COVID-19 and North Carolina Utilities

Impact Assessment of the Coronavirus Pandemic on North Carolina Water and Wastewater Utilities, through July 2020

Report published August 26, 2020
Acknowledgements

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This report is a product of the Environmental Finance Center at the University of North Carolina at Chapel Hill (EFC). Findings, interpretations, and conclusions included in this report are those of the authors and do not necessarily reflect the views of EFC funders, the University of North Carolina, the School of Government, or those who provided review.

Funding for the preparation of this report was provided by the North Carolina Department of Environmental Quality, Division of Water Infrastructure.

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Executive Summary

The COVID-19 pandemic has suddenly and persistently disrupted many aspects of water and wastewater utility operations and finance since at least March 2020. In North Carolina, utilities\(^1\) have experienced growing amounts of payment arrears and growing numbers of customers that would normally have been eligible for disconnections due to non-payment but were shielded by North Carolina Governor’s Executive Orders 124 and 142 (EO 124/142). A detailed analysis by the Environmental Finance Center at the University of North Carolina at Chapel Hill (EFC) found a variety of financial impacts resulting from the COVID-19 pandemic on drinking water and wastewater utilities across the state, including the effects of EO 124/142 during its full implementation period between March 31 and July 29, 2020.

North Carolina customers are between $61.7 million and $81.5 million past due on their water and wastewater bills as of the end of July 2020, and North Carolina utilities forfeited between $23.2 million and $30.8 million in late fees and penalties from April through July 2020. More difficult to assess at this time are the revenue declines and financial implications of reductions in non-residential water use, which can be substantial for some communities.

Most water and wastewater utilities in North Carolina expect to have a net decline in revenues year-over-year due to the pandemic conditions. Even with these revenue losses, however, most utilities should be able to continue covering expenses for several months, either by controlling costs, raising rates, or using funds from reserves. From a statewide perspective, the payment arrears amount to about 2.5% of operating revenues and revenue losses from forfeiting late fees and penalties after four months amounted to less than one percent of utilities’ revenues collectively. The EFC estimates that under a scenario of 10% revenue losses, nearly four in five local government utilities would be able to cover their operations, maintenance and debt service costs for at least one year by using their unrestricted cash to offset the losses.

Importantly, the financial implications of COVID-19 conditions vary widely across utilities. Even though the effects appear manageable from the perspective of utilities statewide, at some individual utilities, conditions have significantly worsened. Several utilities have arrears that amount to more than 5% of revenue, have more than 40% of their customers with arrears, more than 20% of their customers eligible to be disconnected due to non-payment, and/or customers with more than $500 in past due bills. Some utilities will face significant challenges in managing delinquent accounts, setting up payment plans, and collecting on arrears now that the EO 124/142 moratorium on disconnections due to non-payment has expired. Some utilities do not have sufficient reserves to withstand prolonged COVID-19 conditions and effects on their finances.

From customers’ perspective, water and wastewater service are essential for hygiene and their ability to stay at home in the effort to contain the spread of the virus. At the same time, economic conditions have worsened, making it more challenging for more customers to pay their water and wastewater bills. Post-moratorium, customers may need more assistance than in the past in paying their bills. Utilities’ challenges going forward during the pandemic will therefore shift towards customer service and collections (through payment plans, customer assistance programs, and other mechanisms), at least initially. If present conditions continue for several more months, more utilities will need to also focus on managing their financial condition more closely.

\(^1\) The term “utilities” refers to water and wastewater utilities unless otherwise noted in this report.
As the COVID-19 pandemic continues and confirmed cases rise in North Carolina, uncertainty remains as to how the coming months will play out for water and wastewater utilities. Key indicators include the reopening (or return to full operational capacity) of commercial and industrial business, as well as institutions such as schools and universities. Beyond EO 124/142, utilities could see an influx of cash as customers lose protection from disconnection and must either pay off the accumulated arrears of the last four months or register for payment plans. How much of said arrears will be paid back, and when, will affect many utilities as they continue making operational changes and look to next year’s budget.

While some utilities will have the margin to give customers extra time to pay or the ability to aid through various programs, others will need to collect bills past due as quickly as possible, highlighting the differences in the long-term financial health of utilities across the state.

Introduction

This report summarizes the results of a North Carolina state-wide analysis of COVID-19 impacts on water and wastewater systems by the Environmental Finance Center at the University of North Carolina at Chapel Hill (EFC). The analysis utilized data from a statewide survey of water and wastewater utilities, utility-level data as reported to the North Carolina Utilities Commission (NCUC) in response to the North Carolina Governor’s Executive Orders 124 and 142 (EO 124/142), and billing data from two utilities. The EO 124/142 data include the entire period from April through July 2020 during which the Executive Orders imposed a statewide moratorium prohibiting water shut-offs due to non-payment, and the height of the COVID-19 pandemic’s economic impacts.

Survey results illustrated more tenuous circumstances for the state’s small systems than the state’s larger systems, likely exacerbating the divide between the financial health of the state’s small and larger systems. Additionally, 64% of surveyed utilities did not plan to change rates, even after realizing some revenue losses due to the pandemic. Of those utilities surveyed, many have made operational changes to accommodate revenue losses and mitigate risk of employee cuts, and nearly one-third plan to delay capital projects. In general, the poll results suggest that the pandemic has, and will, affect utilities very differently.

The EO 124/142 data reported to the NCUC included information on late fees, eligibility for shut-offs, and unpaid bills during the April-July moratorium. However, the dataset lacks cohesiveness across reporting periods, as some utilities reported some months and not others. To account for this, the EFC estimated statewide values from the available data. The data illustrated $23.2 million-$30.8 million in late fees not collected during the four-month period, and $61.7 million-$81.5 million in unpaid water and wastewater bills as of July 31, 2020. Additionally, it showed an increase in the number of past due accounts and in arrears relative to one year ago. Between April and July, the number of accounts with past due bills were relatively stable, while the average arrears per past due bill increased over time. Likewise, the percent of accounts eligible for disconnection increased from April to July.

From the two utilities providing billing data, very different impacts were observed. How well a utility fares typically depends on the diversity of revenue by type of customers (commercial, residential, industrial, 2 March 31, 2020 – Governor Cooper Issues Executive Order No. 124 Prohibiting Utility Shut-offs, Late Fees, and Reconnection Fees for Residential Customers of All Utility Service Providers.

3 May 30, 2020 – Governor Cooper Issues Executive Order No. 142 Extending the Prohibition on Utility Shut-Offs, Late Fees and Reconnection Fees thru July 29 and requiring monthly reports.

4 The U.S Environmental Protection Agency defines small water systems as those serving 10,000 or fewer people.
institutional), the percentage of delinquent accounts, and the ability and appetite for raising rates. Additional analysis on unrestricted cash and financial resiliency suggests that many utilities have reserves that could at least be partially used to offset financial losses in the short term, though this means less funds would be available for projects or debt payments in the coming months and years. Despite the challenges illustrated by the data in this report, there may be a clear path through the pandemic for many—but not all—North Carolina water and wastewater utilities.

Timeline of events

In March 2020, water and wastewater utilities across the country found themselves needing to adapt to a new world brought about by the COVID-19 pandemic. With stay-at-home orders, closures of schools, restaurants, other businesses, and major disruptions to the workforce and operations, utilities needed to figure out how to continue to provide an essential public service while experiencing rapid changes in revenue and operations. Additionally, individual utilities and state utility commissions imposed moratoria on shut-offs to encourage the continuous service of clean water to all customers, essential for mitigating the spread of the virus.

With these sudden economic shocks in March, and continued uncertainty in the months following, many research groups began exploring how this pandemic would affect water and wastewater utility finances and operations in the short, medium, and long term. On April 14, the American Water Works Association (AWWA) and Association of Metropolitan Water Agencies (AMWA) released a report, written by Raftelis, to “estimate the financial impacts of the COVID-19 crisis on water utilities in the U.S.” In short, the report estimates a $15 billion loss for the water sector over the next year. The report provides a first glimpse into the potential financial ramifications from the pandemic and takes survey responses and estimates the overall financial impact from more short and mid-term impacts such as changes in usage, increase in delinquencies, and decrease in system development fees, as well as longer term impacts such as delayed or accelerating capital projects and delayed rate raises. This report can provide a framework for thinking about various types of impacts on utilities due to the pandemic but offers only a broad view of the industry across the country.

North Carolina Governor’s Executive Orders on COVID-19

On March 10, 2020, North Carolina Governor Roy Cooper issued an executive order declaring a state of emergency, enabling the state to continue implementing the COVID-19 preparedness plan and recommendations of North Carolina Department of Health and Human Services (DHHS). As many residents began to face widespread unemployment or reduced work hours and other financial hardships, numerous public health officials also began to highlight the importance of sanitation and maintaining access to clean water in mitigating the spread of the coronavirus. Such concerns, combined with the urgency of financial complications created by the pandemic, spurred many cities across North Carolina to voluntarily enact moratoriums on water service disconnections.

Citing economic hardship, sanitation, and reducing undue stress on customers during the pandemic, Charlotte, Raleigh, and Winston-Salem all announced on March 12, 2020 that they would reconnect any customers currently disconnected and not disconnect services for non-payment, joining a host of cities across the country

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taking similar steps, including Seattle, Houston, and Detroit.\(^8\) Congresswoman Alma Adams (NC-12) further called on the North Carolina General Assembly to pass a 90-day moratorium on all evictions, foreclosures, and utility disconnections.\(^9\)

Following these efforts, Governor Roy Cooper issued Executive Order 124 on March 31, 2020, which was extended by Executive Order 142, through July 29, 2020.\(^10\) The executive orders prohibited all utility providers of end-user electric, gas, and water and wastewater services from disconnecting delinquent customers as well as collecting fees, penalties, interest, or other charges on late payments.\(^11\) Additionally, providers were ordered to offer delinquent customers payment plans to help settle any outstanding bills extending at least six months after the expiration of the EO moratorium on disconnections due to non-payment.\(^12\)

However, while the requirements for EO 124 were designed to terminate 60 days after their enactment, EO 142 was passed on May 30, 2020, modifying the termination date to July 29, 2020 and making minor clarifications.\(^13\) Under EO 142, local government utilities were also required to reasonably communicate the extension of the moratorium through July to customers and begin reporting data related to the financial impact of COVID-19 to the North Carolina Utilities Commission monthly.\(^14\) The reported information included “(1) number of accounts by type (e.g., residential or business account) for which service termination was forborne, (2) number of reconnections by type of account, (3) amount of late fees and other penalties not collected, (4) number of accounts on an extended repayment plan, and (5) customer notification information.”\(^15\)

**Survey Results: How the Pandemic Affects Utility Finances**

To better understand some of the financial implications of the COVID-19 pandemic, the EFC surveyed 95 water and wastewater utilities in North Carolina. The survey was carried out the first week of May 2020, a little over one month after the state of emergency had been declared. The survey covered a range of topics, including payment plans for delinquent customers, how long utilities would be able to cover all operating and capital expenses under then-current conditions, changes in total revenue collected, staffing for utility operations, plans for the next fiscal year’s rates, and the scope, funding, or timing of capital infrastructure projects for the year.

With reductions in non-residential water use, increased difficulty among residential customers to pay water bills, and other financial complications, the EFC hypothesized that, among other impacts, the ability for utilities to continue their operations would be heavily restricted and overall net financial losses in the short-term were imminent in the face of the pandemic.\(^16\) The survey conducted in early May largely confirms these forecasts\(^17\): At least 60% of surveyed utilities anticipated decreases in revenue collected with uncertainty as to how much, while an additional 29% identified revenue losses from anywhere between 2% to greater than 30% of their operating revenues from fiscal year 2019.

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\(^10\)[https://www.ncuc.net/execorder124.html](https://www.ncuc.net/execorder124.html)


\(^13\)[https://www.ncuc.net/execorder124.html](https://www.ncuc.net/execorder124.html)


Even as water utilities reported foreseeing appreciable revenue losses, 64% said they had no change in plans for FY2020-2021 service rates as budgets adjust for the next year to offset current losses. In fact, more than half of the surveyed utilities reported being able to pay all operating and capital expenses, in general, for anywhere between seven months to over a year with current reserves, even as revenue losses accumulate.

Additionally, many utilities reported opting not to reduce expenses via cutting labor costs or delaying capital infrastructure projects: 53% of survey respondents disclosed that they have maintained both prior hours and staffing with some changing only the structure of their shifts. In addition, 55% communicated no changes in planned projects for the year, implying either current projects will proceed uninhibited or that no projects were planned before the pandemic onset.

However, responses from 49 small water systems depict more tenuous circumstances. Nearly every small water system surveyed has anticipated or experienced reductions in revenue, with three small water systems even indicating that net revenues were at least 25% lower than what they normally would be as a consequence of COVID-19 conditions—a situation likely exacerbated by rising delinquency rates and significant reductions in collections for some utilities. Furthermore, an appreciable number of utilities face near-immediate financial collapse due to COVID-19 related revenue loss. Roughly a quarter of the responding small water systems in the survey reported they are struggling or would struggle to maintain operations if current conditions continued for six months. Finally, over one-third of the small water systems indicated that they are delaying starting a capital project and/or pausing or slowing down a project for which construction has already begun. While canceling such projects can temporarily reduce expenses in the short-term, delaying capital projects can result in these systems being unable to afford the capital improvements requisite to provide safe and adequate service in the future as construction costs rise faster than inflation.18

Figure 1: COVID-19 Conditions’ Effects on Total Utility Revenues Being Collected

Nearly all utilities expected revenues to decrease, even if those decreases had not yet been realized

- Identified the amount that revenues are decreasing: 29%
- Revenues expected to decrease; uncertain of amount: 60%
- Revenues expected to stay the same or increase: 3%
- Don’t know: 7%

Responses from 25 utilities that identified the amount that revenues are decreasing

Results from utilities responding to a poll by the UNC Environmental Finance Center between April 29 - May 5, 2020. The first graph displays the full response of 95 utilities. The second graph displays summary data from text responses provided by 25 utilities that responded “Identified the amount that revenues are decreasing”. Midpoints of reported ranges are displayed. Where dollar amounts of losses were reported, their percentage relative to FY2019 total operating revenues are calculated and displayed.
Figure 2: COVID-19 Conditions’ Effects on Plans for Next Fiscal Year’s Rates

Nearly 14% of utilities had determined to reduce or eliminate a planned rate increase as a consequence of current conditions

| Percentage of Utilities | Rate Change
<table>
<thead>
<tr>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Raising rates even higher than originally planned</td>
<td>6%</td>
</tr>
<tr>
<td>Raising rates lower than originally planned</td>
<td>3%</td>
</tr>
<tr>
<td>Eliminating rate increases originally planned</td>
<td>11%</td>
</tr>
<tr>
<td>Lowering rates next year</td>
<td>0%</td>
</tr>
<tr>
<td>No change to planned rate increase / no rate change</td>
<td>64%</td>
</tr>
<tr>
<td>Don’t know yet</td>
<td>16%</td>
</tr>
</tbody>
</table>

Results from utilities responding to a poll by the UNC Environmental Finance Center between April 29 - May 5, 2020. Not displaying "Other" responses. In addition, nine utilities (out of 95) reported delaying a rate increase by a few months.

Figure 3: How Long Utilities Can Pay Operating and Capital Expenses Under Current COVID-19 Conditions

Nearly 19% of utilities anticipated challenges to pay expenses if current conditions lasted six months

| Percentage of Utilities | Duration
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Couldn’t pay expenses prior to COVID-19 conditions</td>
<td>1%</td>
</tr>
<tr>
<td>Less than 2 months</td>
<td>4%</td>
</tr>
<tr>
<td>Between 2 to 6 months</td>
<td>14%</td>
</tr>
<tr>
<td>Between 7 to 12 months</td>
<td>26%</td>
</tr>
<tr>
<td>More than a year</td>
<td>36%</td>
</tr>
<tr>
<td>Don’t know</td>
<td>19%</td>
</tr>
</tbody>
</table>

Results from utilities responding to a poll by the UNC Environmental Finance Center between April 29 - May 5, 2020.
Figure 4: COVID-19 Conditions' Effects on Staffing for Utility Operations

At the onset of stay-at-home orders, most utilities altered staffing arrangements to allow for shift work, reduced the hours of their current staff, or delayed plans to hire new staff.

- Laid off or furloughed staff: 2%
- Reduced work hours of current staff: 22%
- Delayed or canceled plans to hire staff: 26%
- Maintained hours & staff, but changed shift work: 53%
- Newly contracting out operations: 1%
- None of the above (no change to staffing): 26%
- Don’t know: 0%

Results from utilities responding to a poll by the UNC Environmental Finance Center between April 29 - May 5, 2020. Not displaying “Other” responses. Total is greater than 100% because utilities could select more than one response. “None of the above” is mutually exclusive of all other responses.

Figure 5: COVID-19 Conditions' Effects on Scope, Funding, or Timing of Capital Infrastructure

Roughly one-third of responding utilities reported delaying the start of a new capital project due to the pandemic.

- Pausing/slowing a project for which construction has begun: 6%
- Delaying starting a project that was planned to start soon: 34%
- Accelerating starting a project: 1%
- Reducing the scope or funding for a project for which construction has begun: 2%
- Increasing the scope or funding for a project (current or planned): 2%
- Delaying applying for a subsidized loan/grant by at least six months: 2%
- Accelerating interest in applying for a subsidized loan/grant for a shovel-ready project: 3%
- None of the above (no change to current or planned projects, or no projects): 56%
- Don’t know: 4%

Results from utilities responding to a poll by the UNC Environmental Finance Center between April 29 - May 5, 2020. Not displaying “Other” responses. Total is greater than 100% because utilities could select more than one response. “None of the above” and “Don’t know” are mutually exclusive of all other responses.
In addition to the quantitative analysis presented above, the EFC also collected and analyzed qualitative data. The responses ranged considerably, from respondents noting that having an industrial customer deemed “essential” had secured revenues, to others stating concerns about meeting debt service obligations due to dramatic losses. These responses confirm earlier findings—the financial implications are highly variable across utilities.

Ultimately, the COVID-19 pandemic has imposed several unexpected and unprecedented conditions. From requiring inessential businesses to remain closed to leaving many residential customers unemployed or with reduced work hours, such unprecedented conditions may have and continue to exacerbate financial losses for water and wastewater utilities across the nation. While most utilities, especially small water systems, predict considerable revenue losses for the year due to the coronavirus, the EFC’s survey of North Carolina water and wastewater utilities demonstrates that many are unsure of the extent of shortfall, as well as how to respond with actions such as raising rates for the next fiscal year or delaying capital infrastructure projects.
Statewide Impact of Executive Orders 124 and 142 on Utilities

Executive Orders 124 and 142 mandated that all water and wastewater, natural gas, and electric utilities report data to the North Carolina Utilities Commission (NCUC). The data reported includes the numbers of accounts that have past due bills, number of accounts that would be eligible for disconnection due to non-payment, and total arrears at the end of the month, among other data.

The EFC accessed NCUC reports containing April, May, June, and July data -- which include all four months during which the Executive Order prohibited late fees and disconnections for non-payment-- for water and wastewater utilities only. The utility data were merged with data from the U.S. Environmental Protection Agency and the North Carolina Department of State Treasurer (Local Government Commission) to gain insight into the impacts of the pandemic on utilities and customers. Utilities that reported data include local government utilities, investor-owned utilities (regulated by the NCUC), and non-profit and independent-owned water and wastewater utilities (exempt from NCUC regulations).

As of the end of July 2020, 347 water and wastewater utilities reported their data at least once in April, May, June, or July, of which 182 utilities reported their data in every one of the four months. Among all active local government utilities in the state that provide water or wastewater service to at least residential customers, 58% reported their data at least once in those four months. The response rate was much lower for smaller local government utilities than larger ones (see Appendix A).

Within each report, not all utilities responded to all questions. The EFC specifies the number of responding utilities for each question in the following analysis. Additionally, the reporting form in April did not include all questions that were in the May-July reports. Most notably, the latter reports included questions on the total number of residential and non-residential accounts. However, not all utilities were able to distinguish between residential and non-residential accounts in their reports. As a result, all analyses below combine residential with non-residential accounts.

Total arrears, number of customers that avoided disconnections due to non-payments, and total late fees that were not charged each month are presented in Table 1 for the water and wastewater utilities that reported those numbers. Table 1 aggregates all reporting utilities (i.e. irrespective of ownership type) but does not reflect the total statewide estimates since many utilities in the state did not report their data.
Table 1: Aggregated EO 124/142 Data, Reported by Utilities in the NCUC Reports. 
Not Inclusive of all Drinking Water/Wastewater Utilities Statewide

<table>
<thead>
<tr>
<th></th>
<th>April 2020</th>
<th>May 2020</th>
<th>June 2020</th>
<th>July 2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Utilities that Provided Data to NCUC</td>
<td>296</td>
<td>283</td>
<td>283</td>
<td>237</td>
</tr>
<tr>
<td>Total Arrears</td>
<td>$49,053,206 ($n = 253)</td>
<td>$52,651,499 ($n = 253)</td>
<td>$57,702,939 ($n = 249)</td>
<td>$52,875,263 ($n = 213)</td>
</tr>
<tr>
<td>Cumulative as of the end of the month.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Number/Percentage of Accounts Past Due as of End of the Month</td>
<td>362,162 16% ($n = 263)</td>
<td>313,584 14% ($n = 252)</td>
<td>321,264 15% ($n = 247)</td>
<td>288,211 14% ($n = 212)</td>
</tr>
<tr>
<td>Total Number/Percentage of Accounts Reaching Eligibility for Disconnection During the Month</td>
<td>160,594 6% ($n = 280)</td>
<td>169,788 6% ($n = 260)</td>
<td>213,414 9% ($n = 260)</td>
<td>156,313 7% ($n = 208)</td>
</tr>
<tr>
<td>Total Late Fees/Penalties not Charged to Customers During the Month</td>
<td>$5,228,576 ($n = 272)</td>
<td>$4,999,466 ($n = 245)</td>
<td>$5,247,573 ($n = 263)</td>
<td>$4,666,419 ($n = 207)</td>
</tr>
</tbody>
</table>

To estimate the total statewide financial effects of the pandemic and EO 124/142 on all water and wastewater utilities in the state, the EFC analyzed reported data and extrapolated to include active utilities that did not report their data to the NCUC, as seen in Table 2 (see Appendix B).

The EFC estimates that, during the EO124/142 periods of April through July, between $23.2 million and $30.8 million in late fees and penalties due to non-payments were forfeited by utilities across North Carolina. As of July 31, 2020, the EFC estimates that residential and non-residential customers in the state were collectively between $61.7 million and $81.5 million behind in paying water and wastewater bills. Although these arrears are still owed to the utilities and the EO124/142 did not require the utilities to write off delinquencies, delays in collecting the revenues due can generate significant cash flow challenges to some utilities without large cash reserves to pay expenses.

Table 2: Estimated Statewide Financial Effects of the COVID-19 Pandemic and EO 124/142 on All Water/Wastewater Utilities across North Carolina

<table>
<thead>
<tr>
<th></th>
<th>Reported From utilities with number of service connections and reported amounts.</th>
<th>Estimated for Entire State Including utilities that did not report EO 124/142 data.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total arrears as of July 31, 2020</td>
<td>$52,875,263</td>
<td>$61,700,000 - $81,500,000</td>
</tr>
<tr>
<td>Late fees/penalties not charged in April</td>
<td>$5,228,545</td>
<td>$5,800,000-$7,200,000</td>
</tr>
<tr>
<td>Late fees/penalties not charged in May</td>
<td>$4,999,466</td>
<td>$5,700,000-$7,500,000</td>
</tr>
<tr>
<td>Late fees/penalties not charged in June</td>
<td>$5,247,573</td>
<td>$6,100,000-$ 8,200,000</td>
</tr>
<tr>
<td>Late fees/penalties not charged in July</td>
<td>$4,666,419</td>
<td>$5,600,000-$ 7,900,000</td>
</tr>
<tr>
<td>Total late fees and penalties not charged between April and July 2020</td>
<td>$20,142,034</td>
<td>$23,200,000-$30,800,000</td>
</tr>
</tbody>
</table>
Accounts with Past Due Water/Wastewater Bills (Arrears)

The COVID-19 pandemic has and continues to result in significant changes affecting the economy and customers’ financial ability to pay for utility services. Together with a moratorium on disconnections for non-payment, some customers have accumulated arrears in past due bills to their water and wastewater utilities.

Among the 206 utilities that reported the numbers of accounts with past due bills as of July 31, 2020, half had less than 9.2% of their accounts in arrears, with the majority reporting between 5% and 16% of their accounts with past due bills at the end of the month. While just under 15% of utilities had greater than 20% of their accounts with past due bills, these utilities may face a challenge and greater communication, customer service, and administrative costs in collecting those arrears.

**Figure 7: Percent of Accounts with Past Due Bills as of July 31, 2020**

Most of the utilities reported relatively low average delinquency amounts. Among 203 utilities with reported data, half of the utilities have less than an average of $140.76 in arrears per past due account. The majority have between $89.41 and $238.96 on average per past due account. Utilities with higher average past due amounts could consider longer payment plans to facilitate customers’ ability to pay back large arrears over time.

**Figure 8: Average Arrears per Account with a Past Due Bill as of July 31, 2020.**
EO 124/142 require utilities to implement payment plans over the span of at least six months for customers to pay past due bills. Other practices and strategies exist that can help utilities collect past due bills, including the North Carolina Debt Setoff. Many customers will likely continue to face challenging financial conditions in the coming months as the pandemic continues, and utilities may need to consider multiple options to work with their customers. One option gaining interest is the customer assistance program, which can help cover the cost of utility bills for individual customers with documented needs.

**Accounts Eligible for Disconnection Due to Non-Payment**

In addition to the number of accounts past due, utilities were asked to report on the number of accounts that became eligible during the month for disconnection due to non-payment of water/wastewater bills. The executive orders temporarily prohibited disconnections due to non-payment of bills, ensuring that residents and customers of utilities continue to receive water and wastewater service in their homes despite any financial difficulty in paying bills during the pandemic.

Water and wastewater service has been deemed essential for fighting the coronavirus, supporting the stay-at-home order, and general public health. Utilities tracked and reported the number of accounts that would have ordinarily become eligible for disconnection for non-payment, but did not actually disconnect those accounts. Now that the executive orders expired and the temporary moratorium on disconnections ended, utilities once more have the ability to disconnect customers for non-payment, although some may choose not to exercise this option while the pandemic continues to make living and working conditions difficult for their customers.

In the monthly EO 124/142 reports, a small number of utilities counted all accounts that had past due amounts as also eligible for disconnections, but most differentiated between those that were past due and those that passed some higher threshold that made the account eligible for disconnection. At least 34 utilities reported more accounts that became eligible for disconnections in July 2020 than accounts with past due bills as of July 31, 2020.

Among the 203 utilities that reported their numbers, half had less than 5.7% of their accounts become eligible for disconnection in July 2020, while a majority had between 3% and 10% of accounts become eligible. Nearly 22% of the utilities could have disconnected more than 10% of their customer accounts in this reported month under normal circumstances.

Overall, the moratorium on disconnections spared at least 156,300 customer accounts from disconnections during the month of July in North Carolina.\(^{19}\)

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\(^{19}\) This figure does not include customer accounts from utilities that did not report their July 2020 numbers to NCUC.
Between April 1 and July 31, 2020, North Carolina progressed through various phases of closures and re-openings. This influenced changes to customers’ behaviors, including water use patterns and ability to pay their bills. The longer some customers avoided paying their water and wastewater bills—safe in the knowledge that the utility would not disconnect their service while the executive order was in effect—the greater their arrears would accumulate. The EFC analyzed trends in arrears for the 147 utilities that reported arrears each month between April and July.

*The percent of accounts past due remained stable while the amount of average arrears increased.*

Average arrears increased but the number of accounts past due remained stable, indicating perhaps that customers who have not or cannot pay their bills continue to accumulate arrears, but that not many new customers become behind on their bills payments.
**Figure 10: Percent of Accounts Past Due at the End of Each Month, April-July 2020**

*Between April and July, the percentage of accounts considered past due remained relatively stable*

Assessing data from 147 utilities that reported at least one account with past due bills in each month between April and July.

**Figure 11: Average Arrears with a Past Due Bill at the End of Each Month, April-July 2020**

*Average arrears among accounts that are past due increased after April*

Assessing data from 139 utilities that reported >$0 arrears and at least one account with past due bills in each month between April and July.
Relative to one year prior, for a small number of utilities with reported data, there was a 17%-29% increase in the number of accounts past due and a 42% increase in arrears as of the end of July.

Despite COVID-19 pandemic conditions challenging customers’ financial ability to pay for water and wastewater bills, and no longer facing the risk of being disconnected due to non-payment, most utilities did not see a significant increase in the percentage of customers that are past due on bills. Among 84 utilities with reported data, there was between 17% and 29% increase in the number of accounts past due on bills compared to the same time one year prior between April and July. This accounted for an increase from a little over 10% of customers being delinquent in 2019 to 12.5%-13% of customers in 2020 among the 84 utilities that reported on delinquent accounts in 2019 and 2020 in both months. The increase resulted in a 22%-42% increase in total arrears at the end of each month in 2020 relative to the same period in 2019. At the end of July 2020, arrears for 89 utilities were 42% higher than their arrears at the end of July 2019.

**Figure 12: Percentage of Accounts Past Due, Month End, 2019 vs 2020**

![Graph showing percentage of accounts past due, May to July 2019 vs 2020.]

Assessing data from 84 utilities that reported at least one account with past due bills in each month in 2019 and in 2020.

From April to July, the share of accounts that became eligible for disconnections due to non-payment increased.

Although the percentage of accounts that were past due on bills were relatively stable, the percentage of accounts that became eligible for disconnections increased between April and June and decreased in July. There were 155 utilities that reported at least one account that was eligible for disconnections due to non-payments during April, May, June, and July. Among these utilities collectively, the percentage of accounts that became eligible for disconnections increased from 5.7% in April to 8.9% in June, decreasing to 6.8% in July. It will be important for utilities to communicate directly with these customers in the coming months as the pandemic continues, including notifications of past due bills, disconnection eligibility, and the options for paying past due bills either directly or through payment plans.
The EFC estimates that North Carolina water and wastewater utilities saw between $61.7 million and $81.5 million in arrears as of July 2020. As the executive orders’ moratorium on disconnections due to non-payment expired and utilities begin to implement payment plans to help customers pay back those arrears over at least the next six months, much—but certainly not all—of that revenue will return to the utilities. However, it is difficult to predict at this time how much of these arrears represent a permanent loss of revenues that utilities will have to write off after failing to collect on them. The EFC will track collections working with partnering utilities, and report on these metrics in the coming months.

Even though most of the arrears are likely to be eventually paid back to the utilities, collections on these arrears will be delayed by a few months at the least. This could create cash flow challenges for utilities that do not have significant reserves on hand to pay for expenses. While $61.7 million to $81.5 million appear to be high numbers, they are small in the scale of total revenues that water and wastewater utilities typically collect each year. In FY 2019, the last year prior to the COVID-19 pandemic, local government water and wastewater utilities alone collected more than $3.1 billion in operating revenues from their customers.

Among 150 local governments that reported arrears that were past due as of July 31, 2020, the arrears amounted to 2.5% of the utilities’ FY 2019 operating revenues, combined. Half of the local government utilities had arrears that were less than 1.5% of their FY 2019 total operating revenues. However, arrears were of significantly higher proportions of revenues for some utilities; 7% of the 150 local government utilities had arrears that exceeded 5% of the previous year’s total operating revenues.
Compared to the previous year, 120 utilities reported that end-of-July arrears in 2020 were not significantly higher than end-of-July arrears in 2019, relative to their operating revenues. The primary difference from last year is that a large group of utilities that had less than 0.5% of their operating revenues in arrears in July 2019 witnessed a shift towards higher arrears, mostly up to 2% of operating revenues in July 2020. However, there are similar proportions of utilities that had relatively high arrears in 2020 as in 2019.
EO 124/142 prohibited all utilities from assessing late fees and penalties due to non-payment of bills starting in April 2020, providing another step of financial relief to residents of North Carolina at a time when jobs and incomes were significantly affected during the pandemic. It also represents a permanent loss of revenues to utilities since these fees have been permanently voided and will not be recovered in the future through payment plans or other charges. It is also important to note that with an increase in delinquencies, there would have been a higher-than-normal amount of late fees that were not charged between April and July that were unanticipated in utility budgets prior to the pandemic.

After these four months, the EFC estimates that the total amount of late fees and penalties that were avoided statewide were between $23.2 million and $30.8 million, a small portion of North Carolina utilities’ typical revenues. Among 117 local government utilities that reported avoided late fees in all four months, the revenue loss (not annualized) amounted to 0.82% of combined total operating revenues in FY2019. Half of those utilities lost less than 0.9% of last year’s total operating revenues after four months of avoiding charging late fees and penalties (equivalent to 2.6% annualized). However, some of the loss of revenues from avoiding charging late fees and penalties were relatively higher in some utilities compared to others. Nearly 7% of reporting utilities already lost more than 3% of last year’s total operating revenues after four months of avoiding charging late fees and penalties, which is equivalent to more than 9% on an annualized basis. With the expiration of the Executive Order ending the statewide moratorium on late fees and penalties after four months, many utilities will likely resume charging late fees and penalties to avoid further revenue losses and incentivize customers to pay upcoming bills on time.

Figure 15: Late Fees and Penalties Avoided over Four Months as a Percent of FY2019 Total Operating Revenues

Nearly 56% of utilities lost less than 1% of total operating revenues after four months of voiding late fees and penalties.

A more substantial potential permanent loss of revenues during the pandemic may result from changes in water use among customers. Specifically, non-residential water use has declined for many utilities as businesses, industries, universities, and other commercial enterprises either shut down or reduced operations since mid-March. Some or most of these losses may be offset by increases in water use by other customers (primarily...
residential customers during the stay-at-home order) and increased billed amounts. However, water use changes and the associated net revenue losses are specific to individual utilities because all customer bases are unique.

There is no database that tracks that change of revenue across all water and wastewater utilities in North Carolina, and the EO 124/142 data being reported to the NCUC does not include such estimates. However, the EFC statewide survey of 95 utilities demonstrated that nearly all the responding utilities expected net declines in revenues, and that a small number of utilities at that time were experiencing above 10% annualized declines in revenues. Most utilities estimated lower net declines in revenues. The case studies in the following section serve as examples of how much revenue declined due to water use changes in two communities.
Utility-Level Case Studies

In addition to analyzing the statewide impacts of COVID-19 on utilities, the EFC conducted in-depth analysis with a few systems to analyze the impact and estimate projected losses and recovery in the coming quarters.

The EFC developed an Excel-based tool -- the Revenue Impact Model -- to allow utilities to evaluate how much revenue they have lost and are projected to lose due to COVID-19 conditions. The analysis of COVID-19 revenue loss showed different factors of the pandemic had varying effects among different utilities. The data collected from utilities include most recent audited financial statements, customer usage data, base and volumetric rate information, and budget for the upcoming fiscal year. Based on this information, users can compare “Scenario 1” and “Scenario 2” to explore how a variety of factors and different scenarios of how customer usage might change and may affect revenue in the coming months.

Yadkin Valley Sewer Authority (YVSA)

Water and wastewater usage decreased more significantly in towns with a larger portion of water going to non-residential customers that have slowed down or ceased operations during the stay-at-home order period. Yadkin Valley Sewer Authority (YVSA) serves as an example of this scenario. According to the EFC’s analysis, YVSA could see a 9% decrease in net revenue in 2020 relative to 2019.

YVSA provides sewer service to three towns in North Carolina: Elkin, Jonesville, and Ronda. The largest user of wastewater services, an industrial manufacturing plant, is located within Elkin. This plant makes up approximately 25% of YVSA’s normal billing revenue and had already decreased usage by 20% from December 2019 through January 2020, which affected YVSA’s income before the shut down due to COVID-19. In March 2020, the plant shut down operations, contributing to a very significant reduction in revenue for YVSA. The plant was not back up to pre-COVID operations as of the end of June 2020, and this reduction will continue to have an impact on YVSA. Loss of revenue from this plant, combined with other commercial customers, contributed to 78% of the YVSA’s revenue loss in 2020 relative to revenue in 2019.

Although the decrease in usage was the main factor in projected revenue loss, other factors contributed as well. Delinquent payments protected by EO 124/142 may contribute up to a 21% reduction in revenue relative to 2019 and decreases in non-rate revenue, such as penalties and connection fees, may contribute up to a 1% reduction. Further analysis revealed that without any rate increases, this deficit would not be overcome purely based on payments on delinquencies after the moratorium is lifted.

With a $0.50 rate increase, YVSA would see an increase in net revenue but not a return to average monthly revenue from 2019.

This type of analysis using the Revenue Impact Model allows utilities to track projected changes in revenue. Net revenue loss includes the delinquent arrears, the decrease in non-rate revenue, plus monthly payments on arrears. For YVSA, Scenario 1 assumes that businesses return to normal operations starting August 1st at the expiration of EO 142. Cumulative net revenue loss under Scenario 1 adds up the net revenue loss suffered each month, tracking the total loss of revenue due to COVID-19 until Q4 2022. It includes the deficit suffered from January through the end June of 2020.
South Granville Water and Sewer Authority (SGWASA)

The second utility-level case study was an analysis of revenue loss for a water and sewer utility for South Granville Water and Sewer Authority (SGWASA). Unlike YVSA, usage change was not as significant a factor for revenue loss for this utility. While there was an expected decline in usage by institutional customers (schools) and commercial businesses (restaurants), this was offset by increases in usage in other institutional and residential customers. As a result, usage and revenue remained stable overall. The delinquency rate grew from 5% in March 2020 to 20% in June-July 2020. According to the analysis, this delinquency rate led to non-payments accounting for 81% of lost revenue in the first six months of 2020 and changes in non-rate revenue accounting for 19% of revenue loss. In total, the results predicted a 9.7% reduction in net revenue from 2019 for the months of January-June 2020.
These net revenue losses were projected until the end of 2022. With SGWASA’s payment plan structure, the utility should be able to approach normal revenue levels by Q1 2021. However, it will likely fail to completely make up for the deficit suffered January-June 2020 due to the inability to collect late fees and other fees for this period. Using input from directors at SGWASA, it was assumed that 40% of customers with delinquencies would pay their arrears in full after the moratorium and continue to pay their monthly bills in full going forward, 50% would partially pay off their arrears and full bills going forward (i.e. enter into a payment plan to pay off the rest), and 10% would not be able to pay back the arrears accumulated during the shut off moratorium.

SGWASA’s financial losses from COVID-19 mostly resulted from delinquencies. Under Scenario 1, SGWASA’s payment plans allow the utility to return to normal quarterly revenue levels by Q2 2021. Under "Scenario 2", which assumed that delinquencies and arrears continue through the end of 2020, revenue losses would carry through into 2021, significantly impacting the revenue stream.

Figure 18: “Scenario 1” Revenue from Customer Receipts Output for South Granville Water and Sewer Authority

Figure 19: “Scenario 2” Revenue from Customer Receipts Output for South Granville Water and Sewer Authority
The Individual Utility Level

For both Yadkin Valley Sewer Authority and South Granville Water and Sewer Authority, the impacts of COVID-19 are significant. However, the total impact remains to be seen in the coming months, especially as manufacturing continues to return to normal (or not) and customers participate in payment plans (or not). The differences in type and duration of impact on revenue due to COVID-19 are as unique as each utility, which highlights the importance of considering the repercussions of this crisis at the individual utility level as well as at the state level with aggregate data.

Looking Forward: Financial Resilience

The North Carolina Water and Wastewater Rates Dashboard includes a number of financial benchmarks. These benchmarks are calculated using financial data reported to the Local Government Commission (LGC), and can be used as a starting point for additional analysis. Given the revenue impacts described previously, a Tableau-based tool was created to visualize how cash on hand, or unrestricted cash, might be able to cover revenue losses in the short term.

It is important to note that unrestricted cash is used in many situations. It is often used to pay for emergency situations, such as repairing a line break or other necessary maintenance, and can sometimes be the capital fund for a small utility. Although the tool assumes all unrestricted cash can be used as a utility’s reserve to potentially offset revenue losses, that is likely not the case.

The tool takes unrestricted cash, operating revenues, and operating expenses, and calculates how long the utility could continue to cover operating expenses with a certain percent revenue loss. Days cash on hand, a similar metric, computes the number of days a utility could operate with no revenue coming in, and a minimal benchmark is at least two billing cycles, but six months to a year is often considered a safer benchmark. There is no benchmark for how long a utility could operate by offsetting revenue losses with unrestricted cash but, given the reality of revenue losses over the length of the pandemic and the many uses for unrestricted cash, a lower benchmark is problematic.

The tool operates by pre-populating data from North Carolina local government utilities from FY 2019 or FY 2018 audits. It allows users to adjust data inputs, including revenue loss (as a percent of total revenue) and update unrestricted cash values.
The figures below feature two different scenarios: one utility, “Utility A” with large amount of operating expenses and low unrestricted cash, and “Utility B” with a large amount of operating expenses, but an equally large pool of unrestricted cash. In both cases, 10% revenue loss is assumed. This 10% value is based on results from the two revenue loss case studies above and may vary greatly based on the utility in question.

In both cases, it should be noted that the pre-populated data on unrestricted cash is from the end of FY 2019 -- or June 30, 2019. Actual unrestricted cash might be different than those reported at the end of FY 2019. The values in the tool can be updated. The tool highlights its limitations and encourages users to reach out for more direct assistance.

Statewide Assessment of Financial Resilience

Using the data behind the tool, the financial resilience of utilities across the state can be assessed. Based on this data, the number of days a utility can cover operations by offsetting revenue loss (10%) with unrestricted cash was assessed for all local government utilities with financial data in North Carolina (n=433).

“Operations” was defined in two different ways, resulting in two analyses. First, operations were defined as operating expenses without depreciation. Essentially, this includes only costs for daily operations and maintenance, without any debt or capital expenditures.
Second, debt service is added to the operating expenses without depreciation. In many cases, debt service payments are non-negotiable and must be covered even under dire circumstances. A utility that spends more on operations, maintenance, and debt service than brings in revenues would have negative cashflows for the year. Neither of these two definitions for “operations” include expenditures on current capital projects (beyond debt service) or considerations for building up reserves for future needs and capital projects.

Based on this, utilities were categorized into one of three categories: those falling under 180 days, those falling between 180-365, and those with greater than 365 days.

**Even including debt service coverage, most utilities have enough cash on hand to cover 10% revenue losses for more than 365 days (n=433).**

### Table 3: Breakdown of North Carolina Utilities’ Cash on Hand Cover Abilities

<table>
<thead>
<tr>
<th>Number of Days Utility Can Cover Operations</th>
<th>Just Operating Expenses</th>
<th>Operating Expenses and Debt Service</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;180</td>
<td>5%</td>
<td>7%</td>
</tr>
<tr>
<td>180-364</td>
<td>5%</td>
<td>9%</td>
</tr>
<tr>
<td>365 or more</td>
<td>91%</td>
<td>84%</td>
</tr>
</tbody>
</table>

Even with the inclusion of debt service, most North Carolina utilities have enough unrestricted cash to cover 10% revenue losses for a year or more. Past efforts to build up fund balances and rainy-day funds, while likely not intended to cover revenue losses due to a pandemic, have provided most utilities with some funds to fall back on, though the cost of using those funds will be seen in the coming months and years.

### Further Resources for Utilities

For utilities seeking support, the EFC has multiple free, publicly available resources. These resources range from reports on regionalization and interlocal agreements, to Excel-based analysis tools. All these resources are readily available on the EFC’s website, and include the following items, amongst others:

- Affordability Assessment Excel Tool
- Financial Health Check-up Excel Tool
- Revenue Loss Excel Tool
- Financial Resilience Dashboard Tool

The EFC also provides free technical assistance to small water systems as part of an agreement with US EPA. Additional information regarding technical assistance can be found in Appendix C.
Appendix A: EO 124/142 Reporting Response Rate

Between April and July 2020, 347 utilities reported EO 124/142 data to the NCUC at least once. Among them are utilities owned by local governments, investor-owned utilities regulated by the Utilities Commission, and non-governmental utilities that are exempt from Utilities Commission regulations.

The EFC maintains a database of active local government utilities in the State. Among 483 active local government utilities that provide water or wastewater service to at least residential customers in North Carolina (i.e. not wholesale-only utilities), 58% had provided at least one of the four monthly EO 124/142 reports to the NCUC. The response rate is higher among larger utilities than smaller ones as shown in this table:

<table>
<thead>
<tr>
<th>Number of Accounts</th>
<th>Percent of Local Government Utilities that Submitted at Least One EO 124/142 Report</th>
</tr>
</thead>
<tbody>
<tr>
<td>Up to 500</td>
<td>38%</td>
</tr>
<tr>
<td>501 - 1,000</td>
<td>59%</td>
</tr>
<tr>
<td>1,001 - 3,300</td>
<td>62%</td>
</tr>
<tr>
<td>3,301 - 10,000</td>
<td>74%</td>
</tr>
<tr>
<td>10,001 - 25,000</td>
<td>77%</td>
</tr>
<tr>
<td>More than 25,000</td>
<td>100%</td>
</tr>
<tr>
<td>All</td>
<td>58%</td>
</tr>
</tbody>
</table>
Appendix B: Data and Methods

In late April and early May of 2020, the EFC invited water and wastewater utilities in North Carolina to respond to a six-question online survey. Within a week, 95 utilities responded, ranging widely in sizes and geographic distribution. The EFC summarized the results of the survey in this report text.

The Executive Orders 124/142 required utilities to report data to the NCUC, and that data is publicly available on the NCUC website. The NCUC created unique identifiers for each utility, using docket numbers for those utilities regulated and new numbers for others. The EFC used these unique identifiers to match responses from April through July for analysis.

Many utilities reported the number of accounts after April, but for those that did not report the EFC used an estimated number of accounts from the U.S. Environmental Protection Agency’s SDWIS database (when available). FY 2019 total operating revenues of local government water/wastewater utilities were also included which were compiled by the Local Government Commission of the North Carolina Department of State Treasurer, to place the financial effects in perspective relative to annual revenues of utilities.

The EFC identified utilities that did not report their arrears as of July 31, 2020 and those that did not report the late fees/penalties forfeited in April, May, June, or July 2020. The EFC imputed those missing arrears and late fees/penalties by multiplying their number of accounts with the interquartile range of per-account estimates of similar-sized utilities that reported their data. To do this, the EFC stratified the utilities that reported based on their number of accounts making sure each bin contained at least 10 responding utilities. The average arrears and average late fees per account for each reporting utility were then computed, and the 25th and 75th percentile values in each bin determined. For utilities that did not report their data, their number of accounts were multiplied by the 25th and 75th per-account values in the corresponding bins.

The amount of arrears and the amount of late fees positively correlated with the number of accounts by utility. While expected, as a utility with more accounts would likely have more customers with arrears and late fees, it provides support for the EFC method of extrapolating the amount of arrears and late fees not reported to the NCUC by using the number of accounts in a bin of service population. There is some variance, which is why the utilities were grouped into bins that had at least 10.
Appendix C: Technical Assistance at the EFC

Tier 1 Assistance

Below are resources that utilities may implement on their own or request the EFC walk through and provide assistance:

- **Resources:**
  - Tools To Assist Water Utilities With Financial Decision Making
  - COVID-19 Resource Page
  - Funding table
  - Customer Assistance Programs
  - Regionalization Blog

- **Internal audit using the following checklist**
  - What percent of revenue has the utility lost?
  - What kind of staffing changes has the utility seen?
  - How has each sector’s (residential, commercial, industrial, etc.) usage changed?
  - How many days cash on hand does the utility have?
  - Does the utility have enough reserves to subsidize revenue loss?
  - What do the local economic factors such as unemployment rate look like in the community?
  - Has the utility provided or publicized payment plans for customers?

Tier 2 Assistance

Below highlights more in-depth assistance that the EFC can provide and the types of data that the utility will need to provide to receive the most effective support. Click the link here to request technical assistance, and the appropriate person will follow up with depending on the utility needs.

- **Financial Health Check Up** - Develops a snapshot of the utility’s financial health and define its strengths and weaknesses from the last five years.
  - Data Needed:
    - Complete financial audits from that the last five years

- **Water and Wastewater Rates Analysis Tool** - Reviews utility rates to ensure projected revenues cover projected expenses. This tool will help determine whether existing or proposed rates will keep the utility financially self-sufficient for the next few years. The EFC can help determine what input values may change during and after the COVID-19 crisis and train how to evaluate rate changes in the coming years.
  - Data Needed (some may not be applicable to each utility):
    - Rate sheets
    - Monthly customer usage data by customer class, meter size, etc.
    - Number of customers by class, meter size, etc.
    - Debt service payback schedule
    - Budget
    - Capital improvement plan

- **Financial Resilience Dashboard**: This dashboard is designed to show the impact of revenue losses on a utility in light of COVID-19.
COVID-19 Revenue Loss Tool: This tool integrates any changes in usage, delinquencies, capital improvements, and expenses to provide a more in-depth understanding of COVID-19’s impacts going forward.

○ Data Needed:
  ■ Most recent audited financial statement
  ■ Rate sheet and any proposed rate changes if applicable
  ■ Consumption data over a year or a month by type of connection (residential, commercial, industrial, etc.)

○ List of questions to be answered:
  ■ Has the utility seen any usage change? If so, how much, and between which customer classes? (The usage for each customer class for January-present may also be provided)
  ■ What is the typical amount of delinquencies (bills that customers have not paid), and has that changed since February? If so, how many customers, and what is the amount of accumulated delinquencies?
  ■ Is the utility making any changes to capital improvement projects? If so, does an estimate exist for the cost or savings of those changes?
  ■ Has personnel, chemical, or other expenses changed?