

**REPORT TO CORE AREA LIQUID WASTE MANAGEMENT COMMITTEE  
MEETING OF WEDNESDAY, 22 MARCH 2006**

**SUBJECT**      **NORTHEAST TRUNK AND EAST COAST INTERCEPTOR UPGRADES – PROGRESS REPORT**

**PURPOSE**

To provide an update on the progress and cost estimates to complete the required upgrades to the northeast trunk and east cost interceptor (NET/ECI) sewers.

**BACKGROUND**

At the 10 November 2004 meeting, the Capital Regional District (CRD) Board authorized the design and tendering of the Bowker relief sewer, Trent pump station and forcemain, and Currie sewer pre-build section (see attached map for location of proposed projects).

Due to the concern for the structural integrity of the 1912-constructed northeast trunk-Bowker brick sewer, the Bowker relief sewer was designed and tendered first, in May 2005. Construction commenced later that year and is expected to be complete by June 2006. Meanwhile, design of the Trent pump station and forcemain and Currie sewer pre-build section have been progressing and are anticipated to be tendered later this year.

Due to the hot construction market, the tendered price for the Bowker relief sewer was some 40% higher than the conceptual cost estimate prepared in early 2004. An updated cost estimate of \$17,563,460 (for all four projects) was presented to the committee and Board in June 2005 and the recommendation to award the Bowker relief sewer contract was approved, subject to reducing the scope and negotiating certain cost savings with the contractor.

Now, almost three years after preparing the original cost estimates, and with the detailed design of the remaining projects about 50% complete, a further refinement has been made to the cost estimate for all four projects as follows:

<b>Project</b>	<b>Original (2004) Conceptual Cost Estimate</b>	<b>Updated (2005) Cost Estimate</b>	<b>Known and/or Detailed Design (2006) Cost Estimate</b>
1. Bowker Relief Sewer	\$4,146,880	\$5,188,458 <sup>(2)</sup>	\$5,900,000 <sup>(3)</sup>
Inclusion of Saanich panhandle	316,240 <sup>(1)</sup>		
2. Trent Pump Station			
Land Acquisition	1,200,000	725,000	750,000
Design and Construction	4,896,000	5,250,000	\$8,600,000
3. Trent Forcemain	4,171,200	4,800,000	\$5,000,000
4. Currie Sewer Pre-build	1,482,000	1,600,000	\$2,100,000 <sup>(4)</sup>
<b>Total</b>	<b>\$16,212,320</b>	<b>\$17,563,458</b>	<b>\$22,350,000</b>

- Notes:
- 1 Additional estimated costs to include Saanich panhandle flows were approved at the 13 April 2005 Board meeting.
  - 2 The \$5,188,458 tender amount includes some of the panhandle cost and was achieved after negotiated cost savings and deferring the upper section of the sewer.
  - 3 This includes extension of Bowker relief sewer on Townley to co-construct with Saanich's sewer from Kingsley pump station.
  - 4 The revised alignment of the Trent forcemain is such that a longer length of Currie sewer will be installed in common trench at the same time, to avoid digging up that portion of Richardson Avenue in the future. The longer length results in additional cost; this work would have been required at a later stage in any case.

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As can be seen in the above table, the detailed design cost estimate for Trent pump station, prepared by Kerr Wood Leidal Associates Ltd., far exceeds the conceptual cost estimate completed by Associated Engineering in early 2004. This is due to some scope changes that were revealed during the detailed design but more to higher unit rates associated with specialty equipment and work. The total revised 2006 cost estimate is some 38% more than the original conceptual cost estimate completed about two and one-half years ago. About 8% of the cost increase is attributed to inflation and the remaining 30% is related to increased construction costs resulting from severe shortages of skilled labour and higher cost of construction materials.

This trend of higher construction costs has been consistent for all south-island municipalities and the lower mainland and is now being factored into cost estimates closer to the time when projects are being tendered.

**ALTERNATIVES**

1. Complete the designs, including engineering reviews to ensure best value, and tender and construct the remainder of the upgrade works.
2. Complete the designs but postpone the tendering of Trent pump station, forcemain and Currie sewer pre-build projects in the hope that construction costs will be lower in the future. However, overflows will continue into Bowker Creek and construction costs may be higher, rather than lower, between now and 2010. One of the commitments in the Core Area Liquid Waste Management Plan (LWMP) is to complete these upgrade works during the period 2005 to 2008.

Alternative 1 is recommended.

**FINANCIAL IMPLICATIONS**

These expenditures relate to commitments made in Chapter 16 of the Core Area LWMP. The original 2004 Loan Authorization Bylaw amount of \$15,896,080 amounted to an estimated annual debt-servicing cost of \$1,769,106, which was equivalent to \$20.89 per average residential assessment of \$441,608 for the participants (restated for comparison purposes to 2006 residential assessments and change in sinking fund rate since 2004).

The supplement of \$6,453,920 in capital works, with an estimated annual debt-servicing of \$741,820, is equivalent to \$8.49 per average residential assessment of \$441,608 for the participants. The actual costs will vary by municipality, as this calculation assumes an average residential assessment for all participants. The estimated municipal cost share for these initial four projects (in 2006), and ultimately for all NET/ECI upgrades, when completed in the future, is noted as follows:

<b>Municipality</b>	<b>2006 Cost Share <sup>(1)</sup> (Cost of \$22,350,000)</b>	<b>Long Term Cost Share <sup>(1)</sup> (Cost of all NET/ECI Upgrades = \$67,900,000) <sup>(2)</sup></b>
Oak Bay	16.14%	22.5%
Saanich	22.47%	31.4%
Victoria	61.39%	46.1%
<b>Total</b>	<b>100%</b>	<b>100%</b>

Notes: 1 Cost sharing amounts for individual projects will vary but the overall cost sharing percentage closely matches the total annual flows from each municipality within the NET/ECI system.

2 Future costs will need to be adjusted for inflation and market conditions closer to the time of construction.

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The supplemental cost and financial implications were recently reviewed with staff from the three participating municipalities.

**SUMMARY/CONCLUSIONS**

The proposed northeast trunk and east coast interceptor upgrades are inherent to commitments made in Chapter 16 of the LWMP. When constructed, they will prevent chronic overflows into Bowker Creek, bringing the CRD's facilities into compliance with the LWMP and municipal sewage regulation. Costs have increased by almost 38% over the last two and one-half years, primarily due to the increased demand for skilled labour and higher construction material costs.

**RECOMMENDATION**

That the Core Area Liquid Waste Management committee recommend to the Board that staff be authorized to complete the construction of the upper section of the Bowker relief sewer and complete the design and tendering of Trent pump station, forcemain and Currie sewer pre-build section at a total estimated cost of \$22,350,000, plus GST, to be funded from Loan Authorization Bylaw 3205, as amended by the attached Bylaw 3335.

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Malcolm Cowley, PEng  
Assistant Director  
Hartland and Core Area Engineering

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Dwayne Kalynchuk, PEng  
General Manager, Environmental Services  
Concurrence

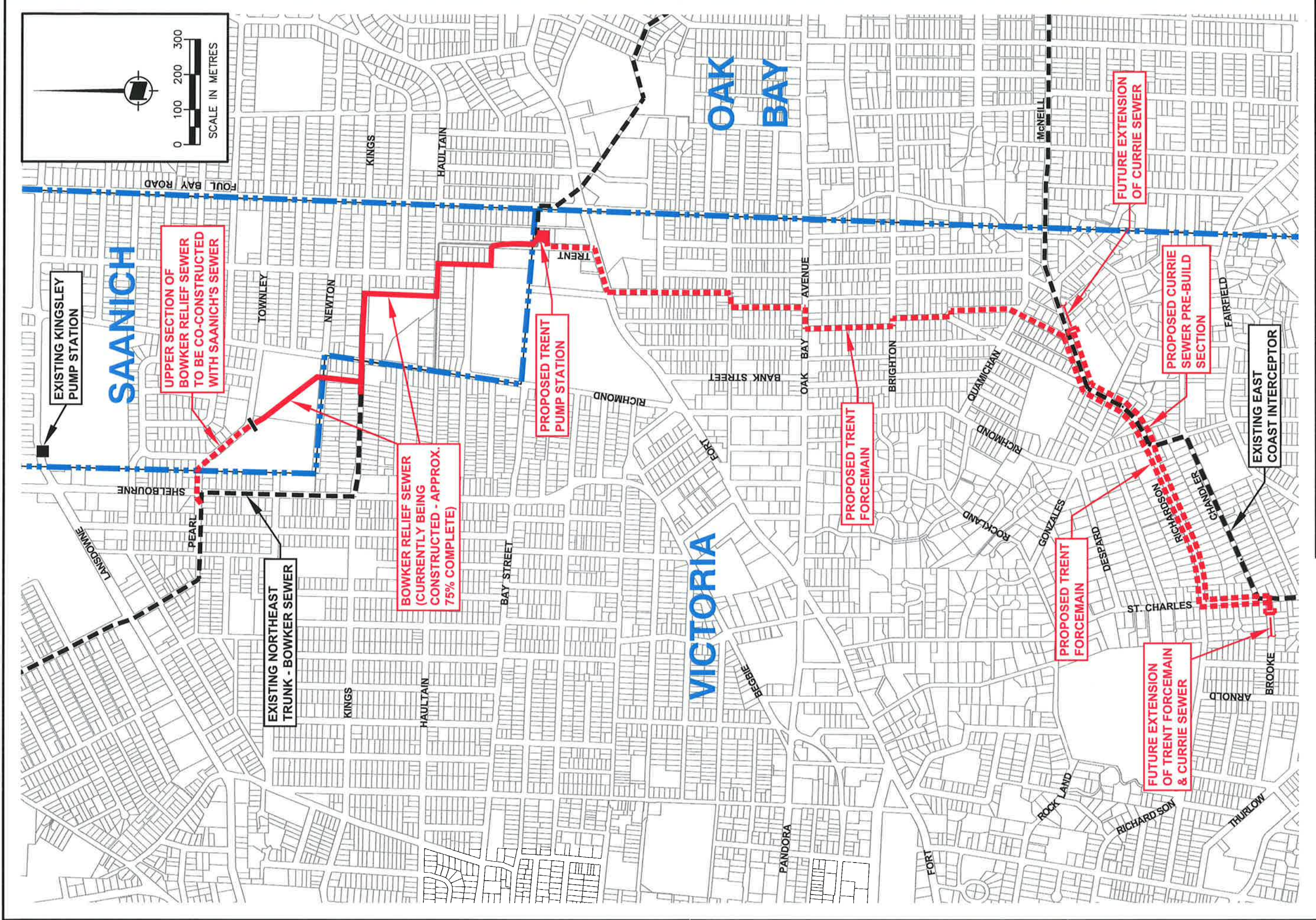
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Kelly Daniels  
CAO Concurrence

**COMMENTS**

MJC:jt  
Attachments: 2





**CRD** CAPITAL REGIONAL DISTRICT  
Environmental Services

**CORE AREA TRUNK SEWERS**  
NET-BOWKER/TRENT P.S./  
TRENT FORCEMAIN/CURRIE SEWER  
REFERENCE MAP

DESIGNED M.C.	DRAWN M.M.	SCALE AS SHOWN	CHECKED	APPROVED	DATE 06/03/06	CONTRACT NO. 7-S154-1	DWG. NO. 0	REV. 1	SHT 1 OF 1
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CAPITAL REGIONAL DISTRICT

BYLAW NO. 3335

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A BYLAW TO AMEND BYLAW NO. 3205, LIQUID WASTE MANAGEMENT CORE AREA AND WESTERN COMMUNITIES SERVICE LOAN AUTHORIZATION BYLAW NO. 1, 2004"

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The Board of the Capital Regional District in open meeting assembled, enacts as follows:

1. Bylaw No. 3205, "Liquid Waste Management Core Area and Western Communities Service Loan Authorization Bylaw No. 1, 2004" is hereby amended by:

(1) Deleting the fifth recital and replacing it with the following recital:

"The estimated cost of the facilities designed, constructed and installed as aforesaid including expenses incidental thereto is the sum of Twenty-Three Million, Nine Hundred Fourteen Thousand, Five Hundred Dollars (\$23,914,500), which is the amount of debt intended to be created by this bylaw".

(2) Deleting section 1(a) and replacing it with the following:

"To borrow upon the credit of the Capital Regional District a sum not exceeding Twenty-Three Million, Nine Hundred Fourteen Thousand, Five Hundred Dollars (\$23,914,500)".

2. This Bylaw may be cited as the "Liquid Waste Management Core Area and Western Communities Service Loan Authorization Bylaw No. 1, 2004, Amendment Bylaw No. 1, 2006".

READ A FIRST TIME THIS day of 2006

READ A SECOND TIME THIS day of 2006

READ A THIRD TIME THIS day of 2006

APPROVED BY THE INSPECTOR OF MUNICIPALITIES THIS day of 2006

ADOPTED THIS day of 2006

CHAIR

SECRETARY