

Supplemental Engineering Report Guidance for Distressed Local Government Units

Latest Version: March 2023

On July 1, 2020, Session Law 2020-79 was enacted to foster the viability of water and wastewater utilities across North Carolina. This session law created a process for identifying distressed Local Government Units (LGUs) and provided a system by which designated units can evaluate and prioritize projects that will move them towards financial, technical, and operational viability; the resulting funding and assistance program is called the Viable Utility Reserve (VUR). This guidance only applies to those LGUs that have been designated as distressed and is intended to supplement the standard Fact Sheets for Drinking Water, Wastewater, and Stormwater Engineering Reports.

This document is intended to serve as guidance and as an example for the expectations of Division of Water Infrastructure (Division) Engineering Reports (ER) for distressed LGUs. The supplementary information and financial analysis serve to evaluate how a particular construction project may increase or alter existing costs, show how rehabilitation or replacement projects may lower existing expenditures, and/or demonstrate other ways in which the financial, technical, and operational viability of a system is improving as a result of the project. Overall, the purpose is to demonstrate how the LGU is moving towards viability through the specific construction project(s) being evaluated.

The new requirements for distressed LGUs:

Financial Analysis for Distressed systems only: If the recipient of grant or loan funding from the Division of Water Infrastructure is designated as distressed, include the following:

- a) List all ongoing projects with dollar amount, sources of funding, type (grant or loan) of funding and anticipated project completion dates.
- b) Describe how the proposed project will move the system towards financial, technical, and operational viability.
- c) Provide short-term and long-term operational and maintenance (O&M) cost of the system and describe how the proposed project will affect the overall financial and operational burden of the system.

This information should be included in all ER submittals for distressed LGUs only and must include both qualitative and quantitative information. **In the financial information section of the ER, please clearly identify this supplemental information as a separate sub-section.** This information may be related to the financial section but should include additional information regarding the project's effects on viability.

If you have any questions regarding this document or the information therein, please contact the Viable Utilities Project Unit: Christyn Fertenbaugh, PE – Supervisor – Christyn.Fertenbaugh@ncdenr.gov.

Provided below is additional clarification for each of the line items bulleted above, including example narratives for hypothetical scenarios (please note that examples provided do not use any real-world data). Please ensure that any narratives provided for your specific project encompass information and details for your project and do not solely rely on the examples below for language. If a 10-year Capital Improvement Plan (CIP) was not provided as part of the application for funding, please provide a copy of the project chart/schedule for review as part of the Engineering Report. If no such formal CIP exists, please provide additional narrative information describing how this project was selected for completion (also see Item c below).

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Item a):

List all ongoing projects with dollar amount, sources of funding, type (grant or loan) of funding and anticipated project completion dates.

This section is intended to provide a basic snapshot of all active projects, regardless of funding source, and should include all currently active study, planning, and construction projects. An example is below:

Example for Item a):

Title	Cost	Source(s) of \$ / Grant or Loan	Anticipated Completion
2022 Wastewater Improvements	\$1,250,000	VUR-W-ARP-0000 (grant)	May 31, 2026
Sewer AIA	\$150,000	AIA-W-0000 (grant)	End of 2023
Water AIA	\$150,000	AIA-D-0000 (grant)	End of 2023
WTP Improvements	\$5,065,000	WIF-0000 (SRF loan, 50% principal forgiveness)	February 28, 2026
Water System Improvements	\$825,000	Self-funded by utility out of capital reserves	End of 2025
Wastewater Rehab And Replacement	\$1,500,000	19-I-0000 (CDBG grant)	November 2024
WWTP Improvements	\$3,500,000	USDA 30yr loan	November 2024

Item b):

Describe how the proposed project will move the system towards financial, technical, and operational viability.

This section should include both qualitative and quantitative information regarding how this project will move the system towards viability. While financial viability is the primary focus, other areas of concern may be addressed as well (such as ongoing operational difficulties, compliance issues, etc.). Where best estimates or assumptions are necessary to calculate quantitative information, please indicate where these numbers are used and how they were determined, using appropriate engineering judgement.

Examples of quantitative information for various project types, including but not limited to:

- Water meter replacements: Consider the existing amount of apparent water loss and expected reductions of loss. Consider loss of revenue from inaccurate meters based on age of meters. Consider increased revenue from improved meter accuracy.
- Sewer rehabilitation: Consider reductions in I&I and associated treatment costs. Consider reduced compliance expenses (such as fines for SSO's) and/or reducing need for immediate treatment plant expansion.

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- WWTP or WTP rehabilitation/replacement: Consider new energy efficiencies, reduced treatment costs, or changes in technical capacity needed for operator classification.
- Regionalization: Consider effects related to interconnections, such as resiliency and reliability, or complete absorption of systems into others (e.g., resulting in a distressed system no longer having their own utility, therefore no longer being distressed).

Detailed example for Item b):

This project will replace all water lines in the Town more than 40 years old, including in several areas that were documented through our Asset Inventory and Assessment (AIA) study from 2020 to have unaccounted for water losses of around 34% (approximately 74,000 gallons per day (gpd)). Replacement of the water lines, valves, and hydrant legs in these areas should reduce the observed water losses by at least 50% (if not more).

The cost of providing water has been estimated to be approximately \$3.92 per thousand gallons, therefore the additional cost of water production due to the total volume of non-revenue water losses identified through our AIA is approximately \$290.08 per day, or \$105,879.20 annually. By reducing the water losses to 37,000 gpd or less, the Town could potentially reduce water production by around 13.5 million gallons annually, saving approximately \$52,939.60 in excess expenditures. This will lessen the overall financial burden at the system and free up revenue to be applied to other expenses such as capital improvements or debt service.

Item c):

Provide short-term and long-term operational and maintenance (O&M) cost of the system and describe how the proposed project will affect the overall financial and operational burden of the system.

Short-term O&M costs are generally those anticipated over a 10-year period and can be expressed as an annual average. Long-term costs are anticipated changes in O&M that are expected to arise as the result of population change and or capital investments beyond 10 years. If an LGU designated as distressed has completed an AIA, rate study, and Capital Improvement Plan (CIP); these documents should be used to help determine short term O&M costs. Additionally, items such as new technologies (and associated costs), increased operator activities, and other O&M costs should be considered as part of this analysis if they were not already considered in an AIA or CIP evaluation processes.

If a project in an existing CIP was originally included as a loan and is now being funded as a grant (ARPA or otherwise), then part of this analysis should identify how that affects the previously evaluated financial outlook for the LGU. Projects which are not listed in the LGU's current CIP should provide additional narrative information describing why/how the project was selected above the projects listed in the CIP.

Examples of quantitative short- and long-term O&M information for various project types, including but not limited to:

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- Water meter replacements: Consider the impact to O&M budgeting of installing new meters in terms of reduced time requirements to read meters, improved accuracy, and impact to customer service.
- Sewer rehabilitation/replacement: Consider reductions in operator/staff hours dealing with SSOs, reducing/eliminating need for immediate treatment plant expansion, reduced line breaks necessitating repairs.
- WWTP or WTP rehabilitation/replacement: Consider costs related to operator time and training necessary for classification of system, consider reductions in operational failures. Also consider increased O&M costs that could result from this project, including but not limited to additional power or chemical needs.
- Regionalization: Consider effects related to interconnections, such as decreased O&M costs related to more reliable water supply or wastewater service, or complete absorption of systems into others (e.g., resulting in a distressed system no longer having their own utility, therefore no longer supporting their own O&M costs).

Example 1 for Item c):

This project will rehabilitate or replace all sewer lines in the City's sewer collection system that have been documented through our 2022 AIA as sources of excessive inflow and infiltration (I&I) and/or documented Sanitary Sewer Overflows (SSOs). Significant I&I has led to increased treatment costs of approximately 40% over standard flows, based on comparisons of our drinking water meter sales and our flow meter leading into our WWTP, and additionally, has led to the City having a total of 17 SSOs in the past two years resulting in \$23,650 in civil penalties issued by the Division of Water Resources.

By rehabilitating these lines through cured in place liners, resealing manholes and pipe connections, and replacing several lines and manholes beyond repair, we anticipate that the I&I will be reduced by 80% resulting in a reduction in treatment cost overages related to I&I from approximately 40% to 5%. This rehabilitation project was previously documented in our CIP in 2027 as anticipated to be funded through a low-interest loan through the Division, therefore receiving grant funding through ARPA has resulted in the City being able to move this much-needed project forward by several years and has reduced the future debt service needed to fund this project.

In the short-term, the reduction in treatment costs is anticipated to be approximately \$38,500 annually; these savings will be redirected into the City's capital reserves, allowing the City to have an increased contingency for unexpected and urgent infrastructure projects. Further, a reduction in the likelihood of SSOs will provide increased time for operators to take care of other necessary tasks and reduce the overall burden on our staff, as these repeated SSOs each take approximately 6-10 hours minimum to inspect and resolve, leading to savings in operator time of approximately 102-170 working hours. These immediate time-savings will allow the City to better operate and maintain their sewer collection system and WWTP both in the short- and long-term horizons.

We anticipate that the annual debt service shown in our financial projections will be reduced by \$68,034 annually due to this project receiving grant funds as opposed to a repayable loan. This long-term impact of reducing annual debt over a period of a standard 20-year repayable SRF loan will

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allow the City to better manage and prioritize other operational improvements and expedite additional projects as listed in the CIP to reduce overall maintenance costs of aging infrastructure. Specifically, the water treatment rehabilitation project originally planned for 2029 can be budgeted to begin in 2026 due to the debt savings from receiving this grant for sewer rehabilitation.

Example 2 for Item c):

This project will add reverse osmosis (RO) treatment as a polishing step prior to disinfection to our existing conventional surface water treatment plant – this change is intended to address PFAS contaminants found in our source water. As this WTP provides regional service not only to our town, but to three other municipalities as well, it is of the utmost importance that these issues be addressed in a timely manner to avoid any regulatory compliance issues with the water supply for these four localities.

Because the change in treatment is in addition to our existing plant, we have calculated the estimated additional annual O&M costs to be a total of \$1,422,670, broken down here into the major cost areas. Detailed O&M breakdowns and assumptions can be found in Attachment B (not included as part of this example). These examples are based on the existing WTP capacity of 2 MGD. Increased power consumption is estimated to be the bulk of the additional costs (around 33%), while other items such as chemicals, labor, and maintenance make up the remainder.

Estimated additional annual O&M costs (in 2023 dollars):

- Power costs: \$460,420
- Chemical costs: \$232,480
- Consumables (e.g., membranes, cartridge filters): \$181,830
- General maintenance costs: \$246,110
- Additional labor costs: \$247,680
- “Other” costs (e.g., additional security, compliance testing): \$54,150

At present, our rates cannot support the increased O&M costs in addition to the debt service incurred by funding this project. In the short-term, we have completed a rate study which indicates the necessity to increase rates during each of the three years that it will take for this project to be completed; these rate increases will follow a schedule of 8%, 5%, and 5% in the next three fiscal years and will be applied to both our town and our regional customers. Prior to the RO treatment unit being placed into operation, revenue from these rate increases will be used to supplement our capital reserves. Upon completion of the project, the revenue generated from these increases will be used to cover the additional O&M costs imposed by this project as specified above.

In the longer term, the town intends to conduct annual rate assessments to address inflation as well as any other funding needs. As a placeholder and in an attempt to prevent rate shock, we have preemptively planned for 3% rate increases annually for the seven years remaining of our current 10-year CIP past this three-year project, based on our demonstrated needs and anticipating inflation. The town reserves the right to make adjustments to this plan as necessary, pending our operating ratios as well as any additional capital needs.

Frequently Asked Questions:

Q: Why are we having to complete new requirements now and where did they come from?

A: The advent of the VUR and its mission to work with LGUs who have been designated as distressed has resulted in the Division seeking ways to better assist and promote viability. While the statutory requirements to complete an AIA, rate study, and obtain initial education are a good start, many systems will need infrastructure improvements to become viable systems now and in the future. Therefore, it is important to ensure that distressed LGUs are making the right investments at the right time and are making optimal usage of any Division funds available.

The American Rescue Plan Act (ARPA) resulted in an accelerated schedule for developing this portion of the VUR program, which means that this information is now being requested during the ER review phase. We anticipate providing improved applicant support in the future, where some of this information may be provided and evaluated before an application for funding is submitted.

Q: Do the existing financial analysis workbooks and tables on the ER website cover these new requirements?

A: No, not directly. These tables were developed for the general purposes of the ER and alternatives analysis and were not created with the drive towards viability in mind. However, they may be helpful in evaluating long-term O&M costs or informing how a specific project promotes viability of an LGU.

Q: Are these ER requirements intended to take the place of the statutory VUR requirements for short-term and long-term action plans for infrastructure repair, maintenance, and management and the long-term financial management plan? Can our responses to these ER questions count as meeting those statutory requirements?

A: No, these ER requirements do not take the place of or address these statutory requirements, and they must still be developed as separate, non-project specific documents and be submitted to the VUR team for review. Ideally, development of these plans will directly inform the responses to these ER requirements, however, we recognize that many LGUs do not yet have these plans in place as funding may be awarded prior to the plans being finalized.