Agenda - Council - March 22, 2006

Report - Standing Policy Committee on Infrastructure Renewal and Public Works - March 7, 2006

Item No. 3 Transfer of Surplus Funds - various projects to the West End Water Pollution Control Centre Disinfection and Nutrient Reduction Projects and the North End Water Pollution Control Centre Centrate Nutrient Reduction Project
File WS-7

STANDING COMMITTEE RECOMMENDATION:

On March 15, 2006, the Executive Policy Committee concurred in the recommendation of the Standing Policy Committee on Infrastructure Renewal and Public Works and submits the following to Council:

1. That surplus cash flow forecasted funds in the total amount of $11,419,000.00 from Sewage Disposal System Fund projects be transferred as follows:

   A. Surplus funds of $3,204,200.00 from the North End Water Pollution Control Centre (NEWPCC) Outfall Capacity and Flood Protection Upgrade Project (Account Number 444 181000 200752 2031001205) be transferred to the West End Water Pollution Control Centre (WEWPCC) Wastewater Disinfection Project (Account Number 444 181000 200752 20330002xx).

   B. Surplus funds of $2,810,800.00 from the North End Water Pollution Control Centre (NEWPCC) Outfall Capacity and Flood Protection Upgrading Project (Account Number 444 181000 200752 2031001205) be transferred to the West End Water Pollution Control Centre (WEWPCC) Nutrient Removal (BNR) Project (Account Number 444 181000 200752 20330003xx).

   C. Surplus funds totaling $5,404,000.00 from the following projects be transferred to the NEWPCC Centrate Nutrient Reduction Treatment Project (Account Number 444 181000 200752 20310011xx):

      i. NEWPCC Outfall Capacity and Flood Protection Upgrade Project (Account Number 444 181000 200752 2031001205) $ 485,000.00

      ii. NEWPCC Wastewater Disinfection Project (Account Numbers 444 181000 200752 20310007xx) $ 957,000.00

Report - Standing Policy Committee on Infrastructure Renewal and Public Works - March 7, 2006

STANDING COMMITTEE RECOMMENDATION (continued):

iii.	South End Water Pollution Control Centre (SEWPCC) Disinfection of Effluent Project (Account Number 444 181000 200752 20320006xx)	$1,043,624.81
iv.	River Water Quality Hearings (Account Number 444 181000 200752 2034000102)	$ 46,837.38
v.	One Stop Counter Service at 510 Main Project (Account Number 444 181000 200752 2030000199)	$ 140,000.00
vi.	WEWPCC Treatment Plant Expansion Project (Account Number 444 181000 200752 2033000100)	$ 1,826,620.47
vii.	Perimeter Road Pumping Station – Pump Upgrade Project Account Number 444 181000 200752 2036000301)	$ 78,212.86
viii.	SEWPCC Treatment Plant Expansion Project (Account Number 444 181000 200752 2032000100)	$ 117,190.51
ix.	Dumoulin Secondary Sewer Relocation (Account Number 444 181000 200752 2037000300)	$ 43,484.92
x.	NEWPCC Distributed Control System Upgrades Project (Account Number 444 181000 200752 20310014xx)	$ 666, 029.05

2. That the Proper Officers of the City be authorized to do all things necessary to implement the intent of the foregoing.

Report - Standing Policy Committee on Infrastructure Renewal and Public Works - March 7, 2006

DECISION MAKING HISTORY:

EXECUTIVE POLICY COMMITTEE RECOMMENDATION:

On March 15, 2006, the Executive Policy Committee concurred in the recommendation of the Standing Policy Committee on Infrastructure Renewal and Public Works and submitted the matter to Council.

STANDING COMMITTEE RECOMMENDATION:

On March 7, 2006, the Standing Policy Committee on Infrastructure Renewal and Public Works concurred in the administrative recommendation and submitted the matter to the Executive Policy Committee and Council.

RE: APPROVAL FOR TRANSFER OF SURPLUS CASH FLOWED FORECASTED FUNDS FOR THE WEST END WATER POLLUTION CONTROL CENTRE DISINFECTION AND NUTRIENT REDUCTION PROJECTS AND THE NORTH END WATER POLLUTION CONTROL CENTRE CENTRATE NUTRIENT REDUCTION PROJECT

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

ORIGINAL REPORT SIGNED BY: Moira L. Geer, C.A., Acting Director
Water and Waste Department

REPORT DATE: February 23, 2006

RECOMMENDATION(S):

That surplus cash flow forecasted funds in the total amount of $11,419,000.00 from Sewage Disposal System Fund projects be transferred as follows:

Surplus funds of $3,204,200.00 from the North End Water Pollution Control Centre (NEWPCC) Outfall Capacity and Flood Protection Upgrade Project (Account Number 444 181000 200752 2031001205) be transferred to the West End Water Pollution Control Centre (WEWPCC) Wastewater Disinfection Project (Account Number 444 181000 200752 20330002xx).

Surplus funds of $2,810,800.00 from the North End Water Pollution Control Centre (NEWPCC) Outfall Capacity and Flood Protection Upgrading Project (Account Number 444 181000 200752 2031001205) be transferred to the West End Water Pollution Control Centre (WEWPCC) Nutrient Removal (BNR) Project (Account Number 444 181000 200752 20330003xx).

Surplus funds totaling $5,404,000.00 from the following projects be transferred to the NEWPCC Centrate Nutrient Reduction Treatment Project (Account Number 444 181000 200752 20310011xx):

NEWPCC Outfall Capacity and Flood Protection Upgrade Project (Account Number 444 181000 200752 2031001205)	$485,000.00
NEWPCC Wastewater Disinfection Project (Account Numbers 444 181000 200752 20310007xx)	$957,000.00
South End Water Pollution Control Centre (SEWPCC) Disinfection of Effluent Project (Account Number 444 181000 200752 20320006xx)	$1,043,624.81
River Water Quality Hearings	$46,837.38

(Account Number 444 181000 200752 2034000102)	
One Stop Counter Service at 510 Main Project	$140,000.00
(Account Number 444 181000 200752 2030000199)	
WEWPCC Treatment Plant Expansion Project	$1,826,620.47
(Account Number 444 181000 200752 2033000100)	
Perimeter Road Pumping Station – Pump Upgrade Project	$78,212.86
(Account Number 444 181000 200752 2036000301)	
SEWPCC Treatment Plant Expansion Project	$117,190.51
(Account Number 444 181000 200752 2032000100)	
Dumoulin Secondary Sewer Relocation	$43,484.92
(Account Number 444 181000 200752 2037000300)	
NEWPCC Distributed Control System Upgrades Project	$666, 029.05
(Account Number 444 181000 200752 20310014xx)	

REPORT SUMMARY

KEY ISSUES: The WEWPCC Wastewater Disinfection and Nutrient Reduction (BNR) Projects and the NEWPCC Centrate Nutrient Reduction Treatment Project have experienced increased estimated project costs. Transfer of surplus funding from other Sewage Disposal System Fund Projects is required to complete the projects.

IMPLICATIONS OF THE RECOMMENDATION(S):

General Implications

X	None
	For the organization overall and/or for other departments
	For the community and/or organizations external to the City of Winnipeg
	Involves a multi-year contract

Comment(s):

Policy Implications

X	No
	Yes – Comment(s):

Environmental Implications

	None
X	Yes – Comment(s): These projects must be completed in order to meet the timelines for interim nutrient reduction targets and Environment Act Licensing requirements as established by the Province of Manitoba.

Human Resources Implications

X	No
	Yes – Comment(s):

Financial Implications

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

Comment(s): Funds for the recommended transfers are included in approved Capital Budgets and have been included in cash flow projections.

REPORT

REASON FOR THE REPORT:

The transfer of funds in an amount exceeding $100,000 or 25 percent of the base budget requires the approval of the Standing Committee on Infrastructure Renewal and Public Works.

HISTORY:

Funds in the amount of $3,918,000.00 are included in the 2000 and 2004 Capital Budgets for the WEWPCC Wastewater Disinfection Project.

Funds in the amount of $22,302,000.00 are included in the 2004 and 2005 Capital Budgets for the WEWPCC Nutrient Removal (BNR) Project.

Funds in the amount of $25,946,000.00 are included in the 2003, 2004 and 2005 Capital Budgets for the NEWPCC Centrate Nutrient Reduction Treatment Project.

DISCUSSION:

While the NEWPCC Disinfection project is projected to be below budget, the WEWPCC Wastewater Disinfection and Nutrient Reduction (BNR) Projects and the NEWPCC Centrate Nutrient Reduction Project capital cost estimates have increased. Many factors have contributed to this growth including adjustments to project scope as the project has evolved from concept through to detailed design, market pressures and investment in capital to reduce future operation and maintenance costs.

A significant number of large construction projects are being undertaken in Winnipeg concurrent with the WEWPCC Wastewater Disinfection and BNR Projects and NEWPCC Centrate Nutrient Reduction Project. Construction firms are reaching capacity, and a period of high inflation within the heavy construction industry currently exists. This has placed an upward pressure on the budgets for the Water and Waste Department Capital Projects and created significant challenges in delivering the project within the original budget. Increasing fuel costs, high

demand for manufactured goods and shortages in certain commodities due to natural disasters have and will continue to exacerbate this situation.

Other major projects in Manitoba such as the floodway expansion and the new airport are also experiencing cost increases.

WEWPCC Wastewater Disinfection and Nutrient Removal (BNR) Projects:

The most recent cost estimate for the WEWPCC Disinfection and BNR projects is $32,235,000. The combined adopted budgets for the WEWPCC Disinfection and BNR Projects is $26,220,000, resulting in a combined shortfall of $6,015,000. The major changes driving the capital cost increases include:

- At the preliminary engineering stages, additional costs were incurred for the BNR process design and for undertaking an independent review of the Conceptual and Functional Design phases of the Project Study by an external panel of top North American experts. The additional cost for this work was $415,000.

- Further development of the BNR process design determined that the existing two clarifier sludge collection mechanisms needed to be replaced with a mechanism more compatible with the sludge collection requirements of a BNR process at a cost of $1,000,000.

- Recent geotechnical investigation undertaken during detailed design identified concerns regarding the high groundwater at the WEWPCC and as a result further testing was necessary. It was determined that dewatering will be required during construction of both the Disinfection facility and a third secondary clarifier. Additional costs requiring a revised foundation system will be $1,000,000 as a result of geotechnical investigations revealing that till depths were greater than expected.

- The original concept odour control design of discharging foul air from the fermenter to the bioreactor is no longer recommended due to concerns regarding corrosion and process impact. A new odour control system was identified to be required during functional design. As a result of increased knowledge of the existing HVAC system capacity and the preliminary results of an air balancing review undertaken during detailed design, an upgrading of the stack and other secondary systems will be necessary. The upgrade would include new stack fans and fan room, a new stack and new bioreactor exhaust fans and dampers at a cost of $1,400,000.

- To account for escalating market conditions, a contingency allowance has been applied to both the Disinfection facility and the BNR upgrade for a total cost of $2,200,000. The contingency allowance was not previously accounted for in earlier estimates due to an oversight.

NEWPCC Centrate Nutrient Reduction Treatment Project:

The most recent cost estimate for the NEWPCC Centrate project is $31,350,000. The adopted budget is $25,946,000, resulting in a shortfall of $5,404,000. The major items driving this cost increase include:

- The original treatment concept at the Preliminary Design stage included a concrete sequencing batch reactor tank followed by a moving bed bioreactor tank (MBBR). After preliminary design an independent review team was retained to provide comments on the proposed treatment system. The independent review team recommended that the MBBR be eliminated to reduce operational complexity, but that two concrete sequencing batch reactor tanks be utilized. While the use of one tank was possible, two tanks would provide operational flexibility and redundancy in the event breakdowns, malfunctions or routine maintenance. The requirement for two tanks results in a cost increase of $1,000,000.

- A reactor tank cover system was added during the functional design phase that would provide for superior odour control in consideration of the proximity of residential development to the NEWPCC. The additional cost of the cover system together with associated blowers and dispersion stack are estimated at $3,000,000.

- The reduction of phosphorous requires the addition of either ferric chloride or alum. Several options for chemical delivery, storage and handling were investigated. This included reuse of existing tanks located on-site, constructing either new outdoor or indoor storage tanks and delivery by either rail car or truck. The reuse of existing storage tanks was considered unacceptable due to their condition and limited storage capacity. Provision of facilities to allow for delivery by either rail car or truck was recommended to ensure competition amongst chemical suppliers. Chemical delivery by rail car has been cheaper in past. Additionally operational considerations for ease and reliability for rail car unloading resulted in recommending a heated rail car storage building. Using storage tanks inside a heated building was also considered prudent from an operational perspective to avoid potential problems with chemical consistency that could adversely impact chemical feed operations. Duplicate tanks will provide the volume to allow for redundancy and use of either chemical. The additional cost of enhancements made during the design process resulted in the cost of the chemical feed system for phosphorous reduction costing an additional $1,100,000.

- To address noise pollution concerns and allow for better operations and maintenance, a blower building has been added at the front of the Nitrogen reduction facility (the original concept allowed for the use of simple blower enclosures). The blower building comes at an estimated capital cost of $304,000.

The scope changes identified during detailed design, additional project requirements and escalating market conditions for the WE and NE projects are projected to result in the existing capital budgets being over expended and a transfer of funds is recommended.

The financial status of the WEWPCC Wastewater Disinfection Project is as follows:

Approved Capital - 2000		$520,000.00
Approved Capital - 2004		$3,398,000.00
Total Approved Capital		$3,918,000.00
Previous Expenditures	$0.00	
Amount required for this project	$7,122,200.00	
Total Estimated Cost	$7,122,200.00	$7,122,200.00
Estimated Shortfall		$(3,204,200.00)

The financial status of the WEWPCC Nutrient Removal (BNR) Project is as follows:

Approved Capital – 2004		$6,102,000.00
Approved Capital - 2005		$16,200,000.00
Total Approved Capital		$22,302,000.00
Previous Expenditures	$525,804.00	
Amount required for this project	$24,586,996.00	
Total Estimated Cost	$25,112,800.00	$25,112,800.00
Estimated Shortfall		$(2,810,800.00)

The financial status of the NEWPCC Centrate Nutrient Reduction is as follows:

Approved Capital - 2003		$1,000,000.00
Approved Capital - 2004		$9,946,000.00
Approved Capital - 2005		$15,000,000.00
Total Approved Capital		$25,946,000.00
Previous Expenditures	$598,941.79	
Amount required for this project	$30,751,058.21	
Total Estimated Cost	$31,350,000.00	$31,350,000.00
Estimated Shortfall		$(5,404,000.00)

The following projects as shown in the financial status reporting below have been identified as having surplus funds available for transfer.

The financial status of the NEWPCC Outfall Capacity and Flood Protection Upgrade Project is as follows:

Authorized Capital - 2005		$6,500,000.00
Previous Expenditures	$0.00	
Amount to be transferred to WEWPCC:		
1) Wastewater Disinfection	$3,204,200.00	
2) Nutrient Removal	$2,810,800.00	
NEWPCC Centrate	$ 485,000.00	
Total Estimated Cost	$6,500,000.00	$6,500,000.00
Estimated Surplus		$0.00

The NEWPCC Outfall Capacity and Flood Protection Upgrade Capital Project was originally set up to fund a project that would increase the hydraulic capacity of the NEWPCC outfall pipe to accommodate the addition of a disinfection facility on the existing outfall and provide future capacity for any new processes at the NEWPCC such as biological nutrient removal (BNR). A preliminary study of the existing outfall and the requirement to accommodate additional processes, identified that the most cost effective way to provide both flood protection and hydraulic capacity would be to implement effluent pumping. In the early stages of the NEWPCC Wastewater Disinfection Project it was determined that temporary pumping of peak dry weather flow could be included with the disinfection project and the need to implement permanent peak wet weather effluent pumping facilities could be deferred until the construction of BNR facilities in 2014. Therefore the funds in the NEWPCC Outfall Capacity and Flood Protection Upgrade Capital Budget will not be required.

The financial status of the NEWPCC Wastewater Disinfection Project is as follows:

Authorized Capital - 2001		$6,480,000.00
Authorized Capital - 2002		$8,520,000.00
Authorized Capital - 2005		$5,000,000.00
Total Approved Capital		$20,000,000.00
Previous Awards and Expenditures	$19,043,000.00	
Amount Recommended for Transfer	$957,000.00	
Total Estimated Cost	$20,000,000.00	$20,000,000.00
Estimated Surplus		$0.00

The financial status of the SEWPCC Disinfection of Effluent is as follows:

Authorized Capital - 1996 (incl. Transfers)	$5,321,000.00
Authorized Capital - 1997	$200,000.00
Total Approved Capital	$5,521,000.00

Previous Expenditures & Transfers	$4,477,375.19	
Amount Recommended for Transfer	$1,043,624.81	
Total Estimated Cost	$5,521,000.00	$5,521,000.00
Estimated Surplus		$0.00

The financial status of the River Water Quality Hearings Project is as follows:

Authorized Capital - 2002		$530,000.00
Previous Expenditures & Transfers	$483,162.62	
Amount Recommended for Transfer	$46,837.38	
Total Estimated Cost	$530,000.00	$530,000.00
Estimated Surplus		$0.00

The financial status of the One Stop Counter Service at 510 Main Project is as follows:

Authorized Capital - 1999		$140,000.00
Previous Expenditures & Transfers	$0.00	
Amount Recommended for Transfer	$140,000.00	
Total Estimated Cost	$140,000.00	$140,000.00
Estimated Surplus		$0.00

The financial status of the WEWPCC Treatment Plant Expansion Project is as follows:

Authorized Capital – 2000 (incl. Transfers)		$1,904,500.00
Previous Expenditures & Transfers	$77,879.53	
Amount Recommended for Transfer	$1,826,620.47	
Total Estimated Cost	$1,904,500.00	$1,904,500.00
Estimated Surplus		$0.00

The financial status of the Perimeter Road Pumping Station – Pump Upgrade Project is as follows:

Authorized Capital - 2001		$538,675.00
Previous Expenditures & Transfers	$460,462.14	
Amount Recommended for Transfer	$78,212.86	
Total Estimated Cost	$538,675.00	$538,675.00
Estimated Surplus		$0.00

The financial status of the SEWPCC Treatment Plant Expansion Project is as follows:

Authorized Capital - 2000 (incl. Transfers)		$395,300.00
Previous Expenditures & Transfers	$278,109.49	
Amount Recommended for Transfer	$117,190.51	
Total Estimated Cost	$395,300.00	$395,300.00
Estimated Surplus		$0.00

The financial status of the Dumoulin Secondary Sewer Relocation Project is as follows:

Authorized Capital - 2000		$66,300.00
Previous Expenditures & Committed Funds	$22,815.08	
Amount required for this project	$43,484.92	
Total Estimated Cost	$66,300.00	$66,300.00
Estimated Surplus		$0.00

The financial status of the NEWPCC Distributed Control System Upgrades Project is as follows:

Authorized Capital - 2000		$500,000.00
Authorized Capital – 2004 (incl. Transfers)		$1,380,000.00
Total Approved Capital		$1,880,000.00
Previous Expenditures & Committed Funds	$1,213,970.95	
Amount required for this project	$666,029.05	
Total Estimated Cost	$1,880,000.00	$1,880,000.00
Estimated Surplus		$0.00

The surplus funds for all projects were included in the Cash Flow Projections in the Capital Expenditures Report and Forecast that was put forward for the period ending September 30, 2005.

FINANCIAL IMPACT:

The following financial impact statement for this project has been prepared in accordance with the recommendation adopted by Council on December 13, 2000.

Financial Impact Statement

Date: January 18, 2006

Project Name: **First Year of Program** **2006**

TRANSFER OF PROJECTED SURPLUS FUNDS FROM VARIOUS PROJECTS TO THE WEWPCC EFFLUENT DISINFECTION PROJECT, WEWPCC BIOLOGICAL NUTRIENT REMOVAL PROJECT AND THE NEWPCC CENTRATE NUTRIENT REMOVAL PROJECT

	2006	2007	2008	2009	2010
Capital					
Capital Expenditures Required	$ 11,419,000	$ -	$ -	$ -	$ -
Less: Existing Budgeted Costs	11,419,000	-	-	-	-
Additional Capital Budget Required	$ -	$ -	$ -	$ -	$ -
Funding Sources:					
Debt - Internal	$ -	$ -	$ -	$ -	$ -
Debt - External	-	-	-	-	-
Grants (Enter Description Here)	-	-	-	-	-
Reserves, Equity, Surplus	-	-	-	-	-
Other - Enter Description Here	-	-	-	-	-
Total Funding	$ -	$ -	$ -	$ -	$ -
Total Additional Capital Budget Required	$ -				
Total Additional Debt Required	$ -				
Current Expenditures/Revenues					
Direct Costs	$ 281,147	$ -	$ -	$ -	$ -
Less: Incremental Revenue/Recovery	281,147	-	-	-	-
Net Cost/(Benefit)	$ -	$ -	$ -	$ -	$ -
Less: Existing Budget Amounts	-	-	-	-	-
Net Budget Adjustment Required	$ -	$ -	$ -	$ -	$ -

Additional Comments: Funds recommended for transfer are available in the approved Capital Estimates for the Sewage Disposal System Fund and are funded by retained earnings and the environmental reserves.

js

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

3028

IN PREPARING THIS REPORT THERE WAS CONSULTATION WITH AND CONCURRENCE BY: N/A

THIS REPORT SUBMITTED BY:

Water and Waste Department
Engineering Division
Prepared by: J. Smalley / D. Gibson