SECTION IV
WASTEWATER SDC

The City's existing wastewater SDC is $45.61 per sewer fixture unit. Assuming a typical single family residential customer with ¾" meter has 23 sewer fixture units; this customer would pay $1,049.03 system development charge under the existing SDC structure.

A. CAPACITY BASIS

We calculated wastewater SDCs using two alternative charge bases; meter capacity equivalents (MEs) and fixture units. In order to estimate the number of MEs and fixture units – the denominators in both reimbursement and improvement fee calculations – the following approach was taken:

- Based on summary level customer data provided by City staff, the City had 3,470 wastewater accounts and 4,275 meter capacity equivalents as of 2008. Using Uniform Plumbing Code fixture unit estimates for varying water pipe and meter sizes, it was estimated that the City had 105,220 wastewater fixture units as of 2008.
- During the 20-year study period, the City's annual growth rate is projected to be 1.37% (per the 2005 Buildable Land Analysis Update).
- The initial total number of MEs and fixture units were grown proportionately with forecasted growth. As a result, it was estimated that the wastewater utility's customer base would grow from 4,275 MEs to 5,612 MEs, resulting in projected growth of 1,337 MEs. Similarly, the existing customer base of 105,220 fixture units would grow to 138,130 fixture units, resulting in a projected growth of 32,910 fixture units. It is important to note that forecasted growth in meter capacity equivalents and/or fixture units may not occur proportionately with City's projected growth. Absent specific projections, however, this was a necessary simplifying assumption.

B. REIMBURSEMENT FEE COST BASIS

In order to estimate the cost of unused capacity in the existing wastewater system – the numerator in the reimbursement fee calculation – the following approach was taken.

- Working closely with City staff, Murray, Smith and Associates (MSA), performed the cost estimates for the water, wastewater, and stormwater systems, and calculated the unused portion of the total capacity of each utility's existing fixed assets. The total cost of the wastewater utility fixed assets was $15,108,507 as of June 30, 2007. It was determined that there was no unused capacity in the assets that were included in the fixed assets listing, except the wastewater treatment plant.
- The total cost of the wastewater treatment plant was $11,065,516. Per City staff, there was available capacity in the treatment plant to serve projected 20-year growth. The share of projected growth in the total capacity base at the end of 20-year study period was

estimated to be 23.8%. Hence, the recoverable cost of unused capacity in the plant was $2,636,386.

- The utility's FY 2008/2009 and FY 2009/2010 budgeted year-end estimated capital expenditures were also treated as construction-work-in-progress (CWIP) and added to the utility's fixed assets. Total cost of these construction projects was $559,399. The portion financed from the utility's operating fund ($466,299) was assumed to be benefiting only existing customers and assigned as used capacity. The remaining $93,100 was financed from the utility's system development charge fund; and it was assumed to be growth related and designated as unused capacity.
- Hence, the total cost of the wastewater utility fixed assets was $15,667,906 at the end of FY 2009/2010. The total value of unused capacity was $2,729,486, or 17.4% of the total fixed assets.
- The utility's outstanding debt principal balance was $10,386,741. Prorating with the unused capacity's share in the utility's total asset base (i.e. 17.4%), it is estimated that $1,809,461 of this amount is related to the unused capacity. Since the utility did not fully pay for the unused capacity available yet, and growth would pay for the related portion of the outstanding debt through rates, this amount was deducted from the total value of the unused capacity.
- Hence, the total reimbursement fee cost basis is $920,025 (i.e. the total value of unused capacity net of a proportionate share of outstanding debt principal balance; $2,729,486 less $1,809,461).

C. Reimbursement Fee Calculation

The reimbursement fees under the two alternative charge bases were then calculated as follows. The net cost basis of $920,025 was divided by total forecasted growth in the capacity bases (1,337 meter equivalents, or 32,910 fixture units). The calculated fee per meter equivalent is $688, and per fixture unit is $28.

D. Improvement Fee Cost Basis

The improvement fee cost basis is calculated as follows:

- Working closely with City staff, Murray, Smith and Associates (MSA) provided the 20-year capital improvement project list and allocation of project costs between existing needs and growth (i.e. SDC eligible).
- Capital improvement projects budgeted for FY 2010/2011 were also added to the list provided. That portion of costs that would be financed from the utility's operating fund was allocated to existing customers only. The remaining portion that would be financed from the SDC fund was allocated to growth.
- The estimated total cost of capital improvement projects, including the ones budgeted for FY 2010/2011, is $6,323,087.
- The total of project costs identified as capacity increasing for future users, and hence SDC eligible, was $917,059.

- At the end of FY 2009/2010, the wastewater SDC fund balance was $343,340. This amount is credited against the SDC eligible project costs to both (1) recognize that the fund balance was available for spending on the project list and (2) prevent new users from paying for those projects twice.
- The resulting net total of $573,719 is the improvement fee cost basis.

E. Improvement Fee Calculation

The improvement fees under the two alternative charge bases were then calculated as follows. The net cost basis of $573,719 was divided by total forecasted growth in the capacity bases (1,337 meter equivalents, or 32,910 fixture units). The calculated fee per meter equivalent is $429, and per fixture unit is $17.

F. Recommended System Development Charge

The wastewater SDC is the sum of the reimbursement fee and the improvement fee, adjusted by an administrative cost recovery factor of 1.61%. The administrative cost recovery factor was derived by dividing annual SDC program accounting and administrative costs, including the amortized cost of this study, by forecasted annual SDC revenues.

Using the number of meter equivalents as the charge basis, the wastewater SDC is calculated to be $1,135 per meter equivalent; the sum of the $688 reimbursement fee, the $429 improvement fee, and a 1.61% or $18 administrative cost recovery factor.

Using the number of fixture units as the charge basis, the wastewater SDC is calculated to be $46 per fixture unit; the sum of the $28 reimbursement fee, the $17 improvement fee, and a 1.61% or $1 administrative cost recovery factor. Assuming a typical single family residential customer with a ¾" meter has 23 water fixture units, a new single family residential customer would pay a $1,058 system development charge under a per fixture unit structure.

Schedules of the wastewater SDCs by meter size under both approaches are provided below in **Exhibit 2**.

Exhibit 2 – Schedules of Wastewater SDCs by Meter Size

Meter Size	Meter Equivalency-Based SDC		Fixture Units-Based SDC	
	Flow Factors [1]	SDCs	Estimated Average Fixture Units [2]	SDCs
3/4" x 5/8"	1	$ 1,135	23	$ 1,058
1"	2.5	2,838	39	1,794
1-1/2"	5	5,675	151	6,946
2"	8	9,080	370	17,020
3"	16	18,160	500	23,000
4"	25	28,375	750	34,500
6"	50	56,750	1000	46,000
8"	80	90,800	1250	57,500

[1] American Waterworks Association (AWWA).

[2] Uniform Plumbing Code; Table 6-5 Fixture Unit Table for Determining Water Pipe & Meter Sizes.