

System Development Fees in North Carolina

2019



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Change in the Legal Landscape Governing Water and Wastewater Capacity Fees in North Carolina

When new developments connect to centralized water and wastewater systems, those new customers often benefit from infrastructure that existing customers have already paid for through monthly water and wastewater bills. In other cases, the addition of new customers creates the need to build additional capacity in the system. Elements of built capacity may include water resources, treatment facilities, storage, pumps, and collection and distribution infrastructure. To ensure that new connections pay for the infrastructure costs of the system capacity they will use, some utilities charge a one-time System Development Fee (SDF). These fees are in addition to other connection fees or tap fees, which compensate the utility for the cost of physically connecting the new customer or development to the centralized distribution or collection system.

Prior to 2018, utilities in North Carolina believed they had authority to charge one-time, capacity-related fees under their broad legal authority to charge rates and fees to cover costs. There were no specific legal requirements or guidelines on how the fees could be calculated or to whom they could be charged. The case of *Quality Built Homes Inc. v. Town of Carthage* in 2016 led to a North Carolina Supreme Court determination that the North Carolina general statutes at the time did not provide wide authority for municipalities to charge capacity-related fees under certain conditions. To clarify the local governments' authority and conditions by which SDFs could be charged, the North Carolina General Assembly consequently passed General Statute §162A Article 8 (Article 8). Article 8 authorizes local governments to charge SDFs for water and wastewater service under specific conditions and using an approved method to perform a supporting analysis which determines a maximum cost-justified fee. Article 8 went into effect for all such fees starting July 1, 2018 (Fiscal Year 2019).

Statewide Survey of System Development Fees in Fiscal Year 2019

In 2018-2019, the Environmental Finance Center (EFC) at the University of North Carolina's School of Government conducted a survey of water and wastewater SDFs charged by local government utilities in North Carolina. Researchers surveyed local government utilities in the state through a combination of web based research, emails, and phone correspondence and identified 81 utilities that charge a SDF following Article 8's guidance. The EFC was able to obtain up-to-date fee schedules as well as their supporting analyses for these utilities. There likely are other utilities in the state that have SDFs that were not included in the final survey.

The participating utilities serve 63 percent of the statewide water utility service population. Their July 2018-June 2019 (FY 2019) SDFs and their methods of analysis are described in this report. Where information was available showing capacity-related fees prior to 2018, a description of whether the fees increased or decreased is provided.

Definitions

In this report, FY 2019 fees calculated according to the requirements of Article 8 will be referred to as “system development fees” (SDFs) regardless of the utility’s actual title for the fee.

Fees designed to recover the cost of capacity prior to FY 2019 will be called “capacity fees.”

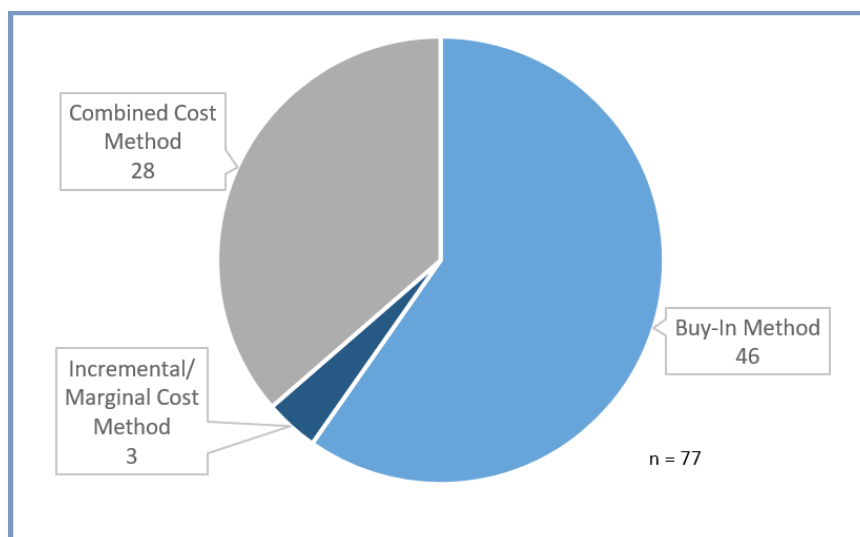
A plan outlining specific future capital improvement projects will be referred to as a “capital improvement plan” (CIP).

Calculation Methods of the Fiscal Year 2019 System Development Fees

Article 8 allows three methods of calculating the SDF: buy-in, incremental/marginal cost, and combined. The buy-in method calculates the fee based on the value of existing facilities, charging new developments a fee to compensate the utility for existing capacity costs. It is generally intended for use when a utility does not have plans to expand its capacity to serve future growth. The incremental/marginal cost method calculates the fee based on the infrastructure costs of new or expanded facilities to meet future growth that are planned in a CIP. It is intended to be used by utilities with little or no excess capacity and with planned infrastructure costs to expand their systems in the near future. Finally, the combined method calculates the fee using the cost of both existing facilities and any planned new construction or expansion of facilities identified in a CIP. This method is typically used when a utility has capacity available in some parts of the system, but the CIP still includes projects in other areas to accommodate future growth.

The majority of the participating utilities calculate their SDFs using the buy-in method. Nearly two-thirds of the participating water utilities follow the buy-in method, while only a small number of utilities use the incremental/marginal cost method, as shown in Figure 1. In addition, the proportions of methods used to calculate wastewater SDFs are almost identical to those used to calculate water SDFs.

Figure 1: Number of Water System Development Fees Based on Calculation Methods

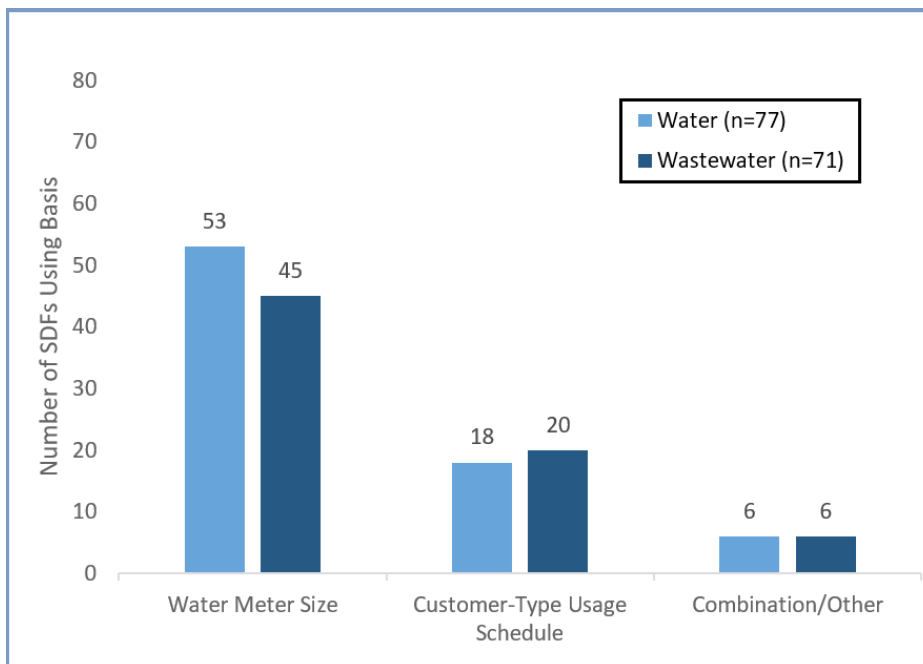


Some utilities use the buy-in method to calculate fees despite capacity needs suggesting an incremental cost or combined cost approach might also have been appropriate. A utility without excess capacity might use the buy-in method if it did not have specific projects planned in a CIP, since such a plan is necessary to calculate an SDF using the incremental/marginal cost method. The timeline of infrastructure plans may also play a role, as Article 8 requires a planning horizon between five and twenty years. This was an issue for one utility in the survey, which needs to add capacity but did not initially have a CIP that met the minimum planning horizon at the time of reporting.

Fee Basis

While the new law states specific methods by which the maximum allowable SDFs can be calculated, it provides discretion in how utilities allocate “convert” fees to specific categories of customers. The 81 responding utilities use a variety of bases to calculate and charge individual customers’ SDFs. These fee bases can be broadly categorized into three main types: water meter size, customer-type assumed demand schedule (which includes several varieties), and a combination of methods or another unique method. The majority of participating utilities use the water meter size basis for water and wastewater SDF calculations, as shown in Figure 2. Most other utilities use a customer-type usage schedule, with a few utilities using a combination/other basis.

Figure 2: Number of System Development Fees by Fee Basis



Under the water meter size basis, all customers with the same meter size are charged the same fee, thus customers with larger meters pay higher fees than customers with smaller meters. To develop a meter size-based SDF schedule, the supporting analysis would determine a fee for the smallest meter size and scale the fee up to larger meter sizes based on maximum water flow rate ratios between meter sizes.

This fee basis assumes that customers with smaller water meters will generally require less system capacity than customers with larger meters since maximum water flow is limited by meter size. While the water meter size basis is simple to understand and implement, and is commonly used by utilities, it can be an imprecise tool in charging customers according to their individual capacity needs. For example, an 800 square-foot small house with no yard and served by a 3/4-

inch meter may never need the maximum flow allowed through the meter, yet could pay the same fee as a much larger residential property with a large yard and a routinely higher demand but the same sized meter. Similarly, a restaurant with a 2-inch meter might only reach maximum water flows during peak mealtimes (with little or no flow during other hours), while a manufacturer with a 2-inch meter might consistently use that maximum flow throughout the day, requiring much greater capacity needs than the restaurant with a similar sized meter. If the utility charges SDFs based on water meter size only, both businesses would pay the same SDF even though they require different amounts of capacity.

Under the customer-type usage schedule, each individual customer's SDF is assessed based on customer type and some characteristic—other than meter size—that estimates their individual water or wastewater use. Most utilities following the customer-type usage schedule fee basis follow the design standards for water or sewage flow rates as defined by North Carolina Administrative Code Title 15A ([15A NCAC 18C .0409](#) for water and [15A NCAC 02T.0114](#) for wastewater). This code defines flow rates in gallons per day based on development type-specific metrics, such as number of bedrooms in a house, number of seats in a restaurant, number of employees in a business, number of beds in a hospital, etc. Under this fee basis, developments requiring more system capacity are assessed higher SDFs than similar developments that use less water, despite the fact that they may use the same water meter size. While many utilities using this basis refer to the Administrative Code for classifications, some choose to make their own modifications, including one utility that created its own unique classifications outlined in a fee schedule. Other utilities use a standard Equivalent Residential Unit (ERU) they have created, such as 360 gallons per day. With this method, different property categories are assigned different ratios to the ERU, which is multiplied by the cost of one ERU. These approaches more closely match the SDFs to parameters that are used to design the water and wastewater systems and their capacity.

Finally, some utilities use a combination of fee bases. For example, a utility might implement a combination of SDFs charged on a basis of square footage for residential customers and on a basis of water meter size for non-residential customers. A few utilities designed their own unique metrics and fee bases that differ from meter size or customer-type usage schedules, and are classified in this report as implementing an “other” fee basis. For example, one utility uses average usage to calculate a fixed fee that is charged to all customers, no matter the property type.

Fiscal Year 2019 System Development Fees for Residential Customers

To compare fees across utilities that use different fee conversion approaches, this report defines a representative residential customer as a 1,700 square foot single-family house with a 5/8-inch or 3/4-inch meter, three bedrooms, and use of 360 gallons per day. There is a wide range of SDFs for residential customers across the state, as shown in Figure 3. Depending on the utility, residential SDFs for water and for wastewater range from less than \$500 to more than \$3,000.

Half of the participating utilities charge less than \$1,218 for water residential SDFs, and half charge

less than \$2,008 for wastewater residential SDFs. Typically, wastewater SDFs are higher than water SDFs. Of utilities offering both water and wastewater services, 82 percent charge higher SDFs for wastewater than water, and half have a residential wastewater SDF that is at least 75 percent higher than the residential water SDF. Wastewater infrastructure costs are usually higher than water infrastructure costs, accounting for the higher cost-based SDFs.

Figure 3: Water SDFs for a Typical Residential Customer in FY 2019

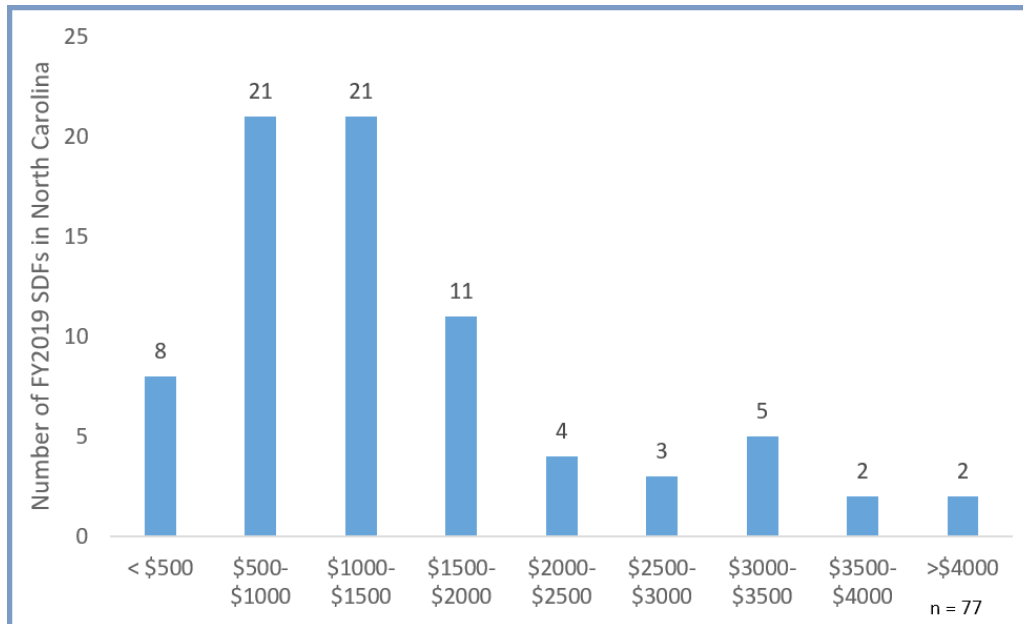
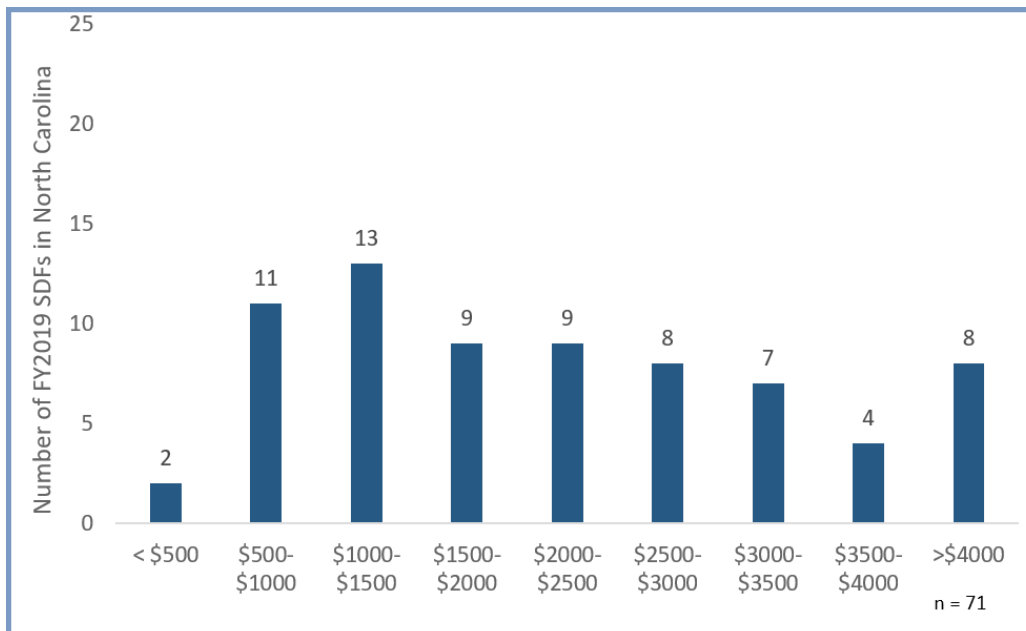


Figure 4: Wastewater SDFs for a Typical Residential Customer in FY 2019



Fiscal Year 2019 System Development Fees for Non-Residential Customers

To compare non-residential fees, this report defines one representative non-residential customer as a restaurant with a 2-inch water meter. Of the participating utilities in the survey, 21 non-residential fees depend on use or another metric not included in our customer case, so these fees could not be calculated for comparison. Four utilities have a different fee basis for non-residential customers than residential customers. These utilities are categorized as “combination” fees in Figure 2.

The representative non-residential customer’s fees for water and for wastewater range from less than \$2,500 to more than \$20,000 depending on the utility. Half of calculated water SDFs were below \$7,240, and half of wastewater SDFs were less than \$11,465. SDFs based on meter size are typically calculated by determining a fee for the smallest available meter size and multiplying by AWWA equivalent meter ratios to determine fees for larger meter sizes. This means that ratios between fees by meter size should be the same for all utilities.

Figure 5: Water SDFs for Representative Non-Residential Customers with 2"-Inch Meters

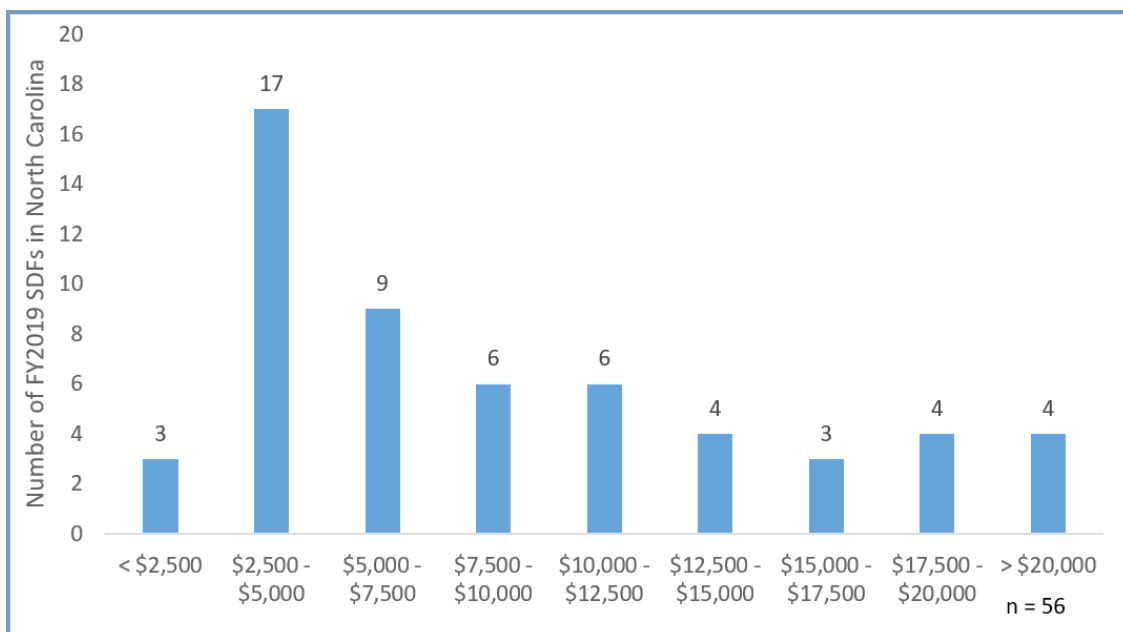
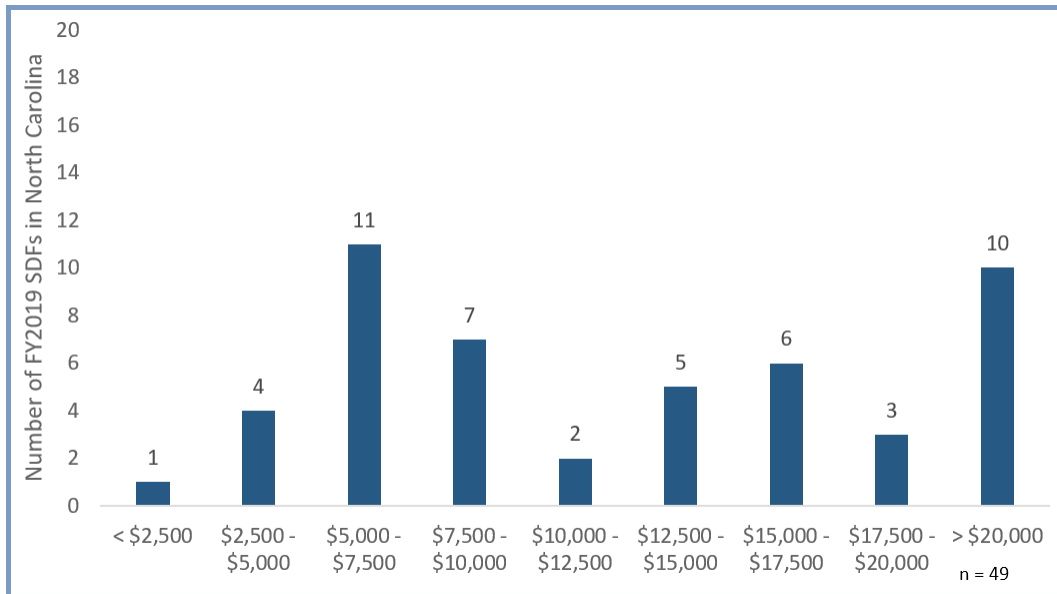


Figure 6: Wastewater SDFs for Representative Non-Residential Customers with 2-Inch Meters



Charging the Maximum Cost-Justified Amount

Under the new law, supporting analyses conducted by utilities must calculate and present a maximum cost-justified SDF for each utility. However, utilities are not required to charge that maximum value.

Of the 81 utilities in the survey, 57 percent appear to charge the maximum cost-justified SDF determined in their supporting analyses. The remaining utilities chose to charge SDFs lower than the maximum cost-justified fee for at least one service for a variety of reasons. Several utilities found that their maximum cost-justified fee could be much higher than the capacity fee they were charging prior to July 2018. Some utilities chose not to raise their existing fee at all, while others raised their SDF but not to the maximum cost-justified fee in order to avoid a significant fee increase.

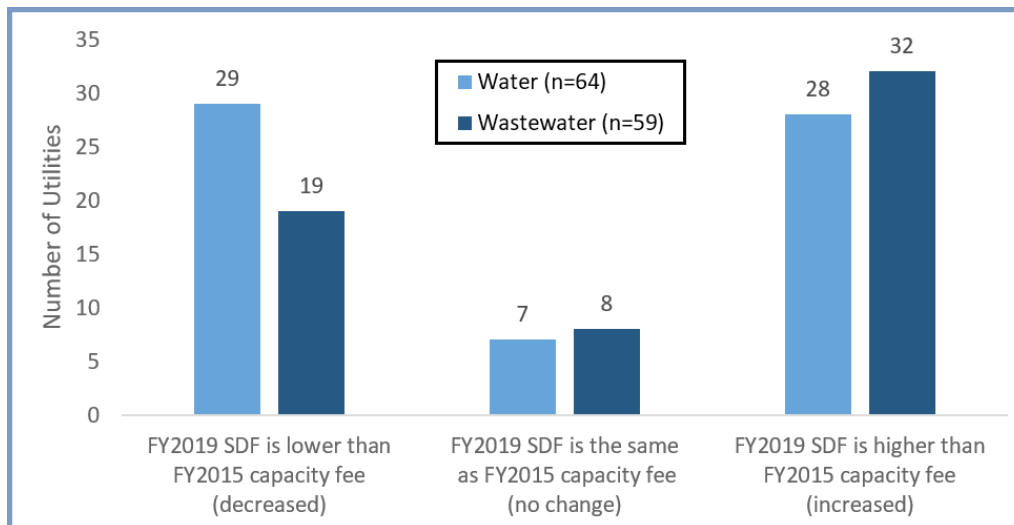
How System Development Fees Changed in July 2018

Unfortunately, data on capacity fees just prior to July 2018 was not available for this analysis. However, the EFC and the North Carolina League of Municipalities conducted a [statewide survey of residential capacity fees in FY 2015](#). Each participating utility's FY 2019 residential SDF was compared with its residential capacity fee in FY 2015, where data was available, to determine how the fees changed in the four-year period to provide insight on the impact of the new legal requirements.

As shown in Figure 7, almost equivalent numbers of utilities decreased and increased their residential water SDFs between FY 2015 and FY 2019. More wastewater SDFs increased in the same timeframe, with 55 percent of utilities' wastewater fees increasing, compared to 33 percent

decreasing. Of the 59 utilities with data on residential SDFs for both water and wastewater in FY 2015 and FY 2019, 60 percent increased the combined water and wastewater fee, 31 percent decreased the combined fee, and 9 percent had no change. It is important to note that fee changes in those four years may have resulted from other factors besides the legislative change.

Figure 7: How Do FY2019 Residential Water and Wastewater SDFs Compare to the Utility's FY 2015 Capacity Fee?



At least 10 utilities chose not to implement an SDF in FY 2019, despite charging a capacity fee in the past. A common reason given was that the utility did not complete the required supporting analysis and public response period in time to implement the SDF by July 1, 2018. Many of these utilities do plan to charge an SDF after the analysis and the mandatory public comment period have been completed. Other utilities chose to stop charging the fees altogether, with no immediate plans to start again. The scope of this study did not include individual utilities' reasoning for fee changes, but the additional cost and administrative effort associated with SDF compliance may have been a factor, particularly since most of these 10 utilities have service populations below 6,000 people.

Data on FY 2019 System Development Fees and Connection Fees

The FY 2019 System Development Fees of the 81 utilities that provided their fee schedule and their supporting analysis to the EFC are available for download as Excel and PDF files [here](#). Both residential and non-residential fees are listed.

Data on 185 utilities' FY 2019 connection fees—sometimes called tap fees—are also included. These fees compensate the utility for the cost of labor and materials to connect the development to the distribution or collection system, and are in addition to the SDF. Some utilities charge only connection fees and not SDFs.

Visit <https://efc.sog.unc.edu/resource/north-carolina-2019-system-development-fees> to download these fee data tables in Excel and PDF formats free of charge.