SECTION III
WATER SDC

The City's existing water SDC is $30.39 per water fixture unit. Assuming a typical single family residential customer with ¾" meter has 30 water fixture units; this customer would pay a $911.70 system development charge under the existing SDC structure.

A. CAPACITY BASIS

We calculated water 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 3,635 water accounts and 4,678 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 142,771 water 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 water utility's customer base would grow from 4,678 MEs to 6,140 MEs, resulting in projected growth of 1,463 MEs. Similarly, the existing customer base of 142,771 fixture units would grow to 187,426 fixture units, resulting in a projected growth of 44,655 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 water 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 water utility fixed assets was $6,929,391 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.
- In contrast, the City has been investing in Row River Water Treatment Plant and Upgrade. These investments were not reflected in the fixed asset listing, therefore added as construction-work-in-progress (CWIP). The total cost of the investment was $10,502,276, and with this investment total plant capacity reached to 6.0 million gallons a day (MGD). Per City staff, the City's existing summer peak usage was 3.0 MGD, hence the Row River Water Treatment Plant had 50%, or $5,251,138 unused capacity.

- 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 $2,205,977. The portion financed from the utility's operating fund ($2,110,035) was assumed to be benefiting only existing customers and assigned as used capacity. The remaining $95,942 was financed from the utility's system development charge fund. It was assumed to be growth related and designated as unused capacity.
- Hence, the total cost of the water utility fixed assets was $19,637,644 at the end of FY 2009/2010. The total value of unused capacity was $5,347,080, or 27.2% of the total fixed assets.
- The utility's outstanding debt principal balance was $11,241,850. Prorating with the unused capacity's share in the utility's total asset base (i.e. 27.2%), it is estimated that $3,061,012 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 $2,286,068 (i.e. the total value of unused capacity net of a proportionate share of outstanding debt principal balance; $5,347,080 less $3,061,012).

C. Reimbursement Fee Calculation

The reimbursement fees under the two alternative charge bases were then calculated as follows. The net cost basis of $2,286,068 was divided by total forecasted growth in the capacity bases (1,463 meter equivalents, or 44,655 fixture units). The calculated fee per meter equivalent is $1,563, and per fixture unit is $51.

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 $18,486,746.
- The total of project costs identified as capacity increasing for future users, and hence SDC eligible, was $7,786,309.
- At the end of FY 2009/2010, the water SDC fund balance was $80,118. This amount was credited against the SDC eligible project costs to both (1) recognize that the fund balance

is available for spending on the project list and (2) prevent new users from paying for those projects twice.

- The resulting net total of $7,706,191 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 $7,706,191 was divided by total forecasted growth in the capacity bases (1,463 meter equivalents, or 44,655 fixture units). The calculated fee per meter equivalent is $5,267, and per fixture unit is $173.

F. Recommended System Development Charge

The water 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 water SDC is calculated to be $6,940 per meter equivalent; the sum of the $1,563 reimbursement fee, the $5,267 improvement fee, and a 1.61% or $110 administrative cost recovery factor.

Using the number of fixture units as the charge basis, the water SDC is calculated to be $228 per fixture unit; the sum of the $51 reimbursement fee, the $173 improvement fee, and a 1.61% or $4 administrative cost recovery factor. Assuming a typical single family residential customer with a ¾" meter has 30 water fixture units, a new single family residential customer would pay a $6,840 system development charge under a per fixture unit structure.

Schedules of the water SDCs by meter size under both approaches are provided below in **Exhibit 1**.

Exhibit 1 – Schedules of Water 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	$ 6,940	30	$ 6,840
1"	2.5	17,350	39	8,892
1-1/2"	5	34,700	151	34,428
2"	8	55,520	370	84,360
3"	16	111,040	500	114,000
4"	25	173,500	750	171,000
6"	50	347,000	1000	228,000
8"	80	555,200	1250	285,000

[1] American Waterworks Association (AWWA).

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