Water and Sewer Cost of Service Rate and Fee Study

Presented to
City Council
City of Evanston

November 17, 2008
Rate Study Project Summary

- Purpose:
  - Develop rates to adequately recover capital and operating costs
  - Provide a 10-year forecast of revenues and expenditures
  - Identify the cost responsibility of each rate class (Residential, Multifamily, Commercial, Industrial, School, City, Park)
  - Design rate schedules that sufficiently and equitably recover revenue requirements
Overall Approach

- Developed Water and Sewer Rate Models
  - Reviewed Water and Sewer Capital Improvement Programs (CIP)
  - Reviewed historical water flow trends and projections
  - Reviewed historic O&M costs and made future projections
  - Reviewed and incorporated fiscal policies and practices
- Projected rate revenue requirements over a five year forecast period.
- Reviewed and updated cost of service evaluation
- Prepared rate recommendations.
Capital Plan Summary - Sewer

- Near completion of largest public works capital improvement program in the City of Evanston’s history
- Project was very successful – significantly reduced flooding within the City
- Project was very expensive – 26 IEPA loans and 4th Bond just sold for the project
- The debt service accounts for 81% of overall sewer fund expense – significant impact on rates.
Capital Plan Summary - Sewer

- Projected capital expenditures over next 10 years approx. $19M*

- Major capital projects:
  - Sewer rehabilitation associated with street improvements
  - Sewer rehabilitation utilizing the sewer lining method
  - Project 10C - Relief sewer in the downtown area – need and funding source of this project are yet to be determined. Additional study will be required.

*Excludes cost of potentially constructing Phase 10c sewer project estimated at $6M.
Historical Trends in Water Consumption Have Impacted Both Sewer and Water Revenues

- Water demand has decreased by more than 16% since 1998.

The FY06 and FY07 projection versus the actual revenue resulted in a $3.9 M shortfall in sewer revenue and $0.6 M shortfall in water revenue.
Sewer and Water O&M Expenses

- O&M Expense Trends

<table>
<thead>
<tr>
<th>Description</th>
<th>FY04/05 Actual</th>
<th>FY05/06 Actual</th>
<th>FY06/07 Actual</th>
<th>FY07/08 Actual</th>
<th>FY08/09 Budget</th>
<th>FY09/10 - FY13/14 Forecast</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water O&amp;M Expense</td>
<td>6,395,000</td>
<td>6,706,000</td>
<td>6,900,000</td>
<td>7,138,000</td>
<td>8,227,000</td>
<td></td>
</tr>
<tr>
<td>% Change</td>
<td>4.9%</td>
<td>2.9%</td>
<td>3.4%</td>
<td>15.3%</td>
<td>4%</td>
<td></td>
</tr>
<tr>
<td>Sewer O&amp;M Expense</td>
<td>1,970,000</td>
<td>2,130,000</td>
<td>2,587,000</td>
<td>$2,181,000</td>
<td>$2,345,000</td>
<td></td>
</tr>
<tr>
<td>% Change</td>
<td>8.1%</td>
<td>21.5%</td>
<td>-15.7%</td>
<td>7.5%</td>
<td>4%</td>
<td></td>
</tr>
</tbody>
</table>

- Cash flow forecast assumes O&M costs will increase by an average of 4% per year.
# Sewer and Water Debt Service

## Debt Service Projection (in $Millions)

<table>
<thead>
<tr>
<th>Description</th>
<th>FY07/08 Actual</th>
<th>FY08/09 Budget</th>
<th>FY09/10 Forecast</th>
<th>FY10/11 Forecast</th>
<th>FY11/12 Forecast</th>
<th>FY12/13 Forecast</th>
<th>FY13/14 Forecast</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water Debt Service</td>
<td>$0.614</td>
<td>$0.621</td>
<td>$1.162</td>
<td>$1.627</td>
<td>$2.074</td>
<td>$2.243</td>
<td>$2.801</td>
</tr>
<tr>
<td>% Change</td>
<td>7.3%</td>
<td>9.2%</td>
<td>4.4%</td>
<td>3.9%</td>
<td>3.2%</td>
<td>0.3%</td>
<td>-19.3%</td>
</tr>
</tbody>
</table>

- Cash flow forecast assumes funding the capital costs based on capital plan discussed above based on a mix of debt and cash.
Sewer Financial Forecast Using 2005 Demand Forecast

Only Inflationary Sewer Rate Adjustments Would be Needed in 2011 through 2013.
Sewer Financial Forecast Under Current Rates

No Sewer Rate Adjustments Would Result in Significant Revenue Deficiencies
Sewer Rate Alternative 1

Just in Time Rate Adjustments

- Reserve Fund Balance
- Capital Projects
- Revenue Increase Required
- Annual Debt Service
Sewer Rate Alternative 2

Smoothed Rate Adjustments
Sewer Rate Alternative 3

Rate Adjustment to Cover Multiple Years

- Reserve Fund Balance
  - Operating Fund
  - Actual vs. Last Scenario vs. Target
  - Years: 2009 to 2015

- Capital Projects
  - Percent of CIP Spent
  - Years: 2009 to 2015

- Revenue Increase Required
  - Percentage: 29.5%
  - Years: 2009 to 2015

- Annual Debt Service
  - Years: 2009 to 2016
  - Millions of Dollars
Capital Plan Summary - Water

- Projected capital expenditures over next 10 years approx. $70M

- Major infrastructure needs including:
  - Emergency interconnect with Wilmette
  - Instrumentation/SCADA upgrades
  - Phased water main replacement program to minimize costly emergency repairs for mains over 100 years old
  - Filter Rehabilitation
  - Rehabilitation of 80 year old concrete treatment basins, chemical mixing basins, and clear wells
  - Zebra mussel system replacement
Water Financial Forecast Under Current Rates

No Water Rate Adjustments Would Result in Significant Revenue Deficiencies
Water Rate Alternative 1

Just in Time Rate Adjustments

Reserve Fund Balance

- Actual
- Last Scenario Recalled
- Target

Capital Projects

- Water CIP
- Last Scenario Recalled

Revenue Increase Required

- Revenue Increase
- Last Scenario Recalled

Annual Debt Service

- New
- Existing
Water Rate Alternative 2

Smoothed Rate Adjustments

- **Reserve Fund Balance**: Graph showing the fund balance over years with actual, last scenario recalled, and target values.
- **Capital Projects**: Bar graph showing water CIP and last scenario recalled expenditures from 2009 to 2014.
- **Revenue Increase Required**: Graph indicating revenue increase required from 2009 to 2014 with 9.4% increase each year.
- **Annual Debt Service**: Bar graph showing new and existing debt service from 2009 to 2014.
Water Rate Alternative 3

Rate Adjustment to Cover Multiple Years
## Combined Water and Sewer Bill Impact – Alternative 1

### Just in Time Rate Adjustments

<table>
<thead>
<tr>
<th>Year</th>
<th>Annual Water Cost</th>
<th>Annual Sewer Cost</th>
<th>Total</th>
<th>$ Increase</th>
<th>% Increase</th>
</tr>
</thead>
<tbody>
<tr>
<td>FY08/09</td>
<td>$147.31</td>
<td>$417.64</td>
<td>$564.95</td>
<td>$-</td>
<td>0.0%</td>
</tr>
<tr>
<td>FY09/10</td>
<td>147.31</td>
<td>432.26</td>
<td>579.57</td>
<td>14.62</td>
<td>2.6%</td>
</tr>
<tr>
<td>FY10/11</td>
<td>164.93</td>
<td>530.35</td>
<td>695.27</td>
<td>115.70</td>
<td>20.0%</td>
</tr>
<tr>
<td>FY11/12</td>
<td>181.52</td>
<td>541.00</td>
<td>722.52</td>
<td>27.25</td>
<td>3.9%</td>
</tr>
<tr>
<td>FY12/13</td>
<td>191.17</td>
<td>541.00</td>
<td>732.17</td>
<td>9.65</td>
<td>1.3%</td>
</tr>
<tr>
<td>FY13/14</td>
<td>203.50</td>
<td>497.72</td>
<td>701.22</td>
<td>(30.95)</td>
<td>-4.2%</td>
</tr>
<tr>
<td>FY14/15</td>
<td>223.55</td>
<td>437.99</td>
<td>661.55</td>
<td>(39.67)</td>
<td>-5.7%</td>
</tr>
<tr>
<td>FY15/16</td>
<td>248.42</td>
<td>437.99</td>
<td>686.42</td>
<td>24.87</td>
<td>3.8%</td>
</tr>
</tbody>
</table>

Based on a residential customer that uses 106 ccf (79,300 gallons) of water per year.
## Combined Water and Sewer Bill Impact – Alternative 2

### Smoothed Rate Adjustments

<table>
<thead>
<tr>
<th>Year</th>
<th>Annual Water Cost</th>
<th>Annual Sewer Cost</th>
<th>Total</th>
<th>$ Increase</th>
<th>% Increase</th>
</tr>
</thead>
<tbody>
<tr>
<td>FY08/09</td>
<td>$147.31</td>
<td>$417.64</td>
<td>$564.95</td>
<td>$-</td>
<td>0.0%</td>
</tr>
<tr>
<td>FY09/10</td>
<td>147.31</td>
<td>459.40</td>
<td>606.72</td>
<td>41.76</td>
<td>7.4%</td>
</tr>
<tr>
<td>FY10/11</td>
<td>161.22</td>
<td>505.34</td>
<td>666.56</td>
<td>59.85</td>
<td>9.9%</td>
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<tr>
<td>FY11/12</td>
<td>176.44</td>
<td>538.03</td>
<td>714.47</td>
<td>47.91</td>
<td>7.2%</td>
</tr>
<tr>
<td>FY12/13</td>
<td>193.09</td>
<td>539.59</td>
<td>732.68</td>
<td>18.22</td>
<td>2.5%</td>
</tr>
<tr>
<td>FY13/14</td>
<td>211.18</td>
<td>496.42</td>
<td>707.60</td>
<td>(25.08)</td>
<td>-3.4%</td>
</tr>
<tr>
<td>FY14/15</td>
<td>223.55</td>
<td>436.85</td>
<td>660.41</td>
<td>(47.20)</td>
<td>-6.7%</td>
</tr>
<tr>
<td>FY15/16</td>
<td>248.42</td>
<td>436.85</td>
<td>685.28</td>
<td>24.87</td>
<td>3.8%</td>
</tr>
</tbody>
</table>

Based on a residential customer that uses 106 ccf (79,300 gallons) of water per year.
### Combined Water and Sewer Bill Impact – Alternative 3

**Rate Adjustment to Cover Multiple Years**

<table>
<thead>
<tr>
<th>Year</th>
<th>Annual Water Cost</th>
<th>Annual Sewer Cost</th>
<th>Total</th>
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<th>% Increase</th>
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<tr>
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<td>$564.95</td>
<td>$ -</td>
<td>0.0%</td>
</tr>
<tr>
<td>FY09/10</td>
<td>147.31</td>
<td>417.64</td>
<td>564.95</td>
<td>-</td>
<td>0.0%</td>
</tr>
<tr>
<td>FY10/11</td>
<td>175.30</td>
<td>540.84</td>
<td>716.15</td>
<td>151.19</td>
<td>26.8%</td>
</tr>
<tr>
<td>FY11/12</td>
<td>175.30</td>
<td>540.84</td>
<td>716.15</td>
<td>-</td>
<td>0.0%</td>
</tr>
<tr>
<td>FY12/13</td>
<td>212.11</td>
<td>540.84</td>
<td>752.96</td>
<td>36.81</td>
<td>5.1%</td>
</tr>
<tr>
<td>FY13/14</td>
<td>212.11</td>
<td>513.80</td>
<td>725.92</td>
<td>(27.04)</td>
<td>-3.6%</td>
</tr>
<tr>
<td>FY14/15</td>
<td>212.11</td>
<td>462.42</td>
<td>674.54</td>
<td>(51.38)</td>
<td>-7.1%</td>
</tr>
<tr>
<td>FY15/16</td>
<td>253.23</td>
<td>462.42</td>
<td>715.66</td>
<td>41.12</td>
<td>6.1%</td>
</tr>
</tbody>
</table>

Based on a residential customer that uses 106 ccf (79,300 gallons) of water per year.
Bill Impact of Decreasing Average Water Demands

- Water demand has decreased by more than 16% since 1998

- **Annual Residential Cost Impact** (Combined Water & Sewer Bill)
  - Estimated 2010 Residential Cost  
    (at 2005/2006 Average Residential Consumption of 9.7 ccf / month) $622
  - Estimated 2011 Annual Cost (Assuming Alt 3 Adopted for Water & Sewer)  
    (at Current Average Residential Consumption of 8.8 ccf/month) $714
  - Difference 14.7%
Regional Rate Comparison

Water

Evanston Residential Water Cost Comparison
(Based on 79,300 gallons or 10,600 cubic feet of water consumed per year)

- Aurora
- Elgin
- Oak Park
- Arlington Heights
- Waukegan
- Skokie
- Springfield
- Naperville, IL
- Wilmette
- Highland Park
- Evanston
- Chicago

Sewer

Evanston Residential Sewer Cost Comparison
(Based on 79,300 gallons or 10,600 cubic feet of water consumed per year)

- Evanston
- Wilmette
- Aurora
- Naperville, IL
- Springfield
- Highland Park
- Elgin
- Oak Park
- Chicago
- Waukegan
- Arlington Heights
- Skokie

* Sewer Comparison excludes wastewater treatment costs.
Regional Rate Comparison

Combined 2008 Water and Sewer Cost

Evanston Residential Water and Sewer Cost Comparison
(Based on 79,300 gallons or 10,600 cubic feet of water consumed per year)

- Aurora
- Evanston
- Elgin
- Wilmette
- Naperville
- Oak Park
- Springfield
- Waukegan
- Arlington Heights
- Highland Park
- Skokie
- Chicago

Annual Residential Water and Sewer Cost

$0 $100 $200 $300 $400 $500 $600 $700
Regional Rate Comparison

Combined 2018 Water and Sewer Cost

Evanston Residential Water and Sewer Cost Comparison - Projected 2018
(Based on 79,300 gallons or 10,600 cubic feet of water consumed per year)

Assumes Chicago water rates increase by 14% in 2010 and 3% per year thereafter, all other community rates increase by 3.0% per year.