Indianapolis Department of Waterworks

Review of Selected Water Rate Design Issues

December 2004

CMT
Crawford, Murphy & Tilly, Inc.
Consulting Engineers
8520 Allison Pointe Blvd.
Suite 102
Indianapolis, Indiana 46250-4227

Table of Contents

Indianapolis WATER

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Introduction

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Introduction

At the risk of oversimplification, conventional rate making procedures for regulated water utilities generally include the following sequence of tasks:

- Identification of pricing objectives
- Evaluation of revenue requirements
- Allocation of utility costs
- Rate structure design

Rate design is a particularly significant step in the process since it focuses on recovering the revenue requirements for a given utility. It has been argued that rate design often receives too little attention and, when improperly implemented, can have significant adverse effects on a utility (Blackhurst 1992).

Traditional rate setting theory identified the following desirable attributes of rate design (Bonbright 1961):

- Total revenue requirements are met
- Practical and as simple as possible while accomplishing desired goals
- Freedom from controversy of interpretation
- Revenue stability between seasons
- Revenue stability from year to year
- Fairness
- Absence of undue discrimination
- Encouragement of wise use of water

In contrast to these features that are primarily utility-centered, the scope of modern rate design in some locales has gradually expanded to include consideration for community goals and objectives. This likely relates to the fact that public drinking water systems are a rising-cost industry because of more stringent regulatory requirements, the need to replace aging infrastructure, and requirements to meet increased customer demands (Beecher 1994). In fact, at least on a national basis, water rate increases have recently tended to outpace inflation and growth of household income (Raftelis Financial Consulting 2002). As a result, improved opportunities have arisen to influence customer behavior or promote community objectives because water bills are consuming a larger percentage of personal income or represent a greater portion of operating expenses for institutional, commercial or industrial customers. Examples of community objectives that can linked to water rate structures include water conservation, economic development, and lifeline rates[(1)].

[(1)] Lifelines rates are defined as "[r]ates applicable to usage up to a specified level that are below the cost of service for the purpose of meeting the social goal of providing so-called minimum annual water requirements to qualified customers at a below-cost price" (American Water Works Association [AWWA] 2000).

Based on the above, at least a part of current rate design approaches has evolved to be nearly as much of an art as a science. That said, ratemaking protocols for regulated utilities are highly prescriptive. For example, rates and charges made by a municipal utility that is regulated by the Indiana Utility Regulatory Commission (IURC) "…must be nondiscriminatory, reasonable and just. …" (IC 8-1.5-3-(b)). This requirement is significant and particularly relevant to those rate structures that may require subsidization between customer classes to achieve community objectives. Although legal analyses of Commission requirements is beyond the scope of this narrative, the industry generally recognizes that discriminatory rates among various classes of customers is permitted if such discrimination avoids drawing "…an unfair line or strike an unfair balance between those in like circumstances having equal rights and privileges (AWWA 1986).

It is important to emphasize that rates are never a perfect match with the cost to provide water service to specific customers. There is always some degree of price discrimination and subsidization between customer classes (Mann 1993). It is noteworthy that the rate schedule for Indianapolis Water does not overtly identify customer classes. Instead, usage blocks are established to generally segregate customer classes based on usage. Theoretically, residential customers with low water use fall within the first block, those with higher rates of usage fall within the second block, and institutional, commercial and industrial customers sequentially fall into subsequent blocks.

Given the above discussion, it is clear that rate design is a key component of the rate setting process. Accordingly, the Indianapolis Department of Waterworks engaged Crawford, Murphy & Tilly to prepare this white paper concerning several selected rate design topics that were of particular significance to Indianapolis Water, which included system development charges (SDC), fire protection charges, and lifeline rates.

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System Development Charges

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There are a variety of commonly used terms that relate to various capital contributions that may be made to a utility, to wit:

- Connection Charge
- System Development Charge (SDC)
- Impact Fee
- System Capacity Charge
- System Buy-in Charge
- Facilities Charge
- Recapture Charges
- Contribution in Aid of Construction
- Treatment Plant Service Charge
- Extension Charges
- Infrastructure Availability Charge

It is perhaps important to point out that the terms "System Development Charge" and "Connection Fees" are frequently used interchangeably, although there are distinctions between the terms (AWWA 2000):

> *System Development Charges: A contribution of capital toward existing or planned future back-up plant facilities necessary to meet the service needs of new customers to which such fees apply. Two methods used to determine the amount of these charges are the buy-in method and incremental-cost pricing method. Various terms are used to describe these charges in the industry, but these charges are intended to provide funds to be used to finance all or part of capital improvements necessary to serve new customers.*

> *System Development Charge Facilities: Those facilities, or a portion of those facilities, that have been identified as being required for new customer growth. The cost of the facilities will be recovered in total or in part through system development charges.*

> *Connection Charge: A charge made by the utility to recover the cost of connecting the customer's service line to the utility's facilities. This charge often is considered as contribution of capital by the customer or other agency applying for service.*

For purposes of this discussion, the meaning of SDC here is equivalent to the codified definition of "impact fee" (IC 36-7-4-1305) and "contribution fee" as defined by the IURC.

General Background

The rationale for a SDC is to require new customers to finance system improvements that directly benefit them and are largely a result of demand growth caused by the new customers (Mann 1993). SDCs offer a number of benefits, including avoidance of subsidization of new growth by existing customers and maintenance of a common rate schedule for existing and new customers.

SDCs have existed since the 1920s (Kolo and Dicker 1993). The notion of collecting increased exactions from developers was coupled with the original creation of planning and zoning enabling acts by the United States Department of Commerce. At the time, public officials recognized an increased need to hold developers responsible for providing adequate on-site improvements to protect the public health, safety and general welfare of communities (Nelson 1995).

From the perspective of a growing water system, policy decisions must be made as to whether costs associated with growth are shared between current and new customers or simply charged to those customers that create the need for increased expenditures and investment. The significance of this issue has been highlighted by "leap frog" developments and migration of resident populations from cities to peripheral suburban areas. Based on 1990 and 2000 census counts, Marion County was one of two counties in Indiana that experienced net out-migration accompanied by very high rates of net in-migration in neighboring counties (Besl 2002). The net result of such patterns of growth is to increase costs associated with providing water service to areas that are located far from core infrastructure facilities.

As might be expected, shifting the fiscal burden for new development from one entity to another has given rise to extensive litigation. As a result, developing SDC policy requires significant legal review and evaluation. Based on a general review of non-legal literature pertaining to impact fees and development charges, such fees or charges must meet three constitutional tests, including procedural due-process, equal protection and taking of property without just compensation tests (Nelson 1995, Libby and Carrion 2004). Furthermore, judgment of the acceptability of SDC policies by courts nationwide has relied on any one of three nexus tests, including the reasonable relationship test (most relaxed standard), the rational nexus test (intermediate standard), and the specifically and uniquely attributable test (most restrictive standard). (Nelson 1995, Townsend 1996, Libby and Carrion 2004).

Methodologies

SDCs are typically calculated using the "buy-in" or "equity" approach, the "incremental cost" method, or occasionally a combination of the two basic methodologies (AWWA 1986, Beecher et al 1990, Raftelis 1993). The former methodology adopts the philosophy that new customers should receive water service in accordance with rates charged to existing customers. The approach also recognizes that existing customers have provided funds for capital and that new customers should be required to pay an amount equal to that already paid by the existing customers. This model computes system equity using either historic or reproduction costs, less depreciation and liabilities. That figure is divided by a measure of system capacity, such as the number of 5/8-inch meter equivalents or supply or drainage fixture units that can be served by the system. Using equivalent meter ratios, the resulting figure provides a measure of the average net equity investment per equivalent 5/8-inch meter (Exhibit 1).

Exhibit 1. Example of SDC calculation using "buy-in" or "equity" method.

	Original Cost ($000)	Accumulated Depreciation ($000)	Net Cost ($000)
Source of Supply	$5,000	$1,000	$4,000
Treatment and Pumping	$8,000	$1,200	$6,800
Distribution System	$12,800	$1,800	$11,000
Services, Meters and Hydrants	$4,800	$800	$4,000
General Structures	$1,400	$200	$1,200
	$32,000	$5,000	$27,000
Less net cost of :			
Distribution System			$11,000
Services, Meters and Hydrants			$4,000
Net Investment in Backup Plant			$12,000
Less:			
Outstanding Bonds			$8,000
Total Equity Investment			$4,000
Number of Customers			$20,000
Average Net Equity Investment Per Equivalent 5/8-inch Meter			$200
Required SDC			$200

(Source: AWWA 1986)

The incremental cost approach aims to have new customers pay for the marginal cost of additional capacity required above and beyond the embedded investment for serving existing customers. Accordingly, this method is most appropriate when new facilities are required to provide the necessary capacity to meet new customer demands (AWWA 2000).

This method involves determining the level of investment needed for new growth areas, the capacity of the planned improvements, and calculating a cost per unit capacity, typically an equivalent residential unit (Exhibit 2).

Exhibit 2. Example of SDC Calculation Using "Incremental" Pricing Method.

Annual revenue under existing rates for typical 5/8-inch customer		$205
Less: Annual operation and maintenance expenses to be met from rates	$115	
Annual replacements and improvement costs to be met from rates	$30	$145
		$60
Net revenue available to service new debt		
Debt that can be serviced (assume 20-year debt amortization at 10% annual interest rate) $60/0.1175=		$510
Estimated total investment in backup facilities required to serve a new 5/8-inch customer		$1,300
Net SDC		$790

(Source: AWWA 1986)

Development of an SDC schedule excludes operating and maintenance costs as well as renewal or replacement investments. As a result, it has been suggested that SDCs be developed after master plans have been completed to properly segregate planned investments (Goff and Hathhorn, 2004).

Indiana Regulation

With respect to utility regulation in Indiana, the IURC's Interim Order in Cause Nos. 42131 and 42093 (concerning Boone County Utilities) articulates the Commission's current opinions regarding administration of contribution fees (Webb 2004).

First, it is noteworthy that the Commission defined "contribution fees" as follows:

"Contribution fees are one-time charges assessed new customers to finance development of utility systems necessary to serve those new customers. Development includes all improvements on a site, facility, or structure that has been identified as being required for new customer growth. The purpose of the contribution fees is to impose a portion of the cost of capital improvements upon those developments that create the need for, or increase demand for, capital improvements. Contribution fees are also variously referred to as availability fees, system fees, development charges, impact fees, connection fees, capacity fees, or contribution in aid of construction fees."

Relevant highlights of the Interim Order were as follows:

- A regulated utility that desires to collect contribution fees must petition the Commission through a formal proceeding for approval of such fees as part of that utility's tariff schedule.

- Proposed contribution fees should be based on approaches similar to those in the May 15, 2001 Order of the Kentucky Public Service Commission (PSC) (Administrative Case No. 375)

- Proceeds collected via contribution fees should be placed in a separate, interest bearing dedicated account. Funds from such an account can only be used to pay for facilities and infrastructure improvements necessary to meet customer demands, including growth and development.

The Order of the Kentucky PSC that was referred to involved the development of "Guidelines for the Development and Administration of SDCs". Given the potential significance of this matter, the full text of the Guidelines is provided in Appendix A. The summary bullet points of the Guidelines are as follows:

- SDCs must meet the rational nexus test. (Note: The "rational nexus test" has been defined as requiring proportionality between the amount charged and the required facilities, and a reasonable connection between use of the collected fees and resulting benefits for the new development (Townsend 1996, Libby and Carrion 2004))

- A utility proposing a SDC using the incremental cost method should present a detailed capital improvement plan that clearly demonstrates its expected cost of capacity.

- An SDC should not exceed the new development's proportional share of the cost of facilities needed to serve that development, after crediting it for other contributions that it has already made or will make toward that cost.

- An SDC should be based upon a method that provides equity to existing and future customers.

- An SDC should not be arbitrary or discriminatory in its application to individuals or customer classes and should be based on meter equivalents or residential equivalents

- The utility seeking to impose an SDC should clearly state when the proposed charge will be assessed and explain why the chosen time for assessment is reasonable.

- The SDC should provide credits, reimbursements and refunds
- An SDC may be assessed on a geographical basis where the applicant has clearly demonstrated a compelling basis for such assessment.
- All SDCs should contain a detailed set of procedures for calculation, operation and administration
- An SDC should be placed in a separate account and receive proper accounting treatment.

Based on the above discussion, it appears that acceptable SDCs can be developed on behalf of Indianapolis Water if either the equity or incremental methods is utilized. It is emphasized that development of SDCs would require extensive legal input and review, given the diversity of current or prospective legal standards that are used to gauge the acceptability of SDCs.

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Fire Protection

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Fire protection is a costly, central investment of water utilities. With luck, these services have a relatively low utilization factor. On the other hand, fire demands are substantial and regularly require increased storage, transmission and distribution capacity, booster pump capacity, and, of course, fire hydrants.

General Background

From a ratemaking perspective, fire protection is generally described as being "public" or "private". Public fire protection service includes the facilities that are necessary to provide adequate levels of service via fire hydrants located along public streets. In contrast, private fire protection generally refers to a service line that connects to a water main for fire protection purposes at an individual building or complex. In turn, the service line may connect to an internal sprinkler system. For large premises, dedicated storage, internal distribution piping and fire hydrants may comprise the assets for private fire protection.

Except as noted below, Indianapolis Water provides both public and private fire protection. Based on a review of the rate schedule and prior cost of service studies for Indianapolis Water Company, charges for public fire protection are included in the monthly base charge. A separate tariff exists for private fire protection. In contrast, the rate schedule for Harbour Water includes a separate public fire protection water service charge that is based on meter size. A separate tariff also exists for private fire protection. No specified public or private fire protection tariffs exist for IW Morgan. This may reflect the fact that the system is not adequate to provide fire flow protection. Not unlike the Morgan water system, the Darlington water system does not support fire flows. The approved tariff for Darlington, however, does include a rate for municipal and private fire hydrants. The Liberty water system apparently supports fire flows and its rate schedule includes a tariff for hydrant rental. It is believed that no cost of service studies have been performed for the Morgan, Darlington and Liberty water systems since their acquisition by the former Indianapolis Water Company. Therefore, the basis of fire-related charges, to the extent that such charges exist, for those systems is unknown.

Methodologies

Rates for public fire protection are calculated beginning with annual operating and maintenance costs and capital costs associated with facilities that are sized larger than otherwise necessary to accommodate fire flows (AWWA 2000). Costs are separated for public fire protection and private fire protection on the basis of equivalent connections that exist for both functions. In the case of Indianapolis Water, prior costs of service studies allocated public fire protection costs across customer classes on the basis of revenue.

Traditionally, the most common means for establishing a charge for private fire protection services was based on the diameter of the fire service connection. The theory that underlies this method is that the amount of water that can be obtained from the utility's system is limited by the size of the connection. Since fire protection costs are demand related, the size of the service line is an appropriate surrogate for gauging the demand of an individual fire protection customer (Stack, 1992). This approach is reflected in the current rates and charges for private fire protection water service for the Indianapolis Water Company.

An alternate methodology involves basing the private fire service charge on the number of sprinkler heads, hydrants, or other internal appurtenances. This approach is burdensome to track. In addition, customers with many sprinkler heads may be unduly charged since only a portion of the heads may be open at any given time (AWWA 2000).

Indiana Regulation

In the mid 1990s, a change was made with respect to billing fire protection charges for customers served by the former Indianapolis Water Company. The prior approach involved the water company billing governmental units for public fire protection, who in turn placed the charges on property tax bills. IC 8-1-2-103(d) provides the basis that was used to abandon payment of public fire protection charges via property tax bills and incorporate the fees into monthly base charges which is reflected in the current rate schedule for Indianapolis Water Company.

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Affordability and Lifeline Rates

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Water and wastewater utilities are commonly believed to be among the most capital intensive of all utility sectors. That characteristic has been highlighted by estimates ranging from $300 billion to $1 trillion over the next 20 years to repair, replace or upgrade water and wastewater facilities (U.S. Government Accounting Office 2002). Based on these considerations, increased concerns regarding the affordability of drinking water are likely to appear in the future.

Water Rates Comparison

A biennial, national survey of selected water systems has been conducted since 1996 (Raftelis Financial Consulting 2002). Results comparing a snapshot of water rates for participating utilities indicated that the median monthly water bill increased by 8.8 percent, which compares to an increase in the Consumer Price Index of only 5 percent. The median monthly water bill for a customer with 1,000 cubic feet of usage and who was served by one of the participating utilities in the survey was $16.46 (2001 data).

The mere existence and growth of rate surveys such as noted above supports the notion that comparing water rates between water utilities is of interest to the industry, the public, or both. Meaningful conclusions concerning the comparable reasonableness of water rates are limited by factors such as the following:

- Source of supply location
- Raw water quality
- Average age of water system
- Service area terrain
- Growth
- Water treatment processes
- Presence or absence of subsidization
- Power costs

For example, two water systems may be equally efficient with regard to their respective operations and prudent with respect to capital investments, but charge substantially different rates. This could be driven by one system having relatively new growth and facilities that relies on uncontaminated groundwater as its source of supply and serves an area with little variation in elevation.

Notwithstanding the above, a comparison of annual residential water bills for customers served by Indianapolis Water and those of other selected communities in Indiana and the Midwest (the "comparison utilities") was prepared (Exhibit 3). Based on those data, the estimated annual residential bill for Indianapolis Water customers was the sixth lowest among the group. However, annual bills for customers served by Indianapolis Water's satellite systems were considerably higher and, with one exception, were highest among the comparison utilities.

With one exception, the comparison water utilities relied on declining block rate structures. The usual

Exhibit 3. Comparison of annual residential water bills for customers served by Indianapolis Water and other selected cities [(1)].

Utility	Monthly Meter Charge	Volume Volume Charge [(2)]	Separate Monthly Public Fire Protection Charge	Annual Bill	Rate Structure [(3)]
Indianapolis Water	$7.55	$1.30	--	$246.60	Declining block (5)
Harbour Water	$14.36 [(4)]	$3.34	$5.25	$463.78	Declining block (5)
IW Morgan Water	$5.75	$5.10	--	$681.00	Declining block (2)
Liberty Water	$2.88	$5.51	--	$695.16	Declining block (2)
Darlington Water	$22.97 [(5)]	$3.80	--	$366.90	Declining block (6)
Carmel Water	$5.31	$1.54	--	$248.52	Declining block (6)
Noblesville	$11.88	$2.29	$2.32	$445.20	Declining block (3)
West Lafayette	$11.64	$1.55	--	$325.68	Declining block (3)
South Bend [(6)]	$6.37	$1.32	$1.85	$274.62	Declining block (6)
Evansville	$2.25	$1.17	$1.23	$182.16	Declining block (5)
Detroit, MI	$2.68	$1.26	--	$183.36	Declining block (3)
Columbus, OH [(7)]	$15.54	$1.37	--	$350.88	Declining block (6)
Cincinnati, OH [(8)]	$5.79	$1.39	--	$236.28	Declining block (3)
Dayton, OH [(9)]	$5.09	$1.22	--	$207.48	Declining block (5)
Louisville, KY [(10)]	$4.75	$1.39	--	$222.96	Increasing and Decreasing Block (7)

(1) Assumes monthly usage of 7,500 gallons [1,000 cubic feet] and 5/8-inch meter service

(2) Average cost per one hundred cubic feet for assumed usage level, rounded to the nearest cent.

(3) Number in parenthesis indicates number of blocks, if any

(4) Meter charge includes allowance for 430 cubic feet of monthly usage

(5) Meter charge includes allowance for 6,000 gallons of monthly usage

(6) Data based on inside city rates. Annual water bill includes mandatory monthly $1.50 water leak insurance contribution. 20% surcharge on suburban water

(7) Data based on inside city rates. Outside city rates 1.3X or 1.5X higher, depending on existence or absence of contract. Meter charge based on monthly billed account.
Quarterly billed account = $3.56.

(8) Inside city rates. Variable multiplier applies to outside city rates based on location.

(9) Based on monthly billing. Meter charge for quarterly billing = $6.43.

(10) For monthly service within Jefferson County general pressure area. Rates vary according to location, monthly or bimontly billing, and occurrence within general or elevated pressure areas.

application for a declining block rate structure is when there is a single rate schedule for all classes of customers (AWWA 2000). In theory, usage blocks are defined to capture the typical usage characteristics for individual customer classes such as residential, commercial, institutional and industrial. The structure recognizes the theoretical decrease in per-unit costs of service because of improved load factors for customers that use large quantities of water. In contrast, the structure is criticized for reducing incentives to conserve with larger amounts of water use. There are other pros and cons regarding declining block rate structures that are somewhat ameliorated by the fact that no rate structure is perfect with respect to specific customers. Nationwide, at least one water rate survey documented a gradual decline in the number of declining block structures accompanied by a slight increase in the number of observed uniform rate structures (Raftelis Financial Consulting 2002).

Affordability of Drinking Water

The "affordability" of drinking water is an issue that escaped extraordinary federal recognition until passage of the 1996 Amendments to the Safe Drinking Water Act (the "Act") (United States Congressional Budget Office 2002). This contrasts with recognition of affordability with respect to energy bills and creation of the federal Low-Income Home Energy Assistance Program (LIHEAP) in the early 1980s (United States Environmental Protection Agency [USEPA] 1998).

The Act requires the USEPA to evaluate the effects of new drinking water regulations on the affordability of water service on a system wide basis. The USEPA based its affordability determinations on a criterion that a technology would not be affordable for a small system if the average expense per household exceeded 2.0% of the service area's Median Household Income (MHI). This was later increased to 2.5% of MHI (United States Congressional Budget Office 2002). MHI data are available at the township level for areas served by Indianapolis Water. A comparison of the as-defined annual water bill to township MHI data was prepared (Exhibit 4). Obviously, a precise match does not exist between township boundaries and the service area limits for Indianapolis Water, which makes the comparison imperfect. Nevertheless, the attached data are instructive as a surrogate for judging affordability of local drinking water service using the 2.5% USEPA benchmark. It is noteworthy that USEPA has also used a benchmark of 2.0% of MHI (United States Congressional Budget Office 2002).

Areas served by Indianapolis Water have a wide range of MHI. For example, based on 2000 census data and a ranking of township MHI figures, the Indianapolis Water service area includes the township with the highest MHI (Clay Township in Hamilton County) as well as one of the lowest in Indiana (Center Township in Marion County [Rank = 999 out of 1008 townships]) (United States Bureau of the Census 2000).

Based on the attached data, there is no instance of the defined annual water bill exceeding 2.5% of the MHI for townships served by Indianapolis Water. *This is not surprising since the 2.5% threshold has never been exceeded for any drinking water regulation promulgated by the USEPA* (USEPA Science Advisory Board 2002). That fact has led to significant criticism of USEPA's affordability criterion with suggestions made that it be lowered to 1.0% of the MHI In addition, the notion of a federally subsidized Low Income Water Assistance Program (LIWAP) has been proposed that would be akin to the LIHEAP program (National Small Systems Affordability Criteria Working Group 2003).

Exhibit 4. Summary of adjusted Median Household Income (MHI) data for townships served by Indianapolis Water and 2.5% EPA benchmark for affordability

County and Township	1999 MHI (1)	Estimated 2004 MHI (2)	2.5% of MHI (3)	Annual Water Bill (4)
Marion County				
Center	$26,435	$30,292	$757	$246.60
Decatur	$45,690	$52,356	$1,309	$246.60
Franklin	$58,482	$67,015	$1,675	$246.60
Lawrence	$49,246	$56,431	$1,411	$246.60
Perry	$42,378	$48,561	$1,214	$246.60
Pike	$47,250	$54,144	$1,354	$246.60
Warren	$39,672	$45,460	$1,137	$246.60
Washington	$47,079	$53,948	$1,349	$246.60
Wayne	$37,554	$43,033	$1,076	$246.60
Boone County				
Eagle	$72,926	$83,566	$2,089	$246.60
Hamilton County				
Clay	$84,428	$96,746	$2,419	$246.60
Delaware	$71,342	$81,751	$2,044	$246.60
Fall Creek	$84,099	$96,369	$2,409	$246.60
Noblesville	$62,234	$71,314	$1,783	$463.78
Hancock County				
Buck Creek	$73,969	$84,761	$2,119	$246.60
Sugar Creek	$62,775	$71,934	$1,798	$246.60
Vernon	$50,444	$57,804	$1,445	$246.60
Hendricks County				
Brown	$69,484	$79,622	$1,991	$246.60
Lincoln	$54,814	$62,811	$1,570	$246.60
Washington	$60,308	$69,107	$1,728	$246.60
Union	$45,550	$52,196	$1,305	$246.60
Middle	$55,402	$63,485	$1,587	$246.60
Liberty	$51,423	$58,926	$1,473	$246.60

Exhibit 4. Summary of adjusted Median Household Income (MHI) data for townships served by Indianapolis Water and 2.5% EPA benchmark for affordability

County and Township	1999 MHI [1]	Estimated 2004 MHI [2]	2.5% of MHI [3]	Annual Water Bill [4]
Morgan County				
Harrison	$52,340	$59,976	$1,499	$681.00
Madison	$55,994	$64,164	$1,604	$681.00
Green	$56,574	$64,828	$1,621	$681.00
Jackson	$44,393	$50,870	$1,272	$681.00
Montgomery County				
Franklin	$45,436	$52,065	$1,302	$366.90

(1) Source: U.S. Bureau of the Census, Census 2000. Issued May 2001.

(2) 1999 MHI adjusted by 1.1459%, based on CPI indices for 1999 and October 2004 of 166.6 and 190.9, respectively

(3) U.S. Environmental Protection Agency criterion for water bill affordability

(4) Assumes monthly usage of 7,500 gallons [1,000 cubic feet] and 5/8-inch meter service.

In practice, those relatively few water utilities that offer special programs to subsidize payment of water bills on behalf of low-income water customers commonly rely on the Federal Poverty Level (FPL) as a more relevant measure of affordability and eligibility to participate in such programs. Examples include the following (Saunders et al 1998, San Francisco Public Utilities Commission 2004, Seattle Public Utilities 2004):

Water System	Percentage of the FPL Used for Program Eligibility
Seattle	200%
Los Angeles	175%
Philadelphia	150%
Philadelphia Suburban	150%
San Antonio	125%
San Francisco	175%

FPL multipliers are routinely used because the FPL itself is widely discredited as being outmoded (USEPA 2002). The current FPL is $18,850 for a family of four (69 FR 30: 7336-7338). Based on a factor of 150% of the FPL, the resulting calculation would yield $28,275, which is less than the estimated 2004 MHI for Center Township. Summary data for poverty status levels in Center Township in 1999 are as follows (United States Bureau of the Census 2000):

Subject	Poverty Status in 1999
Families	7,445
With related children under 18 years	6,181
With related children under 5 years	3,033
Families with female householder, no husband present	4,911
With related children under 18 years	4,406
With related children under 5 years	2,130
Individuals	38,856
18 years and over	24,450
65 years and over	2,836
Related children under 18 years	14,090
Related children 5 to 17 years	9,869
Unrelated individuals 15 years and over	12,693

(Note: "Poverty Status" is not equivalent to the FPL. Poverty Status is a complex determination of 48 thresholds including factors such as income, family size, presence and number of family members under 18 years old, etc.)

Aside from public health and welfare concerns associated with service terminations, the problems associated with lack of affordable water service manifest themselves via increased arrearages and late payments, increased expenses for collection and disconnection tasks, reduced revenue stability and working capital, and decline in public relations (Burns et al 1995). Fortunately, Indianapolis Water is shielded from the costs associated with collection and disconnection activities since those expenses fall within the fixed fee obligations of Veolia Water Indianapolis, LLC. However, the utility is affected by revenue deterioration and must be mindful of its public image. Moreover, paying customers are adversely affected when uncollectible accounts are written off and they effectively subsidize that shortcoming. Based on recent trends, Indianapolis Water has not experienced an increase in the frequency of service terminations or growth in uncollectible account write-offs (Erney 2004).

Lifeline Rates

Lifeline rates make available a defined, minimum level of water service at a reduced cost. In effect, an initial block of usage can be considered essential and subsequent blocks represent discretionary usage, at least with respect to residential customers (Beecher 1994). The underlying philosophy of lifeline rates is that a certain usage level is essential for basic needs and should be provided at an affordable rate even if the rate is below the cost of service (Phillips 1993). Historically, lifeline rate structures have been relatively uncommon, probably due to the relative affordability of water and because lifeline rates typically violate traditional cost of service principles (Beecher et al 1990). Accordingly, other customers must subsidize lifeline rates. It is noteworthy that no lifeline rate structures exist for regulated water utilities in Indiana (Webb 2004).

The most significant issue for designing a lifeline rate concerns eligibility. When lifeline rates were first established, the rates were applied to all customers on the belief that low-income customers use less water than others, which is not true (Woodcock 1991). For example, low-income, unemployed, or elderly tend to be at home more during the day and live in buildings with greater leakage and older, high-volume fixtures and appliances. A study of water use in nearly 2,000 apartments managed by the New York Housing Authority and occupied by low-income residents found water use to average 128 gallons per capita per day (gpcd). This figure compared to a "normal" range of 45 to 70 gpcd (Vickers 2002). The City of Salem, Oregon similarly found that a strong correlation between low-income customers and low-volume use is not assured (City of Salem 2002).

Notwithstanding the above, at least one Midwestern water utility has offered a lifeline rate structure for more than 30 years (Burns 2004). Water rates are currently billed in accordance with the following schedule:

Usage (Units = 100 cubic feet)	Unit Rate per Hundred Cubic Feet
First 5	$1.05
Next 995	$1.47
All usage over 1,000	$1.27

The basis for defining the initial block is unknown and the utility has not performed a cost of service study for its water rates. The initial block was increased from 4 to 5 in the 1980s at the time of a water rate increase to help mitigate the rate hike for low-volume customers.

Making customer-specific lifeline rates available can create an administrative burden since such parties are typically not segregated in utility customer information databases. Local agencies involved with low-income support programs can facilitate the process. In addition, the minimum water use for sanitary requirements will vary between customers, exacerbating administrative requirements. A more general approach was adopted by the City of Olympia, Washington. There, 50% discounts are applied to standard rates for water, as well as solid waste, sewer and stormwater. Eligibility guidelines require low-income and disabled status or low-income and over the age of 62. "Low-income" is defined as 50% below the median family income for Thurston County. It is incumbent on customers to apply for the discount (City of Olympia 2004).

Other issues required for the design of lifeline rates include determination of usage level, which can readily be derived from industry literature (Mayer et al 1999). A third issue involves pricing. One approach for pricing would be to include a quantity allowance in the base customer charge. This methodology offers improved revenue stability for the utility, but may disadvantage those low-volume customers whose actual usage is less than the allowance. An alternate means is to apply the rate to the volumetric charge. A principle advantage of this approach is that it provides a signal to encourage water conservation.

Lifeline rates may not directly benefit those low-income customers who rent housing where the water bill is included in the rent amount. Low-income customers are more likely to rent than own property. For example, the percentages of renter-occupied units in Marion County Center Township and Hamilton County Clay Township in 1999 were 51.5% and 15.6%, respectively. Statewide, a 1998 study determined that 72% of Indiana households served by a public water supply paid directly for their water use (Rubin 1998).

As noted above, lifeline rates have traditionally not conformed to cost of service principles. However, such rates could possibly comply with that standard via the positive revenue implications of keeping customers on the system, and reduction on bad debt. Subject to empirical data, lifeline pricing could achieve both affordability and water conservation goals via rate structures that charge higher unit fees for discretionary water use that creates extraordinary costs of peak demand (Beecher 1994).

An alternative to lifeline rates is offering low income discounts for all or some portion of the water bill (Woodcock 1991). Low-income discount programs appear to be more common than application of lifeline rate structures.

Other Low-Income Support Programs

A cursory search of miscellaneous water utility programs to assist low-income customers was performed, which identified the following examples:

- **Birmingham Water Works**: The Plumber's Helper program provides free plumbing repairs to low-income Birmingham Water Works customers (Birmingham Water Works Board 2004).

- **San Antonio Water System**: The Plumbers to People program began in 1996. Applicants can receive up to $800 assistance *per visit* to repair leaking fixtures. Eligibility guidelines require applicants to be a customer of the water system, meet certain income guidelines, and own their home. Applicants qualify through the San Antonio Community Action Division (San Antonio Water System 2004).

  Project Agua is an initiative aimed at raising $1,000,000 to help customers who are elderly, disabled, unemployed, or who have young children. Proceeds from interest on the principle will be used to offset water bills. The City's Department of Community Initiatives and Community Action Division implement the program.

Affordability Discount Program offers a 50% discount on monthly meter charges for eligible low-income customers. Four levels of discounts are offered.

- **City of Portland, Oregon:** A quarterly discount of $13.80 against water bills is available to eligible customers. Other programs include crisis vouchers ($150 assistance in a 12-month period), and financial assistance to repair leaks (Hasson 2002).

- **City of Philadelphia Water Department**: The City's Water Revenue Assistance Program provides grants up to $200 to pay water bills (Philadelphia Water Department, 2004)

- **Dallas Water Utilities**: Operation WaterShare is a joint program between DWU and the Salvation Army. The program solicits voluntary contributions to fund bill payments for eligible customers (Dallas Water Utilities 2004).

  The Volunteers in Plumbing initiative provides plumbing repair services to correct leaks. Eligible customers are those who are low-income homeowners and at least 62 years old.

- **D.C. Water and Sewer Authority**: The S.P.L.A.S.H. program, Serving People by Lending a Supporting Hand, is similar to Dallas Water Utilities' Operation WaterShare. The program is administered by the Salvation Army (DC Water and Sewer Authority 2004).

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Appendix A

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APPENDIX A
AN APPENDIX TO AN ORDER OF THE KENTUCKY PUBLIC SERVICE COMMISSION IN ADMINISTRATIVE CASE NO. 375
DATED MAY 15, 2001

GUIDELINES ON THE DEVELOPMENT AND ADMINISTRATION OF SYSTEM DEVELOPMENT CHARGES

- **SYSTEM DEVELOPMENT CHARGES MUST MEET THE RATIONAL NEXUS TEST.**

The implementation of an SDC by a utility is not a substitute for a general rate increase for all customers. An SDC can only be used to offset an increase in costs to fund system expansion to accommodate new growth and demand. While an SDC may not be suitable for every utility, it is another financial option that should be available for a utility's use to remain financially viable while charging rates that are fair, just, and reasonable.

In considering whether to assess an SDC, it must be determined if the utility would incur this expense if no growth occurs. If the answer is no, then the expense can probably be included in an SDC. If the answer is yes, then the entire customer base of the utility should be responsible for paying the expense. An SDC should only recover those portions of the cost of system improvements that are reasonably related to the new demand. It should not be collected in areas where infrastructure is in place to provide service and no improvements are required. Applicants seeking the imposition of an SDC must clearly show that the charge is directed to increase costs due to growth.

- **A UTILITY PROPOSING A SYSTEM DEVELOPMENT CHARGE USING THE INCREMENTAL COST METHOD SHOULD PRESENT A DETAILED CAPITAL IMPROVEMENT PLAN THAT CLEARLY DEMONSTRATES ITS EXPECTED COST OF ADDING CAPACITY.**

An SDC must be based only on a water utility's expected cost of adding capacity. This cost is determined through a capital improvement plan. The plan should cover a minimum of five years for slow to moderate growth areas, and an extended period for those areas with rapid growth. It should project the amount of and characteristic of future growth along with the needs that growth will place on the system. The plan should include the amount of growth for different types of customers, such as residential, commercial, and industrial. It should establish the level of service that will be provided, then determine the cost of the upgrades and new facilities needed to provide that level of service. Finally, the plan should also determine when and where the upgrades and new facilities would be needed within the utility's system.

The capital improvement plan should also include a deficiency analysis of the current utility system. An SDC should not be assessed to correct existing deficiencies. Items to be considered include the level of service of the existing facilities and improvements needed to provide adequate service to existing customers. If improvements are needed, the portion of improvements that will serve existing customers must be determined along with a calculation of how much of the remainder of costs can be funded through an SDC.

- **A SYSTEM DEVELOPMENT CHARGE SHOULD NOT EXCEED THE NEW DEVELOPMENT'S PROPORTIONAL SHARE OF THE COST OF FACILITIES NEEDED TO SERVE THAT DEVELOPMENT, AFTER CREDITING IT FOR OTHER CONTRIBUTIONS THAT IT HAS ALREADY MADE OR WILL MAKE TOWARD THAT COST.**

An SDC cannot require new customers to bear more than their equitable share of the capital costs of system facilities in just proportion to the benefits conferred by those facilities. To determine the proportionate share of costs to be borne through the SDC, the following factors should be used:

- The cost of existing facilities. A water utility must adequately demonstrate the value of its current system, including the value of present excess capacity.

- The means by which existing facilities have been financed. New development should not pay for facilities that were not funded by existing customers. For example, new growth should not be required to pay for facilities financed through federal or state or county grants. Any applicant for an SDC must demonstrate how its existing facilities were financed.

- The extent to which new development has already contributed to the cost of providing existing excess capacity.

- The extent to which existing development will, in the future, contribute to the cost of providing existing facilities used in the future.

- The extent to which new development should receive credit for providing at its cost facilities the system has provided in the past without charge to other development in the service area. For example, where customers are required to dedicate land for water line rights-of-way, construct an elevated tank, pump, add treatment capacity, or extension beyond their development site, they should be credited for the value of these actions.

- Extraordinary costs in serving new development. For example, because of terrain, service to some developments may be more expensive and require higher fee assessments.

- The present value of contributions already made or to be made by new development must be credited against SDCs.

- **A SYSTEM DEVELOPMENT CHARGE SHOULD BE BASED UPON A METHOD THAT PROVIDES EQUITY TO EXISTING AND FUTURE CUSTOMERS.**

The American Water Works Association (AWWA) recognizes two SDC methodologies as providing equitable treatment to existing and future customers:

Incremental (or Marginal) Cost Approach. The incremental cost method is based on the concept of new development paying for the incremental cost of system capacity needed to serve new demand. Sometimes called the marginal cost approach, this method proposes to mitigate the impact of new growth on customer user rates. The goal is to charge a fee for new customers sufficient to allow customer user rates to be revenue neutral with respect to growth of the system. However, in systems undergoing rapid and expensive growth, this may be difficult to achieve.

This method is used most commonly where SDCs are used to finance capital expansion as well as to recoup investments creating excess capacity for new demand. It is based on the full replacement of the system with no adjustment for depreciation, or the cost of expanding the system to serve new demand, which is consistent with the theory of this method. This method is most appropriate for situations in which capacity and territory expansions are common and where debt is the primary means of financing expansion and rehabilitation. Adjustments for non-local contributions to the system are made only if such revenues are expected to help finance new facilities or future rehabilitation. This method is most appropriate when a significant portion of the capacity required to serve new customers must be provided by the construction of new facilities.

The following table illustrates the determination of a system development charge using the incremental cost method.

Plant	5-Year Capital Improvement Plan ($1,000)	Maximum-Day Design Capacity (Mgd)	Unit Cost ($/mgd)
Source of Supply	7,500	25	300,000
Treatment and Pumping	8,000	15	533,000
Transmission System	3,000	10	300,000
Distribution Mains	2,000	N/A	N/A
Services, Meters, and Hydrants	1,800	N/A	N/A
General Structures	500	50	10,000
Subtotal	22,800		1,143,000
Less Net Cost of Distribution Mains	(2,000)	N/A	N/A
Services, Meters, and Hydrants	(1,800)	N/A	N/A
Net Investment in Plant	19,000		1,143,000
Maximum-day demand for average equivalent 5/8 inch connection = 1,100 gpd. Average investment per equivalent 5/8 inch connection ($1,143,000 x 1,100 /1,000,000) = $1,257. **SDC = $1,257.**			

Source: AWWA Manual M26, Chapter 3.

The Equity Buy-in (or Vintage Capital) Method. The equity buy-in method is based on the principle of achieving capital equity between new and existing customers. Sometimes referred to as the vintage capital method, this approach attempts to assess new customers a fee to approximate the equity or debt-free investment position of current customers. The financial goal is to achieve a level of equity from new customers by collecting an SDC representative of the average equity attributable to existing customers.

Under this method, the new user becomes an investor in the system and the investment fee is the proportionate share of equity in the system. The equity value of the system is essentially the current replacement cost less any amounts not locally paid, such as federal grants, and less accrued depreciation. Since it is an obligation of all users, accrued depreciation must be paid from rates or debt. In this approach, however, depreciation recovery in the form of rehabilitation is usually financed from capital reserve accounts financed by rates. Use of the equity method is most appropriate when the system has been substantially built out, no major capacity or territorial expansions are envisioned, and depreciation is financed substantially from rates. The approach should also consider the financing costs incurred by existing rate payers to provide excess capacity available for new development.

The following chart illustrates the determination of a system development charge using the equity method.

Plant	**Original Cost ($1,000)**	**Accumulated Depreciation ($1,000)**	**Net Cost ($1,000)**
Source of Supply	4,000	(1,000)	3,000
Treatment and Pumping	7,200	(1,200)	6,000
Transmission and Distribution	9,300	(1,300)	8,000
Distribution Mains	4,300	(500)	3,800
Services, Meters, and Hydrants	5,600	(800)	4,800
General Structures	1,600	(200)	1,400
Subtotal	32,000	(5,000)	27,000
Less Net Cost of Distribution Mains			(3,800)
Services, Meters, and Hydrants			(4,800)
Net Investment in Plant			18,400
Less Outstanding Bonds Allocable to SDC Facilities			(4,000)
Total Equity Investment			14,400
Number of equivalent 5/8 inch meter the system is capable of serving = 20,000. Average net equity investment per equivalent 5/8 inch meter ($14,400,000/20,000) = $720. SDC = **$720**			

Source: AWWA Manual M26, Chapter 3.

Use of other methodologies. Water utilities should be permitted to use other methodologies to develop their SDCs. However, where such methodologies are used, or where combinations of the two methodologies set forth above are used, the utility must clearly demonstrate the need for using the different methodology and that the methodology's use will achieve a more reasonable result.

- **A SYSTEM DEVELOPMENT CHARGE SHOULD NOT BE ARBITRARY OR DISCRIMINATORY IN ITS APPLICATION TO INDIVIDUALS OR CUSTOMER CLASSES AND SHOULD BE BASED ON METER EQUIVALENTS OR RESIDENTIAL EQUIVALENTS.**

To ensure that larger users pay a fair share of the extra capacity needed to serve them, all SDCs should be based upon a meter or residential equivalent. All new users should be assessed the SDC including those previously served by wells. No one should be excluded from paying the charge. A utility may make different payment arrangements (e.g., lump sum payment, an annual payment, or a monthly surcharge) available, but must demonstrate that these options operate in a nondiscriminatory manner.

- **THE UTILITY SEEKING TO IMPOSE A SYSTEM DEVELOPMENT CHARGE SHOULD CLEARLY STATE WHEN THE PROPOSED CHARGE WILL BE ASSESSED AND EXPLAIN WHY THE CHOSEN TIME FOR ASSESSMENT IS REASONABLE.**

The most popular method of collection appears to be at the time the building permit is issued for the new development. This point in time is closer to the time of service, and a better estimate of the new development's impact can be made. The disadvantages of this approach are that the exact impact is not known, the utility must invest in facilities on a speculative basis, and the funds may not be available to the utility in time to construct the necessary facilities.

Some utilities assess and collect SDCs at the time of platting a new development. This approach allows the utility to collect the charges earlier in the project. The disadvantage of this approach is that, often, it is difficult to determine the number of service units the development will demand. Because of the number of estimates that must be made if the SDC is paid early in the development process, the computation is less accurate and more difficult to defend. In addition, the utility is required to make a significant investment in facilities on a somewhat speculative basis.

Other utilities assess and collect SDCs at the time service is requested. Usually, this is when the certificate of occupancy is issued or when an application is made for a meter or for service. Utilities receive funds later with this approach, but the service units are easier to determine and explain to the customer. Most builders and developers favor payment at the time of service because delayed payment lessens their carrying costs during the project. This approach may, in fact, result in homeowners directly paying the SDC.

The timing of collection involves two conflicting issues. First, an SDC must be collected early enough to make funds available for system improvements. Second, an accurate assessment of the SDC can be made only later in the development process when the actual meter size is known.

Timing differences exist between user rates and SDCs. Many major projects related to system expansion require substantial funds for design and construction before sufficient funds are available from SDC receipts. Therefore, usually some funding from user rates is needed to pay for the facilities, generally in the form of paying for debt service on bonds to finance facilities. This may result in double cost recovery if user rate funding of debt service on SDC-related facilities is not taken into account in establishing the level of an SDC. For example, debt service payments included in the user rate analysis are partially offset by the projected receipts from the SDC.

Utilities may request to recover advances or borrowings that are recoverable through an SDC but were incurred prior to the collection of the SDC.

Utilities should explain in their applications how they have considered these problems in determining the appropriate time for assessment and what protections have been placed within the proposed rate and within their planning processes to prevent these problems.

- **THE SYSTEM DEVELOPMENT CHARGE SHOULD PROVIDE FOR CREDITS, REIMBURSEMENTS AND REFUNDS.**

Utilities frequently require developers to construct facilities that provide service beyond the requirements of the new development. When this occurs, developers should be reimbursed for the facilities constructed in excess of their own requirements. New development must be assured that it will not be paying twice for the very facilities financed first by the SDC, and later again by higher rates caused by debt financing. Developers should be credited for contributions that have been made toward the new facilities such as the construction of lines or additional capacity. This may be in the form of a reduction in the SDC for the new development. Because the purpose of the SDC is to pay for system expansion, the utility must also consider contributions to system expansion in the form of physical improvements and additions. Payments of SDCs, together with other system contributions for the same facilities, could result in a double contribution to the system. Many utilities remedy this potential double contribution by implementing credit or development agreements.

Credits are reductions or offsets for all or part of SDCs. The credits may be allowed for any contributed infrastructure or may be limited to specific types of contributions. Credits should not exceed the total amount of SDCs due. Some examples include credits for:

- System improvements specified in the utility's capital improvements program.

- Like improvements (i.e., water improvements are considered for credits only against water SDCs).
- The portion or percentage of system improvements that the SDC funds.
- System improvements that are jointly used.
- Over-collection through over-estimation of costs.
- Previous contributions of facilities or funds.
- The portions of the costs of existing facilities funded by federal or state grants.

The utility should refund SDCs when (1) service is not provided in a reasonable period of time after the charges have been paid and/or (2) when collected charges are not spent on system expansion within a reasonable time period. A development agreement is another method for contribution of utility infrastructure. The developer contractually agrees to make contributions in place of all or a part of the SDCs. It should be noted that policy objectives regarding credits would affect the range of SDC values.

Reimbursement contracts are often used by utilities for infrastructure contributions. These contracts typically provide for reimbursement of some contributed facility costs from SDCs collected from future customers who will use the contributed facility. Limitations on the amount of and the time period for reimbursement are included in the contract.

If a developer elects to construct a facility needed to provide it service, the SDC may be waived if the amount paid for the construction is not less than the SDC. If the amount is greater, then a credit can be given for more than one dwelling.

- **A SYSTEM DEVELOPMENT CHARGE MAY BE ASSESSED ON A GEOGRAPHICAL BASIS WHERE THE APPLICANT HAS CLEARLY DEMONSTRATED A COMPELLING BASIS FOR SUCH ASSESSMENT.**

Generally, an SDC should be applied systemwide, not on a geographical basis. Because (1) many siting and design decisions are discretionary, (2) systems are often designed with redundant facilities for system reliability, and (3) some facilities have no geographic-specific service area, most utilities operate as a complete, integrated system. Any member who receives service from the system may be considered to be receiving sufficient benefit from the payment of an SDC. Because of the topography of some areas or other factors affecting the provision of service, the construction of new facilities may benefit customers within a limited geographical area. In such instances, the use of an SDC to fund the cost of these facilities may be appropriate. The assessment of a geographically specific SDC, however, should not be based on discretionary engineering decisions that make service to an area more costly but only upon significant differences in the cost of providing service. A utility seeking such charge must clearly demonstrate these differences and their severity.

- **ALL SYSTEM DEVELOPMENT CHARGES SHOULD CONTAIN A DETAILED SET OF PROCEDURES FOR CALCULATION, OPERATION AND ADMINISTRATION.**

Any assessment of an SDC must be accompanied by the development of internal procedures for recurring questions and problems. Without such procedures to ensure consistent treatment for all applicants, the utility cannot ensure that the SDC assessments are being applied in a reasonable and nondiscriminatory manner. These procedures should be developed at the time an application for approval of an SDC is submitted to the Commission. Should the Commission approve the assessment of the SDC, these procedures should become part of the utility's filed rate schedules.

- **A SYSTEM DEVELOPMENT CHARGE SHOULD BE PLACED IN A SEPARATE ACCOUNT AND RECEIVE PROPER ACCOUNTING TREATMENT.**

Collections from an SDC must receive separate accounting treatment. All SDCs collected should be placed in an interest-bearing account. Interest income earned on SDC accounts must remain in said accounts. This will help to offset inflationary cost increases for system expansion projects. Records should be maintained in a manner that will show that money received is used solely for the projects for which the fee was collected. Funds from the account are to be used exclusively to fund growth-related capital projects such as, but not limited to, water treatment plants, storage facilities, pumps, distribution mains, transmission, storage and treatment. Reimbursement or repayment of advancements or withdrawals from other funding accounts to pay for such growth-related capital projects is an appropriate use of SDC funds.

- **MUNICIPAL UTILITIES.**

A municipal water utility may assess a public water utility an SDC upon Commission approval. When determining if a municipal utility's proposed SDC is reasonable, the Commission will examine, inter alia, the municipal utility's existing contract with the public utility, the past relationship between the parties, and future demand that the public utility is projected to place upon the municipal utility. In those instances where the evidence shows that the parties have agreed that a municipal utility has committed or reserved a portion of its capacity for a public utility customer and that customer has not exceeded that capacity level, an SDC should not be authorized absent compelling circumstances. Any approved SDC may only be assessed to the wholesale customer and may not be directly assessed by the municipal water utility to the public utility's customers. The SDC must be cost-based.

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