



VILLAGE OF BELCARRA

"Between Forest and Sea"

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October 12, 2011

BELCARRA POTABLE WATER INFRASTRUCTURE PROJECT PUBLIC INFORMATION MEETING

WEDNESDAY, OCTOBER 19, 2011

7:00 PM

Council will hold a Public Information Meeting, Wednesday, October 19, 2011 7:00 pm at the Village Hall. The purpose of the meeting is to provide information to property owners and discuss the status of the Belcarra Potable Water Infrastructure Project.

The MRIFF grant approval for the potable water system was predicated on providing a sustainable water source to protect the health of persons and to ensure protection of property.

Council Report titled "Belcarra Potable Water Project 17188 – Final Construction Cost Estimates and Project Financing" provides background information for the public meeting. The report is available on Belcarra's website www.belcarra.ca.

The potable water infrastructure project does not apply to properties located in Cozy Cove, Farrer Cove and Twin Islands as these properties, located outside of the area where the water supply and distribution system is being constructed, will not be connected to nor pay costs for the construction of the water supply and distribution system.

Residents are invited to attend this public information meeting. If you have questions, please contact the Municipal Hall at 604-937-4100.

**LYNDA FLOYD
PROJECT MANAGER**



COUNCIL REPORT

File:

Date: October 11, 2011
From: Lynda Floyd, Chief Administrative Officer
Subject: **Belcarra Potable Water Project 17188 - Final Construction Cost Estimates and Project Financing**

Recommendation for Consideration:

1. That the Village pursue additional long-term debt as the option to finance the additional Belcarra potable water supply and distribution project costs of \$1,946,106.
2. That the Village pursue the options under the *Community Charter* in a timely manner to amend "Village of Belcarra Water Supply and Distribution Local Area Service No. 1 Establishment and Loan Authorization Bylaw No. 413, 2008", namely to increase the debenture borrowing authorized, given that time is of the essence, due to the need to let the most recent tender and complete the Project by the MRIF grant deadline of March 31, 2012, the impact on the publicly stated debt servicing parcel charge, and the nature and status of the Project.

Purpose:

To provide Council with the final project estimate for the Belcarra potable water supply and distribution system and to seek Council endorsement to secure additional long term borrowing necessary to fund project completion, partially offset by the Canada- British Columbia Municipal Rural Infrastructure Grant

Background:

On January 11, 2010, Council adopted "Village of Belcarra Water Supply and Distribution Local Area Service No. 1 Establishment Bylaw and Loan Authorization Bylaw No. 413, 2008". Bylaw 413 authorized the Village of Belcarra to:

- borrow a sum not exceeding three million twenty thousand nine hundred and twenty-six dollars (\$3,020,926.00) to construct Belcarra's potable water supply and distribution system to benefit Local Area Service No. 1
- establish the local area service that would benefit from the water system; and
- set the maximum term of twenty-five (25) years for which debentures may be issued to secure the debt created by the bylaw.

Bylaw 413 received the assent of the electors conducted through the council initiative process. Valid petitions against Bylaw 413, returned to the Village by the 4:00pm deadline on Monday, January 4, 2010:

- a. were signed by owners of 6.2% of the parcels subject to the local area service tax; and

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- b. the persons signing the petitions were owners of parcels that in total represented 6.5% of the assessed value of land and improvements that would be subject to the local service tax.

Given that signed petitions received by the Village were insufficient to meet the legislated sufficiency requirements, Council adopted Bylaw 413.

In 2010, when Bylaw 413 was adopted, project construction and long term borrowing calculation estimates were predicated on Dayton & Knight Ltd.'s March 18, 2008 letter "Village of Belcarra Potable Water Supply & Distribution System Construction Cost Estimates – 2008 Update". Throughout 2010 and 2011 project engineering and design work continued, having been established in part by the requirements of the July 20, 2009 Canada – British Columbia – Communities Municipal Rural Infrastructure Fund (MRIF) Agreement with Belcarra. The project was segregated into phased components for tendering purposes. Project construction is well underway subsequent to the following contracts awarded:

Contract Name	Date Awarded	Contract Amount
269.7.1 Marine Pipelines	August 12, 2010	\$2,129,325.00 incl 10% contingency; excl HST
08.13A – Waterworks Construction	September 13, 2010	\$1,919,342.15 incl 10% contingency; incl HST
269.7.2 - Potable Water Supply – North Vancouver Terrestrial Work	May 9, 2011	\$377,440.00 incl HST; plus 10% contingency
269.7.3 Potable Water Supply – Belcarra Terrestrial Work	June 27, 2011	\$838,880 incl HST; plus 5% contingency
08.13 Ph II Waterworks Construction	August 8, 2011	\$1,647,572.48 incl 10% contingency; incl HST

On September 23, 2011, tenders for 08.13 Ph III Waterworks Construction closed covering the last phase of works proposed for balance of the watermain not previously constructed over Marine Avenue, West Road, Kelly Road, Watson Road, and Senkler Roads. The lowest bid received was \$1,442,371.68, incl contingency and HST. Until additional project funding is secured, it is recommended that award of this tender be held.

Financial Considerations:

The verbal report provided at Council's June 27, 2011 meeting noted that unexpected additions to the project scope had been encountered once construction commenced and that OPUS DaytonKnight June 14, 2011 cost estimates indicated a 4.4% increase since 2008, for an overall project estimate of \$7,148,380 with work being done to determine final project estimates.

Final costs to complete the potable water project, estimated to be \$8,872,575, are identified in the attached October 12, 2011 letter from OPUS DaytonKnight, summarizing the items added to the project during construction, and the rationale for same.

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Project Budget Estimate Comparison to 2008 Estimate

Component of Budget	Notes	Sept/21/2011	Mar/18/2008
Original OPUS DaytonKnight Project Estimate *	(1)	\$6,864,000	\$6,864,000
Inflation *		973,300	
Items added to Project during construction *		1,306,206	
Original estimate components adjustments *		<u>(423,531)</u>	
*As estimated by OPUS DaytonKnight, Oct/12/2011		8,719,975	
HST, non-rebateable	(2)	152,600	0
External interim financing costs	(3)	33,400	192,192
Internal interim financing costs	(3)	16,851	↓
MFA, debenture financing fees	(4)	29,802	0
MFA, debenture cash reserve contribution	(4)	49,670	0
		\$9,002,298	7,056,192

Additional debt required = \$9,002,298 - \$7,056,192 = \$1,946,106

- (1) Estimate, inflation and items added, reviewed and confirmed by your as complete and accurate.
- (2) The HST cost was not included in the cost estimate as it was understood, in February 2010 when this issue was addressed, that the full HST cost would be fully reimbursed to the Village.
- (3) The 2008 financing costs was estimated at 4% interest on anticipated expenditures starting in June 2009 and ending in September 2012. Lower actual costs anticipated due to greater focus on internal financing, lower market rates and earlier planned receipt of debt (Spring borrowing vs. Fall 2012).
- (4) Not included in original budget estimate.

Project Funding

Source	Notes	Amount
Provincial Grant (Canada-BC Municipal Rural Infrastructure Fund)		\$4,035,266
Authorized Debenture Debt, Bylaw 413, 2008		3,020,926
Subtotal		7,056,192
Additional Funding Required		1,946,106
Total		\$9,002,298

There are two funding sources for the Additional Funding Requirement: (A) Existing Village Resources (Internal Financing) or (B) Additional External Debt.

The attached analysis dated October 12, 2011 of Belcarra's financial position and funding options, was prepared by Nancy Gomerich, NG Consulting.

Bylaw 413, 2008 authorized the Village to borrow from the Municipal Finance Authority for the property owners' share of the project costs and the analysis shows that MFA would be the viable funding for additional external debt.

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If the entire additional Project costs (\$1,946,106) required is financed by additional long-term debt the impact on annual debt servicing costs, using the current MFA estimated 25 year debt interest rate of 4.13%, compared to the estimated MFA interest rate of 6% used in 2008.

	Debt Outstanding	Estimated Annual Debt Servicing (A)	Estimated Annual Per Parcel Charge (= A / 281 parcels)
Revised Debt	4,967,032	324,407	\$1,154
Currently Approved Debt	3,020,926	197,303	\$702
Additional Debt	1,946,106	127,104	\$452

In January 2010 when the debt of \$3M and the related estimated debt servicing limit under Council Initiative was approved, the public was advised that \$253,794 or \$903 per taxable parcel (\$253,794/281 parcels) would be the repayment. Thus, the difference in the annual debt servicing costs and per parcel charge from the perspective of the public is the increase of \$70,613 (\$324,407 - \$253,793) or \$251 (\$21 per month) (\$70,613/281 parcels), respectively, which is relatively nominal and affordable.

The Village obtained the Inspector of Municipalities approval to exceed its legislated Liability Limit (i.e. annually allowable debt servicing costs of principle and interest) by about \$50,000. The approved annual debt servicing limit for the \$3M of debt is \$253,793. The additional debt will result in exceeding the Village's annual debt servicing limit by a further \$70,613 (\$324,407 - \$253,794), or about 121,000 in total. The approval by the Inspector of Municipalities to increase the amount exceeding Belcarra's legislated Liability Limit will be required.

Loan Authorization Bylaw Amendment Process

Pursuant to the *Community Charter* a bylaw that requires approval of the electors or assent of the electors may be amended or repealed without the approval or assent of the electors if the minister (sec 137 (2)) or inspector of municipalities approves (sec 180 (3)), subject to any terms and conditions the minister or inspector deems appropriate.

Next Steps

If Council supports the proposed recommendations, based on consultation with staff at the Ministry and MFA the next steps are:

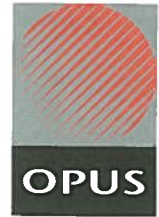
- Provide the Ministry with documentation supporting adoption of Bylaw 413 and Council's request;
- Inform the affected property owners of the project costs, the rationale and the intent to amend the bylaw; and
- Prepare an amending bylaw for 3 readings; and submit for approval together with authorization to exceed servicing limits from the Inspector of Municipalities

Alternatives:

None suggested.

Attachments:

- Opus DaytonKnight – Overall Project Budget and Engineering Scope, June 14, 2011
- Opus DaytonKnight – Overall Project Budget Update, October 12, 2011
- NG Consulting - Review of Potable Water Supply & Distribution System Project Costs and Funding Options, October 12, 2011



June 14, 2011

VIA MAIL & E-MAIL

Ms. Lynda Floyd
 Chief Administrative Officer
Village of Belcarra
 4084 Bedwell Bay Road
 Belcarra, B.C.
 V3H 4P8

Dear Ms. Floyd:

**RE: Village of Belcarra Potable Water Supply & Distribution System
 Overall Project Budget and Engineering Scope**

We have completed a review of the overall project budget based on actual costs received for work on-going or completed, work outstanding and additional work not included in the 2008 project budget letter dated March 18, 2008. Major components to this project as summarized in Table 1.

**TABLE 1
 CONSTRUCTION COST UPDATE SUMMARY**

Item	Description	Cost Estimate (2008)	Current Cost or Estimate
1	Marine Watermain	\$1,918,300	\$1,950,000
2	DNV Vault	\$232,530	\$250,000
3	Dean Place PRV	\$193,500	\$87,000
4	Midden Road Valve Chamber	\$298,500	<u>\$350,000</u>
5	Tatlow Road Reservoir & Pump Station	\$165,000	<u>\$530,000</u>
6	SCADA System	\$0	<u>\$26,000</u>
7	Municipal Watermains - Stage 1	\$2,225,000	\$1,719,300
8	Municipal Watermains - Stage 2		<u>\$416,000</u>
9	Service Connections & Meters	\$1,283,000	<u>\$1,283,000</u>
10	Beesley Engineering Ltd.	\$208,000	\$131,130
11	Opus DaytonKnight Ltd.	\$333,000	\$309,950

Item	Description	Cost Estimate (2008)	Current Cost or Estimate
12	Papove Surveying	\$7,500	\$7,500
13	Balanced Environmental	\$0	\$28,500
14	Tsleil-Waututh	\$0	\$36,500
15	AMEC (Archaeology)	\$0	\$23,500
Total (excl. HST)		\$6,864,330	\$7,148,380
Underlined work is either out for tender or waiting to be tendered			

The total 2008 budget for this work was \$6,864,000.

Major changes to the 2008 Cost Estimate are attributed to the following:

1. Addition of a fire pump system to the Tatlow booster station and construction of a concrete building due to the local site concerns.
2. Addition of SCADA hardware in the Village Hall.
3. Addition of Tsleil-Waututh and AMEC (archaeology) to the professional services component.

The above total cost, adjusted for construction inflation between 2008 and 2011 is \$7,180,000, allowing for work completed in 2010 and work to be finalized in 2011. This inflation estimate is based on the ENR index for 2008 of 8564; 2010 of 8950 and May 2011 of 9034.

Engineering Budget

Opus DaytonKnight provided an engineering budget on October 8, 2009. Due to the permitting nature of this project and the above changes in scope we envision some additional engineering activities which are outside of our previous scope. These include:

1. Contract administration services for 3 construction contracts. Item 1.7 of our scope allowed for 2 contract packages.
2. Design and specification of a fire pump system for the Tatlow Road pump station.
3. Design and conceptualization of the Village SCADA system. We allowed for the SCADA at the valve chambers per item 1.4 (d).
4. Programming of the Village SCADA system to allow remote access and control to at each site.
5. The proposed geotechnical work was not completed (Item 1.4(i)).
6. Addition of specification and procurement contract for the water meters.

The additional estimated costs for these items are provided in the attached Table 2. In summary:

1. Additional Contract Services	\$28,000
2. Fire Pump System	\$5,200

3. SCADA Concept	\$2,500
4. Programming Village SCADA System	\$44,000
5. Geotechnical Credit	(\$10,000)
6. Water Meter Specification	<u>\$11,000</u>

Total of Scope Changes **\$80,700**

The revised budget for Opus DaytonKnight is \$390,650 excluding HST. Should you have any comments please feel free to contact the undersigned.

Yours truly;

Opus DaytonKnight Consultants Ltd.



Walt Bayless, P.Eng.

WB/lp
269.7

cc: Larry Scott, Village of Belcarra
Ron Beesley, Beesley Engineering

**TABLE 2
VILLAGE OF BELCARRA
POTABLE WATER SUPPLY
ENGINEERING SCOPE FOR ADDITIONAL SCOPE**

	Principal J. Lee \$195	Project Manager W. Bayless \$135	Project Engineer D. Taylor \$108	Mechanical M. Kwan \$105	Electrical G. Vranko \$90	Contract Admin. D. Taylor \$108	SCADA N. Wright \$130	Field Inspection TECH \$90	Programming TECH \$100	Drafting TECH \$80	Secretarial \$65	Subconsultant	Totals
ITEM #1 - ADDITIONAL CONTRACT ADMINISTRATION													
Contract													
Specifications			16	2	2								\$2,118
Contract	2	8	12										\$2,766
Document Preparation											10		\$650
Tendering													
Address Questions and Issue Addendum		16											\$2,160
Review Submissions		4											\$540
Letter of Award	2	4											\$930
Contract Finalization		4											\$540
Construction Administration													
Pre-Construction Meeting		2	2										\$486
Construction Administration	8	8				40							\$6,960
Field Inspection								80					\$7,200
Prepare Monthly Progress Payments						10							\$1,080
Final Inspection		6				8		8					\$2,394
TOTAL HOURS	12	52	30	2	2	58	0	88	0	0	10		
SUBTOTAL	\$2,340	\$7,020	\$3,240	\$210	\$180	\$6,264	\$0	\$7,920	\$0	\$0	\$650		\$28,000
ITEM #2 - FIRE PUMP SYSTEM													
Detailed Design													
Mechanical			4	16									\$2,112
Drafting										18			\$1,440
HVAC (building)			2	8						8			\$1,696
TOTAL HOURS	0	0	6	24	0	0	0	0	0	26	0		
SUBTOTAL	\$0	\$0	\$648	\$2,520	\$0	\$0	\$0	\$0	\$0	\$2,080	\$0		\$5,200
ITEM #3 - CONCEPTUAL DESIGN OF VILLAGE SCADA SYSTEM													
Control Architecture		2	8		8								\$1,854
Fibre optic system		3											\$405
Village hall control and remote access						2							\$216
TOTAL HOURS	0	3	0	0	0	2	0	0	0	0	0		
SUBTOTAL	\$0	\$405	\$0	\$0	\$0	\$216	\$0	\$0	\$0	\$0	\$0		\$2,500
ITEM #4 - PROGRAMMING OF THE VILLAGE SCADA SYSTEM													
DNV Deane Place ACE RTU and HMI screen programming plus SCADA alarm and datalogger							8		80				\$9,040
SCADAPack RTU programming (3 sites)									100				\$10,000
HMI configuration (5 HMI screens)									64				\$6,400
Remote access Architecture (RDP session through firewall and switch)							16		16				\$3,680
Win911 alarming									24				\$2,400
Commissioning / field programming									80				\$6,000
Reporting discussions and programming (2 reports)							16		24				\$4,460
Systems Manual									24				\$2,400
TOTAL HOURS	0	0	0	0	0	0	40	0	392	0	0		
SUBTOTAL	\$0	\$0	\$0	\$0	\$0	\$0	\$5,200	\$0	\$39,200	\$0	\$0		\$44,000
ITEM #5 - GEOTECHNICAL WORK													
Geotechnical													-\$10,000
TOTAL HOURS	0	0	0	0	0	0	0	0	0	0	0		
SUBTOTAL	0	0	0	0	0	0	0	0	0	0	0		-\$10,000
ITEM #6 - WATERMETERS													
Review of Watermeter Technology	2	4	16				4						\$3,178
Preparation of Specification			12										\$1,296
Preparation of Procurement Contract			24								8		\$3,112
Address Questions and Issue Addendum			8										\$864
Review Submissions		4											\$540
Letter of Award	2		4								2		\$952
Contract Finalization		4	4								2		\$1,102
TOTAL HOURS	4	12	68	0	0	0	4	0	0	0	12		
SUBTOTAL	\$780	\$1,620	\$7,344	\$0	\$0	\$0	\$520	\$0	\$0	\$0	\$780		\$11,000
TOTAL FEES (rounded)													\$80,700



October 12, 2011

VIA MAIL & E-MAIL

Ms. Lynda Floyd
 Chief Administrative Officer
Village of Belcarra
 4084 Bedwell Bay Road
 Belcarra, B.C.
 V3H 4P8

Dear Ms. Floyd:

**RE: Village of Belcarra Potable Water Supply & Distribution System
 Overall Project Budget Update**

Further to our teleconference on October 4, 2011, and additional information from your consultant undertaking the terrestrial works, Beesley Engineering, we have completed an update of the overall project budget based on costs received for work on-going or completed, work outstanding and additional work not included in the June 14, 2011 and September 21, 2011 project budget letters. Major components to this project are summarized in Table 1.

**TABLE 1
 CONSTRUCTION COST UPDATE SUMMARY**

Item	Description	Cost Estimate (2008)	June 14, 2011 Estimate	Current Cost or Estimate
1	Marine Watermain	\$1,918,300	\$1,950,000	\$1,935,730
2	DNV Vault ⁽¹⁾	\$232,530	\$250,000	\$285,000
3	Dean Place PRV	\$193,500	\$87,000	\$87,000
4	Midden Road Valve Chamber ⁽²⁾	\$298,500	\$350,000	\$322,000
5	Tatlow Road Reservoir & Pump Station	\$165,000	\$530,000	\$457,000
6	SCADA System in Village Hall ⁽³⁾	\$0	\$26,000	\$25,000
7	Municipal Watermains - Stage 1	\$2,225,000	\$1,719,300	\$1,721,276
8	Municipal Watermains - Stage 2		\$416,000	\$1,471,047
9	Municipal Watermains - Stage 3			\$1,287,832 ⁽⁴⁾
10	Service Connections & Meters	\$1,283,000	\$1,283,000	See note (5)
11	Beesley Engineering Ltd.	\$208,000	\$131,130	\$306,000
12	Opus DaytonKnight Ltd.	\$333,000	\$309,950	\$495,650

Item	Description	Cost Estimate (2008)	June 14, 2011 Estimate	Current Cost or Estimate
13	Papove Surveying	\$7,500	\$7,500	\$74,655
14	Balanced Environmental	\$0	\$28,500	\$52,406
15	Tsleil-Waututh	\$0	\$36,500	\$36,500
16	AMEC (Archaeology)	\$0	\$23,500	\$23,500
17a	BC Hydro - Deane Place	\$0	\$0	\$13,606
17b	BC Hydro - Tatlow Rd	\$0	\$0	\$3,778
17c	BC Hydro - Strathcona Rd	\$0	\$0	\$500
17d	BC Hydro - Midden Rd	\$0	\$0	\$500
18	Additional Costs	\$0	\$0	\$45,995
19	Flushing and Disinfection	\$0	\$0	<i>\$80,000</i>
20	Seismic Security and Intrusion Protection of Tatlow Reservoir	\$0	\$0	<i>\$10,000</i>
Sub-Total (excl. Tax)		\$6,864,330	\$7,148,380	\$8,719,975
HST – Municipal Portion Payable				\$152,600
Total ⁽⁶⁾				\$8,872,575

NOTE: *Italic* work is either out for tender or waiting to be tendered

- (1) Includes contingency for Contract 269.7.2 (Strathcona and Deane Place) as part of the current cost column
- (2) Includes contingency for Contract 269.7.3 (Tatlow and Midden Road) as part of the current cost column
- (3) Includes a \$15,000 allowance for a SCADA computer, HMI software, dialler software and security programs.
- (4) Tenders have been received for this work; however, the contract has not been awarded.
- (5) Service connection costs are included in the watermain contracts, Items 7, 8 and 9
- (6) Contingencies for each contract are included in the awarded prices noted in the table

The following items were added to the project during construction:

1. Inflation from 2008 to 2011/2012 (ENR 8310 to 9116)	\$973,300
2. Fire Pump System	\$292,000
3. Road Repairs on Coombe Lane	\$48,800
4. Blow Downs	\$170,000
5. SCADA system (including programming)	\$67,000
6. Individual Service Trenches	\$225,000
7. Repairs to Low Quality Portions of Existing Roadways	\$60,000

8. Difficult Access on Coombe Lane and Turtlehead Road	\$200,000
9. Survey	\$65,000
10. Water Sampling Stations	\$84,000
11. Fibre Optic Cable for SCADA System	\$42,000
12. Habitat Compensation	<u>\$52,406</u>

TOTAL (excluding HST) \$2,289,506

Additional costs such as BC Hydro, Tsleil-Waututh and Archaeology have been included in the original contingencies. The above items are discussed in further in the following section.

SUMMARY OF SCOPE CHANGES

The items below are generally related to changes associated with the CEAA requirements, Ministry of Health requirements, and existing unforeseen ground conditions.

1. Inflation

The inflation is based on the ENR Construction Cost index which was 8310 in 2008 and is currently 9116. This index tracks the cost of construction labour and materials and is considered one of the more representative inflation indices for the construction industry. Implementation of the project was subject to a lengthy permitting process which resulted in the start of work occurring in late 2010.

2. Fire Pump Station

The pre-design work included a residential pump station and no direct fire pump system for the upper pressure zone along Main Avenue. This assessment was based on information provided by the local Fire Department. Following initiation of the project it was indicated the hydrant on Main Avenue was required to meet FUS requirements, which necessitated a NFPA rated fire pump system in addition to the residential booster pump system.

3. Road Repairs on Coombe Lane

The Village of Belcarra took over Ownership of this road from the Ministry of Transportation. Once work was initiated it was identified that the sub-grade material was not adequately prepared prior to constructing the road. It was not acceptable to re-build the road utilizing the same material and a portion was repaired as part of the watermain installation.

4. Blow Downs

In order to address the flushing requirements of the Village, multiple blow down chambers were added to the project. These are located at the low points in the system, which due to the Village layout, are not necessarily at the hydrant locations.

5. SCADA System

It was identified by the Village that remote monitoring and alarming of the water system was required to manage the on-going operational costs related to the water system. The installation of the SCADA system allows the Village operations staff to monitor the status of the system remotely and troubleshoot alarms. This approach allows the staff to determine if a field visit is required, reducing overtime and on-call costs. This cost includes the HMI computer, field RTUs, modems, radios, software, programming costs and installation of the communication wires within the Village Hall.

6. Individual Service Trenches

As a cost savings approach the Village's intent was to install the service connections to two adjacent properties in a common trench. This approach had the potential to reduce the degree of rock work required for services up to the property line. Once the Village completed a survey of the plumbing and geography of each property it was determined that it would be impractical for the homeowner to have the services provided in a common trench as they would not permit a reasonable connection to the existing plumbing. This resulted in an increase in the number of trenches to the property line being installed.

7. Repairs to Low Quality Portions of Existing Roadways

The majority of roads in Belcarra were constructed prior to municipal incorporation in 1979. Road construction was either by MOT approving residents to construct a road/access or by MOT construction itself. As evident by previous watermain works and road rebuilding, standards of the day appeared not to have been used with preference given to finding the most practical and cost effective means to construct roads. Current standards and contractual obligations to construct to MMCD standards has obligated the Municipality to honour "Change Orders" or force accounts for over excavations and imported fill materials to replace blast rock, boulders, heavy organics and substandard or no road base. Even after best efforts to identify potentially sub-standard road base areas within the tender documents, this is still for the most part akin to a "Renovation" where one has to not only anticipate the "unknowns" but the "unknown; unknowns".

During the design stages it was envisioned that the poor conditions of the existing roads would significantly contribute to the structural failure of the asphalt during watermain construction. Accordingly a typical trench repair as prescribed by MMCD would not be an economical solution. Realizing that the point of replacing a trench repair with an overlay was a realistic component of the project, the increased costs would be a reality of this approach. This matter was discussed and approved by the Province as an eligible cost. It was the original intent that overlays in lieu of a trench repair would be covered within the scope of the project budget.

Given the increased water project costs, other projects have been deferred and those funds reassigned to the asphalt resurfacing of Bedwell Bay Road. See photos 1 through 3 attached as Appendix A.

8. Difficult Access on Coombe Lane and Turtlehead Road

Tenders identified areas where the contractor needed to be aware that watermain construction could not follow typical construction methods of side casting spoils and storing materials and backfills. Compounded with the road substrate condition, the contractors made adjustments to their bids reflecting anticipated lower production rates. As the majority of tender responses were tightly bid, we are confident all the tender responses understood the challenges, were aware of the restraints and factored in the loss of production similarly.

9. Survey

Additional survey was completed by the Village resulting from a lack of historical information. The Village did not have any available road survey, no legal survey related to existing infrastructure and inaccurate or unavailable mapping showing the limits of the Village land and the private land. As part of the survey required for the watermain the surface infrastructure was mapped to provide the Village with an appropriate database of Village assets for future planning.

10. Water Sampling Stations

The Ministry of Health requested the Village install a number of water sampling station within the system. These stations are used for chlorine and bacteriological measurements to demonstrate compliance with the Regulations. Water testing was intended to be completed through available sampling locations within public buildings.

11. Fibre Optic Cable for SCADA System

The geography of the Village did not provide the required line of site communication that was required between all major points within the Village water system. Therefore rental of space on existing communications towers or the installation of a private tower would have been required. It was recommended that a fibre optic line be installed adjacent to the watermain work to permit reliable communications between the components of the water system. This approach also protects the communications system from surface damage, such as fallen trees.

12. Habitat Compensation

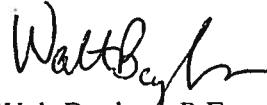
Environmental works for the marine portion of Belcarra Watermain project were outlined in the Fisheries Act Authorization 08-HPAA2-00151, requiring construction of the riparian and eelgrass compensatory fish habitats. The full extent and scope of these works could not be determined until May 2011 when the marine pipeline corridor was finalized and the construction essentially complete. A site visit conducted soon thereafter revealed additional riparian planting, eelgrass transplanting, monitoring and reporting methodology were required to meet Belcarra's obligations set out in Authorization 08-HPAA2-00151.

CLOSURE

The above information is based on input from the Village, Beesley Engineering and Opus DaytonKnight. We trust this information addresses your current concerns and should you have any questions on the above, please do not hesitate to contact the undersigned.

Yours truly,

Opus DaytonKnight Consultants Ltd.



Walt Bayless, P.Eng.

WB/ab
269.7

cc: Larry Scott, Village of Belcarra
Ron Beesley, P.Eng., Beesley Engineering

Appendix A – Reference Photos

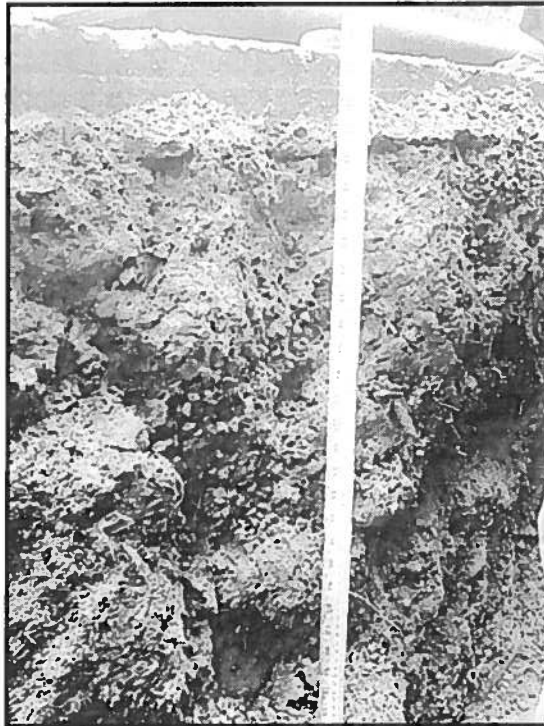


Photo 1 – Many roads within the Village were constructed on organic fill. This photo shows a section of road underlain by 1200 mm of organic material.

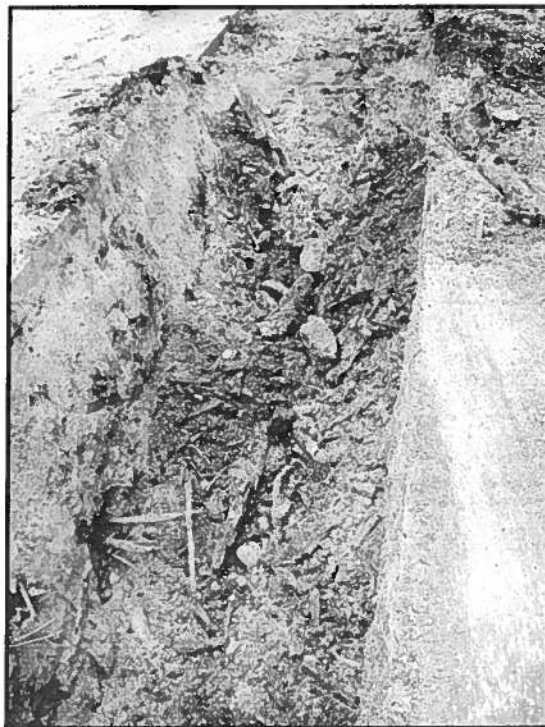


Photo 2 – Section of road constructed on woody organic debris



Photo 3 – Native material encountered under existing roads.

Nancy Gomerich, BBA, CA

October 12, 2011

Lynda Floyd, Chief Administrative Officer
Village of Belcarra

Re: Review of Potable Water Supply & Distribution System Project Costs and Funding Options

The purpose of this letter is to summarize my findings and recommendations with respect to the estimated total capital project costs and related financing options of the Village of Belcarra Potable Water Supply & Distribution System (“Project”) as at September 30, 2011.

My findings and recommendations are based on:

- Discussions with yourself; Carol Arnold, Financial Analyst, Ministry of Community, Sport, and Cultural Development; and Shelley Hahn, Director of Business Services, Municipal Finance Authority (“MFA”)
- Review of various documents provided, the most relevant being:
 - Letter from OPUS DaytonKnight dated October 12, 2011 providing the most recent project budget update and reason(s) for increases in the project cost beyond the 2008 estimate
 - Village Bylaw 413, 2008 and Liability Servicing Limit Certificate (dated April 9, 2003) that provided the authority for the Village to borrow up to \$3,020,926 debt for a maximum term of twenty-five (25) years
 - The Village public information bulletins on the Project dated January 24, 2008, February 11, 2010 and December 9, 2009
 - The most recent audited Financial Statements of the Village dated December 31, 2010
 - The electronic file (“2011-2015 Financial Plan 2011 Budget (Approved 2011-05-09).xls”) providing details of the numbers supporting the Five-Year Financial Plan 2011-2015 Bylaw No. 438, 2011

Findings and Recommendations:

Current Project Budget Estimate

The current Project Budget Estimate is \$9,002,298:

Component of Budget	Notes	Amount
OPUS DaytonKnight Project Estimate dated October 12, 2011	(1)	\$8,719,975
HST, non-rebateable	(2)	152,600
External interim financing costs, estimated at 1.70%	(3)	33,400
Internal interim financing costs, estimated at 1%	(4)	16,851
MFA, debenture financing fees	(5)	29,802
MFA, debenture cash reserve contribution	(6)	49,670
		\$9,002,298

- (1) Estimate reviewed and confirmed by you as complete and accurate.
- (2) The Village HST cost is equal to 14.583% of the 12% HST charges.

- (3) Financing costs on funds borrowed from the MFA to cash flow the Project to date, and estimated costs to Project completion. The MFA interim financing rate is a variable rate and is equal to prime less approximately 1.30% (currently 1.70%). The current outlook is for this rate to remain stable to the anticipated Project completion date of March 31, 2012.
- (4) Financing costs on the use of the Village's own funds to cash flow the Project to date, and estimated costs to Project completion date of March 31, 2012. The financing costs will be calculated using the MFA Money Market Interest rate for fiscal 2008, 2009, 2010 and 2011 to date on funds used (currently estimated at 1% pending provision of actual rates from MFA). The MFA rate to be used is a reasonable approximation on the rate the Village would otherwise earn if it had invested these funds.
- (5) MFA debenture financing fees are fixed charges set at .6% of the gross debenture (debt) issue.
- (6) MFA debenture cash reserve contribution is a fixed charge equal to 1% of the gross debenture (debt) issue. This cash will be withheld from the debenture borrowing by MFA and held as security until the maturity of the debenture. These funds, together with interest thereon, will be returned to the Village when the debenture is fully repaid.

Project Budget Estimate Comparison to 2008 Estimate

Component of Budget	Notes	Sept/21/2011	Mar/18/2008
Original OPUS DaytonKnight Project Estimate *	(1)	\$6,864,000	\$6,864,000
Inflation *		973,300	
Items added to Project during construction *		1,306,206	
Original estimate components adjustments *		(423,531)	
*As estimated by OPUS DaytonKnight, Oct/12/2011		8,719,975	
HST, non-rebateable	(2)	152,600	0
External interim financing costs	(3)	33,400	192,192
Internal interim financing costs	(3)	16,851	↓
MFA, debenture financing fees	(4)	29,802	0
MFA, debenture cash reserve contribution	(4)	49,670	0
		\$9,002,298	7,056,192

Additional debt required = \$9,002,298-7,056,192 = \$1,946,106

- (1) Estimate, inflation and items added, reviewed and confirmed by your as complete and accurate.
- (2) The HST cost was not included in the cost estimate as it was understood, in February 2010 when this issue was addressed, that the full HST cost would be fully reimbursed to the Village.
- (3) The 2008 financing costs was estimated at 4% interest on anticipated expenditures starting in June 2009 and ending in September 2012. Lower actual costs anticipated due to greater focus on internal financing, lower market rates and earlier planned receipt of debt (Spring borrowing vs. Fall 2012).
- (4) Not included in original budget estimate.

Project Funding

Source	Notes	Amount
Provincial Grant (Canada-BC Municipal Rural Infrastructure Fund)		\$4,035,266
Authorized Debenture Debt, Bylaw 413, 2008		3,020,926
Subtotal		7,056,192
Additional Funding Required		1,946,106
Total		\$9,002,298

There are two funding sources for the Additional Funding Requirement: (A) Existing Village Resources (Internal Financing) or (B) Additional External Debt.

A. Review of Existing Village Resources Option (Internal Financing Option)

As an alternative to additional external debt the Village could choose to finance all or part of the additional requirement with its own funds.

A review of the Village’s audited December 31, 2010 Financial Statements details the Accumulated Surplus position as follows:

Dec/31/2010 Financial Statements	
429,107	Internally Restricted (Reserves)
3,692,861	Investment in Non-Financial Assets (Non Financial Assets less related Debt)
199,736	Unrestricted Surplus
<u>4,321,704</u>	

The most significant component of Accumulated Surplus is the Investment in Non-Financial Assets which is equal to the Village’s non-financial assets (primarily tangible capital assets) less related debt. This portion of accumulated surplus is not available to be used for internal financing as it is not cash and will not be converted to cash in the normal course of operations. All of the Village’s tangible capital assets are necessary to support current services. The Village does not have any surplus, marketable land (or other assets) that could readily be sold for cash without significantly impacting operations.

The first step in determining the ability to use the Accumulated Surplus, Reserves or Unrestricted Surplus balances, requires a determination of the extent to which these balance are represented by available cash.

A review of the Village’s audited December 31, 2010 Financial Statements show a cash position of \$1,049,616 of which \$420,773 is externally restricted and \$429,107 is internally restricted by decision of Council (Reserves), leaving \$199,736 of unrestricted cash (Unrestricted Surplus).

Dec/31/2010 Financial Statements		
Short-term Cash Position:	176,675	Cash
	841,062	Investments
	858,658	Accounts Receivable (short-term)
	(826,779)	Accounts Payable (short-term)
	<u>1,049,616</u>	
Allocation of Cash Position:		
Externally Restricted	153,272	Property Taxes paid in advance
	79,844	Refundable Performance Bonds
	72,871	Deferred Revenue - Grant receivable
	114,786	Deferred Revenue - GVTA (Bedwell Bay Road)
	<u>420,773</u>	
Internally Restricted (Reserves)	255,142	Capital Reserve
	111,500	Equipment Reserve
	48,933	Municipal Hall Reserve
	13,532	Climate Reserve
	<u>429,107</u>	
Unrestricted Surplus	<u>199,736</u>	
	<u><u>1,049,616</u></u>	

The \$420,773 externally restricted funds are all of a short-term nature and are therefore not an appropriate source of long-term financing.

The \$429,107 of Reserve funds are for planned future expenditures, primarily of a capital nature. The Capital, Equipment and Municipal Hall Reserves are Statutory Reserves which means that their use is restricted under the *Community Charter*. While loans for the Project works can be made from these Statutory Reserves, the *Community Charter* requires that they be repaid with interest “no later than the time when the money is needed for the purposes of that Reserve.” The 2011-2015 Financial Plan projects a net decrease in the Reserves and Unrestricted Surplus balances of \$90,480 in 2011, with a further net decrease of \$87,379 by the end of 2015, leaving a balance of \$450,984 at that time. Thus, at best, the available Reserve and Unrestricted Surplus funds available to finance the Project works are only \$450,000, and likely a lower amount if the debt term is much more than 10 to 15 years given the loan repayment requirements under the *Community Charter* for the Reserve funds.

Additionally, it should be noted that using available Unrestricted Surplus funds to finance the Project works may result in the need for the Village to borrow to finance operations in the first one-half of each year until the major funding source (taxes) are collected in July¹.

Lastly, and perhaps the most important fact to consider, is that the Reserve and Unrestricted Surplus funds are necessary sources of capital financing for other Village capital works. The Project will result in the Village’s Liability Limit being exceeded for potentially the entire 25 year debt term. While it is possible for the Liability Limit to be reduced sufficiently by early debt payout and/or refinancing over a longer-term, the first option for this to be done is 10 years from the date of issuance of the debt. *Until such time as the Liability Limit is reduced, the Village will be unable to obtain any form of additional capital financing (including MFA equipment leases) other than short-term financing to bridge a cash-flow gap.*² Thus, it is imperative that the Village maintain its existing reserves and surplus balances to use for financing such works.³ This is particularly important given the unknowns respecting the future capital needs of the new water system and the need to be able to respond swiftly should the existence of a health or safety concern exit.

B. Additional External Debt Option

With the addition of the approved Project debt (\$3,020,926) the Village will exceed its legislated Liability Limit (i.e. annually allowable debt servicing costs of principle and interest) by about \$50,000. This event has been pre-approved by the Inspector of Municipalities. The approved annual debt servicing limit for the \$3M of debt is \$253,793.

¹ The Village currently uses cash available from Externally Restricted funds and Unrestricted Surplus to finance operations during the first one-half of the fiscal year. With stable annual operating expenses (excluding amortization expense) of about \$690,000 the Village is easily able to internally finance operations with these cash balances. A total cash balance of \$345,000 (50% of 690,000) would likely be sufficient.

² See *Community Charter*, Section 174 (and related Regulation 93/2007). The restriction is very broad. The Village will not be permitted to incur any additional debenture debt, make any non-current capital commitments or contingencies (including capital lease arrangements, i.e. MFA leases), or make any loan guarantees, until such time as the Village’s Liability limit is reduced by an amount sufficient to permit the incurrence of the liability.

³ The Village is 100% residential and the recently updated Official Community Plan indicates that this make-up is to be maintained into the foreseeable future. Thus, the ability to raise additional funds in any year is limited, with a 1% general municipal tax increase only raising approximately \$5,500.

If additional debt is sought it must also be approved by the Inspector of Municipalities and a new or amended bylaw will need to be adopted following the same procedures followed for the \$3M of authorized debt (see footnote for exception).⁴

If the entire additional Project costs (\$1,946,106) required is financed by additional long-term debt the impact on annual debt servicing costs, using the current MFA estimated 25 year debt interest rate of 4.13%⁵ is:

	Debt Outstanding	Estimated Annual Debt Servicing (A)	Estimated Annual Per Parcel Charge (= A / 281 parcels)
Revised Debt	4,967,032	324,407	\$1,154
Currently Approved Debt	3,020,926	197,303	\$702
Additional Debt	1,946,106	127,104	\$452

The Revised Debt will result in the Village's annual debt servicing limit being exceeded by a further \$70,613 (\$324,407-\$253,794), or about 121,000 in total. If the Village opts for a 30 year debt term (the maximum permitted under the *Community Charter*) the estimated annual debt servicing cost would be \$293,701 with the debt servicing limit being exceeded by about \$90,000.

This being the case, at the time the currently approved debt of \$3M was approved by Council Initiative (January 2010) the related estimated debt servicing limit that the public was advised of was \$253,794 or \$903 per taxable parcel (\$253,794/281 parcels). Thus, the difference in the annual debt servicing costs and per parcel charge from the perspective of the public is the increase of \$70,613 (\$324,407-\$253,793) or \$251 (\$21 per month) (\$70,613/281 parcels), respectively, which is relatively nominal and affordable.⁶

⁴ Exception: Under sections of the *Community Charter* a bylaw that requires approval of the electors or assent of the electors may be amended or repealed without that approval or assent if the minister or inspector of municipalities approves, subject to any terms and conditions deemed appropriate.

⁵ MFA does not issue 25 year debt. All debt issued by MFA is for ten years or less, thus the 4.13% is an estimated rate taking into consideration the current Fall 2010 ten year rate of 3.55% that would be in effect for a ten year term and estimates of market rates for the remaining 15 years of the 25 term, resulting in an estimated average of 4.13%.

⁶ The actual annual debt servicing costs that the Village will incur in the first ten years of the debt will be lower than the \$324,407 as this amount averages the annual debt servicing costs over the life of the 25 year debt using 4.13% which is MFA's estimate of the average annual cost of borrowing funds for 25 years. The actual annual debt servicing costs for at least the first 10 years of the 25 year debt will most likely be about \$50,000 less as the currently anticipated MFA interest rate for the first 10 years is in the range of 3.5%. However, given the interest rate risk beyond the 10 year period, it would be prudent for the Village to budget and tax for the estimated average long-term cost of borrowing of \$324,407. The unspent portion would be transferred to a Reserve to use to fund future debt servicing costs or needed capital works given the limited financing options that will be available to the Village until its liability limit is reduced.

Conclusion and Recommendations

It is recommended that the Village pursue additional long-term debt as the option to finance the additional Project costs of \$1,946,106.

Given that time is of the essence, due to the need to let the most recent tender and complete the Project by the Grant deadline of March 31, 2012, the relatively nominal impact on the publicly stated debt servicing parcel charge, and the nature and status of the Project, it is also recommended that the Village pursue the options under the *Community Charter* to amend the current debt authorization bylaw in a more timely manner.

Sincerely,

Nancy Gomerich, BBA, CA
NG Consulting