require lane closures with proper traffic controls including concrete barriers. Furthermore, the construction timelines were too tight to permit completion of works by February 2010 as required within the funding criteria. The majority of the west deck would require replacement and the most cost effective option would be to replace the entire west deck as part of Contract 2. The incorporation of the west deck replacement has significant impacts on the structural design and traffic staging design. It will also require additional onsite inspection. This additional design work and contract administration was not included in the Consultant's scope of work and therefore additional fees are warranted.

These additional engineering costs and construction inspection costs were included in the most recent funding application to the M.T.O. and are therefore fully funded. The Town has received confirmation that the full amount applied for, including increased engineering fees, has been approved.

The Ainley Group provided a revised engineering fee increase of **\$54,380** for the additional design and contract administration of the Beaver River Bridge Rehabilitation for Contract 2. A breakdown for the fee increase is shown in Table 1 below.

<b>TABLE 1</b>	
<b>Additional Engineering</b>	<b>Amount</b>
Contract #2 Design	\$38,490
Contract #2 Inspection (3 weeks)	\$11,250
Contract #2 Contract Administration	\$4,640
<b>Total Increase in Engineering/CA Fees</b>	<b>\$54,380</b>

The revised Fee Schedule submitted by Ainley Group for their Engineering and Contract Administration Fees for the overall project is as follows:

<b>TABLE 2</b>				
<b>Service Provided</b>	<b>Original Amount</b>	<b>Previously Revised Amount EPW.09.095</b>	<b>Fee Increase</b>	<b>Revised Amount EPW.10.052</b>
2009 Contract #1 Design Fee		\$39,435		\$39,435
2009 Contract #1 -Contract Administration		\$43,750		\$43,750
<b>Sub-Total (Contract #1)</b>		<b>\$83,185</b>		<b>\$83,185</b>
2008/2009 Contract #2 Design Fee		\$105,175	\$38,490	\$143,665
2010 Contract #2 - Contract Administration		\$79,830	\$15,890	\$95,720
<b>Sub-Total (Contract #2)</b>	<b>\$167,130</b>	<b>\$185,005</b>	<b>\$54,380</b>	<b>\$239,385</b>
Sub-Total Engineering/Contract Administration Fee	<b>\$167,130</b>	<b>\$268,190</b>	<b>\$54,380</b>	<b>\$322,570</b>
Total Contingency	\$10,000	\$15,000		\$15,000
<b>Total Engineering/CA Fee</b>	<b>\$177,130</b>	<b>\$283,190</b>	<b>\$54,380</b>	<b>\$337,570</b>

Engineering cost as a percentage of construction costs.

<b>TABLE 3</b>		
<b>Total Cost of Project</b>	<b>Original Scope</b>	<b>Revised Scope</b>
Total Construction Cost (Contract 1 plus Contract 2)	\$1,378,903	\$ 2,079,634
Total Engineering/Contract Administration Fees	\$ 177,130	\$ 337,570
<b>Total Cost</b>	<b>\$1,556,033</b>	<b>\$ 2,417,204</b>
Engineering as Percentage of Construction Cost	13%	16%

The design and contract administration of bridge work carries a higher degree of difficulty and requires a higher level of expertise than a typical road reconstruction, therefore the engineering component of bridgework can be expected to be higher than the 10-12% usually experienced. The original Engineering Agreement worked out to be approximately 13% engineering fees as a percent of capital and therefore the 16% engineering component for this bridge work is not unreasonable given the multiple contracts, revisions and the degree of difficulty with the deteriorating structure. Staff recommend the increase in fees to The Ainley Group.

**Construction Contract**

The tender for “Beaver River Bridge Resurfacing – Contract 2 (2010-21-T-EPW)” was closed on Thursday, May 6, 2010 and a public tender opening took place on the same day. Twelve (12) companies obtained tender documents and 2 tenders were received. The bids included the required tender deposit cheque of \$150,000, Agreement to Bond, signed and sealed copy of Addendum #1 and #2 and tender documents. The received bids were reviewed for accuracy by The Ainley Group to ensure they were mathematically correct.

The list of contractors and tender pricing is provided in Table 4 below:

**Table 4**  
**Beaver River Bridge Resurfacing – Contract 2 (2010-21-T-EPW)**

No.	Bidders Name	Tendered Amount (not incl. GST)
	<i>Engineering Estimate</i>	\$1,536,332.00
1.	Miller Paving Ltd.	\$1,457,961.00
2.	Looby Builders Ltd.	\$1,516,491.00

The Ainley Group have reviewed and recommend awarding the lowest compliant tender received was from Miller Paving Ltd. in the amount of \$1,457,961.00 excluding GST. (Attachment #1)

The tender and award of this project is in compliance with the Town's Purchasing Policy. The award is endorsed by the Tender Award Committee consisting of the CAO, Director of Engineering and Public Works, and Manager of Purchasing or designates.

### **C. The Blue Mountains' Strategic Plan**

Town's Strategic Plan Goal # 2 "Addressing the Town's Municipal Infrastructure needs" is in part satisfied by the recommended action.

### **D. Environmental Impacts**

Green house gases will be produced as part of the construction activities. The Contractor will be required to participate in the Town's anti-idling initiative and appropriate measures will be taken to protect the river.

### **E. Budget Impact**

In March 2007, the Town received a grant of \$720,000 from the Ministry of Transportation (MTO) Connecting Link Program for use towards the final design and construction of the works. The Town applied for and received all funds for costs for works completed in 2009 under Contract 1 and for earlier design work. The Town applied for and received top up funding for 2010 works in the amount of \$1,029,000. The total funding available for the works in 2010 is \$1,950,400 as developed in Table 5 below. Included in this amount is Town contribution for banner poles, flag poles, river illumination/laser lighting, pedestrian railing and similar solely Town cost works to enhance the bridge.

Funding available for the 2010 works (Contract #2) is as follows:

<b>TABLE 5</b>	
2010 MTO Connecting Link funding (MTO)	\$1,029,000
2007 MTO Lump Sum Contribution (MTO)	\$ 720,000
2010 Beaver River Bridge Capital Budget (from Roads Capital Reserves)	\$ 201,400
<b>Total Funding/Contributions For 2010 Works</b>	<b>\$1,950,400</b>

Construction Cost for the 2010 works (Contract #2) is as follows:

<b>TABLE 6</b>	
Contract 2 Construction Cost (MTO's share)	\$ 1,382,661
Contract 2 Construction Cost (Town's share)*	\$ 75,300
Materials Testing	\$ 30,000
Engineering**	\$ 205,000
Advertising	\$ 5,000
Contingency	\$ 50,000
<b>Total 2010 Construction Costs</b>	<b>\$ 1,747,961</b>

\*Note: A portion of this cost will be submitted for MTO funding.

\*\*Note: Approximately \$133,000 of the \$337,570 Engineering Costs have already been reimbursed through the MTO funding program.

2010 budget impact summary:

<b>TABLE 7</b>	
Total 2010 Funding/Contributions	\$ 1,950,400
Total 2010 Construction Costs	\$ 1,747,961
<b>Surplus</b>	<b>\$ 202,439</b>

**OVERALL MULTI-YEAR BUDGET IMPACT**

<b>TABLE 8</b>	
2009 & 2010 Construction Costs (Contract 1 as refunded by MTO)	\$810,370
2010 Construction Costs (Contract 2)	\$ 1,747,961
<b>Total Construction Costs</b>	<b>\$2,558,331</b>
2009 Budget	\$347,600
2010 Budget	\$1,780,600
<b>Total Beaver River Bridge Budget</b>	<b>\$2,128,200</b>
<b>Multi-Year Budget Deficit</b>	<b>\$430,131</b>

Since the multi-year budget deficit is fully fundable by MTO, Staff recommend that the Capital Budget for the Beaver River Bridge Rehabilitation be increased by \$430,131 from \$2,128,200 to \$2,558,331.

Any additional monies required to complete the works, should they be needed, are recommended to be frontend by the Town and will be applied for through a 2011 Connecting Link Funding request.

#### **F. Attached**

1. Beaver River Bridge Rehabilitation – Contract 2 Tender Report prepared by The Ainley Group, dated May 7, 2010.

Respectfully submitted,

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Engineering Design Technologist  
Engineering and Public Works  
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Fax: 519-599-3664  
[tgray@thebluemountains.ca](mailto:tgray@thebluemountains.ca)

Tender Award Committee

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Paul Graham  
CAO

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Reg Russwurm  
Director of Engineering  
& Public Works

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Sherri Adams  
Manager of Purchasing