## REPORTS

**Minute No. 377 Work Schedule and Financing Plan for the Sewer Utility**
**File WW-2.3**

EXECUTIVE POLICY COMMITTEE RECOMMENDATION:

The Executive Policy Committee concurred in the recommendation of the Standing Policy Committee on Public Works and recommends to Council:

1. That the administrative report dated June 3, 2004, with respect to the work schedule and financing plan for the Sewer Utility, be received as information.

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

DECISION MAKING HISTORY:

Moved by Councillor Clement,

That the recommendation of the Standing Policy Committee on Public Works be concurred and forwarded to Council.

Carried

STANDING POLICY COMMITTEE RECOMMENDATION:

On June 8, 2004, the Standing Policy Committee on Public Works concurred in the administrative recommendation, namely, that the report dated June 3, 2004, be received as information and submitted the matter to the Executive Policy Committee.

EXECUTIVE POLICY COMMITTEE RECOMMENDATION:

On November 19, 2003, the Executive Policy Committee requested the Administration to prepare an addendum to the (2004 Water and Sewer Utility) Rate Report that provides a new work schedule and financing plan for the water/sewer utility, including revised water/sewer rates consistent with the 20 to 25 year timeline recommended by the Clean Environment Commission, and that the schedule of work recognize nutrient removal as a priority, with the Administration being asked to table the revised report by June 2004.

Further, the Executive Policy Committee instructed the Administration to work with the Province of Manitoba in order to review the proposed work schedule and financing plan and that a final report on the outcome of those discussions be submitted to Executive Policy Committee and Council by June 2004.

**RE: REPORT ON DISCUSSIONS WITH THE PROVINCE OF MANITOBA REGARDING THE PROPOSED WORK SCHEDULE AND FINANCING PLAN FOR THE SEWER UTILITY**

**FOR SUBMISSION TO:** Standing Policy Committee on Public Works

**ORIGINAL REPORT SIGNED BY:** Director of Water and Waste Department

**REPORT DATE:** June 3, 2004

**RECOMMENDATION:**

That this report be received as information.

## REPORT SUMMARY

**KEY ISSUES:**

The Water and Waste Department arranged a series of meetings between City and Provincial representatives, to prepare alternative implementation plans for the wastewater improvements for discussion. Alternate rate plans presented are as follows:

| Plan 1 - 2004 Rate Report | Plan 2 - Extend Nutrient Removal | Plan 3 - Balanced Distribution |
|---|---|---|
| • Finish nutrient removal by 2008 | • Finish nutrient removal by 2014 | • Spread the work out more evenly over 25 years |
| • As per 2004 Water and Sewer Utility Rate Report presented to Council November 26, 2003 | • Complete CSO implementation in 25 years | |
| • Ten Year Costs Include:<br>- $451m capital<br>- $287m operating<br>- $274m borrowing<br>- $8.41 per 100 c.f. combined rate | • Ten Year Costs Include:<br>- $411m capital<br>- $188m operating<br>- $229m borrowing<br>- $8.41 per 100 c.f. combined rate | • Ten Year Costs Include:<br>- $287m capital<br>- $160m operating<br>- $105m borrowing<br>- $8.01 per 100 c.f. combined rate |

Analysis of these plans by the City of Winnipeg, and their consultants Earth Tech Canada Inc., confirmed that Plan 1 is not possible, Plan 3 does not meet the Provincial goals of nutrient removal, and that Plan 2 was achievable garnering the desired results as fast as possible.

Plan 2 supports Manitoba Conservation and the CEC recommendations in an achievable way. This plan calls for major project sequencing such that, Biosolids are completed by 2010, Nutrient removal by 2014, and CSOs by 2030. This plan meets the short-term reduction targets announced for Lake Winnipeg (10% phosphorous and 13% nitrogen by 2006 for City loads), and project sequencing allows for coordination, and phased implementation between the major expansions required at the SEWPCC and NEWPCC. Along with providing time for review and

regulatory approvals, Plan 2 also provides a more realistic workload for the consulting and contracting communities.

**IMPLICATIONS OF THE RECOMMENDATION:**

**General Implications**

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

Comment: The sewer utility rate is proposed to increase in 2005.

**Policy Implications**

| | |
|---|---|
| X | No |
| | Yes |

**Environmental Implications**

| | |
|---|---|
| | None |
| X | Yes - Includes improvements to the City's wastewater system, including nutrient removal and combined sewer overflows. |

**Human Resources Implications**

| | |
|---|---|
| X | No |
| | Yes |

**Financial Implications**

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

## REPORT

**REASON FOR THE REPORT:**

On November 19, 2003, the Executive Policy Committee (EPC) provided the following instruction:

*That the Administration prepare an addendum to the rate report that provides a new work schedule and financing plan for the water/sewer utility, including revised water/sewer rates consistent with the 20 to 25 year timeline recommended by the Clean Environment Commission, and that the schedule of work recognize nutrient removal as a priority...; and*

*That the Administration be instructed to work with the Province of Manitoba in order to review the proposed work schedule and financing plan, and that a final report on the outcome of those discussions be submitted to Executive Policy Committee and Council by June 2004.*

**HISTORY:**

In January and April 2003, at the request of the Province of Manitoba, the Manitoba Clean Environment Commission (CEC) conducted public hearings on the City of Winnipeg's wastewater collection and treatment systems.

In August of 2003, the CEC recommended that the City of Winnipeg implement a plan directed at improving the City's wastewater treatment and collection system.

On September 26, 2003 the Province of Manitoba directed the City of Winnipeg to implement the CEC recommendations, plus to accelerate the schedule for completion of combined sewer overflow controls (sooner than 20 to 25 years) and full nutrient removal at all three treatment plants by 2008.

The 2004 Water and Sewer Utility Rates were tabled at the meeting of the Standing Policy Committee (SPC) on Public Works on November 23, 2003. The SPC did not concur in the administrative recommendation and recommended to the Executive Policy Committee (EPC):

*That the Administration work with the Province of Manitoba to extend the implementation schedule (particularly for nutrient removal) and provide a more realistic time frame in order to reduce City of Winnipeg consumer concerns with respect to Water and Sewer utility rate increase.*

On November 19, 2003, the EPC directed:
*That the Administration be instructed to work with the Province of Manitoba in order to review the proposed work schedule and financing plan, and that a final report on the outcome of those discussions be submitted to Executive Policy Committee and Council by June 2004.*

On November 25, 2003, the EPC further recommended:
1. *That the sewer rates, based on water used, be increased to $3.11 from $2.73 per 100 cubic feet effective January 1, 2004, which rate includes 55 cents per 100 cubic feet for the Environmental Projects Reserve (27.6 cents in 2003).*
2. *That the City Solicitor/Manager of Legal Services be instructed to prepare the necessary by-law for submission to Council at the November 26, 2003 meeting.*

On November 26, 2003, City Council adopted the recommendations of the EPC.

**DISCUSSION:**

The Water and Waste Department arranged a series of meetings between City and Provincial representatives. The goal of the discussions was to prepare alternative implementation plans for the wastewater improvements for discussion. There were three meetings held between December 2003 and February 2004.

Meeting 1 - December 10, 2003

At the first meeting December 10, 2003, the committee agreed to the following:

- nutrient removal would be a priority;
- overall time limit for implementation of all recommendations would be 25 years consistent with the CEC recommendations and the direction of the EPC;
- alternatives, including implementation timelines, sewer rates and funding alternatives, would be forwarded to the EPC and City Council;
- the Province would consider the results in the licensing process for the three Water Pollution Control Centres; and
- the Province would finalize the license for the West End Water Pollution Control Centre (WEWPCC) since there was agreement on and funding for the improvement to this facility.

The City also agreed to prepare and present alternate rate plans as follows:

Plan 1 – 2004 Rate Report
- finish nutrient removal by 2008
- as per the 2004 Water and Sewer Utility Rate Report presented to Council November 26, 2003

Plan 2 – Extend Nutrient Removal
- finish nutrient removal on an achievable schedule
- complete CSO implementation in 25 years

Plan 3 – Balanced Distribution
- spread the work out more evenly over 25 years

Meeting 2 - February 2, 2004

At the second meeting held February 2, 2004, the City provided analyses of these alternative rate plans. Plan 2 proposed the following program completion dates and capital costs:

| **PLAN 2 - Extend Nutrient Rmoval** | Date | Cost to 2013 ($000s) | Cost to 2030 ($000s) |
|---|---|---|---|
| Disinfection | 2006 | 15,672 | 15,672 |
| Centrate | 2006 | 21,341 | 21,341 |
| CSO | 2030 | 76,702 | 416,814 |
| Biosolids | 2010 | 62,653 | 62,653 |
| Nutrient Removal | 2014 | 229,533 | 276,594 |
| Other | | 4,660 | 8,278 |
| Total Capital | | 410,561 | 801,352 |
| Operating | | 187,680 | 1,467,841 |
| Debt | | 228,500 | 265,000 |

Plan 3 offered a longer schedule for nutrient removal compared to either Plans 1 or 2. Plan 3 proposed the following program completion dates and capital costs:

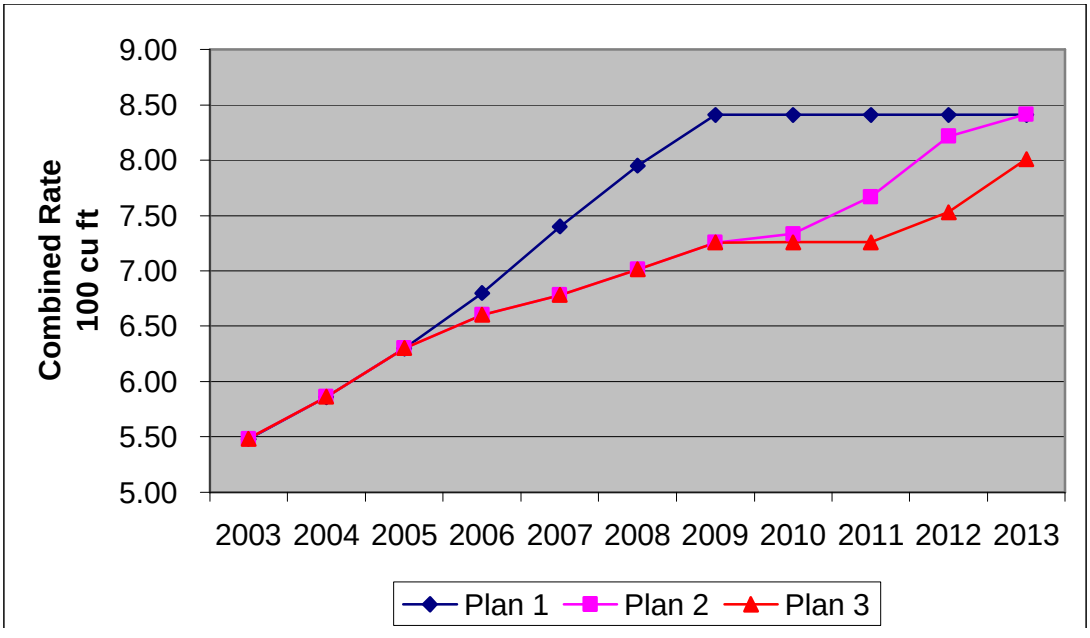
| **PLAN 3 Balanced Distribution** | Completion Date | Cost to 2013 ($000s) | Cost to 2030 ($000s) |
|---|---|---|---|
| Disinfection | 2006 | 15,672 | 15,672 |
| Centrate | 2006 | 21,341 | 21,341 |
| CSO | 2030 | 41,605 | 432,941 |
| Biosolids | 2010 | 62,653 | 62,653 |
| Nutrient Removal | 2017 | 140,705 | 285,668 |
| Other | | 4,660 | 8,593 |
| Total Capital | | 286,636 | 826,868 |
| Operating | | 159,570 | 1,359,863 |
| Debt | | 104,500 | 200,000 |

The Department analyzed variations of Plans 2 and 3 whereby the biosolids program was deferred approximately 10 years. This had no significant impact on rates, nor was it amenable to the Province.

Timing of the capital projects will have an effect on the sewer rate. The following table provides a summary of the projected utility rates as at year 2013.

| | **Plan 1** | **Plan 2** | **Plan 3** |
|---|---|---|---|
| Sewer | 5.00 | 5.00 | 4.60 |
| Water | 3.41 | 3.41 | 3.41 |
| Combined | 8.41 | 8.41 | 8.01 |

Increases to the combined water and sewer rate over the next ten years, range from 46% to 53%, depending on the scheduling of the projects. As the following graph illustrates, all the options reviewed continue to have a large impact on rates, since the Province has not agreed to extend the overall timeframe. Taking into account timing differences, Plans 1 and 2 arrive at the same rate by 2013, with Plan 2 forecasting a decrease in borrowing requirements of $50 million. A summary of financial impacts for Plans 1, 2 and 3 can be found in Appendix A.



The City agreed to:

- further review Plan 2, and quantify the cost per day per customer over the next ten years, as a result of increases associated with environmental projects;
- prepare a written document on why Plan 1 is not achievable and why Plan 2 is the best the City can do in terms of nutrient removal;
- prepare a presentation on the impact of finishing nutrient removal in 2008, 2014 or 2017 in terms of benefits to Lake Winnipeg;
- provide a list of advantages and disadvantages for the three alternative rate models.

Meeting 3 – February 24, 2004

At the third meeting held February 24, 2004, the City provided a consultant's report, as presented by Earth Tech Canada Inc., which confirmed that Plan 1 is not possible, and that Plan 2 is achievable. The advantages and disadvantages of Plans 1, 2 and 3 were discussed. Dr. David Morgan of TetrES Consulting Inc. presented an analysis on nutrient removal. All three analyses concluded that Plan 2 would achieve the desired results as fast as possible.

The City also prepared an analysis, isolating the cost per day per customer over the next ten years, for wastewater improvement projects resulting from the CEC recommendations and Provincial direction. The costs associated with the CEC recommendations and Provincial direction, over and above previously planned projects, make up approximately 71% of the proposed sewer rate increase over the next ten years.

Since Plan 1 is not possible and Plan 3 does not meet the Provincial goals of nutrient removal as fast as possible, Plan 2 is most realistic. This plan is achievable. Plan 2 calls for major project sequencing such that, Biosolids are completed by 2010, Nutrient removal by 2014, and CSOs by 2030. This plan meets the short-term reduction targets announced for Lake Winnipeg (10% phosphorous and 13% nitrogen by 2006 for City loads), and project sequencing allows for coordination, and phased implementation between the major expansions required at the SEWPCC and NEWPCC. Along with providing time for review and regulatory approvals, Plan 2 also provides a more realistic workload for the consulting and contracting communities.

Plan 2 includes $188 million operating costs and $228.5 million in borrowing over 10 years. Total capital costs are estimated at $411 million. Over the next ten years, the combined water and sewer utility rate is forecast to increase by 53% (from the 2003 rate), an increase of 68 cents per day for the average residential customer. Borrowing authority is projected at $228.5 million, $45.5 million lower than first estimated in the 2004 Rate Report (Plan 1). The Department will work with the City's Chief Financial Officer and City Treasurer to determine the best financing alternatives.

Manitoba will review the analyses provided by the City and take into consideration the City's position regarding timing of capital projects, funding alternatives and resulting rate impacts. The Province will then issue licences for the wastewater treatment plants.

The rates and financial plans for the sewer utility for the years 2004 to 2013 for Plan 2 are contained in Appendices B, C, D and E.

On March 19, 2004, an agreement in principle was announced between the City, Province, and Federal governments, to provide up to $165 million in strategic infrastructure funding for three key Winnipeg priorities. Of the three priorities, financial assistance is targeted for improvements to the City of Winnipeg's wastewater treatment systems in response to recommendations from the CEC. Once the agreement has been finalized, the funding can be incorporated into the City's sewer utility rate plan.

**Risks**

The alternate rate plans are based on a total capital program of approximately $800 million, but there is a significant risk that the capital cost could be higher.

- The Province has not yet issued licenses for the three water treatment pollution control centres. If conditions are more stringent than anticipated, the capital costs will increase.
- A multitude of public works projects are taxing the consultant and construction sectors. Limited supply of these resources could also increase capital costs.

**Next Steps**

The Department will submit a report on the 2005 water and sewer utility rates in September of 2004. This report will likely be based on the actual or anticipated final direction of Manitoba Conservation as reflected in the Wastewater Facilities' licences.

As part of the City's due diligence process, the Department will undertake a benchmarking exercise to determine trends in the country, specifically long and short term plans for wastewater treatment and improvements.

The City will incorporate the Canada-Manitoba infrastructure funding agreement into the future utility rate calculations upon confirmation of the agreement.

The Department will report the results of the benchmarking study, proposed utility rates and concluding discussions with the Province in the 2005 Water and Sewer Utility Rate Report to be submitted in September 2004.

**FINANCIAL IMPACT:**

There is no financial impact statement associated with this report.

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Moira L. Geer, C.A.
Manager Finance and Administration

**APPENDICES:**

The following appendices are attached as additional information:

| | |
|---|---|
| APPENDIX A | Plan 1, 2 and 3 - 10 Year Forecast Summary |
| APPENDIX B | Sewage Disposal Utility Financial Projections 2004 to 2013 (Plan 2) |
| APPENDIX C | Environmental Projects Reserve (Plan 2) |
| APPENDIX D | Customer Impact Analysis, Annual Basis (Plan 2) |
| APPENDIX E | Capital Projects and Cash Flow funded by the Environmental Projects Reserve Fund (Plan 2) |

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

**THIS REPORT SUBMITTED BY:**

Water and Waste Department
Finance and Administration Division
Prepared by: Moira Geer, Lucy Szkwarek
Date: May 31, 2004
File No: 010-17-06-01-00, 010-07-20-01-00 and 010-07-20-02-00

**APPENDIX A**

## PLAN 1, 2 AND 3 - 10 YEAR FORECAST SUMMARY

**Water and Waste Department**
**Environmental Projects Assumptions $000s**

| Options | Option Details | 10 Year Forecast to 2013 | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Capital | Borrowing | O&M [1] | Sewer Rate $s | Combined Rate $s | Combined Rate % Increase [2] | Customer Impact [3] Utility Bill $dollars | Customer Impact [3] Increase per day |
| **Plan 1** | As per 2004 Rate Report<br>NE BNR (2004 to 2008)<br>CSO complete by 2025<br>Biosolids (2007 to 2010)<br>EPR $21m 2013, $28m 2019 beyond | $451,390 | $274,000 | $287,390 | $5.00 | $8.41 | 53% | $755.25 | $0.68 |
| **Plan 2** | NE BNR (2004 to 2014)<br>CSO complete by 2030<br>Biosolids (2007 to 2010)<br>EPR $21m 2013 and beyond | $410,560 | $228,500 | $187,680 | $5.00 | $8.41 | 53% | $755.25 | $0.68 |
| **Plan 3** | NE BNR (2010 to 2017)<br>CSO complete by 2030<br>Biosolids (2007 to 2010)<br>EPR $21m 2013, $28m 2019 beyond | $286,640 | $104,500 | $159,570 | $4.60 | $8.01 | 46% | $721.24 | $0.58 |

**APPENDIX B**

SEWAGE DISPOSAL SYSTEM FUND Plan 2
Financial Projections 2004 TO 2013

| Sewage Disposal System | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 |
|---|---|---|---|---|---|---|---|---|---|---|
| Revenue | | | | | | | | | | |
| Sales Revenue | 65,957 | 76,014 | 84,464 | 86,095 | 86,095 | 85,826 | 87,243 | 94,737 | 108,021 | 107,336 |
| Non Rate Revenue | 4,796 | 4,816 | 4,450 | 4,727 | 5,017 | 5,327 | 5,184 | 5,605 | 6,145 | 5,015 |
| Environmental Projects Reserve | 13,899 | 13,944 | 13,990 | 14,061 | 14,061 | 14,016 | 14,016 | 14,016 | 14,016 | 21,052 |
| **Total Revenue** | **84,652** | **94,774** | **102,903** | **104,882** | **105,172** | **105,169** | **106,443** | **114,358** | **128,182** | **133,403** |
| Expenditures | | | | | | | | | | |
| Operating | 29,930 | 31,765 | 34,437 | 36,532 | 37,468 | 38,423 | 42,897 | 47,260 | 48,411 | 50,385 |
| Debt Service | 18,538 | 17,802 | 15,038 | 14,905 | 15,973 | 20,556 | 24,042 | 25,047 | 31,414 | 30,989 |
| Other Corporate Expenses | 8,588 | 10,282 | 10,282 | 10,282 | 10,282 | 10,282 | 10,282 | 10,282 | 10,282 | 10,282 |
| Transfer to Environmental Projects Reserve | 13,899 | 13,944 | 13,990 | 14,061 | 14,061 | 14,016 | 14,016 | 14,016 | 14,016 | 21,052 |
| Transfer to General Revenue Fund | 10,034 | 9,917 | 9,917 | 9,917 | 9,917 | 9,917 | 9,917 | 9,917 | 9,917 | 9,917 |
| **Total Expenditures** | **80,989** | **83,710** | **83,664** | **85,696** | **87,700** | **93,194** | **101,153** | **106,522** | **114,040** | **122,624** |
| Surplus(Deficit) for the year | 3,663 | 11,064 | 19,239 | 19,186 | 17,472 | 11,975 | 5,290 | 7,836 | 14,142 | 10,779 |
| Opening Working Capital | 7,821 | (4,315) | (3,738) | (1,372) | 7,870 | 13,761 | 14,002 | 11,154 | 6,829 | 9,611 |
| Appropriated to Capital | (15,834) | (11,249) | (17,199) | (9,850) | (9,300) | (9,800) | (10,000) | (10,000) | (10,000) | (10,000) |
| Other Changes in Working Capital | 35 | 762 | 326 | (94) | (2,281) | (1,934) | 1,862 | (2,161) | (1,360) | 1,653 |
| Ending Working Capital | (4,315) | (3,738) | (1,372) | 7,870 | 13,761 | 14,002 | 11,154 | 6,829 | 9,611 | 12,042 |
| **Working Capital as a % of Sales** | **-7%** | **-5%** | **-2%** | **9%** | **16%** | **16%** | **13%** | **7%** | **9%** | **11%** |
| Base rate per 100 cu.ft. | **2.562** | **3.003** | **3.303** | **3.303** | **3.303** | **3.303** | **3.369** | **3.706** | **4.262** | **4.126** |
| Environmental Reserve Charge | 0.550 | 0.550 | 0.550 | 0.550 | 0.550 | 0.550 | 0.550 | 0.550 | 0.550 | 0.875 |
| **Overall Sewer Rate** | **3.11** | **3.55** | **3.85** | **3.85** | **3.85** | **3.85** | **3.92** | **4.26** | **4.81** | **5.00** |
| **Overall rate increase/(decrease)** | **13.92%** | **14.15%** | **8.45%** | **0.00%** | **0.00%** | **0.00%** | **1.82%** | **8.67%** | **12.91%** | **3.95%** |
| **Long-Term Debt Summary** | | | | | | | | | | |
| New debt, Environmental Projects | 0 | 0 | 0 | 0 | 21,500 | 20,500 | 42,500 | 65,000 | 43,000 | 36,000 |
| **Debt outstanding, closing year end balance** | **56,709** | **50,177** | **44,828** | **39,611** | **55,586** | **69,291** | **104,587** | **160,138** | **190,137** | **212,552** |

**APPENDIX C**

## Environmental Projects Reserve Plan 2 - Extend Nutrient Removal

| Year | Annual Capital | Contribution to Reserve | | Balance end of year | |
|---|---|---|---|---|---|
| | Expenditure | Volume Rate [1] | Debt | Debt | Reserve |
| to 2002 | 11,856 | 44,136 | | | 32,280 |
| 2003 | 4,770 | 7,675 | | | 35,185 |
| 2004 | 30,671 | 14,603 | | | 19,116 |
| 2005 | 25,837 | 14,326 | | | 7,605 |
| 2006 | 21,224 | 14,142 | | | 523 |
| 2007 | 11,257 | 14,071 | | | 3,337 |
| 2008 | 37,870 | 14,127 | 21,500 | 21,500 | 1,094 |
| 2009 | 34,573 | 14,038 | 20,500 | 42,000 | 1,058 |
| 2010 | 56,286 | 14,037 | 42,500 | 84,500 | 1,310 |
| 2011 | 79,028 | 14,042 | 65,000 | 149,500 | 1,323 |
| 2012 | 56,827 | 14,042 | 43,000 | 192,500 | 1,539 |
| 2013 | 56,988 | 21,082 | 36,000 | 228,500 | 1,633 |
| 2014 | 58,003 | 21,033 | 36,500 | 265,000 | 1,163 |
| 2015 | 10,907 | 21,023 | | | 11,279 |
| 2016 | 11,513 | 21,226 | | | 20,992 |
| 2017 | 9,764 | 21,420 | | | 32,648 |
| 2018 | 20,292 | 21,653 | | | 34,009 |
| 2019 | 21,109 | 21,680 | | | 34,580 |
| 2020 | 21,391 | 21,692 | | | 34,880 |
| 2021 | 21,534 | 21,698 | | | 35,044 |
| 2022 | 22,401 | 21,701 | | | 34,344 |
| 2023 | 22,701 | 21,687 | | | 33,330 |
| 2024 | 22,852 | 21,667 | | | 32,144 |
| 2025 | 23,772 | 21,643 | | | 30,015 |
| 2026 | 24,090 | 21,600 | | | 27,525 |
| 2027 | 24,250 | 21,551 | | | 24,826 |
| 2028 | 24,735 | 21,497 | | | 21,587 |
| 2029 | 25,230 | 21,432 | | | 17,789 |
| 2030 | 26,247 | 21,356 | | | 12,898 |
| **Total** | **$817,979** | **$565,877** | **$265,000** | | |

[1] includes interest

## APPENDIX D

**CUSTOMER IMPACT ANALYSIS Plan 2**
**Annual Basis**

| | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Residential 5/8" meter** | | | | | | | | | | | |
| **8,400** cu.ft. Water | 2.75 | 2.75 | 2.75 | 2.75 | 2.93 | 3.16 | 3.41 | 3.41 | 3.41 | 3.41 | 3.41 |
| Sewer | 2.73 | 3.11 | 3.55 | 3.85 | 3.85 | 3.85 | 3.85 | 3.92 | 4.26 | 4.81 | 5.00 |
| Total Volume Rate | **5.48** | **5.86** | **6.30** | **6.60** | **6.78** | **7.01** | **7.26** | **7.33** | **7.67** | **8.22** | **8.41** |
| FQC | **12.10** | **12.10** | **12.10** | **12.10** | **12.10** | **12.10** | **12.10** | **12.10** | **12.10** | **12.10** | **12.10** |
| | $508.52 | $540.25 | $577.03 | $602.72 | $617.64 | $637.61 | $658.01 | $664.40 | $692.70 | $738.56 | $755.25 |
| Overall $ Change | 0.00 | 31.74 | 36.78 | 25.69 | 14.91 | 19.97 | 20.40 | 6.39 | 28.30 | 45.86 | 16.68 |
| Overall % Change | 0.00% | 6.24% | 6.81% | 4.45% | 2.48% | 3.23% | 3.20% | 0.97% | 4.26% | 6.62% | 2.26% |
| **Small Restaurant 1" meter** | | | | | | | | | | | |
| **56,000** cu.ft. Water | 2.27 | 2.27 | 2.27 | 2.27 | 2.44 | 2.67 | 2.92 | 2.92 | 2.92 | 2.92 | 2.92 |
| Sewer | 2.73 | 3.11 | 3.55 | 3.85 | 3.85 | 3.85 | 3.85 | 3.92 | 4.26 | 4.81 | 5.00 |
| Total Volume Rate | **5.00** | **5.38** | **5.82** | **6.12** | **6.29** | **6.52** | **6.77** | **6.84** | **7.18** | **7.73** | **7.92** |
| FQC | **15.92** | **15.92** | **15.92** | **15.92** | **15.92** | **15.92** | **15.92** | **15.92** | **15.92** | **15.92** | **15.92** |
| | $2,909.05 | $3,123.10 | $3,368.23 | $3,539.62 | $3,632.22 | $3,760.09 | $3,903.71 | $3,941.66 | $4,130.34 | $4,440.70 | $4,547.29 |
| **Automatic Car Wash 2" meter** | | | | | | | | | | | |
| **325,400** cu.ft. Water | 1.79 | 1.79 | 1.79 | 1.79 | 1.96 | 2.19 | 2.44 | 2.44 | 2.44 | 2.44 | 2.44 |
| Sewer | 2.73 | 3.11 | 3.55 | 3.85 | 3.85 | 3.85 | 3.85 | 3.92 | 4.26 | 4.81 | 5.00 |
| Total Volume Rate | **4.52** | **4.90** | **5.34** | **5.64** | **5.81** | **6.04** | **6.29** | **6.36** | **6.70** | **7.25** | **7.44** |
| FQC | **30.28** | **30.28** | **30.28** | **30.28** | **30.28** | **30.28** | **30.28** | **30.28** | **30.28** | **30.28** | **30.28** |
| | $15,390.85 | $16,636.80 | $18,065.39 | $19,023.49 | $19,590.29 | $20,348.03 | $21,152.87 | $21,392.50 | $22,492.23 | $24,305.82 | $24,922.41 |
| **Large Restaurant 3" meter** | | | | | | | | | | | |
| **626,000** cu.ft. Water | 1.79 | 1.79 | 1.79 | 1.79 | 1.96 | 2.19 | 2.44 | 2.44 | 2.44 | 2.44 | 2.44 |
| Sewer | 2.73 | 3.11 | 3.55 | 3.85 | 3.85 | 3.85 | 3.85 | 3.92 | 4.26 | 4.81 | 5.00 |
| Total Volume Rate | **4.52** | **4.90** | **5.34** | **5.64** | **5.81** | **6.04** | **6.29** | **6.36** | **6.70** | **7.25** | **7.44** |
| FQC | **107.81** | **107.81** | **107.81** | **107.81** | **107.81** | **107.81** | **107.81** | **107.81** | **107.81** | **107.81** | **107.81** |
| | $29,257.31 | $31,815.77 | $34,355.61 | $36,192.02 | $37,276.22 | $38,764.75 | $40,294.57 | $40,782.09 | $42,871.25 | $46,350.40 | $47,583.07 |
| **Hotel 3" meter** | | | | | | | | | | | |
| **1,182,800** cu.ft. Water | 1.79 | 1.79 | 1.79 | 1.79 | 1.96 | 2.19 | 2.44 | 2.44 | 2.44 | 2.44 | 2.44 |
| Sewer | 2.73 | 3.11 | 3.55 | 3.85 | 3.85 | 3.85 | 3.85 | 3.92 | 4.26 | 4.81 | 5.00 |
| Total Volume Rate | **4.52** | **4.90** | **5.34** | **5.64** | **5.81** | **6.04** | **6.29** | **6.36** | **6.71** | **7.25** | **7.44** |
| FQC | **107.81** | **107.81** | **107.81** | **107.81** | **107.81** | **107.81** | **107.81** | **107.81** | **107.81** | **107.81** | **107.81** |
| | $54,451.47 | $58,901.71 | $64,078.48 | $67,547.20 | $69,592.96 | $72,415.47 | $75,292.63 | $76,183.68 | $80,277.52 | $86,743.41 | $88,975.27 |
| **Foundry 4" meter** | | | | | | | | | | | |
| **8,987,600** cu.ft. Water | 1.79 | 1.79 | 1.79 | 1.79 | 1.96 | 2.19 | 2.44 | 2.44 | 2.44 | 2.44 | 2.44 |
| Sewer | 2.73 | 3.11 | 3.55 | 3.85 | 3.85 | 3.85 | 3.85 | 3.92 | 4.26 | 4.81 | 5.00 |
| Total Volume Rate | **4.52** | **4.90** | **5.34** | **5.64** | **5.81** | **6.04** | **6.29** | **6.36** | **6.70** | **7.25** | **7.44** |
| FQC | **136.53** | **136.53** | **136.53** | **136.53** | **136.53** | **136.53** | **136.53** | **136.53** | **136.53** | **136.53** | **136.53** |
| | $407,718.91 | $441,490.04 | $480,825.66 | $507,175.07 | $522,699.43 | $544,220.55 | $565,983.67 | $572,611.56 | $603,093.16 | $653,056.84 | $670,009.51 |

Cash flow Projection for Capital Projects Funded by the Environmental Projects Reserve Fund
Sequencing of Future Potential Projects Alternate Rate Model for Plan 2 (including annual Inflation of 2.0%)

| WITH Inflation @ | 2.0% | Year = | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Cost in 000's | | Cash Expended (Capital Only) by Year End | | | | | | | | | | | |
| Project Description | Capital (2004$) | O & M (2004$) | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | Total |
| **EXISTING ENVIRONMENTAL PROJECTS** | | | | | | | | | | | | | | |
| WEWPCC-Disinfection of Effluent | 3,250 | - | - | 561 | 1,405 | 1,433 | - | - | - | - | - | - | - | 3,398 |
| SEWPCC-Disinfection of Effluent [1] | 1,044 | | 50 | - | 1,034 | - | - | - | - | - | - | - | - | 1,034 |
| River Quality Hearings | 200 | | 200 | - | - | - | - | - | - | - | - | - | - | - |
| **Subtotal** | **4,494** | - | **250** | **561** | **2,439** | **1,433** | - | - | - | - | - | - | - | **4,432** |
| [1] budgets reduced by amount of prior year's spending ($4,477) | | | | | | | | | | | | | | |
| **CEC RECOMMENDED PLAN** | | | | | | | | | | | | | | |
| **Wastewater Sampler Upgrades** | **400** | | - | **408** | - | - | - | - | - | - | - | - | - | **408** |
| **Effluent Ammonia/Nutrient Related Studies** | **500** | | - | **510** | - | - | - | - | - | - | - | - | - | **510** |
| **NEWPCC Effluent Disinfection** | **15,000** | **550** | **4,000** | **10,200** | **1,040** | - | - | - | - | - | - | - | - | **11,240** |
| **NEWPCC Centrate BNR Treatment** | **20,500** | **1,000** | - | **6,630** | **7,283** | **7,428** | - | - | - | - | - | - | - | **21,341** |
| **Combined Sewer Overflow Mitigation** | | | | | | | | | | | | | | |
| - CSO Management Strategy | 4,000 | | - | 4,080 | - | - | - | - | - | - | - | - | - | 4,080 |
| - Raise Weirs | 1,600 | | - | 612 | 1,040 | - | - | - | - | - | - | - | - | 1,652 |
| - Inflatable Dam Pilot Testing | 2,700 | | - | 1,122 | 1,665 | - | - | - | - | - | - | - | - | 2,787 |
| - Sewer SCADA System | 11,100 | 110 | - | 1,122 | 5,202 | 5,306 | - | - | - | - | - | - | - | 11,630 |
| - Integration with Basement Flooding Relief | 28,000 | 110 | - | 1,632 | 1,665 | 1,698 | 1,732 | 1,767 | 1,802 | 1,838 | 3,046 | 3,107 | 3,169 | 21,456 |
| - Access available system storage | 54,000 | 210 | - | - | - | - | - | 3,312 | 3,378 | 6,892 | 7,030 | 7,171 | 7,314 | 35,097 |
| - Develop additional storage to achieve 4 o/fs | 196,000 | 750 | - | - | - | - | - | - | - | - | - | - | - | - |
| **Subtotal** | **297,400** | **1,180** | - | **8,568** | **9,572** | **7,004** | **1,732** | **5,079** | **5,180** | **8,730** | **10,076** | **10,278** | **10,483** | **76,702** |
| **Biosolids Management System Modification** | **56,000** | **3,400** | - | **510** | **520** | - | **7,144** | **22,082** | **11,262** | **21,136** | - | - | - | **62,653** |
| **Nutrient Removal (N&P) 1** | | | | | | | | | | | | | | |
| NEWPCC | 164,640 | 1,900 | - | - | 666 | 955 | - | 7,949 | 4,054 | 4,135 | 46,339 | 39,976 | 46,139 | 150,214 |
| SEWPCC | 61,200 | 630 | - | - | - | 849 | 2,057 | 2,539 | 14,077 | 21,940 | 22,379 | 6,573 | - | 70,414 |
| WEWPCC | 8,520 | 130 | - | 1,448 | 3,902 | 3,555 | - | - | - | - | - | - | - | 8,905 |
| **Subtotal** | **234,360** | **2,660** | - | **1,448** | **4,567** | **5,359** | **2,057** | **10,489** | **18,131** | **26,075** | **68,718** | **46,549** | **46,139** | **229,532** |
| **CEC Recomenedations** | | | | | | | | | | | | | | |
| - #2 Licencing (incl EIS and Hearings) | 4,800 | | - | 612 | 416 | - | 325 | 221 | - | 345 | 234 | - | 366 | 2,518 |
| - #9 Public Notification | 250 | | - | 255 | - | - | - | - | - | - | - | - | - | 255 |
| - #16 EMS, SOP & ERP | 500 | | - | 510 | - | - | - | - | - | - | - | - | - | 510 |
| - #18 & 19 Public/Aboriginal Consultn + annual report c | 450 | | - | 459 | - | - | - | - | - | - | - | - | - | 459 |
| **Subtotal** | **6,000** | - | - | **1,836** | **416** | - | **325** | **221** | - | **345** | **234** | - | **366** | **3,742** |
| **Subtotal CEC Recommended Plan** | **630,160** | **8,790** | **4,000** | **30,110** | **23,399** | **19,792** | **11,257** | **37,870** | **34,573** | **56,286** | **79,028** | **56,827** | **56,988** | **406,130** |
| **Totals for Capital** | **634,654** | **na** | **4,250** | **30,671** | **25,837** | **21,224** | **11,257** | **37,870** | **34,573** | **56,286** | **79,028** | **56,827** | **56,988** | **410,562** |
| **Totals for O & M** | **na** | **8,790** | - | - | 7 | 597 | **1,958** | **2,004** | **2,064** | **6,032** | **6,187** | **6,351** | **7,287** | **32,487** |