

Tap Fees and System Development Charges for Residential Water and Wastewater Connections in North Carolina as of January 2009

Report by:

Shadi Eskaf, Environmental Finance Center at the UNC School of Government
Chris Nida, North Carolina League of Municipalities

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To view a table of residential tap fees and system development charges in North Carolina, go to www.efc.unc.edu/projects/tap_impactfee.htm

In 2009, the Environmental Finance Center and the North Carolina League of Municipalities conducted a survey of water and wastewater rates and fees charged by North Carolina utilities owned by local governments and not-for-profit associations. As part of this effort, we collected information about the initial, one-time fees utilities charge their residential customers for new water/wastewater connections. For more information, please go to <http://www.efc.unc.edu/projects/NCWaterRates.htm>

Generally, utilities use three major types of upfront fees and charges in North Carolina: tap fees, system development charges and special assessments. Tap fees are designed to recover all or a portion of the cost (materials and labor) of connecting a customer to the nearest water or sewer line, while system development charges, also known as impact fees, are associated with developing system capacity. Utilities have great flexibility in setting tap fees and system development charges. As a result, the basis utilities use for determining fees varies widely across the state. On the other hand, special assessments are distinctly defined in the NC General Statutes and may only be assessed by utilities (municipalities, counties and authorities) under specific circumstances defined by the authorizing statute (§162A-216, §153A-185 and §162A-6, respectively). This study focused on residential tap fees and system development charges, and *does not address special assessments*.

This report covers residential water and wastewater tap fees and system development charges for approximately 300 NC utilities. *Non-residential tap fees and system development charges are not included in this report*. All fees are current as of January 2009.

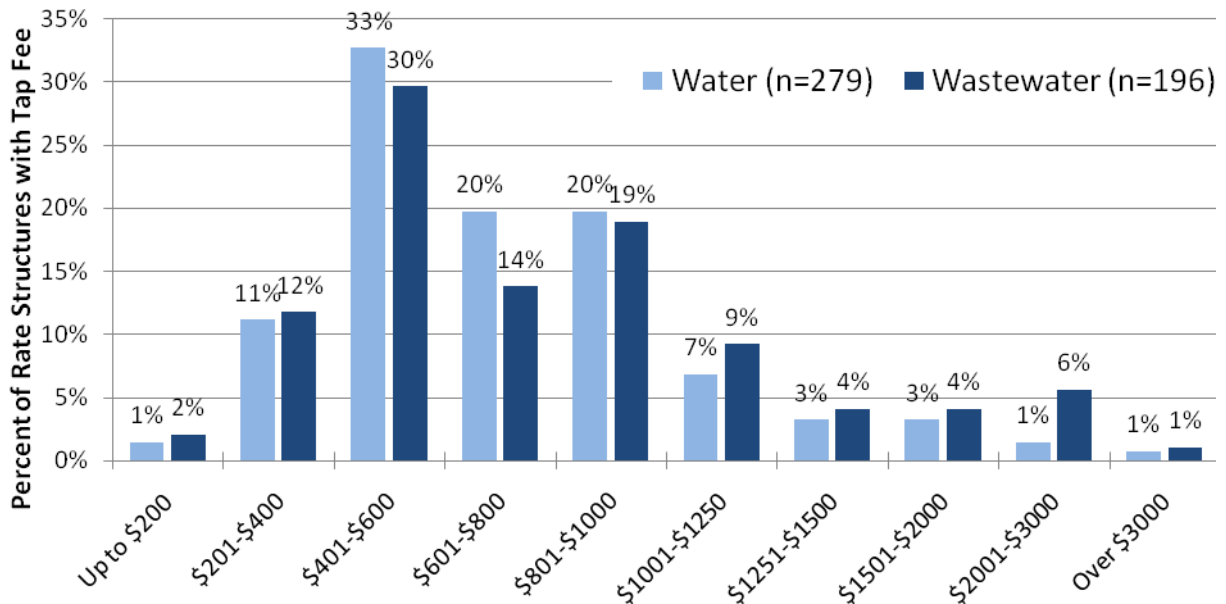
Residential Tap Fees

The tap fee is intended to recover costs associated with connecting the residence to the nearest water or sewer line. In the case of water connections, costs may include the tap, pipe material and installation, water meter, meter box and other associated costs. Tap fees are very common among utilities in North Carolina: 98 percent of all 287 water rate structures in the sample and 90 percent of all 223 wastewater rate structures in the sample charge a tap fee.

While a few utilities charge the customers the actual cost to make the tap connection, the vast majority of the tap fees (99 percent water and 96 percent wastewater) are fixed for residential customers. However, around 12 percent of the utilities will charge the actual cost for extreme situations when the actual cost of connection exceeds the fixed tap fee.

The range of water and wastewater tap fees charged to single family residential customers for a 5/8" or 3/4" water meter (or 4" sewer line) are shown in Figure 1. Most rate structures (73 percent for water and 63 percent for wastewater) charge between \$400 and \$1,000 for their tap fees.

Figure 1 Tap Fees Typically Charged to Residential Customers in January 2009



Most utilities (69 percent of water and 61 percent of wastewater rate structures) charge the same tap fee regardless of whether the connection is made to a residential property inside or outside of town limits or political boundaries. The difference between inside and outside tap fees is shown in Figure 2 and Table 1.

Figure 2 Ratio of Tap Fee for Residential Customers Outside Town Limits to Residential Customers Inside Town Limits

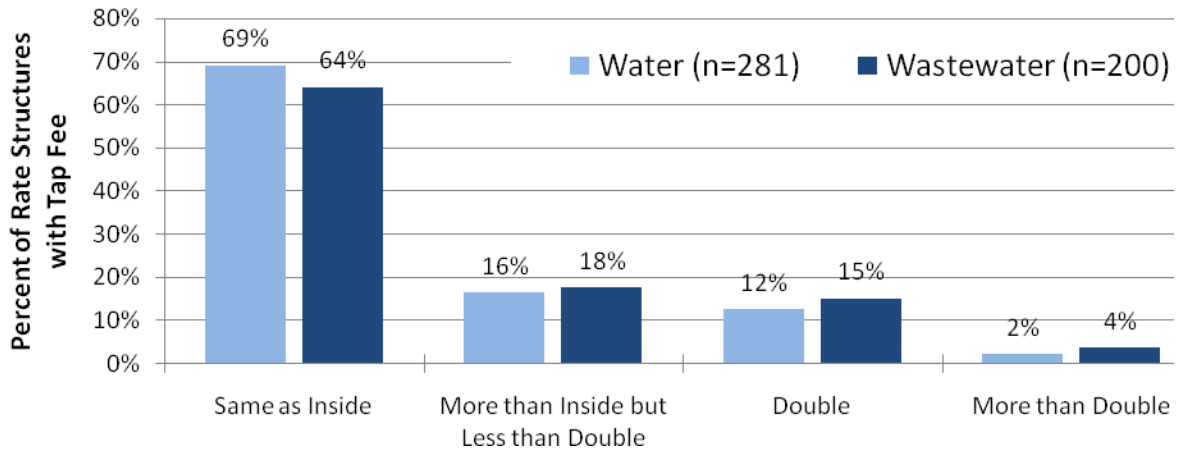


Table 1 Median Residential Tap Fees

	Water (n = 279 rate structures)	Wastewater (n = 196 rate structures)
Inside	\$ 700	\$ 718
Outside	\$1,100	\$1,100

Residential System Development Charges

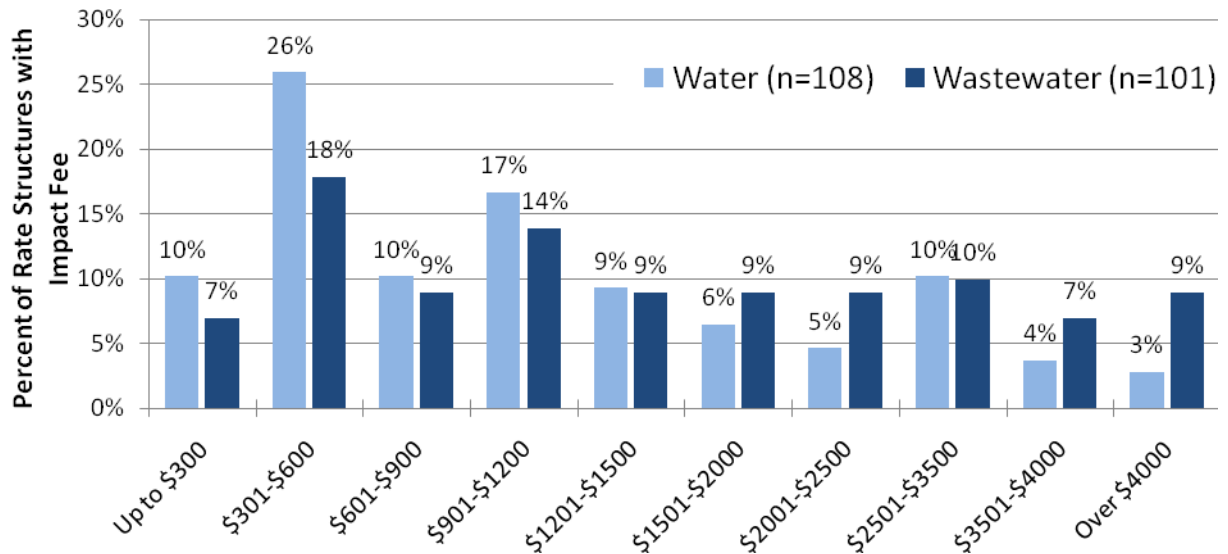
The system development charge is intended to recover costs associated with developing system capacity. Water system capacity features include source water supply and collection, treatment facilities, storage, pumps and distribution. Wastewater system capacity features include collection systems and mains as well as treatment and discharge facilities. The two classic approaches for calculating system development charges are: 1) the equity method (also referred to as system buy-in) where new customers are assessed a fee proportional to the equity position of existing customers, and 2) the incremental cost method in which new customers are assessed the increment of cost to expand system capacity to serve them¹. Ideally, system development charges would have some reasonable connection to the size of the demand exerted on system capacity by the new development.

System development charges are not as common as tap fees among utilities in North Carolina: 39 percent of all 287 water rate structures in the sample and 48 percent of all 223 wastewater rate structures in the sample have a system development charge. These charges go by many names including: Impact Fee, System/Capacity Development Charges, Capacity Use Fee, Capacity Depletion Fee, Capital Facilities Fee, Capital

¹ Manual of Water Supply Practices: M1 *Principles of Water Rates, Fees and Charges*, 5th Edition. American Water Works Association. Denver, CO. 2000.

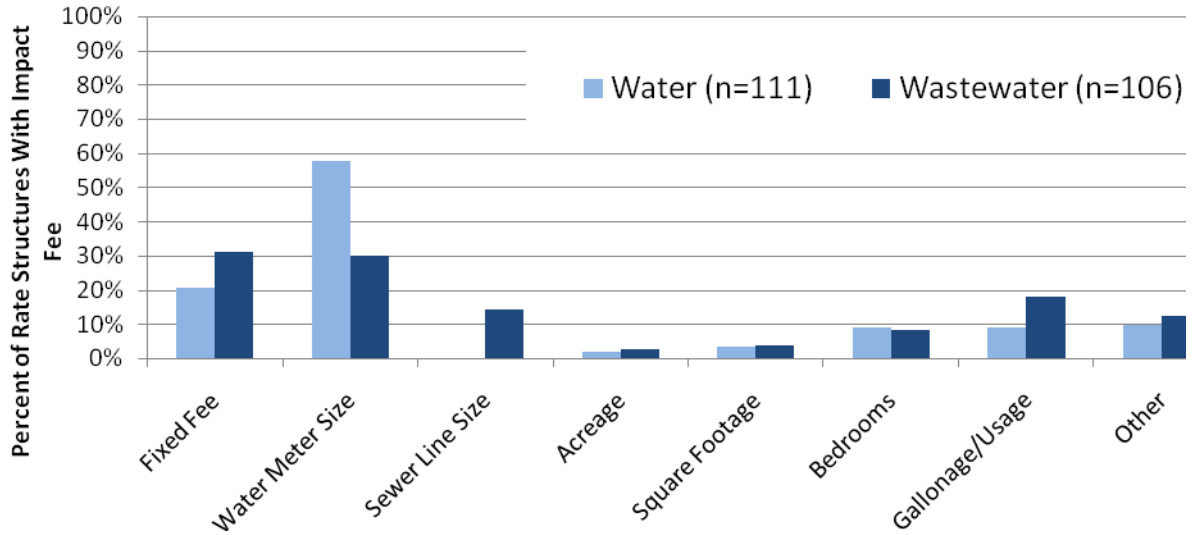
Investment Fee, Capital Recovery Fee, Capital Reserve Fee, Connection Fees, Development and Technology Fee, Tap Fee, Acreage Fee, Privilege Fee, Initial Hook-up Fee, and the list goes on. Some of these names may be informative to the customers about the use and purpose of the fee, while others are not. The range of water and wastewater system development charges typically charged to residential customers are shown in Figure 3. Compared to the tap fees shown in Figure 1, system development charges are typically greater than tap fees.

Figure 3 System Development Charges (Impact Fees) in January 2009 Typically Charged to Residential Customers with a 5/8” or 3/4” Water Meter or 4” Sewer Line, in a 3-Bedroom, 1,700 Square Foot Home on a Half Acre Lot that Uses 360 Gallons/Day



The basis used in determining the system development charge for residential customers is shown in Figure 4. Seventy-seven percent of water and 74 percent of wastewater rate structures with system development charges charge a fixed fee for all customers with the same meter size. The remaining rate structures used a variety of techniques to charge higher prices to residential customers that are expected to use more water or produce more wastewater, thereby paying their fair share towards the system capacity cost. These techniques include charging based on the size of the house (number of bedrooms, square footage), or size of the land (acreage), or by estimating the usage amount of the residence. Some utilities use a combination of fixed charges and these customer-dependent variable charges. For example, the Town of Cary and OWASA base their system development charges on both meter size and the square footage for new residential connections, while the utilities use meter size for non-residential connections. The justification for a square footage basis for the OWASA case comes from a study showing disproportionately greater consumption by residential customers with larger homes. Likewise, customers with large lot sizes may disproportionately affect peak demands during the irrigation season, thereby justifying a greater system development charge based on acreage calculations.

Figure 4 Basis Used for Calculating Residential System Development Charges (Impact Fees)



There are several instances of unique methods for calculating system development charges. For example, the City of Jacksonville has charges based on the number of water-using fixtures in the house. For their residential water system development charge, the fees are \$80/fixture for the first three, \$25/fixture for the next four, \$10/fixture for the next eight and \$5/fixture for all over the first fifteen fixtures. For wastewater, the fees are \$180/fixture for the first three fixtures, \$130/fixture for the next four, \$65/fixture for the next eight and \$30/fixture for all other fixtures. For all non-residential connections, the system development charge is based on meter size. The City of Rocky Mount also has a distinctive fee schedule. In lieu of a system development charge for customers inside the municipal boundaries, the city charges only in the case of water main extensions, at \$25/linear foot, and sewer main extensions at \$30/linear foot. For customers outside municipal boundaries, the city charges a water fee equal to the greater of \$750 per acre or \$350 in the case of a 3/4" tap, \$400 in the case of a 1" tap, and so on.

Most utilities (88 percent of water and 87 percent of wastewater rate structures) charge the same fee regardless of whether the connection is made to a residential property inside or outside of town limits or political boundaries. The median system development charge for residential customers living outside town limits is slightly higher as shown in Table 2. Further, in some cases the basis for setting system development charges may depend on the type of development: 28 percent of water and 34 percent of wastewater rate structures have separate system development charges for non-residential connections.

Table 2 Median Residential System Development Charges

	Water (n = 108 rate structures)	Wastewater (n = 101 rate structures)
Inside	\$1,000	\$1,283
Outside	\$1,075	\$1,310

Figure 5 shows the total amount of tap fees and system development charges charged in the event that new water and wastewater connections are made for residential service for selected service providers in 2009.

Figure 5 Residential Water and Wastewater Tap Fees and System Development Charges (Impact Fees) in 2009

