



Proposed 2022 Clean Water Act **Financial Capability Assessment** **Guidance**

February 2022

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I. Summary

The objective of the Clean Water Act (CWA) is “to restore and maintain the chemical, physical, and biological integrity of the Nation’s waters.”¹ Municipal discharges that violate the CWA can pose significant threats to public health and the environment. When a community is out of compliance with the CWA, the Agency’s expectation is that the community will achieve compliance with the CWA as soon as practicable. Financial capability is one of many factors EPA considers when developing schedules for implementation of long-term CWA control plans; the Agency should also consider the need to expeditiously restore water quality in communities that may have suffered from years of Clean Water Act violations.² The public health and environmental considerations that EPA assesses when developing CWA implementation schedules include environmental justice and mitigation of environmental and public health impacts in low-income and overburdened communities. EPA also encourages communities to utilize integrated planning³ and innovative technologies, such as green infrastructure,⁴ to achieve CWA compliance in a timely, flexible, and cost-effective manner.

Communities, in consultation with regulators and the public, are responsible for evaluating and selecting controls that will meet CWA requirements. After controls have been selected, a financial capability assessment (FCA) is used to aid in assessing a community’s financial capability as a part of negotiating implementation schedules under both permits and enforcement agreements. The Proposed 2022 Financial Capability Assessment Guidance (Proposed 2022 FCA) is intended to standardize what EPA plans to consider when determining a community’s financial capability to implement control measures needed to meet CWA obligations. It is not a methodology for defining water affordability.

The Proposed 2022 FCA incorporates aspects of EPA’s 1997 *Combined Sewer Overflows – Guidance for Financial Capability Assessment and Schedule Development* (1997 FCA Guidance) and EPA’s 2014 *Financial Capability Assessment Framework for Municipal Clean Water Act Requirements* (2014 FCA Framework), which are summarized in Section II.a. Going forward, the

¹ 33 U.S.C. § 1251.

² The CSO Control Policy explains that NPDES authorities “should determine the appropriate vehicle (i.e., permit reissuance, information request under CWA section 308 or State equivalent or enforcement action) to ensure that compliance with the CWA is achieved as soon as practicable.” 59 Fed. Reg. 18688, 18690 (April 19, 1994). The CSO Policy also requires that “each long-term CSO control plan . . . should [] include both fixed-date project implementation schedules (which may be phased) and a financing plan to design and construct the project as soon as practicable.” 59 Fed. Reg. at 18691.

³ In 2012, EPA developed the Integrated Municipal Stormwater and Wastewater Planning Approach Framework (Integrated Planning Framework) that offers a voluntary opportunity for a municipality to develop an integrated plan to meet multiple CWA requirements. Integrated Planning is a process that municipalities can use to achieve clean water and human health goals while addressing aging infrastructure, changing population and rainfall patterns, and competing priorities for funding. On January 14, 2019, the Water Infrastructure and Improvement Act (WIIA) (H.R. 7279) became law. WIIA added a new section 402(s) to the CWA to amend the CWA to include the 2012 Integrated Planning Framework.

⁴ Section 502 of the CWA defines green infrastructure as “...the range of measures that use plant or soil systems, permeable pavement or other permeable surfaces or substrates, stormwater harvest and reuse, or landscaping to store, infiltrate, or evapotranspire stormwater and reduce flows to sewer systems or to surface waters.”

Proposed 2022 FCA replaces the 1997 FCA Guidance to evaluate a community's capability to fund CWA control measures in both the permitting and enforcement context.

In addition, as described in Section II.b, the 1997 FCA Guidance is substantively identical to the public sector sections of the 1995 *Interim Economic Guidance for Water Quality Standards* (1995 WQS Guidance), which is used for evaluating water quality standards (WQS) decisions, including revisions to designated uses, WQS variances, and antidegradation reviews for high-quality waters. Going forward, the Proposed 2022 FCA (particularly Section IV.g) supplements, and should be used in conjunction with, the public sector sections of the 1995 WQS Guidance to assist states and authorized tribes in assessing the degree of economic impact of potential WQS decisions. The Proposed 2022 FCA does not revise the recommended methodology in the private sector sections of the 1995 WQS Guidance.

In Section IV, the Proposed 2022 FCA sets forth two alternatives for assessing financial capability that a community could choose to employ. The first alternative adopts the Residential Indicator (RI) and the Financial Capability Indicator (FCI) from the 1997 FCA Guidance and adds consideration of the lowest quintile income and poverty prevalence within a service area. The second alternative utilizes dynamic financial and rate models that evaluate the impacts of debt service on customer bills. Additional information such as a community's total water costs (i.e., costs for wastewater, stormwater, and drinking water infrastructure investment) may also be submitted and considered when negotiating the length of an implementation schedule for a community's CWA obligations.

EPA plans to work with communities to identify funding sources and financing strategies that can be used to reduce costs over time. As described below, the determination of availability of such funding should be part of a community's financial capability assessment where there are poverty concerns, and a community's decision not to use available subsidized funding should not be a basis for a finding that a community lacks financial capability. As outlined in Section IV.b.4, when there is a "medium" or "high" impact on a community's lowest quintile households, the FCA recommends submittal of a Financial Alternatives Analysis documenting that all feasible steps have been taken to mitigate impacts on the lowest quintile. This step should be a precursor to EPA's consideration of an extended CWA schedule or WQS revisions based on poverty considerations.

EPA has a responsibility to ensure that recipients and subrecipients of federal financial assistance from EPA—including states, municipalities, and other public and private entities—comply with federal civil rights laws that prohibit discrimination on the basis of race, color, national origin (including limited English proficiency), disability, sex, and age,⁵ including Title VI of the Civil Rights Act of 1964.

⁵ Title VI of the Civil Rights Act of 1964, 42 U.S.C. §§ 2000(d) et seq. (Title VI); Section 504 of the Rehabilitation Act of 1973, as amended, 29 U.S.C., 29 U.S.C. § 794, Title IX of the Education Amendments of 1972, as amended, 20 U.S.C. §§ 1681 et seq.; Age Discrimination Act of 1975, 42 U.S.C. §§ 6101 et seq.; Federal Water Pollution Control Act Amendments of 1972, Pub. L. 92 500 § 13, 86 Stat. 903 (codified as amended at 33 U.S.C. § 1251 (1972)); 40 C.F.R. Parts 5 and 7.

Whenever a community receives funding from EPA, including through the Clean Water Act State Revolving Fund and the Safe Drinking Water State Revolving Fund, EPA intends to ensure compliance with civil rights laws by recipients of such funding. It is EPA's obligation to ensure no community is excluded from receiving or denied benefit of EPA funding based on race, color, national origin (including limited English proficiency), age, disability, or sex.⁶

The Proposed 2022 FCA contains a number of questions for public comment, described throughout Section III.b and summarized in Section V.

II. Background on EPA's Financial Capability Assessment Guidance and Framework and Interim Economic Guidance for Water Quality Standards

a. 1997 FCA Guidance and 2014 FCA Framework

EPA's 1997 FCA Guidance sets forth a two-phased approach for evaluating a National Pollutant Discharge Elimination System (NPDES) permittee's financial capability to fund CSO controls in accordance with the CSO Policy.⁷ In the first phase, the RI calculates the cost per household as a percentage of median household income (MHI) for the service area of the permittee using data collected by the U.S. Census Bureau. In the second phase, the FCI evaluates the municipality or wastewater utility's overall fiscal health and local demographics relative to national norms. The RI and FCI results are brought together in a matrix that evaluates the impact ("high," "medium," or "low") a proposed CWA program imposes on the municipality or utility. This two-phased approach is referred to as the Financial Capability Assessment (FCA). While developed for use in assessing a community's capability to fund CSO controls, EPA has also used the 1997 FCA Guidance to inform schedules to implement SSO and other CWA control measures.

EPA developed the 2014 FCA Framework to encourage the use of the flexibility available under the 1997 FCA Guidance. Both the 1997 FCA Guidance and the 2014 FCA Framework were developed with extensive public input and the RI and FCI are based on factors for consideration of financial capability⁸ as identified in the CSO Policy. The results of the FCA analyses provide an important benchmark for EPA decision-makers to consider in CWA permitting and enforcement actions to support consistency across the country. EPA has used both the 1997 FCA Guidance and the 2014 FCA Framework to support consent decree negotiations with over 100 wastewater utilities throughout the United States and U.S. territories.

⁶ For more information about the federal civil rights laws enforced by EPA, including Title VI, please visit: <https://www.epa.gov/ocr/title-vi-laws-and-regulations> and <https://www.epa.gov/ogc/external-civil-rights-compliance-office-title-vi>.

⁷ CWA § 402(q) requires that each permit, order, or decree for a discharge from a municipal combined storm and sanitary sewer shall conform with the CSO Policy.

⁸ These factors are: i) Median household income; ii) Total annual wastewater and CSO control costs per household as a percent of median household income; iii) Overall net debt as a percent of full market property value; iv) Property tax revenues as a percent of full market property value; v) Property tax collection rate; vi) Unemployment; and vii) Bond rating. 59 Fed. Reg. 18688, 18894.

EPA does not view or use the 1997 FCA Guidance as a rigid metric that points to a given schedule length or threshold over which the costs are deemed unaffordable. It is a common misconception that the FCA can be used to cap spending on CWA programs or projects at a percentage of MHI. The FCA does not remove obligations to comply with the CWA nor does it reduce regulatory requirements. Rather, EPA uses the FCA to assess a community's financial capability for the purpose of developing a reasonable implementation schedule for necessary improvements that will not overly burden the community. In practice, EPA considers each community's financial capability on a holistic case-by-case basis, and MHI is only one of the metrics that EPA evaluates. Where appropriate, EPA has considered supplemental information submitted by the community (as encouraged by the 2014 FCA Framework) and approved implementation schedules that are longer than the schedules suggested by the 1997 FCA Guidance baseline analysis.

b. 1995 Interim Economic Guidance for Water Quality Standards

The 1995 WQS Guidance is used for developing supporting analyses for revisions to designated uses, justifications for WQS variances, and for making decisions to allow a discharge that will use the assimilative capacity in a high-quality water. The public sector portion of the 1995 WQS Guidance uses a substantively identical two-phased approach, data, and metrics as the 1997 FCA Guidance. However, the terminology used in the two guidance documents is different.

The first step of the public sector analysis of the 1995 WQS Guidance involves determining a Municipal Preliminary Screener Score (MPS) to assess the impact of the cost to households of the pollution control technology needed to meet water quality-based requirements. The MPS is the cost as a percentage of the median household income (i.e., the ratio of the total per-household costs and the median household income). In the 1997 FCA Guidance, this same ratio is called the Residential Indicator.

The second step of the public sector analysis of the 1995 WQS Guidance involves determining the Secondary Score to evaluate the community's financial capability, using six measures of a community's financial health - bond rating, net debt as a percent of the full market property value, unemployment rate, median household income, property tax revenues as a percent of full market property value, and property tax collection rate. In the 1997 FCA Guidance, these same six measures are used to calculate the Financial Capability Indicator.

In the 1995 WQS Guidance, these two indicators are brought together into a matrix to determine the degree of economic and social impact for a WQS decision, whereas the matrix in the 1997 FCA Guidance is used to determine a community's financial capability to support schedule negotiations.

Because the 1995 WQS Guidance and the 1997 Guidance are so aligned, the Proposed 2022 FCA supplements the public sector sections of the 1995 WQS Guidance to assist states and authorized tribes in assessing the degree of economic and social impact of potential WQS decisions. The Proposed 2022 FCA does not revise the recommended methodology in the private sector sections of the 1995 WQS Guidance. Section IV.g of the Proposed 2022 FCA

applies to the consideration of economic impacts to public entities when evaluating WQS variances and antidegradation reviews. In appropriate cases, these methodologies also inform decisions about revisions to designated uses, subject to the additional analyses described in Section IV.g.

III. Development of the Proposed 2022 FCA Guidance

a. Purpose of the Proposed 2022 FCA Guidance

The Proposed 2022 FCA advances the ability of communities to demonstrate the financial impacts they face and increases the transparency of EPA's considerations as it endeavors to consistently apply FCA methodologies across the country. The Proposed 2022 FCA allows communities to submit more consistent and comprehensive information relevant to the entire community's capability to fund CWA control measures and programs. Specifically, the Proposed 2022 FCA includes templates and calculations that communities can use to submit information regarding lowest quintile income (LQI), drinking water costs, financial models or studies, and other relevant information. The templates and calculations include references to applicable publicly available data sources that can be used in compiling this information.

The Proposed 2022 FCA sets forth two alternative recommended approaches for assessing a community's financial capability to be used in CWA schedule development. The first alternative is the existing 1997 FCA methodology with expanded consideration of lowest quintile income and poverty in the service area. The second alternative is the development of a dynamic financial and rate model that looks at the impacts of rate increases over time on utility customers.

Additionally, EPA recommends the application of the methodologies from Alternative 1 of the Proposed 2022 FCA to the consideration of economic impacts to public entities when making decisions on WQS variances and antidegradation reviews. In appropriate cases, these methodologies also inform decisions about revisions to designated uses, subject to additional analyses.

Relevant portions of the 1997 FCA Guidance for calculation of the RI and FCI are included as Appendices A and B. The structure of these Appendices generally follows the 1997 FCA Guidance worksheets and adds standardized instructions and practice tips to define and incorporate certain additional costs into the RI calculation, i.e., total CWA costs per household as a percent of MHI. MHI represents the mid-point of income in a geographical area determined by the American Community Survey (ACS). The median is generally used to derive a central tendency since it is not largely affected by outlier values. However, EPA recognizes that many communities have customers at either end of the income spectrum. For communities with households that have difficulty paying for their water services, these challenges can be indicated by looking at the community's LQI along with its MHI. As such, EPA has incorporated LQI into the FCA methodology.

The Proposed 2022 FCA can help to ensure that local challenges related to low-income households are more fully considered. The addition of consideration of lowest income households and poverty prevalence in a service area may identify some communities as having a “high” impact under the new Expanded FCA Matrix that may have been a “medium” impact under the 1997 FCA. In such an example, the community’s RI and FCI may show that the community as a whole has the resources to invest in water infrastructure, but that those investments could potentially impose a significant burden on lower-income households unless steps are taken to avoid that result. In such cases, Appendix C of this guidance describes measures communities can implement to reduce that burden, and Section IV.b.4 describes the approach EPA intends to take to address any remaining impacts to lower-income households after the community has done what it can. Where communities seek to extend compliance schedules based on an updated FCA, the environmental, public health, environmental justice, and additional financial considerations discussed in Sections IV.b.4 (Financial Alternatives Analysis) and IV.f (Schedule Development) should be key elements of any such updated analysis. In addition, reopening a previously approved compliance schedule to seek a schedule extension also involves consideration of whether additional control measures may be required for compliance with the CWA.

As with the 1997 FCA Guidance, showing a “medium” or “high” impact in the new Expanded FCA Matrix does not mean that capital investments in critical infrastructure projects should stop. Communities should continue to make capital investments to meet water quality standards even where the Expanded FCA Matrix results indicate a “medium” or “high” impact, though extended schedules may offer flexibility for communities. While EPA is committed to ensuring that financial capability is taken into consideration, it is also critically important that all communities—including lower-income communities—are ensured the protections of the Clean Water Act and the benefits of safe, clean water. To achieve both goals, communities and regions could work to sequence projects within an extended schedule of up to 20 years, or 25 years for unusually high impacts, where the community shows these impacts cannot be addressed through measures such as alternative rate structures, assistance programs, or other sources of funding.⁹ Where schedules of work are phased, the goal should still be to complete the project within the recommended time frames and prioritize the most environmentally important projects as early as possible. As noted above, an FCA should not be used to cap spending on CWA programs or projects at a percentage of MHI or LQI. The types of data provided in the Proposed 2022 FCA are not exhaustive. Consistent with previous policy, EPA plans to consider any relevant financial or demographic information presented that illustrates unique or atypical circumstances faced by a community.

EPA is committed to working with state, tribal, local, and non-government partners to assist communities in meeting CWA obligations in a manner that recognizes unique local financial

⁹ The length of financing can be just as important as the length of a construction implementation schedule when trying to keep rates low for a community’s lowest quintile households. For instance, a community could fund a 20-year implementation schedule with a 30-year or more loan, and in some cases, with low interest or negative interest loans and debt forgiveness from state revolving funds.

challenges. We strongly encourage additional subsidy or grant consideration from governmental funding sources for entities that are considering application for extended schedules because of financial capability constraints. Federal funding initiatives and programs such as the Bipartisan Infrastructure Law (BIL), American Rescue Plan Act (ARPA), State Revolving Loan Funds (SRFs), Water Infrastructure Finance and Innovation Act (WIFIA), and others provide billions of dollars for state, local, territorial, and tribal governments. The BIL has provided \$11.7 billion in additional funds to the Clean Water State Revolving Fund (CWSRF). The state match requirement has been reduced to 10% for the first two years and 49% of the money will be provided as grants or principal forgiveness loans to communities. These resources create a historic opportunity for communities to address long-standing clean water needs.

State, local, and tribal governments' equitable support of communities with limited resources can help those communities meet the challenges of funding necessary water infrastructure improvements, especially where there are disadvantaged and lower income communities with environmental justice, compliance, enforcement, and other concerns. EPA's review of our SRFs and WIFIA, for example, indicate that disadvantaged community funding can make a substantial difference in terms of improving compliance and mitigating environmental pollution by getting needed projects underway and maintaining affordable water service. EPA, in accordance with Executive Order 14008, is working towards a goal that 40 percent of the overall benefits of federal investments in the development of critical clean water infrastructure flow to disadvantaged communities.

Appendices C and D provide information related to water infrastructure financing. These types of programs can help a community come into compliance more quickly and to reduce the financial impacts on a community's lowest quintile households. EPA's Water Finance Clearinghouse (<https://clearinghouse.epa.gov/wfc>) can also be used to pinpoint federal, state, and non-governmental sources of funding and financing that may help communities access capital to meet their water infrastructure needs. The WFC can also provide information on rate structures, financial plans, and customer assistance programs. In addition, EPA's Municipal Ombudsman (<https://www.epa.gov/ocir/municipal-ombudsman>) serves as a resource for communities seeking to comply with the Clean Water Act and will coordinate with the appropriate EPA offices to assist communities with information on federal financial assistance, technical assistance, and integrated planning.

b. Changes from September 2020 FCA Proposal

On September 18, 2020, EPA published a *Proposed 2020 Financial Capability Assessment for Clean Water Act Obligations* (Proposed 2020 FCA) in the Federal Register for notice and public comment.¹⁰ On January 12, 2021, EPA posted a pre-publication version of the FCA Guidance on the Agency website. The pre-publication FCA was never published in the Federal Register and was withdrawn for review and approval in accordance with the January 20, 2021 White House

¹⁰ See 85 Fed. Reg. 58352 (Sept. 18, 2020).

Memorandum, *Regulatory Freeze Pending Review*.¹¹ The Proposed 2022 FCA reflects EPA's consideration of public comments received in response to its September 2020 Federal Register notice, as well as feedback received through various stakeholder outreach sessions since then. The three major changes from the Proposed 2020 FCA are outlined below.

1. Consideration of Lowest Quintile Households and Poverty Indicators

EPA originally proposed to supplement the RI and FCI metrics with two new metrics, the Lowest Quintile Residential Indicator (LQRI) and the Poverty Indicator (PI). The LQRI was intended to evaluate the financial impact of CWA costs on lowest quintile households in a community by calculating the ratio of adjusted costs per lowest quintile household to the service area's lowest quintile income. EPA sought comment on whether the same benchmarks for assessing the Residential Indicator should be used for assessing the LQRI (i.e., 2% to indicate a "high" impact) or if a different benchmark should be used.

While commenters from local governments, the wastewater sector, and environmental organizations were supportive of the new poverty measures, some of these commentors also expressed concerns about the methodology proposed to scale the costs for lowest quintile households and the proposed LQRI thresholds. A number of community-specific factors—such as age of infrastructure, housing type, and efficiency of water appliances—may impact water usage and costs to lowest quintile households. In addition, if the community charges residential customers on a fixed rate structure, i.e., low-volume households receive the same bill as high-volume households, a metric that scales down estimates of cost based on projected water use would likely not be appropriate.

EPA recognizes that considering lowest quintile income is an important measure to supplement existing FCA metrics. MHI does not account for the variability of income distribution from community to community. Even when communities have a similar MHI, infrastructure investments could have a greater financial impact on low-income households in certain situations, such as when there is a wide distribution between the highest and lowest income customers. For this reason, EPA is proposing two simplified Proposed Options to assess the severity and prevalence of poverty in a community's service area. EPA is seeking comment on both Proposed Options, but only one of the Proposed Options will be included in the final 2022 FCA Guidance. Both Options consider the community's lowest quintile income as benchmarked against the national lowest quintile income, as well as five poverty indicators:¹²

¹¹ See <https://www.whitehouse.gov/briefing-room/presidential-actions/2021/01/20/regulatory-freeze-pending-review/>.

¹² As compared to the September 2020 FCA Proposal, EPA eliminated two poverty indicators and added three indicators to help make a better assessment of the prevalence of poverty. One of the eliminated indicators, "percent under federal poverty level," was redundant of "percent under 200% of federal poverty." The second eliminated indicator, "lowest quintile income as percent of aggregate income," did not help us differentiate between communities with substantial numbers of low-income residents and those with fewer low-income residents. We added three factors that help with that differentiation: "unemployment," "percent of vacant

- Percentage of Population with Income Below 200% of Federal Poverty Level;
- Percentage of Population Receiving Food Stamps/SNAP Benefits;
- Percentage of Vacant Households;
- Trend in Household Growth; and
- Percentage of Unemployed Population 16 and Over in Civilian Labor Force.¹³

EPA has determined that the methodology of either Option 1 or 2 would enable EPA to distinguish between two communities with similar MHI but different prevalence or severity of poverty.

Proposed Option 1 for Comment: This Option would add a single new metric, the Lowest Quintile Poverty Indicator (LQPI), to be considered with the RI and FCI. The LQPI would combine a lowest quintile income element with poverty indicator elements. To ensure that both the severity and prevalence of poverty are reflected in the LQPI metric, EPA would give equal weight to the LQI (50%) and the five prevalence of poverty indicators (weighted at 10% each for a total of 50%).

Under Proposed Option 1, RI and FCI would be combined in a matrix to determine an FCA Score. An Initial LQPI Score would be calculated, and adjusted based on a Financial Alternatives Analysis, if appropriate. Finally, the FCA Score and Final LQPI Score would be combined in the Expanded FCA Matrix to provide the final FCA result.

Proposed Option 2 for Comment: This Option would add two new metrics, the Lowest Quintile Income Indicator (LQII) and the Poverty Indicator (PI) to be considered with the RI and FCI. The LQII is the lowest quintile income metric; and the PI is a separate metric based on the average scores of the five prevalence of poverty indicators.

Under Proposed Option 2, RI and FCI would be combined in a matrix to determine an FCA Score. Then, LQII and PI would be each calculated and combined in a matrix to determine an Initial LQPI Score. The Initial LQPI Score would be adjusted based on a Financial Alternatives Analysis, if appropriate. Finally, the FCA Score and Final LQPI Score would be combined in the Expanded FCA Matrix to provide the final FCA result. See Section IV.b.3 for an explanation of the calculations for Option 1 (Exhibit 1a) and Option 2 (Exhibit 1b).

households,” and “trend in household growth.” We retained “percent living under 200% of the federal poverty level” and “percent receiving food stamps or SNAP benefits.”

¹³ The FCI and Poverty Indicators both evaluate unemployment rate for the population in the civilian labor force, although using two different standards for evaluation. The FCI bounds for unemployment rate are +/- 1 percentage point of the national average (i.e., for a national average of 4 percent, the lower bound would be 3 percent and the higher bound would be 5 percent). The Poverty Indicator bounds for unemployment rate are +/- 25% of the national average. In EPA’s view, it can be useful to evaluate the same variable with different bounding methods, especially for years when unemployment rates spike across the country. On the other hand, when unemployment rates are low, the two should have a similar result. In addition, the unemployment rate is relevant to the general economic well-being of residential users in the permittee’s service area (FCI). It is also relevant for benchmarking the prevalence of poverty within the service area (PI).

Question for Public Comment #1: Should the Final 2022 FCA incorporate a single new metric—LQPI—that considers lowest quintile income and poverty indicators together? Or should the Final 2022 FCA incorporate two new metrics (a lowest quintile income indicator and a poverty indicator) to be calculated separately and combined in a matrix?

2. Addition of Financial Alternatives Analysis

Where CWA compliance costs may impact on residents with incomes in the lowest quintile, a longer schedule may not always be the best solution to address impacts to those residents. In particular, if a community shows strong economic indicators in other categories, there may be better options for the community to address the potential financial burden faced by its lowest quintile residents.¹⁴ If the intended goal is to help a community's lowest income residents, an extended CWA schedule may, in fact, have the opposite effect if it delays addressing pollution in the neighborhoods where they live.¹⁵

Use of variable rate structures, customer assistance programs (CAPs), and applications for grants or subsidies from the CWSRF are all potential tools to enable shorter compliance schedules by allowing increased total spending on compliance without burdening low-income customers. In addition, shorter compliance schedules provide water quality and public health improvements that deliver important social, environmental, and economic benefits to the community. For these reasons, as discussed below in Section IV.b.4, EPA does not intend to provide extended CWA compliance schedules or greater consideration for WQS decisions for communities with a "medium" or "high" Initial LPQI Score unless the community demonstrates that it has taken all feasible steps to reduce or mitigate the financial impact of water service costs on the lowest quintile households and to achieve compliance as expeditiously as possible. In evaluating this demonstration, EPA expects to look comprehensively at the community's financial strategy, including, but not limited to, an analysis of the community's approach to covering costs through rate structure and design as well as its other initiatives to assist low-income customers while assuring necessary and timely compliance with environmental requirements. Examples of these types of tools are included in Appendix C.

Question for Public Comment #2: EPA is seeking additional examples or case studies of funding and financing considerations to add to Appendix C.

The goal of this revised approach is to seek ways to minimize financial impacts on the lowest income households while ensuring they also enjoy the benefits of infrastructure investments

¹⁴ The CSO Policy identifies three additional financial considerations for negotiating implementation schedules: grant and loan availability; previous and current residential, commercial, and industrial sewer user fees and rate structures; and other viable funding mechanisms and sources of financing. See 59 Fed. Reg. at 18694.

¹⁵ In addition, in an inflationary environment, the costs of delayed work can be higher where community growth is stagnant.

and improved water quality. Extended CWA compliance schedules or WQS revisions that lower the goals for a water body potentially widen water quality and health disparities among communities, creating environmental justice concerns. On one hand, low-income households may be paying a higher percentage of their total income for basic services and clean water, but on the other hand, if the community is out of compliance with the CWA, overburdened and/or low-income neighborhoods will likely continue to suffer impacts to human health and the environment from raw sewage overflows and inadequately controlled stormwater discharges. Residents in low-income communities also may be more dependent on nearby waters for recreation, fishing, and drinking water. In EPA's view, the first-line responsibility for balancing the financial impact and local clean water improvements rests with the local community. However, EPA is committed to carefully reviewing financial impacts and using the tools and technical assistance at the Agency's disposal to help local communities mitigate environmental—and related financial and societal—impacts for low-income households.

3. *Modification of Scheduling Benchmarks*

The Proposed 2020 FCA provided that communities with “medium” FCA impacts could qualify for compliance schedules up to 15 years. “High” impact communities could receive compliance schedules up to 25 years, or up to the useful life of the CSO controls if they demonstrate an unusually high impact. For users of the 2022 FCA, it is more transparent and consistent to define a recommended scheduling boundary rather than retain the “useful life” schedule benchmark. It is important to consider human health and environmental impacts as well as cost when determining compliance schedules. EPA is also mindful that prolonging water quality impairments could exacerbate environmental justice concerns. EPA believes that, for communities that demonstrate unusually high impacts, 25 years is a reasonable recommended scheduling benchmark that is more consistent with environmental protection and past FCA practice.

The Proposed 2022 FCA keeps 15 years as the outer recommended boundary for “medium” impact communities but changes the benchmark for “high” impact communities to 20 years, or up to 25 years for communities that demonstrate unusually high impacts, as shown below. However, EPA is seeking comment on whether the 20 years for “high” impacts, and 25 years for unusually high impacts, are appropriate recommended scheduling boundaries.

Expanded FCA Matrix Results	Proposed 2020 FCA Recommended Implementation Schedule Benchmarks	Proposed 2022 FCA Recommended Implementation Schedule Benchmarks
Low Impact	Normal Engineering/Construction Schedule	Normal Engineering/Construction Schedule
Medium Impact	Up to 15 Years	Up to 15 Years

High Impact	Up to 25 years (or up to useful life of CSO controls based on additional considerations)	Up to 20 years (or up to 25 years based on additional considerations)
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Question for Public Comment #3: EPA is seeking feedback on the current proposed scheduling benchmarks of 20 years for “high” Expanded FCA Matrix impacts, or 25 years for unusually high impacts. If commentors propose different benchmarks, EPA is requesting examples to support the basis for such benchmarks.

IV. Proposed 2022 Financial Capability Assessment Guidance

a. Overview of the Proposed 2022 FCA

The Proposed 2022 FCA allows communities to provide information under either Alternative 1 or Alternative 2 to establish financial capability for CWA implementation schedules. Alternative 1 of the Proposed 2022 FCA involves analyzing both the first phase (RI) and the second phase (FCI) of the two-phased approach in the 1997 FCA Guidance as critical metrics and adds a new critical metric: the Lowest Quintile Poverty Indicator (LQPI) Score.¹⁶ These three critical metrics, along with a Financial Alternatives Analysis in appropriate circumstances, are considered in accordance with the Expanded FCA Matrix (Exhibit 4). The Proposed 2022 FCA includes recommended implementation schedule benchmarks applicable to Alternative 1 (Exhibit 8). Alternative 2 of the Proposed 2022 FCA involves analyzing financial and rate models in addition to calculating the LQPI Score.

It should be emphasized that these alternatives might not present the most complete picture of a community’s financial capability to fund its CWA requirements. However, these metrics do provide a common basis for financial impact discussions among the community, the state or tribe, and EPA. Since flexibility is an important aspect of the CWA, communities are encouraged to submit any additional documentation (Other Metrics) for consideration that would create a more accurate and complete picture of their financial capability. The Proposed 2022 FCA includes Other Metrics with Standardized Instructions and Other Metrics with Submission of Information to be Determined by the Community. Both alternatives permit consideration of Other Metrics and may support an extended implementation schedule, not to exceed 25 years. See Sections IV.d and IV.e for more information on additional metrics.

Alternative 1: Critical Metrics with Established Thresholds and Instructions

- Residential Indicator – cost per household as a percentage of MHI

¹⁶ As discussed throughout this Proposed 2022 FCA, the “LQPI Score” represents the result from either the LQPI under Proposed Option 1 or the matrix score after combining the LPII Score and PI Score under Proposed Option 2.

- Financial Capability Indicator – six socioeconomic, debt, and financial indicators used to benchmark a community’s financial strength
- Lowest Quintile Poverty Indicator Score –
 - Under Proposed Option 1 for Comment:
 - Final Lowest Quintile Poverty Indicator: one lowest quintile income element (weighted at 50%) and five poverty elements (weighted at 10% each) used to benchmark the severity and prevalence of poverty within the community’s service area
 - Under Proposed Option 2 for Comment:
 - Lowest Quintile Income Indicator: community’s lowest quintile income benchmarked against national lowest quintile income
 - Poverty Indicator: five poverty indicators used to benchmark the prevalence of poverty in a community

Alternative 2: Critical Metrics

- Financial and Rate Models
- Lowest Quintile Poverty Indicator

Other Metrics with Standardized Instructions

- Drinking Water Costs
- Potential Bill Impact Relative to Household Size
- Customer Assistance Programs
- Asset Management Costs
- Stormwater Management Costs

Examples of Other Metrics with Submission Information Determined by the Community

- Unemployment Rates
- Debt Service Coverage Ratio
- Debt to Income Ratio
- Percent Population Decline, or Other Population Trends
- Locality Specific Information on Household Size, Including the Size of Households with Incomes in The Lowest Quintile
- State or Local Legal Restrictions or Limitations on Property Taxes, Other Revenue Streams, or Debt Levels
- Other Metrics as Determined by the Community

b. Alternative 1: Critical Metrics with Established Thresholds and Instructions

1. Residential Indicator

The first step of Alternative 1 is to calculate the Residential Indicator by following the instructions for Worksheets 1 and 2 in Appendix A to determine the Residential Indicator Financial Impact of “low,” “mid-range,” or “high.”

Residential Indicator Financial Impact	Residential Indicator (CPH as % MHI)¹⁷
Low	Less than 1.0 Percent of MHI
Mid-Range	1.0 - 2.0 Percent of MHI
High	Greater than 2.0 Percent of MHI

2. Financial Capability Indicator

The second step of Alternative 1 is to calculate the Financial Capability Indicators by following the instructions for Worksheets 3 to 9 in Appendix B and use the results to determine the Financial Capabilities Indicators Score (“weak,” “mid-range,” or “strong”).

Financial Capability Indicators Score	Socioeconomic, Debt, and Financial Indicators
Weak	Below 1.5
Mid-Range	Between 1.5 and 2.5
Strong	Above 2.5

3. Initial Lowest Quintile Poverty Indicator Score

The third step of Alternative 1 is to calculate an Initial Lowest Quintile Poverty Indicator Score by using the list of indicators in Exhibit 1 to benchmark the severity and prevalence of poverty within the community’s service area. These indicators (other than “Trend in Household Growth”) are evaluated using a $\pm 25\%$ benchmark to national values, like the methodology used to calculate the FCI. For instance, if the national Percentage of Population with Income Below 200% of Federal Poverty Level is 32%, then a community with a value less than 24% would equal a “strong” score for this indicator, a value between 24% to 40% would equal a “mid-range” score, and a value above 40% would equal a “weak” score. Using a $\pm 25\%$ benchmark closely aligns with the middle quintile of data for the parameter, which can characterize the “middle class” of Americans. This bracketing of the middle 50% is a common methodology of identifying outliers on either end of the data distribution.

¹⁷ In the mid-1990s EPA developed the 1% and 2% Residential Indicator benchmarks after conducting an analysis of the costs of wastewater services as a percentage of household income using EPA’s Municipality’s Ability to Pay Model (MABEL) database. The analysis also examined the National Wastewater User Fee Study of the Construction Grants program database, which captured the annual residential expenditures as a percentage of median household income. The 2% benchmark was calculated to be two standard deviations above the average expenditure per household.

“Trend in Household Growth,” the fifth indicator, is evaluated using >1%, 0-1%, and <0% benchmarks.¹⁸ To calculate “Trend in Household Growth”:

- Collect total number of occupied housing units (i.e., households) data, based on the 5-year ACS, for the most recent year and five years earlier from Census Table B25002.
 - o Refer to <https://data.census.gov/cedsci/all?q=B25002>.
- Enter historical household data into the Geometric Average Growth Rate formula below to calculate the five-year trend

$$5 - \text{Year Geometric Average Growth Rate} = ((1 + (HH_n - HH_{n-5})/HH_{n-5}))^{1/5} - 1$$

HH = Number of Occupied Housing Units
n = Most Recent Census Data Year

$$5 - \text{Year Geometric Average Growth Rate} = ((1 + (15,500 - 15,000)/15,000))^{1/5} - 1 = 0.66\%$$

If the community's service area includes more than one jurisdiction, the LQPI indicators should be weighted based the number of households in each jurisdiction throughout the community's entire service area.

¹⁸ This indicator is “strong” if the five-year average household growth is greater than 1 percent. The indicator is “weak” if the five-year average household growth is negative (less than 0 percent). The indicator is “mid-range” if the five-year average household growth is between 0 percent and 1 percent.

Exhibit 1a: Instructions for Calculation of the Initial Lowest Quintile Poverty Indicator Score Under Proposed Option 1

Proposed Option 1: Determine Initial Lowest Quintile Poverty Indicator Score using the template below.

Indicator (Census Data Code)	Strong (Score = 3)	Mid-Range (Score = 2)	Weak (Score = 1)	Weight	Actual Value	Score
LQPI #1 Upper Limit of Lowest Quintile Income (B19080)	More than 25% above national LQI	±25% of national LQI	More than 25% below national LQI	50%		
LQPI #2 Percentage of Population with Income Below 200% of Federal Poverty Level (S1701)	More than 25% below national value	±25% of national value	More than 25% above national value	10%		
LQPI #3 Percentage of Population Receiving Food Stamps/SNAP Benefits (S2201)	More than 25% below national value	±25% of national value	More than 25% above national value	10%		
LQPI #4 Percentage of Vacant Households (B25002)	More than 25% below national value	±25% of national value	More than 25% above national value	10%		
LQPI #5 Trend in Household Growth (B25002)	>1%	0%-1%	<0%	10%		
LQPI #6 Percentage of Unemployed Population 16 and Over in Civilian Labor Force (DP03)	More than 25% below national value	±25% of national value	More than 25% above national value	10%		
Score for LQPI #1						
Average Score for LQPI #2 to #6 (Sum of 2 through 6 divided by 5)						
Initial Lowest Quintile Poverty Indicator Score (Sum of two lines above divided by 2)						
Initial Lowest Quintile Poverty Indicator Benchmarks Low Impact (Above 2.5) Medium Impact (1.5 to 2.5) High Impact (Below 1.5)						

Exhibit 1b: Instructions for Calculation of Initial Lowest Quintile Poverty Indicator Score Under Proposed Option 2

Proposed Option 2, Step 1: Determine Lowest Quintile Income Indicator Score using benchmarks below.

Score	Lowest Quintile Income Indicator
Weak	More than 25% below National LQI
Mid-Range	±25% of National LQI
Strong	More than 25% above National LQI

Proposed Option 2, Step 2: Determine Poverty Indicator Score using template below.

Indicator (Census Data Code)	Strong (Score = 3)	Mid-Range (Score = 2)	Weak (Score = 1)	Actual Value	Score
PI #1 Percentage of Population with Income Below 200% of Federal Poverty Level (S1701)	More than 25% below national value	±25% of national value	More than 25% above national value		
PI #2 Percentage of Population Receiving Food Stamps/SNAP Benefits (S2201)	More than 25% below national value	±25% of national value	More than 25% above national value		
PI #3 Percentage of Vacant Households (B25002)	More than 25% below national value	±25% of national value	More than 25% above national value		
PI #4 Trend in Household Growth (B25002)	>1%	0%-1%	<0%		
PI #5 Percentage of Unemployed Population 16 and Over in Civilian Labor Force (DP03)	More than 25% below national value	±25% of national value	More than 25% above national value		
Poverty Indicator Score (Sum of lines above divided by 5)					
Poverty Indicator Benchmarks Strong (Above 2.5) Mid-Range (1.5 to 2.5) Weak (Below 1.5)					

Proposed Option 2, Step 3: Determine Initial Lowest Quintile Poverty Indicator Score using matrix below.

Poverty Indicator	Initial Lowest Quintile Income Indicator		
	Strong (More than 25% above National LQI)	Mid-Range ($\pm 25\%$ of National LQI)	Weak (More than 25% below National LQI)
Strong (Above 2.5)	Low Impact	Low Impact	Medium Impact
Mid-Range (1.5 to 2.5)	Low Impact	Medium Impact	High Impact
Weak (Below 1.5)	Medium Impact	High Impact	High Impact

4. Financial Alternatives Analysis

The fourth step of Alternative 1 is to perform a Financial Alternatives Analysis if the community's Initial LQPI Score equals a "medium" or "high" impact. A Financial Alternatives Analysis should document whether the community has considered all feasible steps to address impacts to the lowest quintile as identified in Appendix C, including use of variable rate structures, CAPs, and applications for grants or subsidies from the CWSRF.

The demonstration should provide the results of the "checklist" of financing and funding considerations in Appendix C and describe the specific programs being implemented to reduce financial burdens on the community's lowest income residents. EPA would expect to see a list of the programs or steps considered, the actions that would be necessary to put such measures into place, and the plan for taking those actions. Where available tools are not included in the community's plans to mitigate financial impacts on its low-income residents, EPA would expect an explanation of why those approaches are not being pursued.¹⁹ In addition, we strongly encourage additional subsidy or grant consideration from governmental funding sources for entities that show a "medium" or "high" impact Initial LQPI Score.

5. Final Lowest Quintile Poverty Indicator Score

The Final LQPI Score may be different from the Initial LQPI Score depending on the results of the Financial Alternatives Analysis, as shown in Exhibit 2 below, for communities with an Initial LQPI Score of "medium" or "high" impact. For an Initial LQPI Score of "low" impact, the Final LQPI Score would remain "low" impact.

¹⁹ EPA recognizes that not all communities have the expertise to fully evaluate the tools identified in Appendix C. For those that seek support in this effort, EPA's Environmental Finance Centers can provide targeted technical assistance in evaluating environmental financing and program management strategies. See <https://www.epa.gov/waterfinancecenter/efcn>.

Exhibit 2: Adjustment of Initial Lowest Quintile Poverty Indicator Score Based on Financial Alternatives Analysis

Result of Financial Alternatives Analysis	Adjustment to Initial LQPI Score	Rationale
Community: <ul style="list-style-type: none"> - Does not perform the analysis, - Does not consider all alternatives in Appendix C (or as identified by EPA), or - Finds financial alternatives to lessen impact on lowest quintile households but does not commit to pursue alternatives. 	Initial LQPI Score is adjusted down, potentially limiting flexibility in schedule decisions: <ul style="list-style-type: none"> • “Medium” Initial LQPI Score is adjusted to “low” Final LQPI; and • “High” Initial LQPI Score is adjusted to “medium” Final LQPI Score. 	Community can do more to assist its lowest quintile households, so poverty concerns should not be used to justify a longer schedule.
Community performs a Financial Alternatives Analysis and commits to pursuing feasible financial alternatives to reduce the impact on lowest quintile households.	Depending on negotiations with EPA and EPA’s consideration of likelihood of remaining impacts, the Initial LQPI Score may be adjusted or stay the same.	Community commits to taking additional actions to help its lowest quintile; as a result, the lowest quintiles may or may not continue to be significantly impacted.
Community performs a Financial Alternatives Analysis and EPA determines that community has taken all feasible steps ²⁰ to help lowest quintile households, but there are still significant impacts on the lowest quintile.	Initial LQPI Score stays the same, potentially providing increased flexibility in schedule decisions: <ul style="list-style-type: none"> • “Medium” Initial LQPI Score stays “medium” Final LQPI Score; and • “High” Initial LQPI Score stays “high” Final LQPI Score. 	Community has taken all feasible steps to help its lowest quintile, so impacts to lowest quintile households may be used to justify a longer schedule.

6. Expanded Financial Capability Assessment Matrix

The Expanded FCA Matrix, which incorporates the three critical metrics described above, provides a framework for understanding the overall financial impact to the community’s service area. First, combine the RI and FCI in the Financial Capability Matrix (Exhibit 3) to determine an FCA Score, then combine FCA Score and Final Lowest Quintile Poverty Indicator Score in the Expanded FCA Matrix (Exhibit 4). As explained above, a “high” impact or “medium” impact

²⁰ For purposes of the Financial Alternatives Analysis, “feasible” steps should include the financial and funding considerations listed in Appendix C, whether or not they are prohibited by state law.

Expanded FCA Matrix result does not mean that CWA compliance is unaffordable; rather, it means that EPA intends to offer schedule flexibilities as described in the recommended implementation schedule benchmarks in Exhibit 8.

Financial Capability Matrix

The Financial Capability Matrix determines the FCA Score by combining RI and FCI. The matrix is included below as Exhibit 3.

Exhibit 3: Financial Capability Matrix

Financial Capability Indicator	Residential Indicator		
	Low Impact (Below 1.0%)	Mid-Range (1.0% to 2.0%)	High Impact (Above 2.0%)
Strong (Above 2.5)	Low Impact	Low Impact	Medium Impact
Mid-Range (1.5 to 2.5)	Low Impact	Medium Impact	High Impact
Weak (Below 1.5)	Medium Impact	High Impact	High Impact

Expanded FCA Matrix

The Expanded FCA Matrix determines the community's overall impact level when combining the FCA Score (from Exhibit 3) and the Final LQPI Score (from Section IV.b.5). The Expanded FCA Matrix is included below as Exhibit 4.

Exhibit 4: Expanded Financial Capability Assessment Matrix

FCA Score (RI and FCI)	Final Lowest Quintile Poverty Indicator Score		
	Low Impact	Medium Impact	High Impact
Low Impact	Low Impact	Low Impact	Medium Impact
Medium Impact	Low Impact	Medium Impact	High Impact
High Impact	Medium Impact	High Impact	High Impact

The results of the Expanded FCA Matrix correspond to the recommended implementation schedules in Exhibit 8. See Section IV.f (Schedule Development) to see how the Expanded FCA Matrix score is used in the CWA compliance schedule development process. See Section IV.g for equivalent tables for WQS decisions.

c. Alternative 2: Critical Metrics and Instructions

1. Financial and Rate Models

Alternative 2 provides an opportunity for communities that wish to use financial and rate model analyses to submit this more detailed information to assist in developing an appropriate schedule for implementing CWA control measures.

Cash flow forecasting is a useful tool that allows communities to determine, on an annual basis, the revenue necessary to cover costs (including the costs of compliance projects) and to meet

debt covenants over the implementation period. The community should plan and allow for uncertainty in deciding how to adjust water and sewer rates to finance its major capital improvements. As mentioned above, communities should decide how much should be financed through debt and how much should be directly paid for by sewer rates as the costs are incurred. In evaluating potential rate increases, communities should also balance revenue requirements against the likelihood that users will reduce usage or cease paying utility bills, causing the yield of the revenues from the rate increase to be less than expected or desired, potentially causing the community to experience “rate shock.”²¹ In addition, within limits, communities have significant discretion regarding the timing of sewer rate increases. For example, communities may elect to raise rates more than the absolute minimum necessary in early years, thereby creating a cushion against economic uncertainties in later years and providing a strong financial base for bond financing. These model calculations inform the annual rate increases and can help a community evaluate a suite of potential compliance schedules. EPA has provided a list of resources related to water infrastructure financing and rate setting in Appendix D.

While useful, financial and rate models may be complicated or costly to develop, particularly for mid-size or small communities, and may be difficult for a regulator to evaluate. For this reason, EPA proposes that submission of this information is at the discretion of a community. This type of information can be used as an analytic tool to assist in developing schedules for implementing CWA control measures in lieu of the critical metrics and schedule benchmarks set forth under Alternative 1. Alternative 2 may be particularly useful in situations where the community already uses such modeling for its internal financial planning or where multiple constraints affect the community’s ability to achieve compliance with the CWA (in terms of costs or timing). However, EPA does not recommend the use of financial and rate model analysis under Alternative 2 in lieu of Alternative 1 for WQS decisions. Instead, for WQS decisions, the use of financial and rate models could be used in a manner similar to the Other Metrics in Sections IV.d and IV.e of the Proposed 2022 FCA, i.e., as additional information for consideration in conjunction with the use of the Alternative 1 critical metrics.

Communities can provide forward-looking, year-by-year financial modeling of capital expenditures to support a proposed schedule for completing projects necessary to come into compliance with the CWA. Such modeling is commonly used to determine the revenues and rate increases necessary to support the financing of operations and major projects. The typical steps in this process include:

- Determining revenue requirements based on operating costs, debt service payments, asset management, and necessary capital expenditures;
- Allocating the costs of service to customer classes; and
- Developing a schedule of rates and charges necessary to meet revenue requirements.

²¹ Rate shock increases the difficulty of managing program implementation schedules, because financing is contingent on an adequate revenue stream to support the debt service and additional coverage.

Financial and rate models provided in the context of CWA compliance are normally in spreadsheet form with multiple tabs, including inputs and assumptions, debt service schedules, operations and maintenance costs, and schedule of necessary capital improvements. The model then determines the “revenue requirements” necessary to support the proposed or alternative compliance plans, including financing and rate increases. The models are set up so that it is possible to evaluate alternative scenarios in terms of cost, length of time to complete a program, or assumptions related to financing strategies. Simpler modeling for smaller communities is possible based on the same concepts, if percentage revenue increases will be passed through to a typical residential customer bill at the same rate of increase.

To assist EPA’s review of modeling analyses, EPA recommends that communities submit the following supporting data and documentation:

- The last three years of financial reports for the wastewater system.
- A summary of historical rate increases for the past five years.
- The most recent approved Budget and Capital Improvement Plan for the wastewater system.
- Model documentation (e.g., creator, peer review status, version).
- A summary of all model input assumptions and their bases, for example: bond rating, ability to borrow, legislative caps on ability to borrow, selected funding mechanism, access to CWSRF financing, ability to pay back debt, the current operating cost and debt service baseline, current revenue, growth in customers, and inflation in costs and household income.
- An identification of dollar values as either constant (year) or nominal dollars.
- A summary of the model results, explaining the community’s view of the conclusions relevant to its financial capability to implement the necessary work to achieve compliance.
- A fully functional model of the scenarios presented, with all formulas and interactions among separate worksheets intact. The model should include a tab that clearly lays out the input assumptions used.
- A clear description of the baseline financial status and data in terms of year and source documents that the modeling is built from. This should include the basis for the current residential bill that is used to evaluate impacts on households with median income levels. In general, this will be similar to the results in the RI analysis but analyzes only current costs.²²
- All source and supporting documentation that was relied upon when developing the model, including certified financial statements.

²² In general, EPA is finding that per household billed usage is in the range of 5 to 6 CCF (centum cubic feet, or one hundred cubic feet). If the community serves a significant number of households in multi-family structures, then the usage will likely be lower. EPA intends to accept the community’s current “typical bill” usage assumption, if consistent with nationwide averages, or real information on usage from actual billing. A community’s inability to obtain per household usage information for families living in multi-family structures that are not billed separately for utilities does not preclude consideration of usage information from actual billing.

- Evaluation of multiple scenarios in terms of program length or other key assumptions and uncertainties.

Communities and EPA have found a summary of scenarios such as the example shown below in Exhibit 5 to be useful. Other examples would yield different results. To develop year-by-year forward-looking rate model scenarios, such as those shown in Exhibit 5, a community should:

1. Include calculation of the service area RI based on the percentage of residential flow and households (not the number of accounts). Current costs (operations and maintenance expenses, debt service at present time, and other recurring asset management costs) should be included and consistent with the model inputs for the current year. Future costs should include the total capital expenditures and changes in operations and maintenance costs as a result of the required work, and also reflect the community's financing plan, again consistent with model assumptions.
2. Determine whether the modeling will be in current dollars or inflated dollars. If inflated, the modeled costs, including proposed capital expenditures, should be adjusted over time. In addition, MHI values should be escalated using the historic rate of increase of MHI or the Consumer Price Index (CPI). The community should provide the basis for all escalation factor assumptions applied in the model.
3. Define a proposed end year for the completion of investments needed to meet CWA obligations. Examining several alternative scenarios is preferred to better understand the impact of various program lengths.
4. Incorporate existing debt service schedules as well as the assumed financing approach for the proposed program costs. This would likely include a mix of already available reserves, cash from incoming revenues, and new debt financing from either the municipal bond market or state-subsidized funding sources.
5. Iterate through proposed capital investment schedules to develop model scenarios and related revenue requirements.
6. Translate the revenue requirements into annual increases in rates and bills for customers. Apply the annual percentage increases to the baseline or current average household bill.

Where local data is available, communities are encouraged to implement Alternative 2 using local data. For EPA to consider this information, a community should submit all supporting data and documentation, as described above.

Exhibit 5: Examples of Rate Increase Scenarios and Median Household Impacts for Each Scenario

Scenario:	Community Proposed Scenario				Other Scenarios							
End Year:	2047				2036				2041			
Measure:	Rate Inc.	CPH (\$)	MHI (\$)	RI	Rate Inc.	CPH (\$)	MHI (\$)	RI	Rate Inc.	CPH (\$)	MHI (\$)	RI
2016	0%	566	64,814	0.9%	0%	566	64,814	0.9%	0%	566	64,814	0.9%
2017	7.5%	605	66,267	0.9%	5%	593	66,267	0.9%	5%	593	66,267	0.9%
2018	7.5%	647	67,753	1.0%	8.4%	639	67,753	0.9%	6.5%	629	67,753	0.9%
2019	7.5%	588	69,272	0.8%	8.4%	584	69,272	0.8%	6.5%	566	69,272	0.8%
2020	7.5%	629	70,825	0.9%	8.4%	630	70,825	0.9%	6.5%	601	70,825	0.8%
2021	7.5%	672	72,413	0.9%	8.4%	678	72,413	0.9%	6.5%	637	72,413	0.9%
2022	7.5%	719	74,037	1.0%	8.4%	731	74,037	1.0%	6.5%	675	74,037	0.9%
2023	7.5%	770	75,697	1.0%	8.4%	789	75,697	1.0%	6.5%	716	75,697	0.9%
2024	7.5%	824	77,394	1.1%	8.4%	850	77,394	1.1%	6.5%	760	77,394	1.0%
2025	7.5%	882	79,129	1.1%	8.4%	917	79,129	1.2%	6.5%	806	79,129	1.0%
2026	7.5%	944	80,903	1.2%	8.4%	990	80,903	1.2%	6.5%	856	80,903	1.1%
2027	5%	989	82,717	1.2%	8.4%	1,069	82,717	1.3%	6.4%	907	82,717	1.1%
2028	5%	1,037	84,572	1.2%	8.4%	1,154	84,572	1.4%	6.4%	962	84,572	1.1%
2029	5%	1,086	86,468	1.3%	8.4%	1,246	86,468	1.4%	6.4%	1,020	86,468	1.2%
2030	5%	1,138	88,407	1.3%	8.4%	1,345	88,407	1.5%	6.4%	1,082	88,407	1.2%
2031	5%	1,193	90,389	1.3%	8.4%	1,453	90,389	1.6%	6.4%	1,148	90,389	1.3%
2032	5%	1,251	92,416	1.4%	8.4%	1,570	92,416	1.7%	6.4%	1,218	92,416	1.3%
2033	5%	1,311	94,488	1.4%	8.4%	1,697	94,488	1.8%	6.4%	1,292	94,488	1.4%
2034	5%	1,374	96,607	1.4%	8.4%	1,834	96,607	1.9%	6.4%	1,372	96,607	1.4%
2035	5%	1,440	98,773	1.5%	8.3%	1,980	98,773	2.0%	6.4%	1,456	98,773	1.5%
2036	5%	1,510	100,988	1.5%	8.3%	2,139	100,988	2.1%	6.4%	1,545	100,988	1.5%
2037	5%	1,582	103,252	1.5%	0%	2,141	103,252	2.1%	6.4%	1,640	103,252	1.6%
2038	5%	1,659	105,567	1.6%	0%	2,144	105,567	2.0%	6.4%	1,741	105,567	1.6%
2039	5%	1,739	107,934	1.6%	0%	2,146	107,934	2.0%	6.4%	1,848	107,934	1.7%
2040	1.39%	1,764	110,354	1.6%	0%	2,148	110,354	2.0%	6.4%	1,962	110,354	1.8%
2041	1.39%	1,790	112,828	1.6%	0%	2,151	112,828	1.9%	6.4%	2,084	112,828	1.8%
2042	1.39%	1,816	115,358	1.6%	0%	2,153	115,358	1.9%	0%	2,086	115,358	1.8%
2043	1.39%	1,842	117,944	1.6%	0%	2,156	117,944	1.8%	0%	2,089	117,944	1.8%
2044	1.39%	1,869	120,588	1.5%	0%	2,158	120,588	1.8%	0%	2,091	120,588	1.7%
2045	1.39%	1,896	123,292	1.5%	0%	2,161	123,292	1.8%	0%	2,094	123,292	1.7%
2046	1.39%	1,923	126,056	1.5%	0%	2,164	126,056	1.7%	0%	2,097	126,056	1.7%
2047	0%	1,926	128,882	1.5%	0%	2,166	128,882	1.7%	0%	2,099	128,882	1.6%

Key: Rate Inc. = Annual Rate Increase for Wastewater
 CPH = Annual Cost per Household for Wastewater and Stormwater Combined
 MHI = Median Household Income
 RI = Residential Indicator (i.e., CPH as a percent of MHI)

EPA intends to use this information when developing schedules for implementing control measures to work with communities to reduce rate shock and to avoid water utility rates that represent an overly burdensome percentage of household income. Unlike Alternative 1, EPA has not established benchmark percentages of household income for Alternative 2. However,

EPA intends to keep the percentage of household income spent on wastewater utility bills within reasonable bounds when establishing compliance schedules. Where drinking water costs are substantial and impacting households, a community may submit information as part of its financial and rate model. See Section IV.d.1 for more direction. EPA does not intend for schedules to exceed 20 years (or 25 years based on unusually high impacts after consideration of Other Metrics). Communities are encouraged to provide local information to EPA to support any predictions of a likely occurrence of rate shock. Other Metrics, such as drinking water costs, may also impact rate shock.

As mentioned above, EPA does not recommend the use of financial and rate model analysis under Alternative 2 in lieu of Alternative 1 in WQS decisions. Instead, for WQS decisions, the use of financial and rate models could be used in a manner similar to the Other Metrics in Sections IV.d and IV.e of the Proposed 2022 FCA, i.e., as additional information for consideration in conjunction with the use of the Alternative 1 critical metrics.

2. Lowest Quintile Poverty Indicator

In addition to the Financial and Rate Model analysis, a community or EPA should calculate a Final LQPI Score to benchmark the severity and prevalence of poverty within the service area. If a community's Initial LQPI Score (using Exhibit 1.a or 1.b) shows a "medium" or "high" impact, its FCA should include a Financial Alternatives Analysis documenting whether the community has taken all feasible steps to address impacts to the lowest quintile before seeking an extended schedule based on poverty considerations. The Initial LQPI Score may change depending on the results of the Financial Alternatives Analysis, as shown in Exhibit 2 above.

d. Other Metrics with Standardized Instructions

The Proposed 2022 FCA provides standardized instructions to increase transparency and clarity regarding how EPA considers the following factors, discussed in detail below: drinking water costs, potential bill impacts relative to household size, a community's customer assistance program, asset management costs, and stormwater management costs. As noted above, Other Metrics may be considered under Alternative 1 or Alternative 2 and may support an extended implementation schedule, not to exceed 20 years for "high" impacts, or up to 25 years for unusually high impacts. Additionally, use of these Other Metrics may be considered in WQS decisions.

1. Drinking Water Costs

EPA recognizes that both clean water and drinking water costs are often paid for through charges on a single bill. For this reason, the Proposed 2022 FCA more explicitly provides guidance on incorporating a community's drinking water obligations into an FCA evaluation. Given the widespread, increasing costs of delivering reliable drinking water in communities, EPA is providing standardized instructions along with an explanation of how it intends to develop implementation schedules that will account for impacts of drinking water obligations, when significant.

Consideration of Drinking Water Costs under Alternative 1

Drinking water information can be used in Alternative 1 to supplement the three critical metrics and the results of the Expanded FCA Matrix. If information on significant drinking water costs is submitted and supported by the documentation detailed below, under Alternative 1, EPA in its discretion may permit a community to move from a “low” impact to a “medium” impact, or from a “medium” impact to a “high” impact in the Proposed 2022 FCA Implementation Schedule Benchmarks (Exhibit 8). Or, if a community is already experiencing a “high” impact, EPA may use this additional information to support a schedule beyond the schedule benchmarks in Exhibit 8, up to 25 years for unusually high impact situations. Similarly, significant drinking water costs may be taken into account in WQS decisions.

If a community submits information on drinking water costs under Alternative 1, EPA requests that the community provide detailed descriptions and cost estimates for the drinking water requirements. The community should submit the following supporting documentation:

1. Describe the specific improvements and costs required.
2. Describe the underlying requirements for the drinking water improvements (for example, whether the drinking water improvements are required by a state or federal permit, regulation, or enforcement action).
3. Describe the relationship of the wastewater system service area to the drinking water system service area(s) geographically and in terms of households served, specifically the overlap of drinking water system service area relative to wastewater system service area.
4. If the drinking water system and wastewater system are operated by the same utility, identify and explain any issues related to future financing and financial capability expected.
5. Provide the last three years of financial reports for the drinking water system.
6. Provide the current and approved future rate schedules for the drinking water system.
7. In addition to the RI for wastewater costs, provide a cost per household analysis for drinking water costs following the RI worksheets in Appendix A.
8. Propose an implementation schedule that integrates the CWA improvements and drinking water improvements, including a detailed description of the proposed sequencing of the improvements.

Consideration of Drinking Water Costs under Alternative 2

Drinking water information can be used in Alternative 2 to evaluate the impacts of rates for both wastewater and drinking water on household bills. EPA does not intend for such a schedule to exceed 20 years, or up to 25 years based on unusually high impacts after consideration of Other Metrics. If a community submits information on drinking water costs as part of its financial and rate model, EPA requests that the community provide detailed descriptions and cost estimates for the drinking water requirements. The community should submit the following supporting documentation:

1. Describe the specific improvements and costs required.
2. Describe the underlying requirements for the drinking water improvements (for example, whether the drinking water improvements are required by a state or federal permit, regulation, or enforcement action).
3. Describe the relationship of the wastewater system service area to the drinking water system service area(s) geographically and in terms of households served, specifically the overlap of drinking water system service area relative to wastewater system service area.
4. If the drinking water system and wastewater system are operated by the same utility, identify and explain any issues related to future financing and financial capability expected.
5. Provide the last three years of financial reports for the drinking water system, the current approved budget, and the most recent approved Capital Improvement Program budget.
6. Provide the current and approved future rate schedules for the drinking water system.
7. Provide a drinking water rate model analysis.
8. Provide all source and supporting documentation that was relied upon when developing the drinking water rate model, including certified financial statements.
9. Propose an implementation schedule that integrates the CWA improvements and drinking water improvements, including a detailed description of the proposed sequencing of the improvements.

2. Potential Bill Impact Relative to Household Size

Another analysis that EPA and communities have found helpful, shown below by example in Exhibit 6, evaluates the maximum potential bill impact relative to household size. Typically, as household size increases, monthly water usage increases.²³ One-person households generally use significantly less water than three- or four-person households, but also have on average fewer financial resources. Displaying data in this manner (i.e., by household size) provides a more nuanced view of the impact of costs based on likely usage.

The data in Exhibit 6 is an example of how a community can evaluate the feasibility of a capital improvement program relative to various household sizes, using the results of a modeling program. This information allows EPA to understand the specific impact of program costs relative to household size by comparing a table that shows the impacts of current rates on various household sizes to a table that shows the impacts of future rates (incorporating required program costs) on various household sizes. Tables like the ones shown in Exhibit 6 can be created by following the below steps:

- To develop a table showing current rate impacts (see example in Exhibit 6.a):
 - Obtain current data for Percent of Service Area per household size (column 2) and MHI by household size (column 3), available in the ACS database.

²³ A Water Research Foundation study found that as of 2016 the average household (2.65 people) daily water use was 138 gallons, while the average per capita usage was 58.6 gallons. The report notes that there is considerable range in usage across the United States due to the influence of climate and weather patterns. See, Water Research Foundation, *Residential End Uses of Water, Version 2: Executive Report*, April 2016. Accessed at <https://www.waterrf.org/research/projects/residential-end-uses-water-version-2>.

- Using current rates, calculate the monthly household bill for each CCF usage column (top portion of each row).
- Calculate impact for each CCF usage column (bottom portion of each row) by multiplying the household bill by 12 to arrive at an annual bill, then dividing the annual bill by the MHI for each household size.
- To develop a table showing modeled future rate impacts (see example in Exhibit 6.b):
 - As part of the community's modeling, escalate MHI based on an inflationary adjustment to the year at the end or highest point of the model (in the example in Exhibit 6.b, this is 2047).
 - Calculate the monthly household bill for each CCF usage column based on the rates at the end or highest cost point in the community's model (in the example in Exhibit 6.b, this is the example community's 2047 modeled rates).
 - Calculate impact for each CCF usage column by multiplying the household bill by 12 to arrive at an annual bill, then dividing the annual bill by the MHI for each household size.

Exhibit 6: Example Showing Projected Impact of Program Costs by Household Size²⁴

6.a – Table Showing Impacts of Current Wastewater Rates on MHI

Household Size	% of SA HHs	MHI (current) per HH Size	CCF							
			2	3	4	5	6	7	8	9
1	26.83%	\$30,540	\$19.08	\$26.10	\$33.12	\$40.14	\$47.16	\$54.18	\$61.20	\$68.22
			0.75%	1.03%	1.30%	1.58%	1.85%	2.13%	2.40%	2.68%
2	33.76%	\$64,063	\$19.08	\$26.10	\$33.12	\$40.14	\$47.16	\$54.18	\$61.20	\$68.22
			0.36%	0.49%	0.62%	0.75%	0.88%	1.01%	1.15%	1.28%
3	16.33%	\$72,063	\$19.08	\$26.10	\$33.12	\$40.14	\$47.16	\$54.18	\$61.20	\$63.18
			0.32%	0.43%	0.55%	0.67%	0.79%	0.90%	1.02%	1.05%
4	13.37%	\$87,972	\$19.08	\$26.10	\$33.12	\$40.14	\$47.16	\$54.18	\$61.20	\$68.22
			0.26%	0.36%	0.45%	0.55%	0.64%	0.74%	0.83%	0.93%
5	6.37%	\$88,630	\$19.08	\$26.10	\$33.12	\$40.14	\$47.16	\$54.18	\$61.20	\$68.22
			0.26%	0.35%	0.45%	0.54%	0.64%	0.73%	0.83%	0.92%
6	2.22%	\$63,028	\$19.08	\$26.10	\$33.12	\$40.14	\$47.16	\$54.18	\$61.20	\$68.22
			0.36%	0.50%	0.63%	0.76%	0.90%	1.03%	1.17%	1.30%
7	1.11%	\$48,621	\$19.08	\$26.10	\$33.12	\$40.14	\$47.16	\$54.18	\$61.20	\$68.22
			0.47%	0.64%	0.82%	0.99%	1.16%	1.34%	1.51%	1.68%

Low Impact	Medium Impact	High Impact
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²⁴ SA = Service Area; MHI = Median Household Income; CCF = Centum Cubic Feet.

6.b – Table Showing Modeled Impacts of 2047 Wastewater Rates on MHI

Household Size	% of SA HHs	MHI (escalated to 2047) per HH Size	CCF							
			2	3	4	5	6	7	8	9
1	26.83%	\$51,188	\$70.33	\$100.38	\$130.43	\$160.48	\$190.53	\$220.58	\$250.63	\$280.68
			1.65%	2.35%	3.06%	3.76%	4.47%	5.17%	5.88%	6.58%
2	33.76%	\$107,376	\$70.33	\$100.38	\$130.43	\$160.48	\$190.53	\$220.58	\$250.63	\$280.68
			0.79%	1.12%	1.46%	1.79%	2.13%	2.47%	2.80%	3.14%
3	16.33%	\$120,786	\$70.33	\$100.38	\$130.43	\$160.48	\$190.53	\$220.58	\$250.63	\$280.68
			0.70%	1.00%	1.30%	1.59%	1.89%	2.19%	2.49%	2.79%
4	13.37%	\$147,450	\$70.33	\$100.38	\$130.43	\$160.48	\$190.53	\$220.58	\$250.63	\$280.68
			0.57%	0.82%	1.06%	1.31%	1.55%	1.80%	2.04%	2.28%
5	6.37%	\$148,553	\$70.33	\$100.38	\$130.43	\$160.48	\$190.53	\$220.58	\$250.63	\$280.68
			0.57%	0.81%	1.05%	1.30%	1.54%	1.78%	2.02%	2.27%
6	2.22%	\$105,642	\$70.33	\$100.38	\$130.43	\$160.48	\$190.53	\$220.58	\$250.63	\$280.68
			0.80%	1.14%	1.48%	1.82%	2.16%	2.51%	2.85%	3.19%
7	1.11%	\$81,494	\$70.33	\$100.38	\$130.43	\$160.48	\$190.53	\$220.58	\$250.63	\$280.68
			1.04%	1.48%	1.92%	2.36%	2.81%	3.25%	3.69%	4.13%

	Low Impact	Medium Impact	High Impact
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EPA views this data as an additional way for communities to demonstrate the impacts of program costs on various sizes of households. If the table with modeled future wastewater rates shows most cells in the “low” impact CPH category, then the program has relatively low impacts at the household level, as opposed to having most cells in the “high” impact CPH category. Based on the extent of “high” impact cells, EPA may use this information to justify an extended implementation schedule under Alternative 1 or Alternative 2. EPA does not intend for schedules to exceed 25 years based on unusually high impacts after consideration of Other Metrics. Additionally, use of this additional analysis may be considered in WQS decisions.

3. Customer Assistance Programs

Households on fixed or lower incomes, as well as households that face a temporary crisis such as a job loss or illness, may have difficulty paying water and sewer bills. Many wastewater and drinking water utilities have seen an opportunity to meet specific customer needs, along with the needs of meeting their own operational and capital costs to provide drinking water delivery and/or wastewater management services, through developing CAPs. These programs can provide households short-term or long-term reductions through a Bill Discount, Flexible Terms, Lifeline Rate, Temporary Assistance, and Water Efficiency assistance programs. See Appendix C for a more detailed description of these types of programs.

Numerous drinking water and wastewater utilities have developed CAPs to help financially constrained customers maintain access to drinking water and wastewater services. These programs typically determine eligibility of individual households relative to a percentage of the Federal Poverty Level. These programs help households address issues with affordability and help protect public health throughout the community. They also help ensure the utility can

sustainably provide its core services, price services appropriately, and preserve a broad customer base. However, these programs have costs for the community.

If a community has developed a CAP to assist individual households, the community may provide information on both the costs needed to administer the program as well as the revenue lost from the assistance provided (discounted rates, collection fees foregone, improved water efficiency, etc.).

EPA intends to consider the following information if provided:

- Type of program,
- Program eligibilities,
- Number of customers participating in the program,
- Number of customers eligible for the program (if known),
- Program costs,²⁵
- Revenue lost,
- How the program is funded,
- Program benefits, and
- Number of disconnections prevented (if known).

Submission of the above information should allow EPA to confirm that the appropriate CAP costs are being included as part of a community's FCA. Such costs can be included in the calculation of the RI²⁶ under Alternative 1 and as part of a Financial and Rate Model analysis under Alternative 2. To be considered, EPA requests that the community clearly identify if CAP costs have been included in these sections of the FCA, the line items in which these costs appear, and the amounts. Additionally, use of this additional analysis in the same manner may be considered in WQS decisions.

4. Asset Management Costs

Asset management is a critical foundation for understanding near- and long-term operational and capital needs. This information forms the basis for capital planning and a capital funding strategy. Asset management is the practice of managing infrastructure capital assets to minimize the total cost of owning and operating them, while delivering the service level required. It helps answer the following three core questions for long-term infrastructure planning:

1. What assets do you have and where are they located?
2. When do your assets need to be repaired or replaced?

²⁵ The University of North Carolina Environmental Finance Center's Water Utility Customer Assistance Program Cost Estimation Tool is designed to help water utilities estimate the costs of implementing a customer assistance program. See <https://efc.sog.unc.edu/resource/bill-payment-assistance-program-cost-estimation-water-utilities>.

²⁶ As current and projected Clean Water Act related expenses. See Appendix A, Worksheet 1, Lines Number 100 and 103.

3. How much is each asset going to cost you in the near-term and the long-term?

By implementing asset management practices, a community should have a clearer picture of infrastructure-related expenses and future investment needs, which should inform the financial planning process.

A community may provide the following information on its asset management costs if the community can verify that asset management practices are being implemented. These include:

- Implementing projects in the community's Capital Improvement Program,
- Inventorying assets,
- Linking maintenance schedules to the asset inventory,
- Assessing the condition and remaining useful life of the assets in the inventory,
- Determining the capital expenditures needed to replace assets, and
- Planning a funding and financing strategy for operation and maintenance and capital expenditures.

Submission of information verifying the above practices should allow EPA to confirm that the appropriate asset management costs are being included as part of a community's FCA. Such costs may be reflected in the RI under Alternative 1 and as part of a Financial and Rate Model analysis under Alternative 2. To be considered, EPA requests that the community clearly identify when asset management costs have been included in these sections of the FCA, the line items in which these costs appear, and the amounts. Additionally, use of this additional analysis in the same manner may be considered in WQS decisions.

5. *Stormwater Management Costs*

EPA's continued commitment to Integrated Planning recognizes that many local governments and authorities have increased investments in their stormwater infrastructure through capital projects to rehabilitate existing systems, improve operation and maintenance, reduce impermeable surfaces, make use of green infrastructure, and address additional regulatory requirements. As programs are implemented to improve water quality and attain CWA objectives, many state and local government partners find themselves facing difficult economic challenges with limited resources and financial capability.

To be considered by EPA, the following information should be submitted for verification of stormwater costs that are not within a community's wastewater-related funds:

- Identify the municipal fund that the stormwater activity is conducted within (for example, identify whether stormwater management is in a separate stormwater enterprise fund, incorporated into the wastewater enterprise fund, or conducted within the general fund).
- Describe the specific stormwater activities and associated costs (for example, provide costs for stormwater program development, implementation, and enforcement as well as costs for designing, building, and maintaining stormwater infrastructure).
- Include supporting documentation for cost estimates.

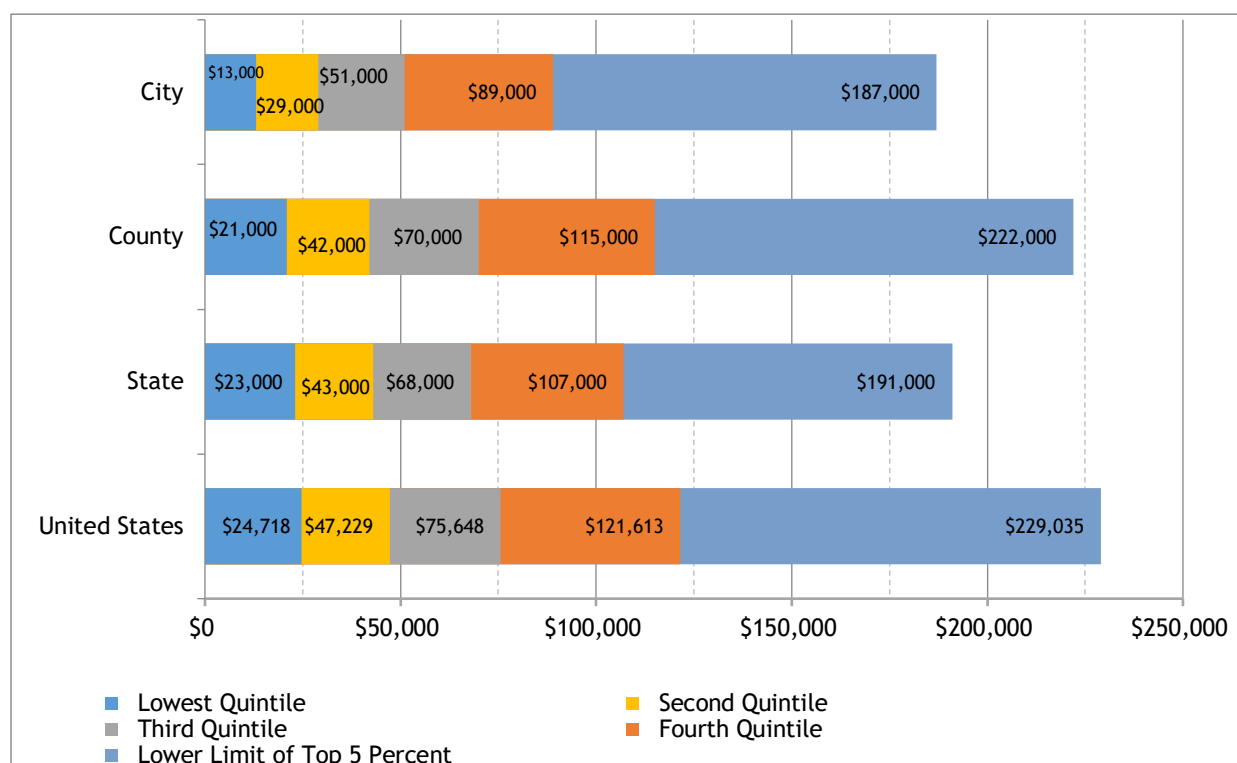
- Describe the underlying requirement for the stormwater activities and costs (for example, whether it is required by a state or federal permit, regulation, or enforcement action).
- Identify projected, current, and historical stormwater fees.

Submission of the above information should allow EPA to confirm that the appropriate stormwater costs are included as part of a community's FCA and provide EPA with the appropriate assurances that those expenditures will be made. Such costs may be incorporated in the RI under Alternative 1 and as part of a Financial and Rate Model analysis under Alternative 2. To be considered, EPA requests that the community clearly identify when stormwater management costs have been included in these sections of the FCA, the line items in which these costs appear, and the amounts. Additionally, use of this additional analysis in the same manner may be considered in WQS decisions.

6. Comparisons to National Data

For any of the Other Metrics submitted by a community, the community can provide a graphic or chart that shows the community's data compared with county, state, and national data. An example is shown below in Exhibit 7. This information could be used to assist EPA in assessing a community's circumstances in relation to national averages and as compared to other benchmark communities. Such a comparison can be used to highlight a community's unique or atypical circumstances. Additionally, use of such comparisons in the same manner may be considered in WQS decisions.

Exhibit 7: Graph comparing quintile distribution in city, county, state, and nationally



EPA continues to encourage communities to provide additional financial and demographic information regarding the community's financial capability to implement CWA obligations or to evaluate WQS decisions. This information would supplement the information provided under either Alternative 1 or Alternative 2. Examples of Other Metrics include:

- Unemployment Rates
- Debt Service Coverage Ratio
- Debt to Income Ratio
- Percent Population Decline, or Other Population Trends
- State or Local Legal Restrictions or Limitations on Property Taxes, Other Revenue Streams, or Debt Levels
- Other Metrics as Determined by the Community

e. Other Metrics with Submission of Information Determined by the Community

Additional examples of Other Metrics that may be submitted are listed in Appendix E. The examples described in Appendix E are not intended to be a complete list, nor a list of factors that will be relevant in every community. Rather, it provides an illustration of information that may prove useful in some instances. For such information to adequately illustrate that a community's situation is atypical, EPA encourages communities to compare any additional information on their circumstances to national averages or to that of other communities.

f. Schedule Development

When developing implementation schedules to construct control measures to meet CWA obligations, a community should consider public health, environmental justice, and environmental impacts as well as financial capability. In addition to completing an analysis under Alternative 1 or 2, a community should consider the following public health and environmental impacts when determining the sequencing and priority of projects.

1. Environmental and Public Health Considerations

Discharges to Sensitive Areas: The CSO Policy states that a community's long-term control plan (LTCP) should give the highest priority to "sensitive areas." Sensitive areas, as determined by NPDES permitting authorities in coordination with state and Federal agencies, as appropriate, include the following: Outstanding National Resource Waters; National Marine Sanctuaries; waters with threatened or endangered species and their habitat; waters with primary contact recreation; public drinking water intakes and their designated protection areas; and shellfish beds. For discharges to sensitive areas, the CSO Policy states that LTCPs should: prohibit new or significantly increased overflows; eliminate or relocate overflows; or, where elimination or relocation is not feasible, provide treatment to meet WQS and regularly assess the feasibility of prohibition, relocation, or elimination.²⁷

²⁷ See 59 Fed. Reg. 18688, 18696 (April 19, 1994).

During the LTCP planning process, a community should characterize existing CSO conditions and identify receiving waters that are sensitive areas. The LTCP should give priority to sensitive areas and any implementation schedule should sequence projects to mitigate impacts on sensitive areas as early as possible. Giving highest priority to sensitive areas might mean in some cases that discharges to non-sensitive areas would be addressed later in the implementation schedule than would be the case under a normal engineering and construction schedule.

The identification of an area as “sensitive” is based on the designated use of a water body established by a state or authorized tribe as part of its water quality standards. If a use is not attainable for one of the reasons in 40 CFR 131.10(g) and is not an existing use (as defined in 40 CFR 131.3), a state or authorized tribe may revise the designated use with a supporting use attainability analysis (UAA) and must then adopt the highest attainable use.

Use Impairment: LTCPs should also give priority to receiving waters that experience recurring adverse impacts from the community on aquatic life, human health, or aesthetics. Such waters may be the subject of public concern. As a result of public participation and discussion with the permitting authority, the community should develop an implementation schedule that gives highest priority to waters with impaired uses and addresses them as soon as possible. As is the case with sensitive areas, giving highest priority to certain use-impaired waters might mean that discharges to other waters would be addressed later in the implementation schedule than would be the case under a normal engineering and construction schedule.

Public Health: While SSOs cannot be permitted, they can be the subject of CWA enforcement actions. Even where an SSO does not reach a water of the United States, it can be a violation of a permit obligation to properly maintain and operate a sewer system. Accordingly, where basement backups of raw sewage and the ejection of raw sewage from manholes onto streets are CWA permit violations, reducing exposure to this raw sewage should be a priority in any schedule that is negotiated with the community to protect public health.

Environmental Justice: The guiding principle of environmental justice is the fair treatment and involvement of all people regardless of race, color, culture, national origin, income, and educational levels with respect to the development, implementation, and enforcement of protective environmental laws, regulations, and policies. Communities can use EPA’s EJSCREEN tool²⁸ when assessing whether there may be environmental justice concerns within their service area, such as areas with: people of color and/or low-income households; potential environmental quality issues; and/or existing environmental quality impairments in an area with demographic factors that suggest the community is sensitive to environmental pollution.²⁹

²⁸ EPA has developed an environmental justice mapping and screening tool called EJSCREEN. It is based on nationally consistent data and an approach that combines environmental and demographic indicators in maps and reports. Screening results should be supplemented with additional information and local knowledge to get a better understanding of the issues in a selected location. EJSCREEN is available at <https://www.epa.gov/ejscreen>.

²⁹ Overview of Demographic Indicators in EJSCREEN, <https://www.epa.gov/ejscreen/overview-demographic-indicators-ejscreen>.

Any implementation schedule should sequence projects to mitigate public health and environmental impacts to areas with potential environmental justice concerns as early as possible. For WQS decisions, in addition to completing an economic analysis under Section IV.g and considering any other financial metrics, a community or state is strongly encouraged to consider opportunities to mitigate impacts of WQS decisions on areas with potential environmental justice concerns. See Section IV.g for additional discussion. Before seeking an extended schedule, EPA also encourages communities to actively involve the affected public by holding public meetings. The affected public includes rate payers, industrial users of the sewer system, persons who reside downstream from the CSOs, persons who use and enjoy these downstream waters, and any other interested persons. For any change to WQS, a public hearing is required per 40 CFR 131.20.

2. *Alternative 1 Schedule Development*

This guidance does not dictate specific implementation schedules based on financial capability. It does, however, provide recommended implementation schedule benchmarks in Exhibit 8 to aid all parties in negotiating reasonable and effective schedules for implementation of CWA controls. Exhibit 8 should be used after all three critical metrics in Alternative 1 have been calculated, including performing the Financial Alternatives Analysis and establishing the Final LQPI Score to determine the community's overall impact level using the Expanded FCA Matrix.

The results of the Expanded FCA Matrix correspond to the recommended implementation schedule benchmarks in Exhibit 8, below. EPA has developed these schedule benchmarks to account for the consideration of the new critical metric, the LQPI Score. Based on EPA's experience, EPA recommends that, absent consideration of Other Metrics, it is financially feasible for communities to implement measures for compliance with the CWA that would have a "medium" impact within 15 years and to implement measures that would have a "high" impact within 20 years. In unusually high impact situations, an implementation schedule up to 25 years may be negotiated with state NPDES and EPA authorities based on consideration of Other Metrics. In addition, communities should continue to make capital investments to meet water quality standards even if they are "high" impact, though schedules up to 20 years (or up to 25 years for unusually high impacts) may offer flexibility for "high" impact communities.

Exhibit 8: 2022 FCA Recommended Implementation Schedule Benchmarks for Alternative 1

Expanded FCA Matrix Result	Recommended Implementation Schedule Benchmarks
Low Impact	Normal Engineering/Construction Schedule
Medium Impact	Total schedule up to 15 years
High Impact	Total schedule up to 20 years (schedule up to 25 years based on negotiation with EPA and state NPDES authorities)

It is important to note that EPA evaluates financial capability on a continuum. Although the Expanded FCA Matrix categorizes impact as "high," "medium," or "low," this does not necessarily mean that communities will be given the maximum number of years within that

category or that schedules will be rigidly set according to the break points between the categories. For example, two communities whose total residential household costs are 1.1% and 1.9% of MHI are both categorized in the FCA Guidance as having a “mid-range” impact for the RI. All other things being equal, the appropriate schedules for those communities are likely to be different. Similarly, all other things being equal, two communities whose LQIs are 24% below the national LQI and 26% below the national LQI would be more likely to have similar overall compliance timeframes, even though one community is ranked as having a “mid-range” score and the other as having a “weak” score. Finally, Other Metrics submitted by the community may affect the length of the schedule regardless of where the community is on the “high,” “medium,” and “low” continuum.

Because the three critical metrics under Alternative 1 might not present the most complete picture of a community’s financial capability to fund its CWA controls, communities are encouraged to submit any additional documentation (Other Metrics) that would create a more accurate and complete picture of their financial capability. The Proposed 2022 FCA includes Other Metrics with Standardized Instructions and Other Metrics with Submission of Information to be Determined by the Community. Any Other Metrics that have been submitted for consideration would supplement the three critical metrics and the Expanded FCA Matrix results, and consideration of these metrics may, in rare cases, result in implementation schedules that go beyond the schedule benchmarks in Exhibit 8, up to 25 years for unusually high impact situations. Additionally, the use of these additional metrics in the same manner may be considered in WQS decisions.

Exhibit 9, below, describes four hypothetical schedule determinations where the three critical metrics, Other Metrics, and environmental considerations were assessed together to develop the implementation schedule.

Exhibit 9: Schedule Development for Hypothetical Communities

Scheduling Consideration	Community #1	Community #2	Community #3	Community #4
Engineering/Construction Schedule	9 years	9 years	9 years	9 years
Sensitive Areas	n/a	2 years to remove discharges from sensitive areas	n/a	n/a
Use Impairment	n/a	2 years to remove discharges from waters with impaired uses	n/a	n/a
Environmental Justice	Potential EJ concerns identified	n/a	n/a	Potential EJ concerns identified
Financial Capability	Proposed 2022 FCA Result = Low Impact (engineering schedule)	Proposed 2022 FCA Result = Medium Impact (up to 15 years)	Proposed 2022 FCA Result = High Impact (up to 20 years unless justified by additional information)	Proposed 2022 FCA Result = High Impact (up to 20 years unless justified by additional information)
Significant Drinking Water Costs	n/a	2 additional years	n/a	2 additional years
Demonstration of Financial Alternatives as Part of FCA	No	Yes	Yes, and analysis shows that additional measures can reduce FCA impact closer to Medium	Yes
Schedule:	9 years (reduction of discharges in areas with EJ concerns within first 3 years)	17 years (removal of discharge from sensitive area and waters with impaired uses within first 2 years)	17 years	22 years (reduction of discharges in areas with EJ concerns within first 5 years)

3. *Alternative 2 Schedule Development*

Unlike Alternative 1, EPA has not established benchmarks for the development of an implementation schedule under Alternative 2. Instead, EPA plans to consider the impacts on households as well as the Final LQPI Score when approving implementation schedules that seek to avoid rates that represent an overly burdensome percentage of household income.

Under Alternative 2, communities are encouraged to submit any additional documentation (Other Metrics) that would create a more accurate and complete picture of their financial capability. The Proposed 2022 FCA includes Other Metrics with Standardized Instructions and Other Metrics with Submission of Information to be Determined by the Community. Any Other Metrics that have been submitted for consideration would supplement the financial and rate model and Final LQPI Score and may result in an extended implementation schedule, not to exceed a total of 25 years.

g. Recommended Expanded Economic Impact Matrix and Analyses for WQS Decisions for the Public Sector

The recommended expanded matrix and additional analyses for water quality standards (WQS) decisions described in this Section IV.g, along with the electronic spreadsheet tools for the public sector at <https://www.epa.gov/wqs-tech/spreadsheet-tools-evaluate-economic-impacts-public-sector>,³⁰ replace the worksheets and calculations for the public sector sections of the 1995 WQS Guidance. EPA intends this replacement to guide states and authorized tribes in evaluating the degree of economic impact from potential WQS decisions. Section IV.g includes the expanded economic impact matrix for WQS that incorporates the Municipal Preliminary Screener (MPS), Secondary Score (SS), and Lowest Quintile Poverty Indicator (LQPI) Score in a multi-step approach, as well as incorporating consideration of a Financial Alternatives Analysis in a similar manner as Alternative 1 of the Proposed 2022 FCA for extended CWA compliance schedules. Section IV.g also includes recommended additional analyses or actions when considering revisions to designated uses. Section IV.g does not revise the recommended methodology in the private sector sections of the 1995 WQS Guidance.

WQS decisions relevant to this document include revisions to designated uses, WQS variances, and antidegradation reviews. The WQS regulations at 40 CFR 131.10(g)(6), commonly referred to as “Factor 6,” allow revisions to designated uses or the adoption of WQS variances if a state or authorized tribe can demonstrate that attaining the use is not feasible because controls more stringent than the technology-based requirement would result in both substantial and widespread economic and social impacts. The WQS regulations at 40 CFR 131.12(a)(2) allow lowering of water quality if it is necessary to accommodate important economic or social development in the area in which the high-quality waters are located.

³⁰ These electronic spreadsheet tools for the public sector encompass the data inputs and calculations of the 1995 WQS Guidance.

1. Use of Guidance and Additional Analyses for WQS Use Attainability Analyses as Compared to WQS Variances

The metrics and thresholds in Alternative 1 of the Proposed 2022 FCA are based on a “snapshot” of financial and socio-economic data. Because financial conditions are dynamic, these metrics are most appropriate for evaluating requests for WQS variances based on 40 CFR 131.10(g)(6). Specifically, the snapshot approach is well-suited for determining the duration of WQS variances, with the time-limited nature of a WQS variance ensuring that changes in financial conditions will be considered if and when there is a request for a subsequent variance or at the time of reevaluation for a WQS variance with a duration longer than five years.

Although EPA has had considerable experience and success negotiating the schedule of water quality improvements under CWA consent decrees and evaluating requests for time-limited WQS variances based on 40 CFR 131.10(g)(6) using the analytical approach in the 1995 WQS Guidance and 1997 FCA Guidance, the same cannot be said for requests to remove designated uses or change to less stringent use subcategories. While the analyses and metrics recommended in the Proposed 2022 FCA may be considered in evaluating such use change requests, EPA recommends caution in doing so. There may be many cases where these analytics and metrics demonstrate that attaining the designated use and criterion is not feasible throughout the limited term of a WQS variance, but the same would not be true for a use removal or change to a less stringent use subcategory, which does not include a temporal component. To that end, EPA recommends states or authorized tribes first explore whether there are other factors under 40 CFR 131.10(g) that preclude attainment of the designated use. These other factors involve evaluating environmental conditions that are less likely to change over time and are more likely to impact all segments of a community evenly, as opposed to the dynamic nature and potential disproportionate distribution of economic conditions in a community.

Where states and authorized tribes choose to pursue a use change based on 40 CFR 131.10(g)(6), an appropriate demonstration for removal of a use or a change to a less stringent use subcategory must satisfy all of the requirements in the WQS regulations at 40 CFR part 131, particularly those at 40 CFR 131.10, and should include the calculations of the WQS Economic Impact Matrices, consideration of financial alternatives as described in Step 3b of this Section IV.g and Appendix C of this document, as well as other analyses described below for use changes.

Although the consideration of a Financial Alternatives Analysis is applicable to the demonstration of any WQS decisions based on 40 CFR 131.10(g)(6) where a community’s Initial LQPI Score is “medium” or “high,” for use changes it provides especially critical information. This information, along with the additional analyses that support an appropriate economic justification, facilitate WQS decisions that strive to restore and maintain water quality to the greatest extent possible, consistent with the objectives of the CWA. For starters, an appropriate justification should demonstrate that all feasible financial alternatives (such as those identified in Appendix C of this guidance including loans, grants, customer assistance programs, and

alternative rate structures) and additional future debt capacity have been considered and none of the viable financial alternatives currently, or under reasonably expected future economic conditions, results in the designated use being feasible to attain.³¹

In addition, there are other analyses or actions that EPA recommends to assess decisions regarding use changes. EPA recommends a trend analysis of the LQPI Score (see Exhibit 1 in Section IV.b) over the most recent 10-year period to ensure the financial data is representative and reflects changing economic conditions of a community's low-income households over time. Finally, when states and authorized tribes re-examine designated use changes in accordance with WQS regulations regarding triennial reviews,³² EPA expects that they evaluate up-to-date economic information if the designated use was revised based on 40 CFR 131.10(g)(6), including whether the use is attainable after retiring debts.

2. WQS Decisions in Areas with Potential Environmental Justice Concerns

In addition to completing an economic analysis, including the Financial Alternatives Analysis, using Section IV.g and considering any other financial metrics, a community, state, or authorized tribe is strongly encouraged to consider other opportunities to mitigate impacts of WQS decisions to areas with potential environmental justice concerns. For example, for WQS variance demonstrations, EPA recommends that communities sequence activities included in WQS variance requirements to mitigate impacts to areas with potential environmental justice concerns as early as possible. Finally, public hearings, required by the WQS regulations when reviewing or revising WQS, provide opportunities for public comments, including comments on potential environmental justice concerns resulting from changes to designated uses when they are initially proposed and during subsequent triennial reviews.

3. Submittal of Additional Community-Specific Information

Because the three recommended critical metrics set forth below might not present the most complete picture of a community's financial capability, communities are encouraged to submit any additional documentation that would create a more accurate and complete picture of their financial capability. Financial and rate models in Alternative 2 (as discussed in Section IV.c) or Other Metrics (as discussed in Sections IV.d and IV.e) could provide additional information for

³¹ For purposes of the Financial Alternatives Analysis, "feasible" steps should include the financial and funding considerations listed in Appendix C, whether or not they are prohibited by state law.

³² 40 CFR 131.20(a): "The State shall from time to time, but at least once every 3 years, hold public hearings for the purpose of reviewing applicable water quality standards adopted pursuant to §§ 131.10 through 131.15 and Federally promulgated water quality standards and, as appropriate, modifying and adopting standards. The State shall also re-examine any waterbody segment with water quality standards that do not include the uses specified in section 101(a)(2) of the Act every 3 years to determine if any new information has become available. If such new information indicates that the uses specified in section 101(a)(2) of the Act are attainable, the State shall revise its standards accordingly ..."

consideration in conjunction with the use of recommended critical metrics in Alternative 1 to support WQS decisions. However, EPA is not recommending the use of financial and rate model analysis under Alternative 2, alone or in lieu of Alternative 1, in WQS decisions.

4. Steps to Evaluate the Degree of Economic Impact from Potential WQS Decisions

Step 1: Determine the Initial Economic Impact by Using Table 1

Table 1, used to determine the initial economic impact for the public sector, is the same as the matrix for the public sector in the 1995 WQS Guidance. To calculate the Municipal Preliminary Screener (MPS) and Secondary Score (SS) for use in this step, please see the electronic spreadsheet tools for the public sector at <https://www.epa.gov/wqs-tech/spreadsheet-tools-evaluate-economic-impacts-public-sector>.

Table 1:

Secondary Score (SS)	Municipal Preliminary Screener (Cost Based on Median Household Income) (MPS)		
	Below 1.0%	Between 1.0% to 2.0%	Above 2.0%
Below 1.5 (Weak Economy)	Impact Unclear	Substantial Impact	Substantial Impact
Between 1.5 to 2.5 (Mid-range Economy)	Impact Not Likely to be Substantial	Impact Unclear	Substantial Impact
Above 2.5 (Strong Economy)	Impact Not Likely to be Substantial	Impact Not Likely to be Substantial	Impact Unclear

Step 2: Determine the Initial Lowest Quintile Poverty Indicator Score

For more information on how to calculate the Initial Lowest Quintile Poverty Indicator (LQPI) Score, please see Exhibit 1 under Alternative 1 in the Proposed 2022 FCA in Section IV.b.3.

Step 3: Determine the Final Lowest Quintile Poverty Indicator Score

Where a community's Initial LQPI Score is "medium" or "high," the Final LQPI Score should be based on the outcome of the Financial Alternatives Analysis. As described earlier in this section, WQS variances are temporary in nature and provide a transparent mechanism for making water quality improvements towards the eventual attainment of the designated use with timeframes that are justified and enforceable in NPDES permits. Therefore, to ensure that there is maximum flexibility where water quality improvements can and will be made, EPA is providing adjustments to the Initial LQPI Score for WQS variances in Step 3a, which is equivalent to those provided in Exhibit 2 of Section IV.b.5 for schedule decisions. However, unlike WQS variances, the purpose of designated use changes that would require such an

analysis is to revise the ultimate desired condition rather than meet it. Similarly, the purpose of antidegradation reviews is to determine whether to allow a lowering of high water quality where such high water quality already exists, potentially also reducing a water's climate resiliency. While both are allowed by EPA's regulations, where justifiable, neither designated use changes nor antidegradation reviews inherently include an enforceable mechanism to drive additional environmental improvement, and may have longer lasting impacts on low-income communities. Therefore, EPA presumes that where there are financial alternatives identified, such alternatives would mitigate impacts to low-income communities leading to a downward adjustment of the Initial LQPI Score (see Step 3b).

3a: For WQS Variances

For WQS variance decisions, if the Initial LQPI Score is "medium" or "high" (i.e., score 2.5 or below), perform a Financial Alternatives Analysis in accordance with Section IV.b.4 and Appendix C. The Final LQPI Score may be different from the Initial LQPI Score depending on the results of the Financial Alternatives Analysis, as shown in Table 2 of this section.

Table 2:

Result of Financial Alternatives Analysis	Adjustment to Initial LQPI Score	Rationale
Community: <ul style="list-style-type: none"> - Does not perform the analysis, - Does not consider all alternatives in Appendix C (or as identified by EPA), or - Finds financial alternatives to lessen impact on lowest quintile households but does not commit to pursue alternatives. 	Initial LQPI Score is adjusted, potentially limiting flexibility in schedule decisions: <ul style="list-style-type: none"> • "Medium" Initial LQPI Score is adjusted to "low" Final LQPI; and • "High" Initial LQPI Score is adjusted to "medium" Final LQPI Score. 	Community can do more to assist its lowest quintile households, so poverty concerns should not be used to justify a WQS variance.
Community performs a Financial Alternatives Analysis and commits to pursuing feasible financial alternatives to reduce the impact on lowest quintile households.	Depending on discussions with EPA and EPA's consideration of likelihood of remaining impacts, the Initial LQPI Score may be adjusted or stay the same.	Community commits to taking additional actions to help its lowest quintile; as a result, the lowest quintile may or may not continue to be significantly impacted.
Community performs a Financial Alternatives Analysis and EPA determines that community has taken all	Initial LQPI Score stays the same, potentially providing increased flexibility in WQS decisions:	Community has taken all feasible steps to help its lowest quintile, so impacts to lowest quintile households

feasible steps ³³ to help lowest quintile households, but there are still significant impacts on the lowest quintile.	<ul style="list-style-type: none"> • “Medium” Initial LQPI Score stays as “medium” Final LQPI Score; and • “High” Initial LQPI Score stays as “high” Final LQPI Score. 	may be used to justify a WQS variance.
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Step 3b: For Use Changes or Antidegradation Reviews

For use change decisions and antidegradation reviews, the presumption for any community with a “medium” or “high” Initial LQPI Score is that the Final LQPI Score will be adjusted to a “low” or a “medium,” respectively, if any feasible financial alternatives are identified. However, where the community commits to all feasible financial alternatives and provides justification showing that even after implementing feasible financial alternatives, significant impacts to the lowest quintile would remain, there is no change in the Initial LQPI Score. That is, the Initial LQPI Score is the Final LQPI Score.

Step 4: Use the Expanded Economic Impact Matrix in Table 3 to combine the results from the Initial Economic Impact (Table 1) and the Final Lowest Quintile Poverty Indicator Score (from Step 3)

Table 3:

Initial Economic Impact (MPS and SS)	Final Lowest Quintile Poverty Indicator (LQPI) Score		
	Low Impact	Medium Impact	High Impact
Impact Not Likely to be Substantial	Impact Not Likely to be Substantial	Impact Not Likely to be Substantial	Impact Unclear
Impact Unclear	Impact Not Likely to be Substantial	Impact Unclear	Substantial Impact
Substantial Impact	Impact Unclear	Substantial Impact	Substantial Impact

5. Recommendations for Making WQS Decisions

The following are recommendations for making WQS decisions after applying the Expanded Economic Impact Matrix from Table 3, including consideration of financial alternatives where appropriate and additional analyses when evaluating changes to designated uses. EPA notes that Table 4 does not indicate that WQS decisions should be rigidly determined according to the break points between the categories. Information on Other Metrics or analysis of financial and rate models may provide additional information that could influence WQS decisions. Further, EPA recommends that in addition to completing the economic analyses set forth in this Section

³³ For purposes of the Financial Alternatives Analysis, “feasible” steps should include the financial and funding considerations listed in Appendix C, whether or not they are prohibited by state law.

IV.g and considering any other financial metrics, opportunities to mitigate impacts of WQS decisions to areas with potential environmental justice concerns should be considered (see discussion in the introduction of this section).

Table 4: Recommendations for Making WQS Decisions

Results of Expanded Economic Impact Matrix (Table 3)	Recommendations for Making WQS Decisions
Impact Not Likely to be Substantial	<p>Results would likely not demonstrate infeasibility based on 40 CFR 131.10(g)(6) for revisions to designated uses or WQS variances.</p> <p>For antidegradation reviews, results would likely not demonstrate that allowing lower water quality is necessary to accommodate important economic or social development in the area in which the waters are located per 40 CFR 131.12(a)(2).³⁴</p>
Impact Unclear	<p>For revisions to designated uses or WQS variances, infeasibility based on 40 CFR 131.10(g)(6) is likely unclear.</p> <p>For use changes, consider the Expanded Economic Matrix results in concert with the results of the additional analyses and actions described in this Section IV.g for use changes. Where feasibility remains unclear, communities may want to consider whether a use change is appropriate at this time. Communities may also evaluate Other Metrics (described in Sections IV.d and IV.e of the Proposed 2022 FCA) or the financial and rate models (described in Alternative 2 in Section IV.c).</p> <p>For WQS variances, where the impacts are unclear, EPA recommends evaluation of Other Metrics (described in Sections IV.d and IV.e of the Proposed 2022 FCA) or the financial and rate models (described in Alternative 2 in Section IV.c).</p>

³⁴ In order to allow a lowering of high water quality, the state or authorized tribe must find that the lowering is necessary to accommodate important economic or social development in the area in which the waters are located per 40 CFR 131.12(a)(2). The economic demonstration in the Proposed 2022 FCA only serves to determine whether there is “important economic or social development in the area in which the waters are located.” A state or authorized tribe would still need to conduct an analysis of alternatives, consistent with 40 CFR 131.12(a)(2)(ii), to determine if such a lowering is “necessary.”

	For antidegradation reviews, where it is unclear that allowing lower water quality is necessary to accommodate important economic or social development in the area in which the waters are located, per 40 CFR 131.12(a)(2), ³⁵ EPA recommends evaluation of Other Metrics (described in Sections IV.d and IV.e of the Proposed 2022 FCA) or the financial and rate models (described in Alternative 2 in Section IV.c).
Substantial Impact	<p>For use changes, consider the results of the Expanded Economic Matrix in concert with the results of the additional analyses and actions described in this Section IV.g for use changes to determine whether overall results continue to support a demonstration of infeasibility based on 40 CFR 131.10(g)(6).</p> <p>For WQS variances, results would likely support a demonstration of infeasibility based on 40 CFR 131.10(g)(6).</p> <p>For antidegradation reviews, results would likely support a demonstration that lowering water quality is necessary to accommodate important economic or social development in the area in which the waters are located per 40 CFR 131.12(a)(2).³⁶</p>

V. Request for Public Comment

EPA requests comment on the Proposed 2022 FCA. Specifically, as discussed in Section III.b, EPA is seeking comment related to the following questions:

1. Should the Final 2022 FCA incorporate a single new metric—LQPI—that considers lowest quintile income and poverty elements together? Or should the Final 2022 FCA incorporate two new metrics (a lowest quintile income indicator and a poverty indicator) to be calculated separately and combined in a matrix?
2. EPA is seeking additional examples or case studies of funding and financing considerations to add to Appendix C.
3. EPA is seeking feedback on the current proposed scheduling benchmarks of 20 years for “high” Expanded FCA Matrix impacts, or 25 years for unusually high impacts. If commentors propose different benchmarks, EPA is requesting examples to support the basis for such benchmarks.

³⁵ Ibid.

³⁶ Ibid.

VI. Appendices

- a.** Appendix A – Residential Indicator Worksheets
- b.** Appendix B – Financial Capability Indicator Worksheets
- c.** Appendix C – Financing and Funding Considerations for Financial Alternatives Analysis
- d.** Appendix D – Resources Related to Water Infrastructure Financing
- e.** Appendix E – Examples of Other Metrics Relevant to Consideration of Financial Capability

Residential Indicator Worksheets UPDATED (2022)

This appendix contains an updated version of the steps necessary to prepare the Residential Indicator. The worksheets and instructions are largely identical to the 1997 FCA Guidance. Since then, however, data sources have evolved, and this update recognizes the inputs that can be found today. In addition, “Practice Tips” in text boxes are incorporated to provide additional guidance on aspects of the Residential Indicator calculation that EPA has found are common questions and can benefit from additional direction.

CRITICAL METRIC: THE RESIDENTIAL INDICATOR

The Residential Indicator measures the financial impact of the current and proposed Clean Water Act (CWA) controls on residential users. Development of this indicator starts with the determination of the current and proposed wastewater system control costs per household (CPH). Second, the service area’s CPH estimate and the median household income (MHI) are used to calculate the Residential Indicator. Finally, the Residential Indicator is compared to established financial impact ranges to determine whether required CWA controls will produce a possible “high,” “mid-range,” or “low” financial impact on the permittee’s residential users. Worksheets are provided to aid in developing the Residential Indicator.

Developing CPH Estimate

The first step in developing the CPH is to determine the permittee’s total wastewater treatment (WWT) and collection system costs by adding together the current costs for existing wastewater treatment operations and the projected costs for any proposed CWA controls. The next step is to calculate the residential share of the total system costs. The final step is to calculate the CPH by dividing the residential share of total costs by the number of households in the permittee's total wastewater service area.

PRACTICE TIP: The total wastewater service area should include all retail and wholesale areas served.

Current wastewater system costs are defined as current annual wastewater operating and maintenance expenses (excluding depreciation) plus current annual debt service (principal and interest). This fairly represents cash expenses for current wastewater treatment operations. (Expenses for funded depreciation, capital replacement funds, or other types of capital reserve funds are not included in current WWT costs, because they

represent a type of savings account rather than an actual operation and maintenance expense.)

PRACTICE TIPS:

For a service area with wholesale customers, current costs should also include the wholesale customers' O&M and debt service incurred to provide retail service and delivery of wastewater to the primary community. This information can be inserted as an explicit line item so that the calculation is transparent.

The community may provide more detailed breakout of O&M costs as sub-parts. These may include historical average asset management and payment-in-lieu of taxes (PILOT). Note that the community should perform a sensitivity analysis on the addition of PILOT to determine the overall impact on residential households with and without PILOT.

Estimates of total projected costs are made for any proposed CWA controls. Any concerns about including specific proposed WWT projects, combined sewer overflow (CSO) or other CWA controls in the projected costs, or the length of the planning period, should be discussed with the appropriate NPDES permitting and enforcement authorities. These costs should be provided in consistent year dollars and include projected increased operation and maintenance expenses plus projected debt service costs for any proposed WWT and CWA controls. The information and calculations used to develop the CPH and the Residential Indicator are presented in Worksheets 1 and 2 and their instructions.

Worksheet 1 Instructions

Current Costs: Enter the requested data on lines 100 through 109 of Worksheet 1. The operation and maintenance costs on lines 100 and 103 should include all significant cost categories, such as labor, chemicals, utilities, administration, and equipment replacement. Do not include depreciation on line 100 or line 103.

PRACTICE TIP: Divide lines 100 and 103 into sub-lines to further break out costs (e.g., 100a: O&M Expenses for Core Service Area City; 100b: O&M Expenses for Wholesale Community). An additional line item can be provided for asset management, along with an explanation of the basis for the value.

Projected Costs: Projected costs for compliance are identified on Lines 103 and 104. Costs should be provided in current dollars, preferably consistent with the year of the most recent demographic and current financial data. Adjust the projected annual WWT and CWA costs to current dollars using the appropriate cost indices, preferably for the geographical region of permittee.

PRACTICE TIP: Future capital costs should be in the same year dollars as the current cost data. Use the appropriate engineering construction cost index to adjust projected capital costs or related increased operations costs as necessary.

The annualized debt service cost information for the projected WWT facilities and projected CWA controls (Line 104) can be calculated using an annualization factor, which reflects the local borrowing interest rate and borrowing term of the permittee. For example, if the adjusted projected debt costs (current dollars) are \$25,000,000 and typical borrowing terms include an interest rate of eight percent over 20 years, then costs can be annualized with the following calculation:

$$\text{Annual Debt Service Costs} = \text{Adjusted Debt Costs} \times \text{Annualization Factor}$$

$$\text{Annual Debt Service Costs} = \$25,000,000 \times .1019 = \$2,547,500$$

The annualization factor for the example is calculated using the following formula:

$$\text{Annualization Factor} = \frac{\text{Interest Rate}}{(1 + \text{Interest Rate})^{\text{years}} - 1} + \text{Interest Rate}$$

$$\text{Annualization Factor} = \frac{.08}{(1 + .08)^{20} - 1} + .08 = .1019$$

Alternatively, annual debt service costs can be calculated in Excel spreadsheets using the following formula:

$$= -PMT(\text{Interest Rate}, \text{Term of Loan in Years}, \text{Present Value of Projected Costs})$$

The annualized debt service cost for the projected CWA controls is entered on line 104. Line 104 should include future cash-financed capital. Divide lines 101 and 104 into sub-lines to further categorize debt service costs (e.g., 104a: Annual Revenue Bond Debt Service; 104b: Annual Pay-Go Costs). Add the current and projected wastewater treatment and projected CWA control costs to estimate the total WWT and CWA costs (line 102 + line 105).

PRACTICE TIP: The debt service should be estimated based on the source and type of debt or other financing expected to be used to pay for necessary capital expenditures, including state clean water revolving and pooled funds.

Residential Share: Calculate the residential share of the total cost (line 106) and enter on line 107. The residential share of total costs (line 107) is computed by multiplying the percent of total wastewater flow including infiltration and inflow attributable to residential users by the total costs (line 106).

PRACTICE TIPS:

The residential share represents costs for all households, whether in single-family homes or in multi-unit condominiums or apartment buildings. Residential costs exclude the portion of expenses attributable to commercial, governmental, and industrial customers. Permittees that treat multi-unit household as commercial accounts within the billing system need to estimate the flows attributable to those households.

In general, the residential share is based on billed flow for residential households. If supported by documentation, the residential share may be adjusted for infiltration and inflow (I&I) based on how the permittee addresses I&I in its bills.

For example, for a permittee with the following characteristics:

Total Costs:	\$12,000,000
Residential Flow:	10.5 Million Gallons per Day
Total Flow:	13.1 Million Gallons per Day

The residential share of the total cost is:

$$\text{Residential Share of Costs} = \text{Total Costs} \times \frac{\text{Residential Wastewater Flow}}{\text{Total Wastewater Flow}}$$

$$\text{Residential Share of Costs} = \$12,000,000 \times \frac{10.5 \text{ Million Gallons per Day}}{13.1 \text{ Million Gallons per Day}} = \$9,600,000$$

Calculate the CPH (line 109) by dividing total residential share costs (line 107) by the total number of households (line 108) in the permittee's total wastewater service area. The Residential Share percentage in this example is 80.2 percent.

Data Sources

The permittee's latest audited Financial Report should be available to develop the current wastewater treatment costs.¹ In order to comply with accounting requirements, most permittees develop a combined statement of revenues, expenses, and changes in fund balance. These Financial Reports should be available directly from the permittee, or, in some states, from central records kept by the state auditor or other state offices. The permittee may have a separate financial report, or its financial data may be incorporated into a municipality's report.

Projected costs in the wastewater service area should be available through the permittee's planning documents. Wastewater service area boundaries also should be available from the permittee, frequently in electronic format. The Census Bureau annually collects American Community Survey data on the number of households by Census-designated place. If the permittee's service area is relatively contiguous with political boundaries, then do a search for "Census QuickFacts" with the name of the town or county. Alternatively, Census Table B25002 (refer to <https://data.census.gov/cedsci/all?q=B25002>) is a resource if a more nuanced estimate is required. Note that "occupied housing units" equals households. The permittee should use the most recent 5-Year ACS Household data in its FCA calculations.

¹ For many communities, this Financial Report was previously characterized as a Comprehensive Annual Financial Report (CAFR), but the Governmental Accounting Standards Board has recently indicated that the CAFR should now be referred to as the "Financial Report."

PRACTICE TIPS:

Note that the volume of residential usage may not only include volume for residential customer accounts, but residential households may also be served through multi-unit structures in commercial accounts, such as apartment buildings. Census data can provide information on the number of households in multi-family structures, providing a basis for adjusting the residential usage. The residential share tends to be lower for communities with more commercial or industrial customers, and generally higher in suburban, predominately residential areas.

Particularly for more complex service areas, electronic Geographic Information System (GIS) shapefiles can be analyzed with census electronic files, to better characterize the service area households. Many utilities already have GIS mappings of the service area to assist in management of the system. In addition, note that in Census terminology, a “household” is equal to an “occupied housing unit,” so data characterizing occupied housing units may be helpful to understanding the nature of the permittee’s service area. In addition, the permittee should not use “residential customer” counts to estimate households, as more than one household may occupy a residential customer site, and households may live in commercial multi-unit customer properties.

COST PER HOUSEHOLD Worksheet 1

	<u>Line Number</u>
<u>Current WWT Costs</u>	
• Annual Operations and Maintenance Expenses (Excluding Depreciation)	100
• Annual Debt Service (Principal and Interest)	101
Subtotal of Current Costs (Line 100 + Line 101)	102
<u>Projected WWT and CWA Costs (Current Dollars)</u>	
• Estimated Annual Operations and Maintenance Expenses (Excluding Depreciation)	103
• Annual Debt Service (Principal and Interest)	104
Subtotal of Projected Costs (Line 103 + Line 104)	105
Total Current and Projected WWT and CWA Costs (Line 102 + Line 105)	106
Residential Share of Total WWT and CWA Costs	107
Total Number of Households in Service Area	108
Cost per Household (Line 107 ÷ Line 108)	109

Developing the MHI Estimate

The second step in developing the Residential Indicator is to determine the median household income (MHI) for the permittee’s entire wastewater service area. Information and calculations used to develop the MHI value are presented in Worksheet 2 and its instructions.

Worksheet 2 Instructions

Enter the requested information on Worksheet 2, lines 201 through 203. If the permittee’s service area is relatively contiguous with political boundaries, then do a search for “Census QuickFacts” with the name of the town or county. Alternatively, Census Table B19013 (refer to <https://data.census.gov/cedsci/all?q=B19013>) is a resource if a more nuanced estimate is required. The permittee should use the most recent 5-Year Average MHI data in its FCA calculations.

PRACTICE TIP: For more complex service areas, electronic Geographic Information System (GIS) shapefiles can be analyzed with census electronic shapefiles, allowing a more precise characterization of the MHI for service area households. Many permittees already have GIS mappings of the service area to assist in management of the system.

On Worksheet 2, calculate the adjusted MHI by entering the most recent 5-Year census MHI value on line 201. Then enter the MHI Adjustment Factor, if any, on line 202. Finally, multiply the MHI (line 201) by the Adjustment Factor (line 202) and enter the Adjusted MHI on line 203.

PRACTICE TIP: In general, an adjustment factor is not required given that the Census data is the most up-to-date information available. Identify the year of the Census data, and if an adjustment is made, provide an explanation.

If the permittee's service area includes more than one jurisdiction, it may be necessary to develop a weighted MHI for the entire service area. The Bureau of Census's

designated MHI areas generally encompass most permittee’s service areas. For this reason, the calculation of a weighted MHI usually will not be necessary to reasonably represent the permittee’s MHI. When a weighted MHI must be calculated, a weight would be assigned to each jurisdiction to reflect its share of the total households.

The following example illustrates how to develop a weighted MHI value. If a permittee is a regional authority that serves three local jurisdictions, the weighted average MHI would be calculated as follows:

Jurisdiction	MHI	Number of Households (HH)
A	\$30,000	100,000
B	\$45,000	25,000
C	\$25,000	<u>50,000</u>
		175,000

$$\begin{aligned}
 \text{Weighted MHI} &= MHI_A \left(\frac{HH_A}{\text{Total HH}} \right) + MHI_B \left(\frac{HH_B}{\text{Total HH}} \right) + MHI_C \left(\frac{HH_C}{\text{Total HH}} \right) \\
 &= \$30,000 \left(\frac{100,000}{175,000} \right) + \$45,000 \left(\frac{25,000}{175,000} \right) + \$25,000 \left(\frac{50,000}{175,000} \right) \\
 &= \$17,143 + \$6,429 + \$7,143 = \$30,715
 \end{aligned}$$

Data Sources

Median household income is available for most communities from the latest annual Census ACS data collection. In the few cases where a local jurisdiction’s MHI is not available, the surrounding county’s MHI may be sufficient. The Census Bureau provides annual 5-Year Average Median Household Income data in Table B19013.

Developing the Residential Indicator

Worksheet 2 Instructions

To calculate the Residential indicator (line 205 of Worksheet 2), divide the total annual control cost per household (line 109 transferred to line 204) by the Adjusted MHI (line 203) and multiply by 100.

Analyzing the Residential Indicator

The Residential Indicator will be used in the Expanded Financial Capability Matrix to help permittees, and EPA and state NPDES authorities determine reasonable and workable long-term wastewater system control schedules.

To assess the financial impact CWA controls may have on the permittee's residential users, the Residential Indicator is compared to the financial impact ranges that reflect EPA's previous experience with water pollution control programs. These ranges are as follows:

Financial Impact	Residential Indicator (CPH as % MHI)
Low	Less than 1.0 Percent of MHI
Mid-Range	1.0 - 2.0 Percent of MHI
High	Greater than 2.0 Percent of MHI

When the Residential Indicator is less than 1.0 percent, between 1.0 and 2.0 percent, and greater than 2.0 percent, the financial impact on residential users to implement the CWA controls will be characterized as "low," "mid-range," and "high," respectively. Unless there are significant weaknesses in a permittee's financial and socioeconomic conditions, second phase reviews for permittees that have a low residential indicator score (less than 1.0) are unlikely to result in longer implementation schedules. Permittees with low residential indicators may wish to forego the second phase analysis and proceed with the normal engineering and construction implementation schedule developed as part of the planning process.

In situations where a permittee believes that there are unique circumstances that would affect the conclusion of the first phase, the permittee may submit documentation of its unique financial conditions to the appropriate state NPDES and EPA authorities for consideration.

**RESIDENTIAL INDICATOR
Worksheet 2**

<u>Median Household Income (MHI)</u>		<u>Line Number</u>
• Census Year MHI	_____	201
• MHI Adjustment Factor	_____	202
• Adjusted MHI (Line 201 x Line 202)	_____	203
<u>Annual WWT and CWA Control Cost per Household (CPH)</u> (Line 109)	_____	204
<u>Residential Indicator:</u> Annual Wastewater and CWA Control Costs per Household as a percent of Adjusted Median Household Income (CPH as % MHI) (Line 204 ÷ Line 203 × 100)	_____	205
Residential Indicator Rating	_____	

Financial Capability Indicator Worksheets UPDATED (2022)

This appendix contains an updated version of the steps necessary to prepare the Financial Capability Indicator. The worksheets and instructions are largely identical to the 1997 version. Since then, however, data sources have evolved, and this update recognizes the inputs that can be found today. In addition, “Practice Tips” in text boxes are incorporated to provide additional guidance on aspects of the Financial Capability Indicator that EPA has found are common questions and can benefit from additional direction.

CRITICAL METRIC: PERMITTEE FINANCIAL CAPABILITY INDICATORS

Selected indicators are assessed to evaluate the financial capability of the permittee. These indicators will examine the permittee's debt burden, socioeconomic conditions, and financial operations. The second-phase review examines three general categories of financial capability indicators for the permittee:

- Debt Indicators - Assess current debt burden of the permittee or the communities within the permittee's service area and their ability to issue additional debt to finance the CWA controls. The indicators selected for this purpose are:
 - Bond Ratings (General Obligation and/or Revenue Bond Fund)
 - Overall Net Debt as a Percent of Full Market Property Value
- Socioeconomic Indicators - Assess the general economic well-being of residential users in the permittee's service area. The indicators selected for this purpose are:
 - Unemployment Rate
 - Median Household Income
- Financial Management Indicators - Evaluate the permittee's overall ability to manage financial operations. The indicators selected for this purpose are:
 - Property Tax Revenue Collection Rate
 - Property Tax Revenues as a Percent of Full Market Property Value

Even though the financial capability analysis reflects current conditions, pending changes in the service area should be considered in development of the second phase indicators. For example, if the current unemployment rate is high, but there is a new plant opening that will stimulate economic growth, the unemployment indicators for the service area would need to be modified to reflect the projected impact of the new plant. The permittee should submit documentation of such conditions to the appropriate EPA and state NPDES authorities for consideration. When the permittee is a sanitary district, sewer authority or similar entity, the second phase indicators related to property values and tax

revenues may not be applicable. In those circumstances, the permittee may simply use the remaining indicators or submit other related documentation that will help assess its financial capability to implement the necessary wastewater system controls.

DEBT INDICATORS

The debt indicators described below were selected to assess the current debt burden conditions and the ability to issue new debt. These indicators are the bond rating and overall net debt as a percent of full market property value. When these indicators are not available for the permittee, other financial data which illustrates debt burden and debt issuing capacity may be used to assess the permittee's financial capability in this area.

Bond Rating (Worksheet 3)

The information needed to evaluate the bond ratings is presented in Worksheet 3. Recent bond ratings for the permittee and service area communities summarize a bond rating agency's assessment of a permittee's or community's credit capacity. General obligation (G.O.) bonds are bonds issued by a local government and repaid with taxes (usually property taxes). They are the primary long-term debt funding mechanism in use by local governments. General obligation bond ratings reflect financial and socioeconomic conditions experienced by the community as a whole.

"Revenue bond" ratings, by comparison, reflect the financial conditions and management capability of the wastewater utility. They are repaid with revenues generated from user fees. Revenue bonds are sometimes referred to as water or sewer bonds. In some cases, these bonds may have been issued by the state on behalf of local communities.

Bond ratings normally incorporate an analysis of a wide variety of quantitative and qualitative financial capability indicators. These analyses evaluate the long-term trends and current conditions for the indicators. The ultimate bond ratings reflect a general assessment of the permittee's current financial conditions. However, if security enhancements like bond insurance have been used for a revenue bond issue, the bond rating may be higher than justified by the local conditions.

PRACTICE TIP: If the permittee’s or community’s rating was enhanced through bond insurance, the uninsured rating should be stated in the bond prospectus, and that value should be provided in the FCA analysis.

Many small and medium-sized communities have not used debt financing for projects and, as a result, have no bond rating. The absence of bond rating does not indicate strong or weak financial health. When a bond rating is not available, this indicator may be excluded from the financial analysis.

Worksheet 3 Instructions

Enter the most recent bond ratings on Worksheet 3, lines 301 and 302. Note that ratings are requested for general obligation bonds and revenue bonds. When there are several different bond ratings, enter the most recent bond rating on Line 303 as the summary bond rating.

Data Sources

Municipal bond reports from rating agencies (e.g., Moody's Bond Record, Standard & Poor's Corporation, and Fitch) provide recent ratings. Municipal bond prospectuses typically list the bond rating in the upper-right corner of the cover page and within the “Ratings” section of the report. General Obligation and Revenue Bond prospectuses are available at: <https://emma.msrb.org/>. Municipalities also may have reports from rating agencies summarizing updates of the rating status.

Benchmarks

Moody's Investor Services

“Baa” is the minimum investment grade rating. See *Moody’s on Municipals – an Introduction to Issuing Debt* for a description of bond ratings.

Moody’s Investor Services’ Rating

- Weak: Ba, B, Caa, Ca, C
- Mid-Range: Baa
- Strong: Aaa, AA, A

Standard & Poor's; Fitch

“BBB” is the minimum investment grade rating. See Standard & Poor's *Municipal Finance Criteria* and Fitch's *Rating Definitions* for a description of bond ratings.

Standard & Poor's and Fitch Ratings

- Weak: BB, B, CCC, CC, C, D
- Mid-Range: BBB
- Strong: AAA, AA, A

BOND RATING Worksheet 3

	<u>Line Number</u>
Most Recent General Obligation Bond Rating:	
Date:	
Rating Agency:	
Rating:	301
Most Recent Revenue (Water/Sewer or Sewer) Bond:	
Date:	
Rating Agency:	
Bond Insurance (Yes/No):	
Rating:	302
Summary Bond Rating:	303

Overall Net Debt as a Percent of Full Market Property Value

Description

Overall net debt is debt repaid by property taxes in the permittee's service area. It excludes debt which is repaid by special user fees (e.g., revenue debt). This indicator provides a measure of the debt burden on residents within the permittee's service area and measures the ability of local governmental jurisdictions to issue additional debt. It includes the debt issued directly by the local jurisdiction and debt of overlapping entities, such as school districts. This indicator compares the level of debt owed by the service area population with the full market value of real property used to support that debt and serves as a measure of financial wealth in the permittee's service area. Information needed to develop overall net debt as a percent of full market value is identified on Worksheet 4.

Worksheet 4 Instructions

Enter requested data on Worksheet 4, lines 401 - 405.

- Line 401 - Direct Net Debt - Enter the amount of each jurisdiction's general obligation debt outstanding that is supported by the property in the permittee's service area. General obligation bonds are secured by the “full faith and credit” of the community and are payable from general tax revenues. This debt amount excludes general obligation bonds that are payable from some dedicated user fees or specific revenue source other than the general tax revenues. These general obligation bonds are called “double-barreled bonds.”
- Line 402 - Debt of Overlapping Entities - The Statistical Section of the permittee’s Financial Report generally lists the outstanding debt attributable to the permittee’s service area. If not, calculate the permittee's service area's share of any debt from overlapping entities using the process illustrated below:
 - Identify in Column A below each overlapping entity that has incurred debt that must be partially supported by the permittee's service area. (Check the Statistical Section of the permittee’s Financial Report or State assessor's office for this information).
 - Identify the total amount of tax-supported outstanding debt for each overlapping entity in Column B. Money in a sinking fund is not included in the outstanding debt since it represents periodic deposits into an account to ensure the availability of sufficient monies to make timely debt service payments.
 - Identify the percentage of each overlapping entity's outstanding debt charged to persons or property in the permittee's service area in Column C. The percentage is based on the estimated full market value of real property of the respective jurisdictions.

- Multiply the total outstanding debt of each overlapping entity by the percentage identified for the permittee's service area (Column B x C).
- Add the figures in Column D to arrive at total overlapping debt for permittee's service area.

(A) Overlapping Entities	(B) Outstanding Debt (less Sinking Fund)	(C) Percent Chargeable to Permittee's Service Area	(D) Outstanding Debt Attributable to Permittee's Service Area
County	\$10,500,000	25%	\$2,625,000
School District	\$16,800,000	95%	\$15,960,000
Total Overlapping Debt			\$18,585,000

- Line 403 - Overall Net Debt - Add lines 401 and 402.
- Line 404 - Market Value of Property - The property value should reflect the full market value of real property excluding personal property within the permittee's service area. It is possible that the tax assessed property value will not reflect full market value. This occurs when the tax assessment ratio is less than one. In such cases the full market value of property is computed by dividing the total tax assessment value by the assessment ratio (the assessment ratio represents the percentage of the full market value that is taxed at the established tax rate). For example, if the assessed value is \$1,000,000 and the assessment ratio is 50 percent then the full market value of real property is $\$1,000,000 / .50 = \$2,000,000$.
- Line 405 - Overall Net Debt as a Percent of Full Market Property Value - Divide line 403 by line 404 and multiply by 100.

Data Sources

Debt information is generally available in the Statistical Section of the community's Financial Report. In most cases the most recent Financial Report is on file in the finance department of the community's website. Overlapping debt is also generally provided in a community's Financial Reports. Market value of real property is available in the Statistical Section of the community's Financial Report. If not, the property assessment data should be readily available through the community, county, or State's assessor office. The boundary of most permittee's service areas generally conforms to one or more community boundaries. Therefore, prorating community data to reflect specific service area boundaries is not normally necessary for evaluating the general financial capability of the permittee.

Benchmarks

- Weak: Above 5%
- Mid-range: 2-5%
- Strong: Below 2%

**OVERALL NET DEBT AS A PERCENT OF FULL MARKET PROPERTY
VALUE
Worksheet 4**

	<u>Line Number</u>
<ul style="list-style-type: none"> Direct Net Debt (G.O. Bond Excluding Double-Barreled Bonds): 	401
<ul style="list-style-type: none"> Debt of Overlapping Entities (Proportionate Share of Multijurisdictional Debt): 	402
<ul style="list-style-type: none"> Overall Net Debt (Lines 401 + 402): 	403
<ul style="list-style-type: none"> Full Market Value of Property: 	404
<ul style="list-style-type: none"> Overall Net Debt as a Percent of Full Market Property Value (Line 403 divided by Line 404 x 100): 	405

SOCIOECONOMIC INDICATORS

The socioeconomic indicators are used to assess the general economic well-being of residential users in the permittee's service area. The indicators used to assess economic conditions are unemployment rate and median household income. When the permittee has additional socioeconomic data, it may want to submit the data to the appropriate EPA and state NPDES authorities to facilitate a better understanding of the permittee's unique economic conditions. Several examples of this type of socioeconomic data could be poverty rate, population growth, and employment projections.

Unemployment Rate

Unemployment information is entered on Worksheet 5. The unemployment rate is defined as the percent of a permittee's service area residents on the unemployment rolls.

Worksheet 5 Instructions

Unemployment values are entered on lines 501 - 503 on Worksheet 5. If the unemployment rate for a permittee's service area is not available, the unemployment rate for the county in which the service area is located may be used as a substitute. On line 503, enter the average national unemployment rate.

Data Sources

The Bureau of Labor Statistics (BLS) maintains current unemployment rate figures for municipalities and counties with a population over 25,000. National and state unemployment data are also available for comparison purposes. This information can be obtained from the BLS Data Tools webpage at <https://www.bls.gov/data>. The most recent year of unemployment data can be used.

Benchmarks

Compare the permittee's unemployment values with the national average values. National averages are readily available through the Bureau of Labor Statistics.

- Weak: More than 1 percentage point above the National Average
- Mid-range: ± 1 percentage point of the National Average
- Strong: More than 1 percentage point below National Average

For example, if the national average unemployment rate is 6 percent, an unemployment rate greater than 7 percent would be considered weak, while an unemployment rate less than 5 percent would be considered strong.

UNEMPLOYMENT RATE

Worksheet 5

		<u>Line Number</u>
• Unemployment Rate – Permittee:	_____	501
• Source:	_____	
• Unemployment Rate – County (use if permittee’s rate is unavailable):	_____	502
• Source:	_____	
Benchmark:		
• Average National Unemployment Rate:	_____	503
• Source:	_____	

Median Household Income

Median household income (MHI) is defined as the median amount of total income dollars received per household during a calendar year in a given area. It serves as an overall indicator of community earning capacity. Worksheet 6 is used to present information for this indicator.

Worksheet 6 Instructions

Median household income was discussed during the first phase assessment and is presented on Worksheet 2. On line 601 of Worksheet 6, enter the adjusted MHI from Worksheet 2 (line 203). Enter the national MHI value for the same year (line 602) and enter the value on Line 604.

Data Sources

Median household income is available through Census Bureau ACS data at the following website: <https://www.census.gov/data.html>. Refer to Table B19013: “Median Household Income in the Past 12 Months (in [Current Year] Inflation-Adjusted Dollars).”

Benchmarks

Compare the permittee's MHI to the adjusted national MHI:

- Weak More than 25% below Adjusted National MHI
- Mid-Range \pm 25% of the Adjusted National MHI
- Strong More than 25% above Adjusted National MHI

MEDIAN HOUSEHOLD INCOME
Worksheet 6

Line Number

- Median Household Income –
Permittee (Line 203,
Worksheet 2)

601

- Source

Benchmark

National MHI:

602

- Source:

Relationship to Benchmark

- Permittee MHI
Relationship to
National MHI
(Line 601/Line 602)

603

- Rating
(See table above)

FINANCIAL MANAGEMENT INDICATORS

The financial management indicators used to evaluate a permittee’s financial management ability are property tax revenue as a percent of full market value of real property and property tax revenue collection rate.

Property Tax Revenues as a Percent of Full Market Property Value

This indicator can be referred to as the “property tax burden” since it indicates the funding capacity available to support debt based on the wealth of the community. It also reflects the effectiveness of management in providing community services.

Worksheet 7 Instructions

Property tax burden is computed on Worksheet 7. The full market value of real property was calculated in Worksheet 4, line 404. Enter the full market value on line 701. Enter the most recent year's property tax revenue on line 702. General fund revenues are primarily property tax receipts.

PRACTICE TIP: Property tax revenues should include both current year collections and collections of payments in arrears from prior year assessments.

Data Sources

Property tax revenue collection data and market value of real property are generally available in the Statistical Section of the community’s Financial Report. If not, property assessment and tax revenue collection data should be readily available through the community, county, or state assessor’s office. Occasionally, the assessment and tax revenue data of communities partially serviced by the permittee may have to be prorated to provide a clearer picture of the permittee's property tax burden.

Benchmarks

- Weak: Above 4%
- Mid-range: 2% - 4%
- Strong: Below 2%

**PROPERTY TAX REVENUES AS A PERCENT OF FULL MARKET PROPERTY
VALUE**
Worksheet 7

	<u>Line Number</u>
Full Market Value of Real Property (Line 404)	701
<hr/>	
Total Property Tax Revenues	702
<hr/>	
Property Tax Revenue as a Percent of Full Market Property Value (702 ÷ 701 × 100)	703
<hr/>	

Property Tax Revenue Collection Rate

The property tax revenue collection rate is an indicator of the efficiency of the tax collection system and the acceptability of tax levels to residents.

Worksheet 8 Instructions

The property tax revenue collection rate is calculated on Worksheet 8. Total property tax revenues collected was listed in Worksheet 7, Line 702. Enter this value on line 801. Enter the property taxes levied on line 802. Divide the property tax revenue collected by the property taxes levied and multiply by 100 to present the collection rate as a percentage on line 803.

Data Sources

Property taxes levied and property tax revenues are available in a community's annual Financial Report. Property taxes levied can also be computed by multiplying the assessed value of real property (see Worksheet 4, Line 404) by the property tax rate, both of which are available from a community's financial statements or the state assessor's office. Occasionally, the assessment and tax revenue data of communities partially serviced by the permittee may have to be prorated to provide a clearer picture of the permittee's property tax revenue collection rate.

Benchmarks

- Weak: Below 94%
- Mid-range: 94-98%
- Strong: Above 98%

PROPERTY TAX REVENUE COLLECTION RATE
Worksheet 8

		<u>Line Number</u>
• Property Tax Revenue Collected (Line 702)	<hr/>	801
• Property Taxes Levied	<hr/>	802
• Property Tax Revenue Collection Rate (Line 801 ÷ Line 802 × 100)	<hr/>	803

Analyzing Permittee Financial Capability Indicators

This section describes how the indicators in the second phase may be used to generate an overall score of a permittee's financial capability. The indicators are compared to national benchmarks to form an overall assessment of the permittee's financial capability and its effect on implementation schedules in the long-term CWA control plan.

In situations where a permittee believes that there are unique circumstances that would affect the conclusion of the second phase, the permittee may submit documentation of its unique financial conditions to the appropriate EPA and state NPDES authorities for consideration. The purpose of additional information is to clarify unique circumstances which are not fairly represented by the overall scores of the selected indicators. An example could be where a state or community imposes restrictions on property taxes.

Worksheet 9 Instructions

The indicators generated from the worksheets are compared to the state, national, or industry benchmarks presented in Table 2. Information compiled from Worksheets 3 through 8 is summarized in Column A on Worksheet 9. Score each of these values using the rating standards in Table 2 and the following score benchmarks and enter the appropriate number in Column B. The score definitions are:

<u>Benchmarks</u>	<u>Score</u>
• Weak	1
• Mid-Range	2
• Strong	3

To calculate an average score for the indicators, total the values in Column B and divide by the number of entries. Enter the average score on Line 907.

If it is not possible to develop one or more of the six indicators, the permittee should explain why the indicator is inappropriate or unavailable. Since the point of the analysis is to measure the overall financial impact of the wastewater system controls, the debt and socioeconomic indicators are generally better measures of this impact than the financial management indicators. Consequently, if one of the debt or socioeconomic indicators is not available, the two financial management indicators should be averaged and used as a single indicator to average with the available debt and socioeconomic indicators. This averaging is necessary so that undue weight is not given to the financial management indicators.

TABLE 2 Summary of Financial Capability Indicator Ratings

Indicator	Strong	Mid-Range	Weak
Bond Rating	AAA – A (S&P) or Aaa – A (Moody's) or AAA – A (Fitch Ratings)	BBB (S&P) or BAA (Moody's) or BBB (Fitch Ratings)	BB - D (S&P) or Ba – C (Moody's) or BB - D (Fitch Ratings)
Overall Net Debt as a Percent of Full Market Property Value	Below 2%	2% - 5%	Above 5%
Unemployment Rate	More than 1 Percentage Point Below the National Average	± 1 Percentage Point of National Average	More than 1 Percentage Point Above the National Average
Median Household Income	More than 25% Above Adjusted National MHI	± 25% of Adjusted National MHI	More than 25% Below Adjusted National MHI
Property Tax Revenues as a Percent of Full Market Property Value	Below 2%	2% - 4%	Above 4%
Property Tax Collection Rate	Above 98%	94% - 98%	Below 94%

Summary of Permittee Financial Capability Indicators
Worksheet 9

<u>Indicator</u>	<u>Column A: Actual Value</u>	<u>Column B: Score</u>	<u>Line Number</u>
Bond Rating (Line 303)	_____	_____	901
Overall Net Debt as a Percent of Full Market Property Value (Line 405)	_____	_____	902
Unemployment Rate (Line 501)	_____	_____	903
Median Household Income (Line 601)	_____	_____	904
Property Tax Revenues as a Percent of Full Market Property Value (Line 703)	_____	_____	905
Property Tax Revenue Collection Rate (Line 803)	_____	_____	906
Permittee Indicators Score (Sum of Column B ÷ Number of Entries)		_____	907

Financing and Funding Considerations for Financial Alternatives Analysis

Water infrastructure projects are a major undertaking for communities of all sizes and economic status. The Proposed 2022 FCA can serve as a planning tool for evaluating the financial resources a community has available to implement CSO controls, along with assisting in negotiating CWA implementation schedules. For many, navigating the complex process of investing in water infrastructure is challenging, especially if financial resources are limited or if customers have difficulty paying their bills.

EPA's CSO Policy states that, "each permittee is ultimately responsible for aggressively pursuing financial arrangements" for the implementation of CWA controls.¹ Determining the costs and thoroughly planning how to fund and finance a project will help a community manage this process.² There are ways to pay for these projects to alleviate a community's overall expenses. Communities should also consider approaches that can be used to reduce or mitigate the financial impact of water services on the lowest quintile households, while still allowing the community to complete critical infrastructure improvements within a reasonable schedule.

For communities demonstrating a "medium" or "high" Initial LQPI Score (see Section IV.b.3 of the Proposed 2022 FCA), the community's FCA should provide the results of a "checklist" of financial alternatives to minimize the burden on residential ratepayers, and identify the additional steps it proposes to take, if any. The "checklist" is broken into four categories. Below the "checklist" are detailed descriptions of funding and financing approaches that can help communities in making water infrastructure and water quality investment decisions.

Financial Alternatives "Checklist"

1. Financing Options for Capital Costs
 - a. Has the community discussed financing options, including timing, terms, and potential grants or forgiveness, with the responsible State Revolving Fund?
 - b. Has the community looked into grants or low-cost loans for its projects?
 - c. Has the community considered extended financing on loans?

¹ CSO Policy, 59 Fed. Reg. 18688, 18690 (April 19, 1994).

² "Funding" is providing "one-way" financial resources to support an infrastructure project. This includes money that utilities get from customers paying their bills and other charges like connection fees (referred to as "pay as you go" or "Pay Go" funding). Funding also refers to when the recipient obtains a grant or similar form of funds that do not need to be repaid and do not carry an interest expense.

"Financing" is the "two-way" movement of money for a program or project. This is when the monetary resource need is filled from external, borrowed money where principal and interest are owed to the source of funds. This includes federal and state loans as well as municipal bonds. These require repayment of principal and interest over a specific period of time. Typically, financing is used for capital assets or "infrastructure" and not used for supporting ongoing operation and maintenance.

- d. Has the community considered restructuring its existing loans to better terms?
- e. Has the community considered special assessment districts to finance geographically defined project work?³
- f. Has the community considered other revenue sources to reduce direct burden on ratepayers such as sales or property taxes, rental income from water tower leases, or other potential sources of support (see list below under Utility Revenue Streams)?
- g. Has the community investigated how other financing approaches could reduce the cost and shorten the schedule of required projects?

2. Rate Design

- a. What kind of rate structure does the community have?
- b. Has the community prepared a forward-looking financial plan and rate analysis within the last five years? If so, was the plan implemented?
- c. Does the community use inclining block rates that charge higher per gallon rates for higher increments of use?⁴
- d. Does the community use volumetric rates, rather than flat fee charges for sanitary sewer service?⁵
- e. Does the community have identified separate rate structures for commercial, industrial, and wholesale customers reflecting their particular demands on the collection and treatment system?
- f. Does the community charge differently for different types of customers (e.g., commercial vs residential, in-city vs suburbs, based on property size or pipe size)?
- g. Have you considered a wealth-based approach?

³ A special assessment tax is a surtax levied on property owners to pay for specific local infrastructure projects such as the construction or maintenance of roads or sewer lines. The tax is charged only to the owners of property in the neighborhood that will benefit from the project. That neighborhood is called the special assessment district.

⁴ This rate structure tends to help lower-income customers who generally use less water than higher-income customers. As the Environmental Financial Advisory Board (EFAB) noted in its 2007 recommendations, “a utility system with an increasing block rate structure would see residential customers with large consumption incurring a much larger cost than customers with low consumption.” *EFAB Report: Comments on EPA Document: Combined Sewer Overflows-Guidance for Financial Capability Assessment and Schedule Development* (May 31, 2007).

⁵ Flat rates are common in smaller utilities. Non-volumetric rates are common in many areas but can penalize customers with below-average levels of usage. A flat fee plus volumetric rate structure tends to help lower-income customers who generally use less water than higher-income customers. As EFAB noted in its 2007 recommendations, “a utility system with an increasing block rate structure would see residential customers with large consumption incurring a much larger cost than customers with low consumption.”

3. Ratepayer Support Options for Lower Income Residential Customers

- a. Has the community looked into setting up a Customer Assistance Program?
- b. Identify the types of customer assistance support your community has for lower income residential customers, including which, if any, of the below types of programs are offered.
 - i. Lifeline Rate—A low flat rate for an initial amount of usage, to cover most or all of a household’s basic needs, such as drinking, cooking, and sanitation. Water consumption above the lifeline amount could be charged at a higher rate. Can be applied to all customers, or just to low-income customers.
 - ii. Percentage-of-Income Payment Plan—Rate design that prevents water bills from exceeding a certain percentage of the customer’s income.
 - iii. Bill Discount—Reduces an eligible low-income customer’s bills by a flat dollar amount or a percent discount. Can be used to reduce the fixed service charge, the volumetric consumption charge, or both. Additionally, discounts can be tiered by income.
- c. What other programs are available to financially support lower income households in the service area?
- d. What legal obstacles exist to establishing low-income household support for your community?

4. Financial and Utility Management

- a. Is the utility accounted for as a proprietary/enterprise fund or a separate independent utility?
- b. Are all rate revenues or other user charges applied to fund the utility’s purposes?
- c. Has the utility raised rates in the last five years? If so, provide information regarding the rate increases.
- d. Does the utility have programs to optimize maintenance and asset management to reduce life cycle costs?⁶
- e. Is regionalization, consolidation, and/or other partnerships to provide economies of scale and reduce per customer costs a possibility?

⁶ Optimizing the efficiency of a utility’s operations (including through operational changes and strategic capital investments) is an important tool to help reduce a system’s total revenue needs and thereby improve the affordability of bills for all customers. This can often be accomplished through improved asset management, especially over the course of a multi-year compliance schedule.

- f. Has the utility or related municipality instituted a stormwater management program? If so, are impervious-area based stormwater fees⁷ used to fund the stormwater compliance costs?
- g. Does the utility provide direct financial assistance (through rebates, upfront subsidies or direct replacement of fixtures) for efficiency improvements including leak repairs or replacement of inefficient fixtures or appliances?
- h. What efforts has the utility made to help the community understand the value of the various improvements that the utility is undertaking, including benefits associated with water quality and public health improvement as well as any social and economic co-benefits?

Utility/Community Financial Assistance: Grants and Loans Specifically for Wastewater, Stormwater, and/or Drinking Water (“Water”) Utilities

Public Funding and Financing Sources

Clean Water State Revolving Fund

- **EPA/State – Clean Water State Revolving Fund (CWSRF)**

<https://www.epa.gov/cwsrf>

Loans; Grants

Many communities look at national- and state-level sources when seeking financial support for infrastructure projects. Often these come in the form of federal dollars that are distributed from EPA to states and administered at the state level, such as the CWSRF and Drinking Water State Revolving Fund (DWSRF). These federal-state partnerships provide low-cost financing to help communities address water infrastructure needs.

Do you need a low-cost loan, that can also possibly provide a portion of funds that you don’t have to pay back? Look at your state’s CWSRF and DWSRF programs.

SRFs can offer:

- Below market interest rates
- Possible 0% interest rate
- Possible “additional subsidization” (i.e., money that you don’t have to pay back)
 - Possible negative interest rates
 - Possible principal forgiveness or grants
- Up to 30-year repayment, drinking water projects can be up to 40 years

⁷ The impervious surface rate structure can shift cost burdens from residential customers to nonresidential customers, such as commercial and industrial properties that have large impervious areas (e.g., roofs, parking lots, or paved areas) but may discharge little or no wastewater.

- Possible planning and design loan option
- Clean Water SRF has priority list, but do not have to fund in priority order
- Sponsorship program- bigger borrower would get a bigger reduction in interest rate
- Separate Drinking Water State Revolving Fund
 - DWSRF has state disadvantaged community definitions
 - DWSRF has public health priority list

Already have a SRF loan? Look at any existing SRF loans, and see if they can be restructured. You can also have multiple SRF loans.

Rural and/or Small Communities Specific Funding Sources

- **U.S. Department of Agriculture (USDA) – Rural Utility Services (RUS) Water and Environment Program (WEP)**

<https://www.rd.usda.gov/programs-services/all-programs/water-environmental-programs>

Loans; Grants

Does the utility serve less than a population of 10,000 people? If so, you can qualify for USDA loans and grants.

WEP provides funding for the construction of water and waste facilities in rural communities and is proud to be the only Federal program exclusively focused on rural water and waste infrastructure needs of rural communities with populations of 10,000 or less. WEP also provides funding to organizations that provide technical assistance and training to rural communities in relation to their water and waste activities.

Serve a population more than 10,000 people but less than 50,000 people? USDA WEP can provide loan insurance for communities less than 50,000 people.

- **U.S. Housing and Urban Development (HUD) – Community Development Block Grant (CDBG) State Program**

<https://www.hudexchange.info/programs/cdbg-state/>

Grants

Under the State CDBG Program, states award grants to smaller units of general local government that do not receive CDBG funds directly from HUD. These are called non-entitlement areas. Eligible activities include construction of public facilities and improvements, such as water and sewer facilities, streets, neighborhood centers, and the conversion of school buildings for eligible purposes. Not less than 70 percent of CDBG funds must be used for activities that benefit low- and moderate-income persons. Eligible grantees are as follows:

- Non-entitlement areas are cities with populations of less than 50,000 (except cities that are designated principal cities of Metropolitan Statistical Areas), and
- Counties with populations of less than 200,000.

Larger Cities and Municipalities Specific Funding Sources

- **U.S. Environmental Protection Agency (EPA) – Water Infrastructure Finance and Innovation Act (WIFIA)**

<https://www.epa.gov/wifia>

Loans

WIFIA provides long-term, low-cost supplemental loans for regionally and nationally significant projects. Important program features include:

- \$20 million: Minimum project size for large communities.
- \$5 million: Minimum project size for small communities (population of 25,000 or less).
- 49 percent: Maximum portion of eligible project costs that WIFIA can fund.
- Total federal assistance may not exceed 80 percent of a project's eligible costs.
- 35 years: Maximum final maturity date from substantial completion.
- 5 years: Maximum time that repayment may be deferred after substantial completion of the project.
- Interest rate will be equal to or greater than the U.S. Treasury rate of a similar maturity⁸ at the date of closing.
- Projects must be creditworthy and have a dedicated source of revenue.
- NEPA (<https://www.epa.gov/nepa>), Davis-Bacon (<https://www.dol.gov/whd/govcontracts/dbra.htm>), American Iron and Steel (<https://www.epa.gov/cwsrf/state-revolving-fund-american-iron-and-steel-ais-requirement>), and all other federal cross-cutting authorities (cross-cutters) apply.

- **U.S. Housing and Urban Development (HUD) – Community Development Block Grant (CDBG) Entitlement Program**

<https://www.hudexchange.info/programs/cdbg-entitlement/cdbg-entitlement-program-eligibility-requirements/>

Grants

The CDBG Entitlement Program awards grants to entitlement community grantees to carry out a wide range of community development activities directed toward revitalizing neighborhoods, economic development, and providing improved community facilities and services. Eligible activities include construction of public facilities and improvements, such as water and sewer facilities, streets, neighborhood centers, and the conversion of school buildings for eligible purposes. Not less than 70 percent of CDBG funds must be used for activities that benefit low- and moderate-income persons. Eligible grantees include:

- Principal cities of Metropolitan Statistical Areas (MSAs)
- Other metropolitan cities with populations of at least 50,000
- Qualified urban counties with populations of at least 200,000 (excluding the population of entitled cities)

⁸ <https://www.treasury.gov/resource-center/data-chart-center/interest-rates/Pages/TextView.aspx?data=yield>

Economic Development Specific Funding Sources

The role of wastewater service providers working with their local economic development office has grown in recent years. Increasing a community's rate base through community economic development can improve the ability to attract capital for utility infrastructure projects. Most communities have an economic development office or a representative whose specific mission is to attract new businesses to the area.

- **U.S. Department of Commerce – Economic Development Administration (EDA)**

Grants

Investments for Public Works and Economic Adjustment Assistance Programs

<https://www.eda.gov/programs/eda-programs/>

EDA invests in traditional public works projects, including water and sewer systems improvements, industrial parks, business incubator facilities, expansion of port and harbor facilities, skill-training facilities, and brownfields redevelopment. This empowers distressed communities to revitalize, expand, and upgrade their physical infrastructure, and generate or retain long-term, private sector jobs and investment.

Planning Program and Local Technical Assistance Program

<https://www.eda.gov/funding-opportunities/>

EDA assists eligible recipients in developing economic development plans and studies designed to build capacity and guide the economic prosperity and resiliency of an area or region. The Local Technical Assistance program strengthens the capacity of local or State organizations, institutions of higher education, and other eligible recipients to undertake and promote effective economic development programs through projects such as feasibility studies and impact analyses.

Environmental Justice-Specific Funding Sources

- **EPA – Environmental Justice-Specific Funding Sources**

Environmental Justice Collaborative Problem-Solving (CPS) Cooperative Agreement Program

<https://www.epa.gov/environmental-justice/environmental-justice-collaborative-problem-solving-cooperative-agreement-0>

Grants

EPA's EJ CPS Cooperative Agreement Program provides funding for eligible applicants for projects that address local environmental and public health issues within an affected community. The CPS Program assists recipients in building collaborative partnerships to help them understand and address environmental and public health concerns in their communities.

Environmental Justice Small Grants Program

<https://www.epa.gov/environmentaljustice/environmental-justice-small-grants-program>

Grants

EPA's EJ Small Grants Program supports and empowers communities working on solutions to local environmental and public health issues. The program is designed to help communities understand and address exposure to multiple environmental harms and risks.

Other Funding Sources

- **State-Specific Clean Water Loans or Grants**

Many states have dedicated funds for wastewater projects. Look on your state's environmental and/or public health agency website to find state specific loan and grant information to fund wastewater infrastructure projects.

- **Regional Funding Sources**

Appalachian Regional Commission (ARC) Grants

<https://www.arc.gov/funding/ARCGrantsandContracts.asp>
Grants

ARC awards grants and contracts from funds appropriated to the Commission annually by Congress. Program grants are awarded to state and local agencies and governmental entities (such as economic development authorities), local governing boards (such as county councils), and nonprofit organizations (such as schools and organizations that build low-cost housing). ARC provides funds for basic infrastructure services, including water and sewer facilities, that enhance economic development opportunities or address serious health issues for residential customers.

Great Lakes Grants

<https://www.epa.gov/great-lakes-funding>
Grants

Funded activities under the program will advance protection and restoration of the Great Lakes ecosystem in support of (i) the Great Lakes Restoration Initiative as described in the Great Lakes Restoration Initiative Action Plan II (<https://www.glri.us/action-plan>), (ii) the Great Lakes portion of Objective 2.02 (Protect and Restore Watersheds and Aquatic Ecosystems) of EPA's 2014-2018 Strategic Plan, and/or (iii) the Great Lakes Regional Collaboration Strategy to Protect and Restore the Great Lakes (<https://www.glrc.us>).

- **Federal Emergency Management Agency (FEMA) – Building Resilient Infrastructure and Communities (BRIC)**

<https://www.fema.gov/grants/mitigation/building-resilient-infrastructure-communities>
Grants

BRIC will support states, local communities, tribes, and territories as they undertake hazard mitigation projects, reducing the risks they face from disasters and natural hazards. BRIC is a new FEMA pre-disaster hazard mitigation program that replaces the existing Pre-Disaster Mitigation program.

- **Water Finance Clearinghouse**

<https://clearinghouse.epa.gov/wfc>

Want to find a vast list of funding sources in one place? Visit the Water Finance Clearinghouse.

The Water Finance Clearinghouse is an easily navigable web-based portal to help communities locate information and resources that will assist them in making informed decisions for their drinking water, wastewater, and stormwater infrastructure needs. The Water Finance Clearinghouse includes two searchable databases: one contains available funding sources for water infrastructure

and the second contains resources, such as reports, weblinks, and webinars on financing mechanisms and approaches that can help communities access capital to meet their water infrastructure needs.

Private Funding and Financing Sources

- **Foundations**

Loans; Grants

Foundation funding may be a possibility, depending on the mission of specific local, regional, or national foundations.

Charitable foundations and other philanthropic organizations have been a source of monetary support for community planning and infrastructure projects. Philanthropic support typically comes in two forms:

- **Grants:** A monetary award to an organization or individual to undertake specific activities or projects, as defined in the grant. Grant funds are not required to be repaid—this is a form of funding.
- **Impact Investing:** An investment made into a company or organization with the intention of generating specific impacts that align with the investing organization’s mission, along with a financial return for the investing organization. Impact investment rate terms range from below market-rate to market-rate, depending on the investing organization’s strategic goals, providing a lower-cost alternative for borrowers to traditional, market-rate loans—this is a form of financing.

- **Investors and Banks**

Loans

Communities have successfully leveraged private sources of funding and financing to pay for their infrastructure projects. Private capital typically takes one of two forms in the infrastructure funding context:

- **Private Financing (Loans):** Private financial groups and individual investors can offer private loans for infrastructure projects. Impact investing loans from non-governmental organizations is also possible. Typically, private loans have higher interest terms than public funds and philanthropic impact investing loans but may offer other types of incentives attractive to borrowers.
- **Private Financing (CDFIs):** The Community Development Financial Institutions (CDFI) Fund is a fund from the U.S. Department of the Treasury, which distributes funding to private financial institutions that are recognized for providing service and support to communities in need. In turn, these institutions use the CDFI funds to provide flexible financing to communities.

Local Funding and Financing Sources

- **Municipal Bonds**

Loans

A bond is a debt obligation issued by a nonprofit organization (state, city, county, or other) to finance its capital expenditures. It is a debt investment in which an investor loans money to an entity (state, city, county, or other), which borrows the funds for a defined period at a variable or fixed interest rate. The interest paid on municipal bonds is tax-exempt, making them an attractive low-cost way to obtain capital.

- **Utility Revenue Streams**

Utilities fund most their infrastructure investments through local revenue-generating mechanisms (e.g., customer rates and other fees for water, wastewater, and stormwater services). See the *Progressive Rate Structures* section below.

Many utilities have also created additional revenue streams to pay for new infrastructure investments to reduce rate increases for their customers. Non-rate-based revenue can help to improve the organization's overall financial health by creating new sources of income for unexpected expenses and diversifying the utility's income in communities with decreasing volumes of water sold and collected (e.g., due to declining populations or water conservation programs). Some examples of how utilities have approached this include:

- ***Leasing space on water towers:*** Water towers are valuable real estate because they are often located in or near towns. Because of their proximity to population centers, water utilities have been able to sell space on their towers for cellphone antennas and advertising.
- ***Selling grid service to a local electric utility:*** Grid service refers to an arrangement where a local electric utility pays the water utility for agreeing to temporarily curtail some of its electric load when needed to help the electric utility match supply to demand. The water utility is still paid for agreeing to this arrangement even if it is never asked to shed load.
- ***Selling fertilizer as a product:*** Utilities have found a range of ways to recycle and sell product reclaimed from wastewater, including as organic-nitrogen fertilizer for gardeners and farmers. In addition to providing an additional revenue stream, the utilities save on waste disposal costs.
- ***Selling water and wastewater line protection:*** Homeowners own the lateral service lines that connect the main distribution lines to their home. Replacement cost is generally \$2,500–\$3,500, and is the responsibility of the homeowner. Some utilities have sold a service that acts as an “insurance” for customers, guaranteeing the utility will fix their lateral service lines when necessary. This can make use of the utility's existing expertise and resources to provide a sought-after service to the customer.
- ***Other sources of revenue generated from taxes:*** Other sources of local revenue can include general revenues appropriated to support wastewater services and portions of payroll taxes, property taxes, sales taxes, and toll severance taxes devoted to support wastewater services.
- ***Your elected officials:*** Consider talking to your elected officials about your infrastructure needs.

Additional examples of how communities have implemented these revenue building strategies is available in EPA's *Water Infrastructure Financial Leadership Successful Financial Tools for Local Decision Makers* document, available at https://www.epa.gov/sites/production/files/2017-09/documents/financial_leadership_practices_document_final_draft_9-25-17_0.pdf.

Customer Financial Assistance: Finance Programs and Approaches Specifically for Low-Income Customers

- **Customer Assistance Programs (CAPs)**

https://www.epa.gov/sites/production/files/2016-04/documents/dw-ww_utilities_cap_combined_508.pdf

Households on fixed or lower incomes, as well as households that face a temporary crisis such as a job loss or illness, may have difficulty paying water and sewer bills. Many wastewater and drinking water utilities have seen an opportunity to meet specific customer needs, along with the needs of meeting their own operational and capital costs to provide drinking water delivery and/or wastewater management services, through developing CAPs. These programs can show households short-term or long-term reductions through a Bill Discount, Flexible Terms, Lifeline Rate, Temporary Assistance, and Water Efficiency advantages.

Additional information on CAPs is available at:

- Compendium of Drinking Water and Wastewater Customer Assistance Programs (EPA), available at https://www.epa.gov/sites/production/files/2016-04/documents/dw-ww_utilities_cap_combined_508.pdf
- Navigating Legal Pathways to CAPs (Environmental Finance Center at UNC Chapel Hill), available at <https://efc.sog.unc.edu/project/navigating-legal-pathways-rate-funded-customer-assistance-programs>
- Guidance on Developing CAPs (Water Research Foundation), available at <https://www.waterrf.org/research/projects/customer-assistance-programs-multi-family-residential-and-other-hard-reach>

- **U.S. Health and Human Services (HHS) – Low Income Household Water Assistance Program (LIHWAP)**

<https://www.acf.hhs.gov/ocs/programs/lihwap>

LIHWAP provides funds to assist low-income households with water and wastewater bills. LIHWAP grants are available to states, the District of Columbia, the Commonwealth of Puerto Rico, U.S. Territories, and federally and state-recognized Indian tribes and tribal organizations that received fiscal year 2021 Low Income Household Energy Assistance Program (LIHEAP) grants.

- **Progressive Rate Structures**

Utilities fund most of their infrastructure investments through revenues generated from customer rates and other fees for drinking water, wastewater, and stormwater services.

Examples of wealth-based approaches:

- A set cost for a 'livable' amount of water usage for the household and then anything in excess of that base amount would cost exponentially more.

- Another example is that the sewer bill is split in two. The first part would be based on a reasonable amount of water usage. This ‘base’ charges would then be captured via an increase to the community’s overall property tax rate (and then those revenues would be transferred from the community’s general fund to the utility’s enterprise fund). The second part would be considered usage above the reasonable amount. The ‘excess’ charges would be billed directly to the customer by the utility.

Additional Financial Approaches

- **Special Assessment Districts**

Special assessments are used to provide and fund projects for a specific geographic area. Special assessment districts provide the legal arrangement to charge those receiving the service for capital and/or operating costs of the project. CWA projects may be funded with special assessments. For example, in Michigan, neighborhoods with significant basement flooding problems have approved the use of special assessments to fund corrections to their wastewater collection system that include correction of CSO problems.

- **Taxes (Income Taxes, Sales Taxes, Property Taxes)**

Taxes may be used as a limited funding source for annual wastewater system costs. Options include income taxes, sales taxes, and property taxes. Taxes may not be used to pay operating costs for some projects funded through the SRFs. However, user charge regulations do not require that capital outlays or debt service be covered in the user charge system. As a result, taxes can be used to repay bonds or loans for CWA projects that are subject to CWA Title II requirements. Projects funded with other sources such as local bonds, state loans, etc. do not have these restrictions.

- Income taxes: Individual or corporate income taxes have historically had less applicability to environmental program funding than other taxes such as property taxes, and targeted sales taxes. Income taxes are used to fund environmental programs, but their use is largely at the state level.
- Sales taxes: Many local jurisdictions raise funds through sales taxes. Communities may dedicate a portion of local option sales tax revenues to water pollution control, or may impose a local option sales tax on a specific product or service.
- Property taxes: Local governments use ad valorem property taxes as the primary source of funding for general government operations. Ad valorem property taxes are based on the value of property. As a result, residents with larger and/or more expensive homes pay more in property taxes than residents with less expensive homes.

Resources Related to Water Infrastructure Financing

Compendiums and documents on rate setting and CAPs

- Drinking Water and Wastewater Utility Customer Assistance Programs: <https://www.epa.gov/waterfinancecenter/compendium-drinking-water-and-wastewater-customer-assistance-programs>
- Water Infrastructure Financial Leadership: <https://www.epa.gov/waterfinancecenter/water-infrastructure-financial-leadership>
- Environmental Policy Innovation Center: <http://policyinnovation.org/>
 - H₂Affordability: How Water Bill Assistance Programs Miss the Mark: <http://policyinnovation.org/water/affordability>

Funding sources

- Water Finance Clearinghouse: <https://clearinghouse.epa.gov/wfc>
- Clean Water State Revolving Fund: <https://www.epa.gov/cwsrf>
- Drinking Water State Revolving Fund: <https://www.epa.gov/dwsrf>
- Water Infrastructure Finance and Innovation Act (WIFIA): <https://www.epa.gov/wifia>
- The Environmental Justice Collaborative Problem-Solving (CPS) Cooperative Agreement Program: <https://www.epa.gov/environmental-justice/environmental-justice-collaborative-problem-solving-cooperative-agreement>
- Environmental Justice Small Grants Program: <https://www.epa.gov/environmentaljustice/environmental-justice-small-grants-program>
- Source Reduction Assistance (SRA) Grant Program: <https://www.epa.gov/p2/grant-programs-pollution-prevention#sra>
- CoBank's Rural Water and Wastewater Lending: <https://www.cobank.com/corporate/industry/water>
- National Rural Water Association (NRWA)'s Rural Water Loan Fund: <https://nrwa.org/members/products-services-portfolio/rural-water-loan-fund/>
- Pisces Foundation Water Grant: <https://piscesfoundation.org/what-we-do/water/>
- Rural Water Loan Fund (RWLF): <https://nrwa.org/members/products-services-portfolio/rural-water-loan-fund/>
- U.S. Army Corps of Engineers (USACE)'s Project Modifications for Improvement of the Environment (CAP Section 1135): <https://www.sas.usace.army.mil/Missions/CAP/Section-1135-Project-Modifications-for-Improvements-to-the-Environment/>
- USACE's Emergency Streambank and Shoreline Protection: <https://www.mvr.usace.army.mil/Business-With-Us/Outreach-Customer-Service/Flood-Risk-Management/Section-14/>

- U.S. Department of Agriculture (USDA)'s Water and Waste Disposal Guaranteed Loan Program: <https://www.rd.usda.gov/programs-services/water-waste-disposal-loan-guarantees>
- USDA's Water & Environmental Programs (WEP): <https://www.rd.usda.gov/programs-services/all-programs/water-environmental-programs>
- USDA's Water & Wastewater Projects Revolving Fund Program: <https://www.rd.usda.gov/programs-services/revolving-funds-for-financing-water-and-wastewater-projects>
- USDA's Water & Waste Disposal Loan & Grant Program: <https://www.rd.usda.gov/programs-services/water-waste-disposal-loan-grant-program>
- USDA's Water & Waste Disposal Predevelopment Planning Grants: <https://www.rd.usda.gov/programs-services/water-waste-disposal-predevelopment-planning-grants>
- U.S. Department of Commerce – Economic Development Administration (EDA)'s Investments for Public Works and Economic Adjustment Assistance Programs: <https://www.eda.gov/programs/eda-programs/>
- EDA's Planning Program and Local Technical Assistance Program: <https://www.eda.gov/funding-opportunities/>
- U.S. Department of Health and Human Services – Indian Health Service (IHS)'s Sanitation Facilities Construction (SFC) Program: <https://www.ihs.gov/dsfc/>
- U.S. Department of Housing and Urban Development (HUD)'s Community Development Block Grant (CDBG) Program: https://www.hud.gov/program_offices/comm_planning/communitydevelopment
- HUD's CDBG – Disaster Recovery Program: <https://www.hudexchange.info/programs/cdbg-dr/>
- HUD's Section 108 Loan Guarantee Program: <https://www.hudexchange.info/programs/section-108/>
- U.S. Federal Emergency Management Agency (FEMA)'s Hazard Mitigation Grant Program (HMGP): <https://www.fema.gov/grants/mitigation>
- FEMA's Public Assistance (PA) Grant Program: <https://www.fema.gov/assistance/public>
- FEMA's Pre-Disaster Mitigation (PDM) Grant: <https://www.fema.gov/grants/mitigation/pre-disaster>
- FEMA's Flood Mitigation Assistance Program (FMA): <https://www.fema.gov/grants/mitigation/floods>
- U.S. Small Business Administration (SBA)'s Business Physical Disaster Loans: <https://disasterloan.sba.gov/ela/Information/BusinessPhysicalLoans>

Environmental Finance Centers

- EPA Region 1 – University of Southern Maine <https://neefc.org/>
 - Water and Wastewater Rates Analysis Model can set water and/or wastewater rates for the following year by projecting the utility's expenses, revenues from rates, and fund balance. Data inputs are minimal.
 - Water Utility Customer Assistance Program Cost Estimation Tool is designed to help water utilities estimate the costs of implementing a customer assistance program.
- EPA Region 2 – Syracuse University <https://efc.syr.edu/>
 - In the *About Us* → *Environmental Finance Center Network* tab, there is information about trainings and webinars to encourage smarter management of municipal finances and assets, and to help operators conduct day-to-day operations more efficiently.
 - In the *Projects* → *Drinking Water and Wastewater Infrastructure* → *EFCN Smart Management for Small Water Systems* tab, there are free workshops, webinars, and technical assistance on topics such as asset management, financial management, and others for small water system operators, owners, and municipal representatives.
 - In the *Projects* → *Municipal Development* → *Public Management and Finance Program* tab, the website discusses how the Environmental Finance Center delivers technical assistance to rural communities that are developing water or wastewater infrastructure projects and other environmental improvement projects. The EFC offers individualized technical assistance in funding and financing advice, asset management guidance, and other topics.
- EPA Region 3 – University of Maryland <https://www.efc.umd.edu/>
 - The Municipal Online Stormwater Training (MOST) Center is meant to help communities bridge the gap in needed technical and financial resources through a comprehensive training program to help municipalities within the Chesapeake Bay Watershed access and implement innovative stormwater management techniques to improve water quality in the Bay. Formed based on the expressed need from many in the Chesapeake Bay that are faced with limited capacity and resources for meeting stormwater management obligations.
 - Works each year with several communities in the region to revitalize their stormwater management and financing programs. Projects span across Maryland, Virginia, Pennsylvania, and West Virginia.
 - Working to build managerial and financial capacity of small public drinking water systems.
 - Working with the City of Scranton to assess the City's current asset management framework in addressing both combined sewer system and separate storm sewer system.
- EPA Region 4 – University of North Carolina, Chapel Hill <https://efc.sog.unc.edu/>

- The main feature of this website is the Utility Financial Sustainability & Rates Dashboards, which can be found within the *Resources* tab at the top of the homepage. Within this dashboard for selected states, you can perform the following:
 - Compare a selected utility’s median water and/or sewer bill to all utilities in the state (or a host of other comparison groups), as well as see annual water and/or sewer bills as a percentage of MHI. You can also raise rates to see how metrics change.
 - See selected demographic data for the town in which the water and/or sewer utility operates, compared to total/median demographic data for all utilities in the survey (or a host of other comparison groups) as well as statewide. Demographic data includes: number of systems, estimated number of connections, estimated service population, average household size, median household income; and poverty rate.
- In the homepage, scroll down and select either “Drinking Water” or “Stormwater.” From there, you can also see the most recent rate sheet associated with your utility, as well as tables of rate structures and rates.
- There is also a simple template for utility financial planning, and several presentations related to ratemaking and utility financial management.
- EPA Region 5 – Michigan Technical University <http://gleic.org/>
 - Resources include an electronic reference library of key publications to support the efficient management, maintenance, operation, and finance of municipally owned or controlled environmental systems. Publications might include providing technical guidance on the use of specific maintenance treatments for water and sewer collection and distribution systems; providing technical guidance on conducting a water distribution system leak study using locally available resources; developing a guide for establishing a sustainable capital improvement program using asset management principles; and providing summarized technical data such as methods for rate studies.
- EPA Region 6 – University of New Mexico <http://southwestefc.unm.edu/>
 - An “Asset Management Switchboard,” which is a repository of documentation and tools related to asset management: <https://swefcamswitchboard.unm.edu/am/>
 - Finance-related services the EFC provides:
 - Asset Management
 - Small Systems Project
 - Water System Finance

- EPA Region 7 – Wichita State University
https://www.wichita.edu/academics/fairmount_college_of_liberal_arts_and_sciences/hugowall/efc/
 - The Kansas City Development Project is a training program designed to teach Kansas municipal officials and utility staff about the managerial and financial aspects of running a water system. The Project seeks to build capacity for municipal officials and utility staff that make financial decisions regarding their community's water utility. The project includes conducting interactive trainings across Kansas on topics such as utility asset management, financial planning, and promotion of inter-local cooperation.
 - Professional development for water and wastewater professionals to further the implementation of asset management concepts through networking with other systems and content experts.
 - Detailed guidance document on how to successfully form a sewer district in Missouri in a way the average citizen can understand.
 - Training to provide an overview of the importance of capital planning and review the elements necessary to develop and implement a Capital Improvement Program. Participants learn the details of putting together a capital plan through checklist and matrix tools. Financial research information is also provided on traditional and non-traditional funding sources in order to provide options available for funding capital assets.
 - EFC has curated all funding opportunities for watershed projects in one place, organized by tags in a searchable database:
https://www.wichita.edu/academics/fairmount_college_of_liberal_arts_and_sciences/hugowall/efc/news/meramec-funding-sources-landing-page.php
- EPA Region 8 – National Rural Water Association <https://efc.nrwa.org/>
 - Rural Water Loan Fund provides low-cost loans for short-term repair costs, small capital projects or replacement costs, or pre-development costs associated with proposed water and wastewater projects. Systems must be public entities serving up to 10,000 persons, or in rural areas with no population limits.
 - National Rural Water Association has webinars, workshops, and guidebooks on sustainable utility management for small and rural water and wastewater systems.
- EPA Region 9 – California State University, Sacramento <https://www.efc.csus.edu>
 - Tools for collecting, recording, and uploading asset data in your municipal stormwater system. Additionally, there are training and workshops on asset management and utility performance, as well as indicators of financial and technical performance.
 - Toolkit to support asset management and funding for municipal stormwater programs. Toolkit includes guidance report and worksheets to help record data on system assets, as well as maintenance needs and long-term costs. Additionally, there

- are guidance and tools for evaluating benefits and costs in stormwater management, as well as forums/workshops on topics of technical, managerial, and financial aspects of stormwater management.
- EPA Region 10 – Rural Community Assistance Corporation
<https://www.rcac.org/environmental/environmental-finance-center/>
 - Develops and provides financial modules and tools including a very small system asset management plan.
 - Collects and shares infrastructure finance resources that communities can review or adapt and use to move forward with innovative financial solutions.
 - Develops and delivers hands-on, adult learner centered financial and environmental training on topics that include source water protection, tribal infrastructure financing and asset management.
 - Provides direct technical assistance to small rural communities and tribes as they plan for and work toward financial sustainability for their environmental and public health utilities and facilities.
 - Assists rural communities to build, improve, manage, operate, or finance drinking water and wastewater systems.

Examples of Other Metrics Relevant to Consideration of Financial Capability

Examples of Information Related to Residential Impacts:

1. Income distribution by quintile, geography, or other breakdown, illustrating how income distribution in the service area differs from comparable data on the national level or for similar cities.
2. Where cities have adopted differential rates for low-income customers, the income distribution that led to that rate structure.
3. Information about service area poverty rates and trends.
4. Projected, current, and historical sewer and stormwater fees as a percentage of household income, quintile, geography or other breakdown.
5. Information on sewer and water usage for various classes of ratepayers or by type of dwelling unit.
6. Information on the percent of households who own versus rent.

Examples of Information Related to Financial Strength:

1. Historical population trends or population projections.
2. Service area unemployment data and trends, or other labor market indicators, including unemployment on an absolute basis.
3. Rate or revenue models, including dynamic financial planning models showing the projections of impacts over the program period. All revenue sources tied to CWA obligations may be included as appropriate.
4. Rate determination studies used to develop and support recent rate increases.
5. Data and trends on late payments, disconnection notices, service terminations, uncollectable accounts, or revenue collection rates.
6. Historical increases in rates or other dedicated revenue streams.

7. State or local legal restrictions or limitations on property taxes, other revenue streams or debt levels.
8. Other costs or financial obligations, such as those that relate to drinking water or other infrastructure, that significantly affect a permittee's ability to raise revenue.
9. Circumstances that may affect a permittee's bond rating. For instance, incurring debt beyond certain thresholds may negatively impact the permittee's bond rating, thus reducing the ability to raise capital.
10. Financial plans that show the implications of incurring additional debt for a permittee's ability to secure financing, including projections of metrics such as debt ratios, debt service coverage, debt per customer, days of cash on hand, days of working capital, and other metrics used by rating agencies. Such data should be benchmarked to metrics such as rating agency medians and relative to similar entities. This will be especially relevant where the permittee does not have a bond rating.
11. Extraordinary stressors such as those from natural disasters, municipal bankruptcies, unusual capital market conditions, or other situations which impact a permittee's ability to raise revenue or acquire needed financing. When such stressors occur, they may also provide support for making changes to existing schedules.