

**Minutes - Standing Policy Committee on Infrastructure Renewal and Public Works -
September 12, 2006**

REPORTS

**Minute No. 155 Water Treatment Program Financial Status Report No. 8 for the
Period from March 20, 2006 to July 31, 2006
File GL-9**

STANDING COMMITTEE DECISION:

The Standing Policy Committee on Infrastructure Renewal and Public Works concurred in the administrative recommendation and received the matter as information.

**Minutes - Standing Policy Committee on Infrastructure Renewal and Public Works -
September 12, 2006**

DECISION MAKING HISTORY:

Moved by Councillor Thomas,

That the administrative recommendation be concurred in.

Carried

RE: WATER TREATMENT PROGRAM FINANCIAL STATUS REPORT NO. 8 FOR THE PERIOD FROM MARCH 30, 2006 TO JULY 31, 2006

FOR SUBMISSION TO: THE STANDING COMMITTEE ON FISCAL ISSUES
AND THE STANDING POLICY COMMITTEE ON
INFRASTRUCTURE RENEWAL AND PUBLIC WORKS

ORIGINAL REPORT SIGNED BY: Barry D. MacBride, P. Eng., Director
Water and Waste Department

REPORT DATE: September 5, 2006

RECOMMENDATION(S): That this report be received as information.

REPORT SUMMARY

- **KEY ISSUES:**
- Water Treatment Program Financial Status Report No. 7 included a revised cost estimate for the Water Treatment Program of \$300 million; approximately \$70 million (30%) higher than the Council approved budget and \$65 million higher than the previously reported estimate of \$235 million.
- The low bid recently received for the Mechanical and Electrical Contract (Bid Opportunity No. 742-2005) was \$36.956 Million. The amount carried in the updated cost estimate of \$300 Million for this work was approximately \$48 Million. There were 3 formal bid submissions and the high bid was \$46.2 million.
- Three other tenders were received during the reporting period. The aggregate value of these tenders was \$12.54 Million and the amount carried in the updated cost estimate of \$300 Million was \$12.4 Million.
- Prices remain volatile due to the active construction market, the labour shortage and increases in the cost of materials and fuel.
- Based upon recent experience, the updated cost estimate of \$300 Million appears to be adequate, subject to unforeseen construction events.

IMPLICATIONS OF THE RECOMMENDATION(S):

General Implications

- | | |
|-------------------------------------|---|
| <input checked="" type="checkbox"/> | None |
| <input type="checkbox"/> | For the organization overall and/or for other departments |
| <input type="checkbox"/> | For the community and/or organizations external to the City of Winnipeg |
| <input type="checkbox"/> | Involves a multi-year contract |
- Comment(s):

Policy Implications

- | | |
|-------------------------------------|----|
| <input checked="" type="checkbox"/> | No |
|-------------------------------------|----|

Yes – Comment(s):

Regulatory Implications

None
 Eliminates or reduces regulatory impact
 Proposes regulatory impact
Comment(s):

Environmental Implications

None
 Yes – Comment(s):

Human Resources Implications

No
 Yes – Comment(s):

While there are no human resource implications associated with this recommendation, additional staff will be required to maintain and operate the new facility.

Financial Implications

Within approved current and/or capital budget
 Current and/or capital budget adjustment required

The increase in the cost of the water treatment plant will require an adjustment to the capital budget in the future. The impact of this increased cost will be factored into the 2007 water and sewer rate plans and the department will look at various options to minimize the impact to rates. Based upon the current construction schedule funding commitments are projected to approach the Council approved budget of \$230.1 Million by December, 2006. A separate report requesting Council approval for early access to additional funds identified in the 2007 Capital Estimates is being prepared.

REPORT

REASON FOR THE REPORT:

At its meeting held on December 16, 1999, City Council adopted a policy whereby all Capital projects with a total estimated cost of \$10 million or more be submitted by the associated Civic Department to the Standing Committee on Fiscal Issues for review and recommendation prior to any bid solicitation being issued.

HISTORY:

2006 On May 9 and June 13 the Standing Policy Committee on Infrastructure Renewal and Public Works and the Standing Committee on Fiscal Issues respectively received “Water

Treatment Program Financial Status Report No. 7” as information, and concurred in the administrative recommendation that the report be distributed to all members of Council.

2006 On May 24, Council adopted a recommendation to award Contract 583-2005 to PCL Construction for the tender price of \$55,997,000.

2006 On June 13 the Standing Committee on Fiscal Issues received “Water Treatment Program Financial Status Report No. 7” as information.

DISCUSSION:

MAJOR CAPITAL PROJECT STEERING COMMITTEE

Administrative policy for projects with capital cost exceeding \$10 million requires formation of Major Capital Project Steering Committee. The Committee has been formed and its members are:

Barry D. MacBride, Director and Chair
Mike Ruta, Corporate Controller
Bill Larkin, Director of Public Works
Harry Finnigan, Director of Planning, Property and Development

The Committee has reviewed this report and recommended that the report be sent to Fiscal Issues Committee.

DESCRIPTION OF PROJECT

The Water Treatment Program includes all work necessary to design and construct a new water treatment plant for the City of Winnipeg, to be operational by the end of 2008.

RISKS AND RISK MITIGATION STRATEGIES

There are several mechanisms in place to manage the risk on this project.

- A comprehensive risk management analysis was undertaken last year and is continuously monitored.
- A risk management team meets on a monthly basis (or more frequent if required) to review risks as the project proceeds – risks are actively managed and resolved on an ongoing basis.
- Value engineering has been undertaken at several stages during the project to ensure optimal and most cost-effective design.
- The Department regularly reports to the Major Capital Steering Committee and the Standing Committee on Fiscal Issues.
- During tendering of the Mechanical and Electrical contract for the Water Treatment Plant prospective bidders expressed concern regarding highly volatile pricing for steel pipe and copper wire. In order to mitigate this risk the contract documents were modified to allow the successful bidder to immediately order this material, with payment upon delivery of

material to a bonded warehouse in Winnipeg, rather than upon delivery to the project site at the time of installation. This allowed bidders to secure pricing and eliminate the risk of price fluctuation.

- The Mechanical and Electrical contract constituted a major body of work for local contractors. The tender period was extended and numerous clarifications were issued to ensure a clear understanding of the scope of work and thereby reduce risk in order to elicit competitive bids.

CHANGES FROM LAST REPORT

Detailed design of the WTP is proceeding, concurrent with construction and is almost complete. Tenders have been received for certain long delivery and early construction items. Bulk excavation for the WTP clear well and the WTP proper has been completed. Construction of the clear well is approximately 78% complete (60% complete in the last report). The first yard piping contract is almost complete (75% complete in the last report). Construction of the raw water pumping station (RWPS) is 65% complete (30% complete in the last report). Construction of the upgrade to a portion of Provincial Road No. 207 has started and will be complete in September. Construction of the WTP settling ponds is underway and is 14 percent complete. Mobilization for the WTP Structural Concrete contract is complete and construction is underway. Mobilization for the Branch 1 Surge Tower contract is complete and construction is underway. A list of upcoming contracts is provided later in this document.

At the time of last report, funds committed to the Water Treatment Program (including the concrete contract) stood at approximately \$135.5 million, and funds expended were about \$39.2 million. As of July 31, 2006 funds committed to the Water Treatment Program (subject to award of the Mechanical and Electrical contract under consideration by the Standing Policy Committee on Infrastructure Renewal and Public Works on September 12, 2006) stood at approximately \$192.2 Million and funds expended were about \$55.3 Million. At the time of the last report, committed expenditures were approximately \$33 million above budget and it was projected that final cost of the project would be about \$70 million over budget, and the total project cost would be about \$300 Million. No change to this situation is forecast.

ISSUES/RISKS REQUIRING FURTHER ATTENTION

Project Costs

The project is 64 percent committed relative to the forecast cost of \$300 Million. Accordingly, the risk of significant budget swings due to adverse pricing is declining. However, as construction activity ramps up, risks associated with extra work claims and delays will increase. The field staff complement for the project has been increased to monitor and control these risks.

Project Funding

The estimated cost for the Water Treatment Program is now projected at \$300 Million. The Council approved budget for the Water Treatment Program is \$230.1 Million. It is projected that commitments for the Water Treatment Program will approach \$230 Million by December, 2006.

In order to maintain the proposed construction schedule, it will be necessary to obtain additional Council approved funding prior to the conclusion of the 2007 capital budget process. This matter will be dealt with in a separate report to Council.

FINANCIAL ANALYSIS

Tenders issued and pending as of the date of this report are summarized in Appendices 1 and 2 respectively of this report.

During the reporting period, four tenders were received. The low bid recently received for the Mechanical and Electrical Contract (Bid Opportunity No. 742-2005) was \$36.956 Million. The amount carried in the revised cost estimate of \$300 Million for this work was approximately \$48 Million. There were 3 formal bid submissions and the high bid was \$46.2 million. Three other tenders were received during the reporting period. The aggregate value of these tenders was \$12.54 Million and the amount carried in the updated cost estimate of \$300 Million was \$12.4 Million.

Based upon this experience, the updated cost estimate of \$300 Million appears to be adequate, subject to unforeseen construction events.

A summary of the budget to forecast comparison is contained in Appendix 3.

The 2006 rate plan included a capital cost of \$230 million for the water treatment plant, with \$110 million funded by debt and \$120 million cash funded. Based on the projected cost of the Water Treatment Program, the borrowing requirements will become \$180 million.

The revised capital costs will be included in the department's 2007 rate plans, current budget and capital budget.

Project funding

The approved capital and projected budget deficit (in \$000s) are as follows:

| Year | Capital Program | Actual + Projected Cashflows | Cumulative Capital Budget Remaining |
|---------------------|------------------------|-------------------------------------|--|
| Up to 2003 | \$20,000 | \$4,100 | \$15,900 |
| ⁽¹⁾ 2004 | \$26,000 | \$8,300 | \$33,600 |
| ⁽¹⁾ 2005 | \$84,000 | \$22,814 | \$94,786 |
| ⁽²⁾ 2006 | \$97,300 | \$99,000 | \$93,086 |
| ⁽³⁾ 2007 | \$2,800 | \$105,000 | (\$9,114) |
| 2008 | \$0 | \$60,786 | (\$69,900) |
| Total | \$230,100 | \$300,000 | (\$69,900) |

- (1) Capital Budget approved by Council.
- (2) WTP Program requirements approved by Council and included in the 2006 Capital Budget.
- (3) WTP Program requirements approved by Council and included in the 2007 Capital Budget.

FINANCIAL IMPACT:

As this report is submitted for informational purposes only, there is no financial impact associated with this recommendation.

Moira L. Geer C.A.
Manager of Finance & Administration

IN PREPARING THIS REPORT THERE WAS:

Internal Consultation With and Concurrence By: N/A

External Consultation with: N/A

THIS REPORT SUBMITTED BY:

Department: Water and Waste Department

Division: Engineering Services Division

Prepared by: Tom Pearson

File No.: 020-18-29-05-00

Appendix 1 - Tenders Issued

| Tender Number | Issued To | Description | Budget ⁽¹⁾ | Tender Price | Variance \$ | Variance % |
|----------------------|----------------------|-----------------------------------|------------------------------|---------------------|--------------------|-------------------|
| 037-2006 | Gateway | Surge Tower | 2,205,464 | 3,579,700 | 1,374,236 | 62.31% |
| 049-2006 | Not Awarded Yet | On-Site Chlorine Generation | 1,453,000 | 2,255,612 | 802,612 | 55.24% |
| 101-2005 | Conforce | Precast Piles - Supply Clearwell | 1,001,913 | 971,250 | -30,663 | -3.06% |
| 102-2005 | Armtec | Sluice Gates at Clearwell | 715,000 | 687,800 | -27,200 | -3.80% |
| 153-2005 | Mulder Construction | Yard Pipe Supply and Installation | 3,600,000 | 4,277,541 | 677,541 | 18.82% |
| 154-2005 | FB Leopold | DAF Equipment - Supply | 6,347,520 | 6,561,708 | 214,188 | 3.37% |
| 166-2005 | Bird | Concrete Structure Clearwell | 9,821,147 | 7,899,000 | -1,922,147 | -19.57% |
| 219-2005 | Bituminex | PR 207 Upgrade | 343,711 | 2,028,991 | 1,685,280 | 490.32% |
| 32-2005 | Mueller | Yard Pipe Valves - Supply | 812,130 | 842,570 | 30,440 | 3.75% |
| 34-2006 | Munroe Construction | Dewatering Cells | 4,106,000 | 6,929,227 | 2,823,227 | 68.76% |
| 378-2005 | Lafarge | Precast Piles - Supply WTP pck 1 | 654,000 | 512,500 | -141,500 | -21.64% |
| 427-2005A | Calgon | GAC Filter Media- Pckg 1 | 1,387,000 | 1,522,228 | 135,228 | 9.75% |
| 427-2005B | US Filter | Filter Underdrains | 1,845,750 | 1,109,162 | -736,588 | -39.91% |
| 428-2005 | Fuji Electric | Ozone Equipment | 2,332,710 | 2,090,400 | -242,310 | -10.39% |
| 515-2005 | Power & Mine | RWPS - Pump Supply | 1,526,000 | 2,026,524 | 500,524 | 32.80% |
| 561-2005 | Armtec | Sluice Gates | 1,118,449 | 482,589 | -635,860 | -56.85% |
| 571-2005 | Power & Mine | DBPS Pumps and retrofit | 1,428,610 | 2,285,834 | 857,224 | 60.00% |
| 583-2005 | PCL Constructors Ltd | WTP-Substructure | 25,019,269 | 55,997,000 | 30,977,731 | 123.82% |
| 650-2005 | Bird Construction | RWPS - Substructure | 4,189,274 | 5,609,000 | 1,419,726 | 33.89% |
| 682-2005 | Toromont | Standby Power | 3,260,000 | 2,842,187 | -417,813 | -12.82% |
| 694-2005 | Lafarge | Precast Piles - Supply WTP pck 2 | 561,000 | 737,500 | 176,500 | 31.46% |
| 70-2005 | Munroe Construction | Bulk Excavation | 956,560 | 706,250 | -250,310 | -26.17% |
| 731-2005 | Power & Mine | Valves | 38,500 | 238,985 | 200,485 | 520.74% |
| 742-2005 | Not Awarded Yet | WTP Process Mech & Electrical | 38,420,359 | 36,950,000 | -1,470,359 | -3.83% |
| | Total | | 113,143,366 | 149,143,558 | 36,000,192 | 31.82% |

⁽¹⁾ The total Council approved budget for the WTP is \$230.1 Million. The variances from budget identified herein are included in the revised cost projection of \$300 Million.

| Appendix 2 - Tenders to be Issued | | | |
|-----------------------------------|-------------------------------------|---------------------|-------|
| Estimated Date of issue | Description | Budget ¹ | Notes |
| Aug-06 | Surge Tower Overflows | 3,000,000 | |
| Mar-07 | Chemical Storage Building Structure | 9,845,652 | |
| Sep-06 | Emergency Generator Building | 4,403,221 | |
| Sep-06 | LOX Facility (equipment lease) | 0 | 2 |
| Mar-07 | LOX Facility Foundation | 142,878 | |
| Jan-08 | On-site Roads | 1,225,920 | |
| Jan-07 | Hydrants & Underground Piping | 715,783 | |
| Dec-06 | Tel/Com System | 100,000 | |
| Dec-06 | Security System | 243,960 | |
| Nov-06 | Systems Programming | 2,177,373 | |
| Aug-06 | Manitoba Hydro Service Charges | 2,912,012 | |
| Jan-07 | WTP Overflow | 770,620 | |
| Apr-08 | Isolation Chamber | 204,660 | |
| Nov-06 | Precast Roof | 5,319,402 | |
| Jan-07 | Forcemains to cells & Pumps | 1,370,416 | |
| Jan-07 | WTP Super structure | 10,289,382 | |
| Mar-07 | Off-site Sewers | 1,619,360 | |
| Oct-06 | DBPS Valves, Meter & pipe | 1,913,384 | |
| Feb-07 | Additional Admin Facilities | 4,300,000 | |
| Mar-07 | Chlorine Generation Building | 5,343,000 | |
| Total | | 55,897,023 | |

1 These funds are included in the revised cost projection of \$300 Million.

2 No capital budget allocated. Lease costs will be included in the annual operating budget for the facility.

| Appendix 3 - Summary of Firm Commitments | | |
|---|-----------------------------------|--------------|
| Description | Forecast Cost - Million \$ | Notes |
| Miscellaneous Project Costs | 50,317,542 | 1,4 |
| General Requirements | 3,250,100 | 2,3 |
| Temporary Site Services | 4,392,238 | 2,3 |
| Site work | 2,099,375 | 2,3 |
| Tenders Issued | 149,143,558 | 2,4 |
| Tenders to be Issued | 55,897,023 | 2,3 |
| Forecast Extra Work | 9,195,066 | 2,3 |
| Finance and Administration | 3,040,000 | 2,4 |
| Contingency | 20,864,713 | 2,4 |
| Total Budget | 298,199,615 | |

Total Firm Commitments **223,365,813**

As a percentage of Budget **74.9%**

- 1 Sum of Items A, B, C, D, & E - Appendix 4
- 2 Included in Item F – Water Treatment Construction – Appendix 4
- 3 Forecast Costs are subject to market variability – not firm
- 4 Forecast Costs are reasonably firm – although contingency will fluctuate with cost variations experienced to completion.

APPENDIX 4
WATER TREATMENT PROGRAM FORECAST

As of July 31, 2006

| Project Component | Capital Budget | | | | Capital Expenditure Forecast | | | | | Surplus (Deficit) From Revised Budget ³ | Variance Last Report | Change in Variance |
|---|----------------|---|---|----------------|-------------------------------|-----------------|---------------|---------------|----------------|---|----------------------|--------------------|
| | Original | Council Approved Change - March 23, 2005 ¹ | Council Approved Change - Nov.28, 2005 ² | Revised | Actual Costs To July 31, 2006 | Projected Costs | | | Total Forecast | | | |
| | | 2006 | 2006 | | | 2007 | 2008 | | | | | |
| A Conceptual Engineering | \$ 3,700,000 | \$ - | \$ - | \$ 3,700,000 | \$ 3,765,297 | \$ - | \$ - | \$ - | \$ 3,765,297 | \$ (65,297) | \$ (65,297) | \$ - |
| B UV Disinfection | 9,000,000 | - | - | 9,000,000 | 8,221,814 | 183,253 | - | - | 8,405,067 | 594,933 | 594,933 | - |
| C Chloramination | 3,000,000 | - | - | 3,000,000 | - | 1,500,000 | 1,500,000 | - | 3,000,000 | - | - | - |
| D Project Management Office | 100,000 | - | - | 100,000 | 60,765 | 16,535 | 22,700 | - | 100,000 | - | - | - |
| E Professional Services | 24,260,000 | 1,846,748 | 388,794 | 26,495,542 | 14,299,695 | 6,597,098 | 7,000,000 | 7,150,385 | 35,047,178 | (8,551,636) | (8,551,636) | - |
| F Water Treatment Plant Construction | \$ 173,940,000 | \$ 11,453,252 | \$ 2,411,206 | \$ 187,804,458 | \$ 22,965,847 | \$ 84,095,251 | \$ 88,971,360 | \$ 51,849,615 | \$ 247,882,073 | \$ (60,077,615) | \$ (60,077,615) | \$ - |
| | \$ 214,000,000 | \$ 13,300,000 | \$ 2,800,000 | \$ 230,100,000 | \$ 49,313,418 | \$ 92,392,137 | \$ 97,494,060 | \$ 59,000,000 | \$ 298,199,615 | \$ (68,099,615) | \$ (68,099,615) | \$ - |

Notes:

¹ Program amended to include on-site generation of sodium hypochlorite and a standby power system.

² Program amended to include additional control systems infrastructure and space for workshops and water services personnel.

³ Variance from budget due to scope changes, design refinements, market forces and professional fees. Recent favorable pricing on the Mechanical and Electrical Contract has increased the contingency component of the budget.

However, no adjustment to the forecast cost to complete is recommended at this time.