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**REPORT TO BEDDIS WATER SERVICE COMMISSION  
MEETING OF TUESDAY 13 DECEMBER 2011**

**SUBJECT      BEDDIS WATER SYSTEM CAPITAL UPGRADES AND REFERENDUM PROCESS**

**ISSUE**

New funding, through a new loan, is required to complete upgrades to the Beddis water service infrastructure in order to provide reliable drinking water service.

**BACKGROUND**

A capital improvement program for the Beddis water system was initiated in 2005. The program addressed issues of water quality, storage and distribution system improvements. The work conducted by May 2009 included the erecting of a storage tank and construction of a water treatment plant, both of which were never fully completed or commissioned. The work was suspended in May 2009 due to a lack of funds to complete the construction.

In 2010, the Beddis Water Service Commission (BWSC) and Captial Regional District (CRD) staff worked to assess the work required to complete capital improvements, and in doing so engaged Genviar Consultants in conducting a comprehensive review of the system. Genivar presented its findings in reports delivered in November 2010, January 2011 and June 2011. Genivar reviewed the technical aspects of the required work, determined the status of work previously completed, recommended a scope of construction, and estimated the effort to complete the recommended work. Genivar's work was supplemented by cost estimates by Advicas Group Consultants Inc.

The scope of work recommended by Genivar includes water treatment, storage and distribution system upgrades. The cost estimates include project management, consulting engineering, construction and commissioning. The following table summarizes the major work and cost estimates that form the basis for a referendum, as summarized below and detailed on Attachment #1.

<b>Item</b>	<b>Major Work Description</b>	<b>Cost Estimate</b>
1.	Construct and Commission Water Treatment Plant Works	\$275,364
2.	Construct and Commission Revised Storage Tank Works	\$694,708
3.	Construct and Commission Pressure Reducing Valve Station	\$86,631
<b>Total (rounded)</b>		<b>\$1,057,000</b>

The scope of work generally includes the following:

1.      Construct and Commission Water Treatment Plant Works
  - Labour effort to complete the construction of the electrical and mechanical equipment.
  - Labour effort to startup and prove out the equipment prior to placing the plant into production.
  - Installation of a chlorine contact chamber.
  - Demolition and removal of obsolete equipment in the old pumphouse.

2. Construct and Commission Revised Storage Tank Works

- Decommissioning of the existing Lautman and Sky Valley storage tanks and Lautman pump station.
- Construction of an additional tank next to the new Sky Valley tank.
- Construction of a new booster pump station near the new tanks, with auxiliary power, to serve the Sky Valley pressure zone.
- Connection and commissioning of the new booster station and tanks.
- New watermain from the Lautman tank site to the new Sky Valley site.

3. Construct and Commission Pressure Reducing Valve Station

A new pressure reducing station is required on Cusheon Lake Road to reduce pressure in the Creekside area when the new Sky Valley tanks enter service. The new tanks are at a higher elevation than the Lautman Tank.

New funding would be required to complete the work. A referendum process for public assent to borrow the required funds was anticipated in the 2011 Capital Plan, which includes a budget of \$10,000 for referendum costs. The funds for referendum costs are available in the Beddis Water Capital Fund, provided by a 2010 Gas Tax grant.

**ALTERNATIVES**

1. That the Beddis Water Service Commission authorize staff to conduct a referendum process to seek approval of the electors to borrow up to \$1,057,000 to complete water treatment, storage and distribution upgrades.
2. That the Beddis Water Service Commission receive this report.

**IMPLICATIONS**

Alternative 1

A referendum is estimated to cost up to \$10,000 from available funds in the Beddis Water Capital Fund. If the referendum is successful, the project will proceed as planned, resulting in the completion of upgrades that are expected to meet legislated requirements for drinking water, improve aesthetic water quality, improve reliability of water service and reduce risks of failure of aging infrastructure. Based on the amount of \$1,057,000 being borrowed through the Municipal Finance Authority and repaid over 15 years at 6% annual interest, the annual cost of principal and interest will be approximately \$116,208. The resulting impact on the parcel tax for this debt will be approximately \$886, which includes a 5.25% fee from the Province of BC. It is anticipated that this increase would be required in 2013.

The tentative schedule would see the referendum process completed by the spring of 2012, design, tendering and award of a construction contract by the fall of 2012 and completion of the work by the spring of 2013.

Alternative 2

The proposed capital project cannot proceed without new borrowing. If a referendum process is not initiated for the recommended scope and budget, an alternative scope and budget would need to be developed to meet legislated requirements for drinking water, improve aesthetic water quality, improve reliability of water service and reduce risks of failure of aging infrastructure.


**CONCLUSION**

The remaining work required to complete the capital upgrading program initiated in 2005 has been identified. In order to complete the work, new borrowing is required and a referendum process is proposed to seek electoral assent to borrow funds through the Municipal Finance Authority. The financial impact of the borrowing is estimated to be an increase of \$886 per taxable folio.

**RECOMMENDATION**

That the Beddis Water Service Commission authorize staff to conduct a referendum process to seek approval of the electors to borrow up to \$1,057,000 to complete water treatment, storage and distribution upgrades.

  
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J.A. (Jack) Hill, MBA, PEng  
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Concurrence

SM/CS:ls  
Attachment: 1

**BEDDIS WATER SYSTEM CAPITAL PROJECTS SUMMARY 2011**

November 9, 2011

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**ATTACHMENT 1**

BARE CONSTRUCTION COSTS <sup>1</sup>		ADDITIONAL COSTS				TOTAL	Calculation
		Water Treatment Plant	Storage Tanks	PRV			
<b>Construct and Commission Treatment Plant Works</b>		<b>\$133,500</b>					
Site Security Fencing	\$15,000						
Remaining mechanical, includes chlorination	\$32,000	\$133,500	\$336,803	\$42,000	\$512,303		
Remainder electrical and instrumentation work	\$42,000	\$51,908	\$130,958	\$16,331	\$199,197	0.3888 x A	
Demolition at existing plant: pumps, filters, piping	\$4,500						
Plant startup and commissioning	\$32,000						
Chlorine contact at plant discharge	\$8,000						
<b>Construct and Commission Storage Tank Works</b>		<b>\$336,803</b>					
105m - 150 mm main Lautman to new tank site	\$13,650						
50m rock blasting for watermain	\$20,000						
Trench excavation for watermain	\$12,600						
Tree removal/clearing for watermain	\$3,620						
New booster station building	\$19,500						
Mechanical equipment (booster station)	\$27,400						
External piping reservoirs to booster station	\$21,500						
25 mm connections to 2 homes	\$6,030						
Decommissioning of existing tanks & Lautman booster	\$12,300						
200 Amp electrical service (booster station)	\$3,608	\$27,811	\$70,164	\$8,750	\$106,725	0.15 x C	
Mechanical connections (booster station)	\$1,000	\$9,909	\$9,851	\$1,230	\$15,000		
Lighting and wiring (booster station)	\$1,600	\$31,720	\$80,026	\$9,979	\$121,725	F + G	
Switching and receptacles (booster station)	\$900						
Heater cabinet and connections (booster station)	\$2,461						
SCADA c/w radio (booster station)	\$8,800						
Programming (booster station)	\$3,600						
Starter components (booster station)	\$5,000						
Commissioning of SCADA (booster station)	\$4,350						
7.5 hp gas genset (booster station)	\$20,820						
Conduit from tanks to booster station	\$1,436	\$4,124	\$10,405	\$1,298	\$15,827	0.0175 x (E+H)	
Connections to chlorine analyser	\$10,000						
Level sensing	\$3,000						
Commissioning of tank level controls	\$3,250						
General Conditions for changes (reservoirs)	\$6,658						
Overhead electrical service from Sky Valley	\$5,000						
Supply and install new 20,000 lg tank	\$113,620						
Test and disinfect tank	\$5,100						
<b>Construct and Commission PRV Station</b>		<b>\$42,000</b>					
New PRV station at Cusheon Lake Road	\$42,000						
<b>SUBTOTAL - BARE CONSTRUCTION COST</b>		<b>\$512,303</b>					
<b>Consulting Services<sup>2</sup></b>							
F ENGINEERING							
G LEGAL							
H SUBTOTAL - CONSULTING							
<b>Other Costs</b>							
I UNRECOVERABLE HST							
J CRD STAFF TIME <sup>2</sup>							
K CONSTRUCTION COST INFLATION <sup>2</sup>							
L SUBTOTAL - OTHER COSTS							
<b>TOTAL ESTIMATED PROJECT COST</b>		<b>\$275,364</b>	<b>\$694,708</b>	<b>\$86,631</b>	<b>\$1,056,704</b>	<b>E + H + L</b>	
<b>FINANCIAL IMPACT OF PROJECT</b>							
M TOTAL ESTIMATED PROJECT COST (rounded)					<b>\$1,057,000</b>		
N Total annual cost of borrowing for new project (principal and interest) <sup>3</sup>					\$116,208		
O Taxable Folios (2011 budget)					138		
P Provincial levy for parcel tax collection					5.25%		
Q Estimated Parcel tax increase per folio					<b>\$686</b>		

**Footnotes**

- 1 Cost estimates by Advicas Group Consultants Inc.
- 2 Cost estimates by Genivar
- 3 Municipal Finance Authority 15 year loan at 6% annual interest