

Section 8

Financial Capability Assessment

8.1 Introduction

Based on the evaluations presented in previous sections of this Facilities Plan, the most desirable options were carried forward to evaluate the financial impacts of the wastewater treatment plant (WWTP) upgrade and the combined sewer overflow (CSO) improvement program on the users and rate payers. The financial assessment described herein evaluated alternatives following the framework developed by the U.S. Environmental Protection Agency (EPA) in *Combined Sewer Overflows — Guidance for Financial Capability Assessment and Schedule Development*, published in February 1997 and modified in November 2014. The intent of the evaluation is to assess the affordability of the Water Pollution Control Authority’s (WPCA’s) capital improvement programs. The first phase of the EPA financial capability assessment estimates the impact of anticipated capital improvements and operating costs on the average residential ratepayer by evaluating the household burden. The household burden is an EPA defined metric that assesses the typical residential sewer bill as a percent of a community’s median household income (MHI). Under the EPA guidance process, a household burden exceeding 2 percent of MHI is deemed a high burden.

The second phase of the EPA process details financial impact indicators, which are benchmarks defined by the US EPA. These indicators evaluate ancillary factors that may influence an entity’s ability to fund the proposed capital plan.

8.2 Methodology and Assumptions

This report and financial capability assessment have been prepared in accordance with the EPA’s financial capability assessment guidance document (as noted above) and standard industry practices. Data was obtained from various sources to develop a financial projection model to project the impact of the anticipated capital program on the future revenue requirements and rates for the City and its residents. All data used in this report have been gathered from either the WPCA or credible, public sources.

This financial capability assessment projects financial changes through FY 2045. Unless specified otherwise, all dollar figures in this section are in future year dollars, that is adjusted for estimated inflation. Given the forecasting horizon, numerous assumptions are necessary and have been used in this assessment. The following describes some of the critical assumptions used for this analysis:

- The FY 2021 approved budget is used as the basis for projections.
- Base year for capital is 2020.
- Consistent with the EPA guidance, only sewer and stormwater related costs are included in this analysis.

- It is assumed WPCA continues with its current practice of carrying \$250,000 annually to support an operating reserve.
- The analysis assumes annual collection rate on billed rate revenue of 96% annually. Of the uncollected amount, 80% is assumed recovered as revenue the subsequent fiscal year.
- General operating and maintenance (O&M) costs are assumed to inflate at 2.0 percent annually.
- Salaries are assumed to increase at 2.0 percent annually.
- Benefits are assumed to increase 5.0 percent annually.
- Electric costs are projected to increase 1.5 percent on an annual basis.
- Indirect Costs are assumed to remain constant through projections at \$475,000 annually.
- Collection Fees (attorney costs) are assumed to remain constant through projections \$300,000.
- WPCA currently has a contract operations agreement with Inframark to operate and maintain WPCA's system. For the purposes of this analysis, it is assumed that the service agreement expense increases at 2.5 percent annually throughout projections.
- Miscellaneous revenues generally are assumed to remain constant over the projection period. Miscellaneous and non-rate revenues can be erratic and are generally beyond the control of WPCA, so WPCA has been conservative in holding them constant at current budgeted levels.
- Capital costs are projected to increase at an average annual rate of 3.0 percent.
- WPCA currently charges a usage rate based on consumption. For FY 2021, the current usage rate is \$6.12 per hundred cubic feet (HCF).
- The WPCA has an agreement with the Town of Trumbull, where Trumbull receives a discounted usage rate, with the discount phased out over time. For FY 2021, Trumbull receives a 4.0 percent discounted user rate, which is reduced 1.0 percent each year until it is assumed Trumbull is charged the standard WPCA usage rate in FY 2025 and beyond.
- Median household income (MHI) for Bridgeport in 2018 was estimated to be \$45,411, based on most recent U.S. Census Bureau, American Community Survey (ACS) data. MHI is assumed to increase 1.3 percent annually, which is consistent with the historical average increase since 2010.
- The typical residential consumption is assumed to be 80 HCF per year. Consumption is assumed to remain constant throughout the projection period.
- Two sets of financing projections have been used in this analysis. The first assumes that the WPCA proceeds using financing that it fully controls and has a reasonable basis for

projecting. The second relies on SRF loans and grants (Clean Water Fund) that will be of significant financial advantage to the WPCA, but the City has no guarantee that such funding will be available on the terms and for the size of program that is envisioned. The two financing projections are as follows:

- The WPCA (through the City of Bridgeport) issues bonds for all capital, except if it currently has a binding commitment for an SRF loan. It is assumed that General Obligation (GO) debt will be issued with an average interest rate of 5.0 percent and a 20-year amortization period.
- SRF loans will be executed with a 2.0 percent interest rate for a 20-year amortization period. Many of the capital items to be financed are eligible and are assumed to receive state grants that will reduce the debt financed requirement by between 20 and 50 percent depending on the type of project. The assumed level of grants is described in Section 9.

The following sections summarize the financial projections for four distinct alternative capital plans:

- **Baseline.** This assumes no WWTP upgrade or Long-Term CSO Control Plan (LTCP) spending. The baseline alternative assumes capital spending allowances for ongoing renewal and replacement of existing infrastructure. The capital spending carried in the baseline alternative is included in all other alternatives. The remainder of the expenses for the Facilities Plan (\$1.4 million) is assumed to be covered through grants. The Combined Sewer Overflow Project H3 is anticipated to be 50% grant funded, 50% financed through SRF loans. The remainder of the capital spending for the baseline alternative is either cash funded or assumed financed through GO debt.
- **90/40 Consent Order Schedule.** These alternatives (with and without Clean Water Fund (CWF) grant and loans) follow the capital plan detailed in the existing consent order schedule and assume that the plants would be constructed to match their current capacities (90 million gallons per day (mgd) at West Side plant and 40 mgd at East Side plant). This analysis shows the impact of assuming full eligibility for SRF and state grants, as well as the impact of assuming all city GO debt to finance the program.
- **200/80 Staggered Schedule.** In this alternative the West Side plant would be upgraded followed by the East Side plant. Additionally, the wet weather treatment capacity of both plants would be increased to provide a significant CSO reduction benefit. The West Side plant capacity would be increased to 200 mgd and the East Side plant capacity would be increased to 80 mgd. Collection system improvements would be included to address the Ash Creek and Ellsworth Park consent order.

Table 8.2-1 breaks down the total capital spending for the 90/40 Consent Order Schedule through FY 2040 and the 200/80 Staggered Schedule alternative through FY 2036, with and without grants. The spending totals shown in this table do not include the amounts carried as part of the baseline, although those amounts have been included in the projections. The totals for the baseline are shown through FY 2045.

Table 8.2-1 Summary of Capital Spending

Alternative	No Grants		With Grants	
	2020 \$ Capital Cost	Inflated Capital Cost	2020 \$ Capital Cost	Inflated Capital Cost
Baseline	\$73,393,000	\$108,861,500	\$70,455,300	\$105,692,400
90/40 Consent Order Schedule	\$904,000,000	\$1,150,150,900	\$570,320,000	\$709,829,100
200/80 Staggered Schedule	\$570,000,000	\$687,512,300	\$388,500,000	\$468,874,300

Table 8.2-2 summarizes the assumed amount of grant funding and SRF loans available for each alternative. The total assumed grant amount for the 90/40 Consent Order Schedule is \$443.5 million, which consists of \$440.3 million in grants for projects in this alternative, plus the \$3.2 million in grants for Baseline projects. The total assumed grant funding total for the 200/80 Staggered Schedule is \$221.8 million, which consists of \$218.6 million in grants for projects in this alternative, plus the \$3.2 million in grants for Baseline projects. These projections also assume significant SRF funding at the level of \$709.8 million and \$468.9 million, respectively. With the addition of the Baseline projects (\$1.7 million), the SRF funding totals \$711.5 million and \$470.6 million, respectively.

Table 8.2-2 Summary of Grant and Loan Funding

Alternative	Assumed Grant Availability	Assumed SRF Availability
Baseline	\$3,169,100	\$1,688,300
90/40 Consent Order Schedule	\$440,321,800	\$709,829,100
200/80 Staggered Schedule	\$218,638,000	\$468,874,300

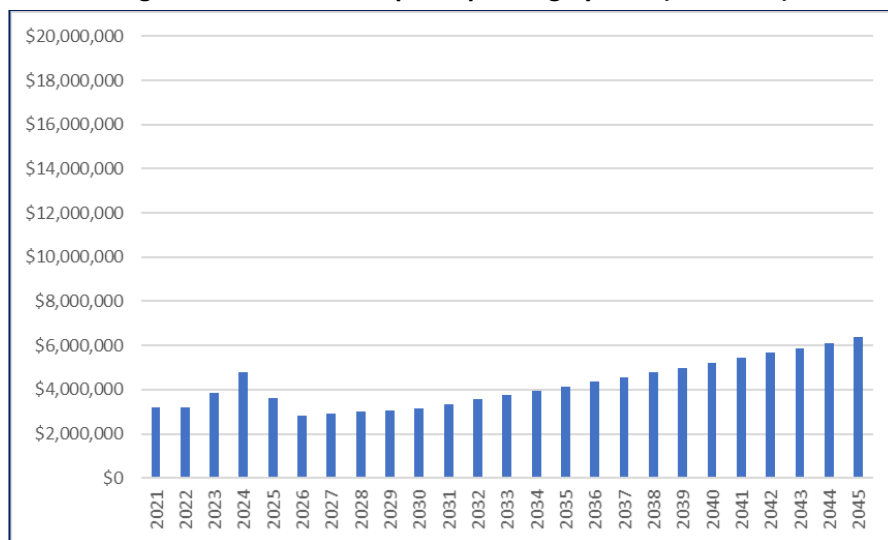
The following sections summarize the revenue requirement projections and the estimated household burden on Bridgeport residents for each capital alternative.

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8.3 Baseline Financial Analysis

This section summarizes the projected sewer revenue requirements for WPCA, including the impact of the baseline capital program summarized in Section 8.2 through FY 2045. **Figure 8.3-1** details the annual capital spending for the baseline alternative net of assumed grants (thus the amount to be debt financed in each year).

Figure 8.3-1 Baseline Capital Spending by Year (Inflated \$)



The projected revenue requirements will be summarized in three main components:

- Operations and maintenance costs (O&M)
- Debt service and capital expenditures
- Miscellaneous revenue

The following sections summarize the total projected sewer expenses and revenue requirements for the baseline alternative.

8.3.1 Baseline Operations and Maintenance

Operations and maintenance costs exist for all aspects of the sewer utility. O&M expenses have been separated into nine general categories, generally consistent with WPCA’s current budgetary structure:

- Administration
- Natural Gas
- Electricity
- City Admin Allocation (Indirect Costs)
- Collection Fees (Attorney Costs)

- Operations, Maintenance, and Management Services Agreement
- Nitrogen Payment
- Operating Reserve
- Bad Debt Reserve

Total operating expenses are projected to grow from \$34.5 million in FY 2021 to \$60.0 million in FY 2045. This represents an average annual increase of 2.3 percent. Anticipated operating expenses over time are summarized in **Table 8.3-1**.

Table 8.3-1 Projected Operating Expenses

O&M Category	FY 2021	FY 2027	FY 2033	FY 2039	FY 2045
Administration	\$2,055,853	\$2,394,610	\$2,803,105	\$3,299,317	\$3,906,619
Natural Gas	\$140,000	\$157,663	\$177,554	\$199,954	\$225,181
Electricity	\$2,475,000	\$2,706,272	\$2,959,155	\$3,235,668	\$3,538,019
City Admin Allocation	\$475,000	\$475,000	\$475,000	\$475,000	\$475,000
Collection Fees	\$300,000	\$300,000	\$300,000	\$300,000	\$300,000
Operations, Maintenance, and Management Services Agreement	\$27,017,561	\$31,332,088	\$36,335,616	\$42,138,175	\$48,867,364
Nitrogen Credit Payment	\$400,000	\$0	\$0	\$0	\$0
Operating Reserve	\$250,000	\$250,000	\$250,000	\$250,000	\$250,000
Bad Debt Reserve	\$1,400,154	\$1,664,692	\$1,896,375	\$2,161,119	\$2,480,857
Total O&M	\$34,513,568	\$39,280,325	\$45,196,805	\$52,059,233	\$60,043,040

8.3.2 Baseline Debt Service and Capital Expenditures

Capital costs can be financed through annual cash payments as cash funded capital, or through bonded debt as debt service. The debt service and capital expenditures have been separated into three categories: existing debt service, anticipated debt service, and cash funded capital.

Existing debt service represents the sewer related debt that is currently outstanding. Anticipated debt service relates to the annual debt service payments projected from the implementation of future capital spending.

Cash funded capital is the annual capital projects that WPCA elects to fund directly through current year rate revenue without issuing debt. The WPCA has assumed some annual allowance for cash funded capital that ramps up over time, with the remainder of the baseline spending assumed debt financed. As mentioned, the baseline assumes that the Combined Sewer Overflow H3 project is eligible for SRF loans, while all other future baseline capital spending is assumed to be cash funded or financed through GO debt.

Table 8.3-2 shows the projected capital and debt obligations through FY 2045, including the costs associated with the assumed baseline capital spending.

Table 8.3-2 Debt Service and Capital Expenditures

	FY 2021	FY 2027	FY 2033	FY 2039	FY 2045
Existing Debt Service - Bond	\$545,776	\$611,854	\$305,992	\$200,021	\$17,684
Existing Debt Service - SRF	\$2,880,321	\$2,250,959	\$873,292	\$173,237	\$0
Anticipated Debt Service - Bond	\$153,159	\$1,705,604	\$2,262,467	\$2,855,314	\$3,141,283
Anticipated Debt Service - SRF	\$0	\$114,380	\$104,250	\$94,121	\$0
Cash Funded Capital	\$150,000	\$900,000	\$2,300,000	\$2,900,000	\$3,500,000
Total Debt Service and Capital	\$3,729,256	\$5,582,797	\$5,846,001	\$6,222,693	\$6,658,967

8.3.4 Miscellaneous Revenue

Miscellaneous or non-rate sewer revenue consists of all revenue generated by WPCA that is not directly related to sewer rates. **Table 8.3-3** summarizes the miscellaneous revenues through the projection period. For projection purposes, the majority of the miscellaneous revenues are assumed to remain constant over the forecast period, however arrearage collections are tied to the recovery of prior year uncollected rate revenue.

Table 8.3-3 Projected Miscellaneous Revenue

Miscellaneous Revenue	FY 2021	FY 2027	FY 2033	FY 2039	FY 2045
Interest on Investments	\$17,000	\$17,000	\$17,000	\$17,000	\$17,000
Septic Ticket Revenue	\$1,250,000	\$1,250,000	\$1,250,000	\$1,250,000	\$1,250,000
Other Revenue	\$21,908	\$21,908	\$21,908	\$21,908	\$21,908
Industrial Surcharges	\$18,192	\$18,192	\$18,192	\$18,192	\$18,192
Nitrogen Credits Received	\$150,000	\$0	\$0	\$0	\$0
Arrearage Collections	\$1,111,819	\$1,293,873	\$1,483,410	\$1,696,486	\$1,938,857
Total Miscellaneous Revenue	\$2,568,919	\$2,600,973	\$2,790,510	\$3,003,586	\$3,245,957

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8.3.5 Revenue Requirement

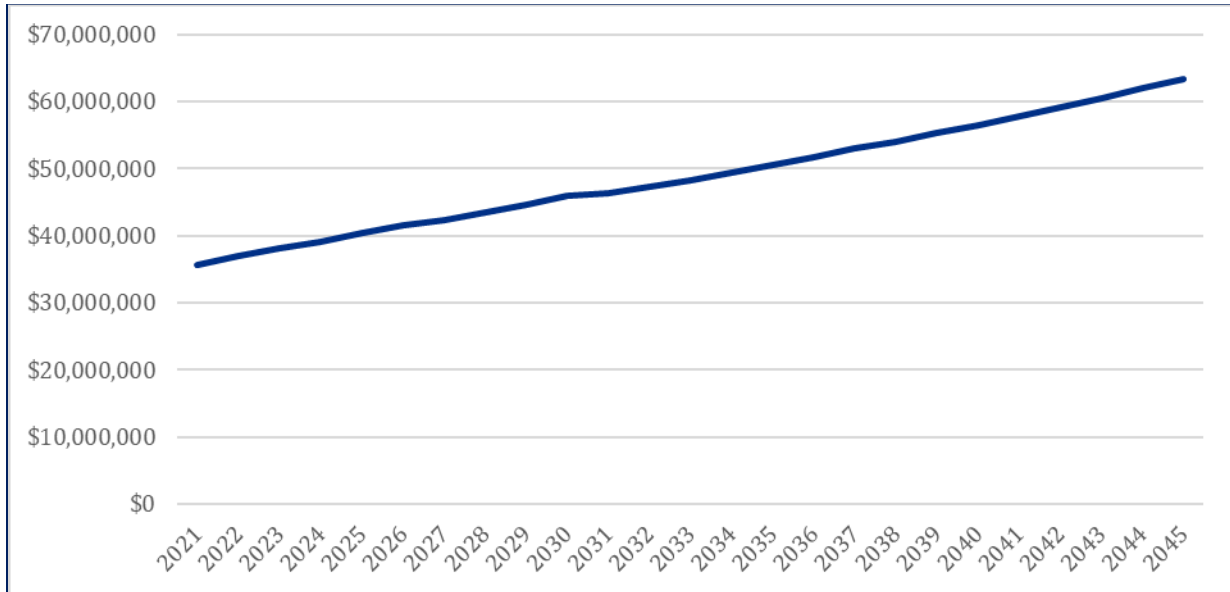
The revenue requirement is the total revenue that must be generated annually through sewer rates to fund WPCA’s sewer expenses. The sewer revenue requirement is calculated by subtracting non-rate sewer revenue from total sewer expenses. **Table 8.3-4** shows the total revenue requirement for the baseline projections. The total revenue requirement is projected to grow from approximately \$35.7 million in FY 2021 to approximately \$63.5 million in FY 2045, equivalent to an average annual increase of 2.4 percent.

Table 8.3-4 Projected Revenue Requirement

	FY 2021	FY 2027	FY 2033	FY 2039	FY 2045
Operating Expenses	\$34,513,568	\$39,280,325	\$45,196,804	\$52,059,233	\$60,043,039
Existing Debt Service	\$3,426,096	\$2,862,812	\$1,179,284	\$373,258	\$17,684
Anticipated Debt Service	\$153,159	\$1,819,984	\$2,366,717	\$2,949,435	\$3,141,283
Cash Funded Capital	\$150,000	\$900,000	\$2,300,000	\$2,900,000	\$3,500,000
Less: Miscellaneous Revenue	(\$2,568,919)	(\$2,600,973)	(\$2,790,510)	(\$3,003,586)	(\$3,245,957)
Revenue Requirement	\$35,673,904	\$42,262,148	\$48,252,295	\$55,278,340	\$63,456,049

Figure 8.3-2 graphically depicts the projected revenue requirement for the baseline projections.

Figure 8.3-2 Projected Revenue Requirement – Baseline



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8.3.6 Residential Indicator

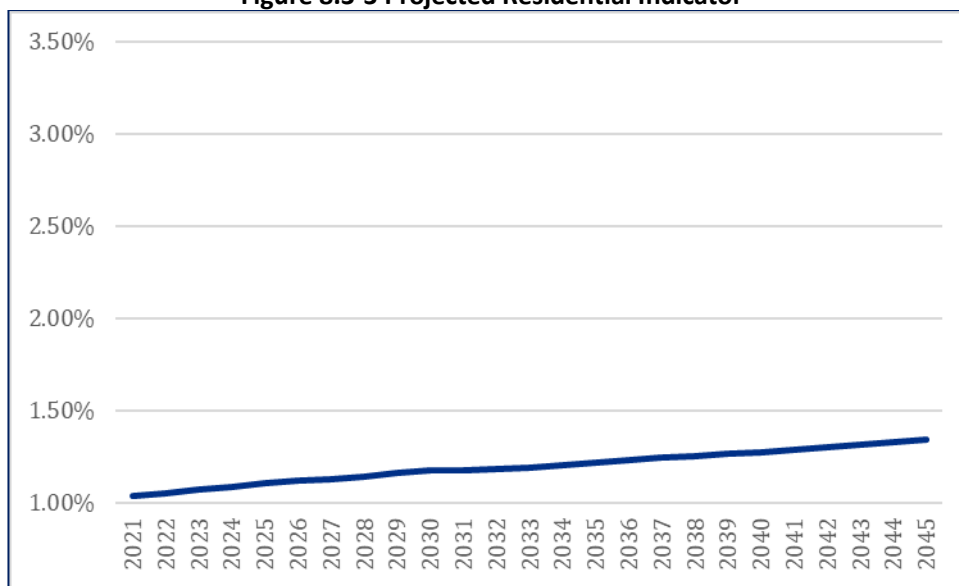
The “Residential Indicator” is defined as the typical dwelling unit sewer bill compared to MHI and is used as a benchmark by the EPA in assessing the affordability of a proposed program. The estimated sewer household bill for FY 2021 in Bridgeport is \$490 based on an assumed annual sewer use of 80 HCF per residential dwelling unit.

The projected growth in the typical household sewer bill, MHI and the corresponding Residential Indicator are shown in **Table 8.3-5** for the baseline projection. **Figure 8.3-3** shows graphically the increase in the household burden through FY 2045. For the first 10 years, residents will face average annual rate increases of 2.5 percent.

Table 8.3-5 Projected Household Bill, MHI and Residential Indicator

	FY 2021	FY 2027	FY 2033	FY 2039	FY 2045
Estimated Household Bill	\$490	\$574	\$655	\$750	\$861
MHI	\$47,207	\$50,949	\$54,987	\$59,345	\$64,049
Residential Indicator	1.04%	1.13%	1.19%	1.26%	1.34%

Figure 8.3-3 Projected Residential Indicator



8.4 Financial Analysis - Capital Alternatives

This section summarizes the financial projections of the previously described capital plans. Each alternative builds off the baseline projection and includes the baseline capital spending. The O&M and miscellaneous revenue for all alternatives are assumed to remain the same as in the baseline projection, so the results are focused on the change in anticipated debt service as a result of the capital spending plans. The additional debt service will then impact the overall revenue requirement and the household burden.

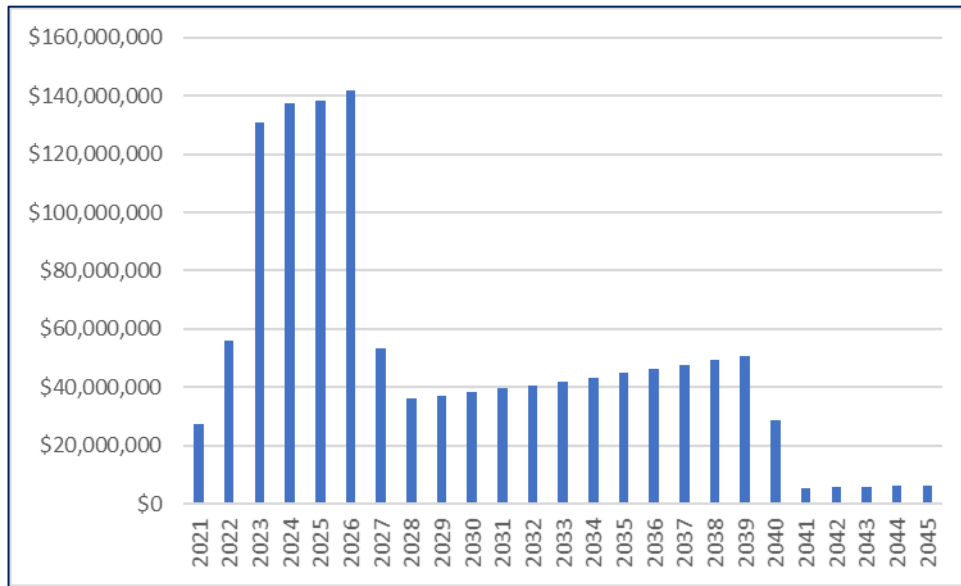
8.4.1 90/40 Consent Order Schedule; No SRF or State Grant Availability

This section summarizes the projected sewer revenue requirements for the 90/40 Consent Order Schedule alternative, assuming Bridgeport receives no financial assistance from the State (grants and/or SRF loans). This alternative shows the impact of WPCA financing the majority of the program through GO debt.

8.4.1.1 Capital Spending

This alternative carries an additional \$1.15 billion in capital spending (Inflated) over the baseline, for a total capital spending of \$1.26 billion (\$1.15 billion plus \$110 million as presented previously in Table 8.2-1) through FY 2045 when including baseline spending. **Figure 8.4-1** details the annual capital spending for this program.

Figure 8.4-1 Proposed Spending by Year (Inflated \$) – 90/40 Consent Order Schedule; No SRF/Grants



8.4.1.2 Debt Service

Table 8.4-1 shows the projected capital and debt obligations through FY 2045, including the costs associated with the 90/40 Consent Order Schedule alternative. This alternative assumes no SRF or state grant availability, which means that the capital spending for the program is assumed to be issued through GO debt.

Table 8.4-1 Debt Service and Capital Expenditures – 90/40 Consent Order Schedule; No SRF/Grants

	FY 2021	FY 2027	FY 2033	FY 2039	FY 2045
Existing Debt Service - Bond	\$545,776	\$611,854	\$305,992	\$200,021	\$17,684
Existing Debt Service - SRF	\$2,880,321	\$2,250,959	\$873,292	\$173,237	\$0
Anticipated Debt Service - Bond	\$1,353,821	\$61,898,372	\$73,710,111	\$85,306,516	\$57,391,742
Anticipated Debt Service - SRF	\$0	\$228,760	\$208,501	\$188,241	\$0
Cash Funded Capital	\$150,000	\$900,000	\$2,300,000	\$2,900,000	\$3,500,000
Total Debt Service and Capital	\$4,929,918	\$65,889,945	\$77,397,896	\$88,768,015	\$60,909,426

8.4.1.3 Revenue Requirement

Table 8.4-2 shows the total revenue requirement, which includes the projections for implementing the projects in 90/40 Consent Order Schedule alternative, assuming no SRF or grant availability. The total revenue requirement is projected to grow from approximately \$36.9 million in FY 2021 to approximately \$118.3 million in FY 2045, equivalent to an average annual increase of 5.0 percent.

Table 8.4-2 Projected Revenue Requirement – 90/40 Consent Order Schedule; No SRF/Grants

	FY 2021	FY 2027	FY 2033	FY 2039	FY 2045
Operating Expenses	\$34,513,568	\$41,393,800	\$48,012,668	\$55,313,382	\$63,182,854
Existing Debt Service	\$3,426,096	\$2,862,812	\$1,179,284	\$373,258	\$17,684
Anticipated Debt Service	\$1,353,821	\$62,127,132	\$73,918,611	\$85,494,758	\$57,391,742
Cash Funded Capital	\$150,000	\$900,000	\$2,300,000	\$2,900,000	\$3,500,000
Less: Miscellaneous Revenue	(\$2,568,919)	(\$3,880,190)	(\$4,986,980)	(\$5,546,754)	(\$5,803,637)
Revenue Requirement	\$36,874,566	\$103,403,554	\$120,423,583	\$138,534,644	\$118,288,643

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8.4.1.4 Residential Indicator

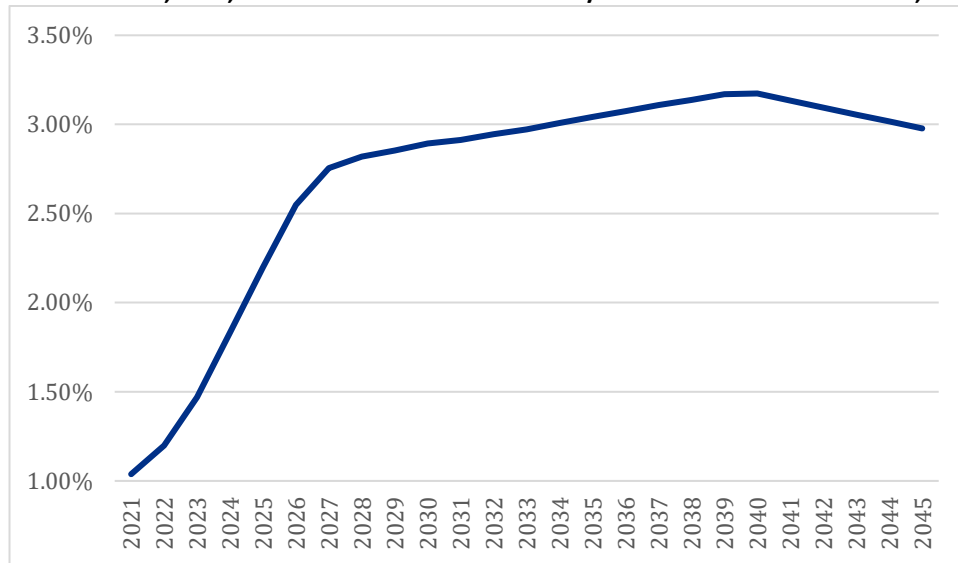
The projected growth in the typical household sewer bill, MHI and the corresponding Residential Indicator are shown in **Table 8.4-3** for the 90/40 Consent Order Schedule alternative, assuming no SRF or state grants. **Figure 8.4-2** shows graphically the increase in the household burden through FY 2045.

For the first 5 years, residents will face average annual rate increases of nearly 21.2 percent. The sewer rate is projected to triple within the first 10 years of this program.

Table 8.4-3 Projected Household Bill, MHI and Residential Indicator – 90/40 Consent Order Schedule; No SRF/Grants

	FY 2021	FY 2027	FY 2033	FY 2039	FY 2045
Estimated Household Bill	\$490	\$1,404	\$1,635	\$1,881	\$1,907
MHI	\$47,207	\$50,949	\$54,987	\$59,345	\$64,049
Residential Indicator	1.04%	2.75%	2.97%	3.17%	2.98%

Figure 8.4-2 Projected Household Bill, MHI, and Residential Indicator – 90/40 Consent Order Schedule; No SRF/Grants



The residential indicator reaches the 2 percent threshold in FY 2025 for this alternative. At its peak in FY 2040, the residential indicator nears 3.2 percent.

Given the magnitude of the household burden and increases in rates, this program assuming no grants or SRF presents a major financial and economic challenges and is likely not feasible.

8.4.2 90/40 Consent Order Schedule; with SRF and State Grant Availability

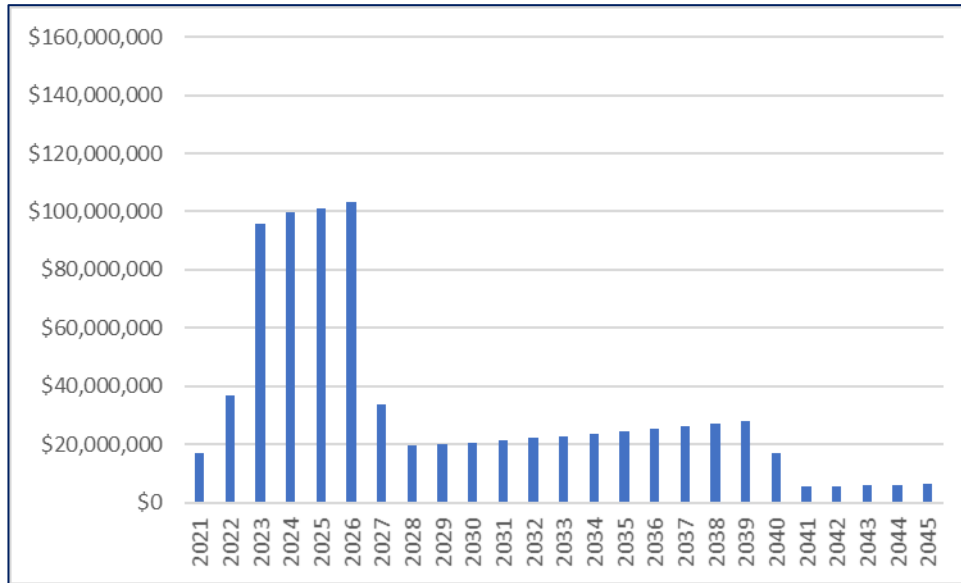
This section summarizes the projected sewer revenue requirements for the 90/40 Consent Order Schedule alternative, assuming that SRF loans and state grants as described in Section 9 are available.

8.4.2.1 Capital Spending

The capital spending for this alternative is identical to Section 8.4.1, with the difference in the projections being the financing mechanism for the capital spending. **Figure 8.4-3** below details the annual capital spending net of grants for this alternative, which totals \$815.5 million (Inflated \$).

This alternative assumes that Connecticut Department of Energy and Environmental Protection (DEEP) will provide WPCA with grants totaling \$440 million, and \$710 million in SRF loans.

Figure 8.4-3 Proposed Spending by Year (Inflated) – 90/40 Consent Order Schedule; With SRF/Grants



8.4.2.2 Debt Service

Table 8.4-4 shows the projected capital and debt obligations through FY 2045, including the costs associated with this alternative.

Table 8.4-4 Debt Service and Capital Expenditures – 90/40 Consent Order Schedule; With SRF/Grants

	FY 2021	FY 2027	FY 2033	FY 2039	FY 2045
Existing Debt Service - Bond	\$545,776	\$611,854	\$305,992	\$200,021	\$17,684
Existing Debt Service - SRF	\$2,880,321	\$2,250,959	\$873,292	\$173,237	\$0
Anticipated Debt Service - Bond	\$153,159	\$1,705,604	\$2,262,467	\$2,855,314	\$3,141,283
Anticipated Debt Service - SRF	\$278,036	\$30,142,785	\$35,243,639	\$40,349,780	\$26,539,880
Cash Funded Capital	\$150,000	\$900,000	\$2,300,000	\$2,900,000	\$3,500,000
Total Debt Service and Capital	\$4,007,292	\$35,611,202	\$40,985,390	\$46,478,352	\$33,198,847

8.4.2.3 Revenue Requirement

Table 8.4-5 shows the total revenue requirement, which includes the projections for implementing the projects in this alternative. The total revenue requirement is projected to grow from approximately \$36.0 million in FY 2021 to approximately \$90.3 million in FY 2045, equivalent to an average annual increase of 4.0 percent.

Table 8.4-5 Projected Revenue Requirement – 90/40 Consent Order Schedule; With SRF/Grants

	FY 2021	FY 2027	FY 2033	FY 2039	FY 2045
Operating Expenses	\$34,513,568	\$40,284,487	\$46,583,115	\$53,646,574	\$61,525,617
Existing Debt Service	\$3,426,096	\$2,862,812	\$1,179,284	\$373,258	\$17,684
Anticipated Debt Service	\$431,195	\$31,848,389	\$37,506,106	\$43,205,095	\$29,681,162
Cash Funded Capital	\$150,000	\$900,000	\$2,300,000	\$2,900,000	\$3,500,000
Less: Miscellaneous Revenue	(\$2,568,919)	(\$3,190,073)	(\$3,875,105)	(\$4,244,848)	(\$4,477,847)
Revenue Requirement	\$35,951,940	\$72,705,615	\$83,693,400	\$95,880,079	\$90,246,616

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8.4.2.4 Residential Indicator

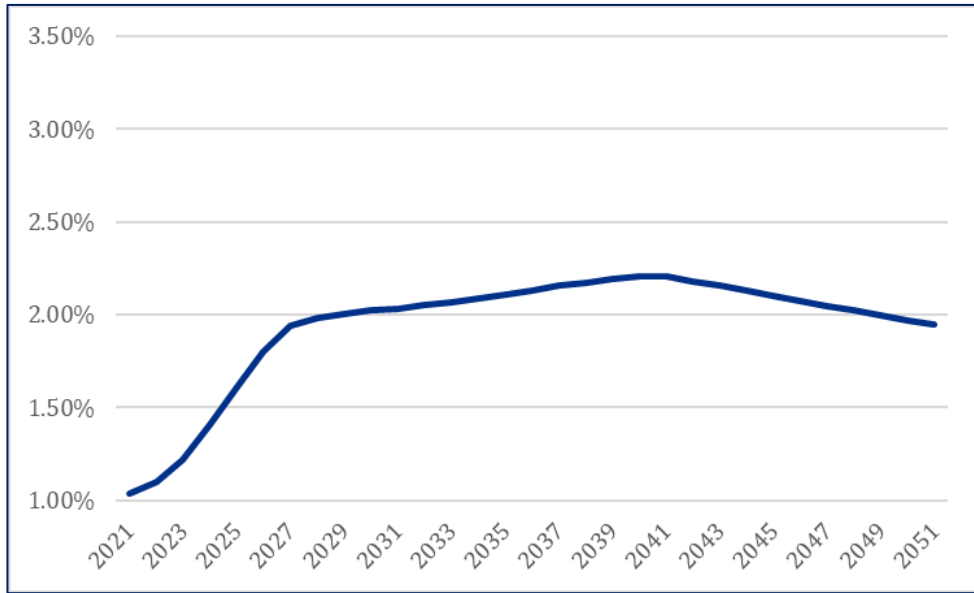
The projected growth in the typical household sewer bill, MHI and the corresponding Residential Indicator are shown in **Table 8.4-6** for this alternative. **Figure 8.4-4** shows graphically the increase in the household burden through FY 2045.

For the first 5 years, residents will face average annual rate increases of 13.1 percent. The sewer rate is projected to double within the first 10 years of this program.

Table 8.4-6 Projected Household Bill, MHI and Residential Indicator – 90/40 Consent Order Schedule; With SRF/Grants

	FY 2021	FY 2027	FY 2033	FY 2039	FY 2045
Estimated Household Bill	\$490	\$987	\$1,136	\$1,302	\$1,345
MHI	\$47,207	\$50,949	\$54,987	\$59,345	\$64,049
Residential Indicator	1.04%	1.94%	2.07%	2.19%	2.10%

Figure 8.4-4 Projected Household Bill, MHI, and Residential Indicator – 90/40 Consent Order Schedule; With SRF/Grants



The residential indicator reaches the 2 percent threshold in FY 2029. The household burden reaches a peak of 2.2 percent in FY 2040. Given the burden on Bridgeport residents and the relatively significant rate increases particularly over the short-term, this program will be potentially problematic to implement.

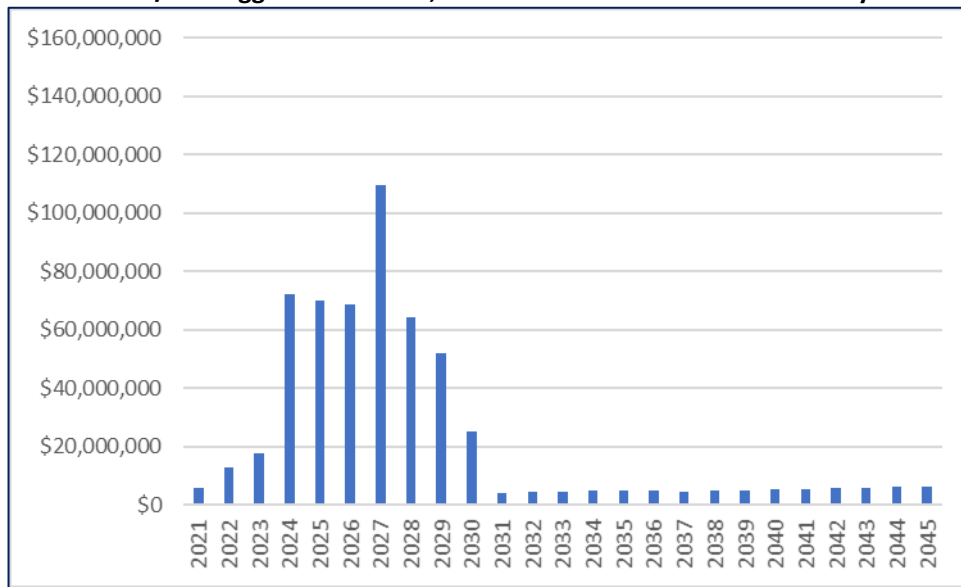
8.4.4 200/80 Staggered Schedule; with SRF and State Grant Availability

This section summarizes the projected sewer revenue requirements for the alternative that includes staggering the plant upgrades (and increasing plant sizes), and including Ash Creek, Ellsworth and Conveyance for the West Side collection system.

8.4.4.1 Capital Spending

This alternative carries an additional \$469 million in capital spending over the baseline, for a total capital spending of \$575 million (\$469 million plus \$106 million as presented previously in Table 8.2-1) through FY 2045. **Figure 8.4-5** details the annual capital spending net of grants for this alternative.

**Figure 8.4-5 Proposed Spending by Year (Inflated \$) –
200/80 Staggered Schedule; with SRF and State Grant Availability**



This alternative assumes that CT DEEP will provide WPCA with grants totaling \$218 million, and \$469 million in SRF loans.

8.4.4.2 Debt Service

Table 8.4-7 shows the projected capital and debt obligations through FY 2045, including the costs associated with this alternative.

**Table 8.4-7 Debt Service and Capital Expenditures –
200/80 Staggered Schedule; with SRF and State Grant Availability**

	FY 2021	FY 2027	FY 2033	FY 2039	FY 2045
Existing Debt Service - Bond	\$545,776	\$611,854	\$305,992	\$200,021	\$17,684
Existing Debt Service - SRF	\$2,880,321	\$2,250,959	\$873,292	\$173,237	\$0
Anticipated Debt Service - Bond	\$153,159	\$1,705,604	\$2,262,467	\$2,855,314	\$3,141,283
Anticipated Debt Service - SRF	\$55,058	\$17,709,613	\$30,015,805	\$27,370,215	\$19,842,742
Cash Funded Capital	\$150,000	\$900,000	\$2,300,000	\$2,900,000	\$3,500,000
Total Debt Service and Capital	\$3,784,314	\$23,178,030	\$35,757,556	\$33,498,787	\$26,501,709

8.4.4.3 Revenue Requirement

Table 8.4-8 shows the total revenue requirement, which includes the projections for implementing the projects in this alternative. The total revenue requirement is projected to grow from approximately \$35.7 million in FY 2021 to approximately \$83.5 million in FY 2045, equivalent to an average annual increase of 3.6 percent.

**Table 8.4-8 Projected Revenue Requirement –
200/80 Staggered Schedule; with SRF and State Grant Availability**

	FY 2021	FY 2027	FY 2033	FY 2039	FY 2045
Operating Expenses	\$34,513,568	\$39,782,905	\$46,420,632	\$53,177,551	\$60,995,553
Existing Debt Service	\$3,426,096	\$2,862,812	\$1,179,284	\$373,258	\$17,684
Anticipated Debt Service	\$208,217	\$19,415,217	\$32,278,272	\$30,225,530	\$22,984,024
Cash Funded Capital	\$150,000	\$900,000	\$2,300,000	\$2,900,000	\$3,500,000
Less: Miscellaneous Revenue	(\$2,568,919)	(\$2,854,237)	(\$3,784,566)	(\$3,913,389)	(\$4,045,265)
Revenue Requirement	\$35,728,962	\$60,106,697	\$78,393,622	\$82,762,950	\$83,451,996

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8.4.4.4 Residential Indicator

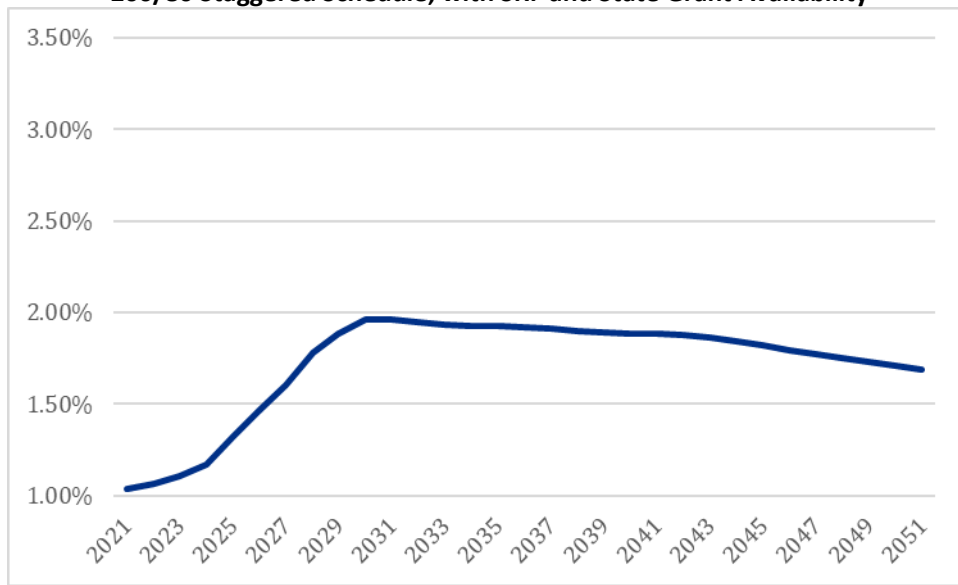
The projected growth in the typical household sewer bill, MHI and the corresponding Residential Indicator are shown in **Table 8.4-9** for this alternative. **Figure 8.4-6** shows graphically the increase in the household burden through FY 2045.

For the first 10 years, residents will face average annual rate increases of 7.9 percent, with multiple years of double-digit rate increases.

Table 8.4-9 Projected Household Bill, MHI and Residential Indicator – 200/80 Staggered Schedule; with SRF and State Grant Availability

	FY 2021	FY 2027	FY 2033	FY 2039	FY 2045
Estimated Household Bill	\$490	\$816	\$1,064	\$1,123	\$1,165
MHI	\$47,207	\$50,949	\$54,987	\$59,345	\$64,049
Residential Indicator	1.04%	1.60%	1.94%	1.89%	1.82%

Figure 8.4-6 Projected Household Bill, MHI, and Residential Indicator – 200/80 Staggered Schedule; with SRF and State Grant Availability



The residential burden peaks at 1.96 percent in FY 2030 for this alternative.

8.5 Phase 2 Evaluation

This section presents the Phase 2 financial impact indicators, which are benchmarks as defined by US EPA in the *Combined Sewer Overflows — Guidance for Financial Capability Assessment and Schedule Development* (EPA, February 1997). These indicators evaluate ancillary factors that may have an effect on an entity’s ability to fund the proposed LTCP. The analysis is based on the city of Bridgeport as the proxy for WPCA. This assessment identifies three categories, each with two indicators as listed below:

- Debt Indicators:

- Bond Rating
- Overall Net Debt
- Socio-economic Indicators:
 - Median Household Income
 - Unemployment Rate
- Financial Management Indicators:
 - Property Tax Revenue
 - Property Tax Collection Rate

While the Phase 1 assessment (Residential Indicator) is a time-series analysis, the Phase 2 process involves comparing Bridgeport’s position for each indicator with EPA defined benchmarks to determine a score of “strong”, “mid-range”, or “weak”. The corresponding values assigned to each indicator are “3”, “2”, or “1”, respectively.

8.5.1 Debt Indicators

The two debt indicators used in Phase 2 of the financial capability assessment are bond rating and overall net debt. These indicators are intended to be indicative of the City’s capacity to gain access to capital markets to raise the necessary capital to implement the anticipated capital plan.

8.5.1.1 Bond Rating

The bond rating indicator is intended to address a general capacity to undertake debt. While rating designations vary by credit rating agencies, long-term bond ratings range from AAA/Aaa (high grade) to C/D (in default). **Table 8.5-1** shows the most recent ratings from Moody’s Investors Service (MIS) and from Standard & Poor’s (S&P). The scoring for this indicator includes the ratings as follows:

- **Strong (Score = 3)** — a high grade or strong bond (e.g., Aaa or AAA, Aa or AA, A).
- **Mid-Range (Score = 2)** — a medium grade bond (e.g., Baa or BBB). These are the minimum “investment grade” bond ratings.
- **Weak (Score = 1)** – a speculative or “junk” bond (e.g. Ba or BB, or lower)

Based on the benchmarks provided in the EPA guidance document, this indicator for the City is rated mid-range and earns a score of 2, based on the MIS bond rating from 2017.

Table 8.5-1 Current Bond Rating

Item	Rating
Moody’s Investors Service (MIS)	Baa1
Bond Rating Indicator Score	2

8.5.1.2 Overall Net Debt as a Percent of Full Market Property Value

Overall net debt is the amount of tax-backed bonded debt for all taxing units not supported by revenue from sewer user fees. Indicator scores for overall net debt are based on the percentage of the full-market property value. The EPA guidance document benchmarks for overall net debt are:

- **Strong (Score = 3)** — overall net debt is below two percent of the full-market property value.
- **Mid-Range (Score = 2)** — overall net debt is two to five percent of the full-market property value.
- **Weak (Score = 1)** — overall net debt is more than five percent of the full-market property value.

The information for this indicator is from Bridgeport’s 2019 Comprehensive Annual Financial Report. The information is shown in **Table 8.5-2**.

Table 8.5-2 Overall Net Debt Rating

Item	Value
Direct net debt	\$803,151,864
Debt of overlapping entities (proportionate share of multi-jurisdictional debt)	\$0
Overall net debt	\$803,151,864
Market value of property	\$9,155,540,000
Overall net debt as a percent of full market property value	8.7 percent
Overall Net Debt Indicator Score	1

The overall net debt for the City in 2019 was approximately \$803 million. The City’s market value of property (equalized valuation) is approximately \$9.2 billion, which makes the overall net debt approximately 8.7 percent of full-market property value. Thus, this indicator is rated as weak using the EPA guidelines, which equates to a score of 1.

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8.5.2 Socio-economic Indicators

The two socio-economic indicators used in Phase 2 of the financial capability assessment are unemployment rate and median household income. These indicators are intended to be indicative of the City's general economic condition.

8.5.2.1 Unemployment Rate

Unemployment rate is a measure of the City's labor force that is unemployed but seeking employment. The EPA guidance document benchmarks for unemployment rate are:

- **Strong (Score = 3)** — unemployment rate is more than one percent below the national average.
- **Mid-Range (Score = 2)** — unemployment rate is within one percent (+/-) of the national average.
- **Weak (Score = 1)** — unemployment rate is more than one percent above the national average.

The unemployment rate for Bridgeport, as compared to the national average, is shown in **Table 8.5-3**. The City's average unemployment rate in 2019, according to the U.S. Bureau of Labor Statistics, was 13.4 percent, 6.9 percent more than the state average rate of 6.5 percent, and 7.5 percent more than the national average rate of 5.9 percent. Based on EPA standards, this results in a parameter score of 1.

Table 8.5-3 Unemployment Rate Comparison

Item	Value
Bridgeport: Unemployment Rate	13.4 percent
Connecticut: Unemployment Rate	6.5 percent
National: Unemployment Rate	5.9 percent
Comparison of Bridgeport with National	7.5 percent above
Unemployment Rate Indicator Score	1

8.5.2.2 Median Household Income

This indicator is related to the Residential Indicator in that they both consider MHI. While the Residential Indicator is a comparison of MHI and average annual household bills, the median household income indicator focuses solely on Bridgeport's MHI by comparing it to the national median household income. The benchmark then is a measure of the relative wealth or poverty of the service area. The EPA guidance document benchmarks for median household income are:

- **Strong (Score = 3)** — MHI is more than 25 percent above the national average.
- **Mid-Range (Score = 2)** — MHI is within 25 percent (+/-) of the national average.
- **Weak (Score = 1)** — MHI is more than 25 percent below the national average.

The City and national MHI values, shown in **Table 8.5-4**, are based on the most recent Census Bureau, American Community Survey (ACS) data.

Table 8.5-4 Median Household Income Comparison

Item	Value
Most recent Bridgeport estimate (2018 ACS)	\$45,411
Most recent National estimate (2018 ACS)	\$60,293
Compare Permittee with Average National MHI	24.7 percent below
Median Household Income Indicator Score	2

In addition to the City slightly lagging behind in MHI, the U.S. Census Bureau estimated that in 2018, 21.4 percent of the City’s residents are living below the poverty line, as compared to a national average of 14.1 percent and a state average of 10 percent.

8.5.3 Financial Management Indicators

The two financial management indicators are property tax revenues and tax collection efficiency. The indicators are used to assess a community’s capacity to support debt.

8.5.3.1 Property Tax Revenues as a Percent of Full Market Property

Property tax revenue as a percent of full market property value is an indicator related to the funding capacity available to support debt, based on the wealth of the community. The EPA guidance document benchmarks for property tax revenues are:

- **Strong (Score = 3)** — property tax revenue is below two percent of the full-market property value.
- **Mid-Range (Score = 2)** — property tax revenue is two to four percent of the full-market property value.
- **Weak (Score = 1)** — property tax revenue is more than four percent of the full-market property value.

In the City, property tax revenues collected in 2019 were approximately \$315 million, with a full-market property value of \$9.2 billion. As shown in **Table 8.5-5**, the calculated property tax revenue indicator for the City is 3.4 percent, which places the City in “mid-range” with a rating score of 2.

Table 8.5-5 Property Tax Revenues

Item	Value
Full market value of real property	\$9,155,540,000
Property tax revenue	\$314,663,125
Property tax revenue as a percentage of full market property value	3.4 percent
Property Tax Revenue Indicator Score	2

8.5.3.2 Property Tax Collection Efficiency

The last Phase 2 indicator is the property tax collection rate. This indicator represents the relationship of property taxes collected versus property taxes levied. The EPA guidance document benchmarks for property tax collection efficiency are:

- **Strong (Score = 3)** — property taxes collected are above 98 percent of the property taxes levied.
- **Mid-Range (Score = 2)** — property taxes collected are between 94 and 98 percent of the property taxes levied.
- **Weak (Score = 1)** — property taxes collected are less than 94 percent of the property taxes levied.

Computation of this indicator rating is shown in **Table 8.5-6**, and is based on the City’s data for the 2019 tax year. The City’s property tax collection rate is just above 98 percent of the taxes levied, which results in an EPA parameter score of 3.

Table 8.5-6 Property Tax Collection Efficiency

Item	Value
Property tax revenue collected	\$314,663,125
Property taxes levied	\$319,856,486
Property tax revenue collection rate	98.4 percent
Property Tax Collection Efficiency Indicator Score	3

8.5.4 Summary of Financial Impact Indicators

Table 8.5-7 shows the EPA’s Phase 2 Financial Impact Indicator benchmarks used to evaluate the six indicators. The indicators are shown in the left-hand column. The corresponding EPA benchmarks for each indicator are shown for “strong”, “mid-range” or “weak” ratings. The highlighted boxes in this table indicate where the City falls within the framework of these indicators.

Table 8.5-7 Financial Impact Assessment Benchmarks

Indicator	Strong (Score=3)	Mid-Range (Score=2)	Weak (Score=1)
1. Bond Rating	AAA to A (S&P) or Aaa to A (MIS)	BBB (S&P) or Baa (MIS)	BB to D (S&P) or Ba to C (MIS)
	Below 2 percent	2 percent to 5 percent	Above 5 percent
3. Unemployment Rate	>1 percent below National Average	±1 percent of National Average	>1 percent above National Average
4. Median Household Income	>25 percent above adjusted National MHI	±25 percent of adjusted National MHI	>25 percent below adjusted National MHI
5. Property Tax Revenue	Below 2 percent	2 percent to 4 percent	Above 4 percent
6. Property Tax Collection Rate	Above 98 percent	94 percent to 98 percent	Below 94 percent

Note: The highlighted values represent Bridgeport’s benchmark scores

The values and scores of the six indicators for Bridgeport are summarized in **Table 8.5-8**. An overall (average) score below 1.5 is considered weak and an overall score above 2.5 is considered strong by EPA guidelines. An overall score between 1.5 and 2.5 is considered mid-range. Overall, the un-weighted average score for the Phase 2 evaluation is 1.8 which falls in the mid-range of the financial capability scale.

Table 8.5-8 Financial Impact Assessment Summary

Financial Impact Indicator	Value	Score
1. Bond rating	Baa1	2
2. Overall net debt as a percent of property value	8.7 percent	1
3. Unemployment rate compared with national average	7.5 percent above	1
4. Median household income compared with national average	24.7 percent below	2
5. Property tax revenue as a percent of property value	3.4 percent	2
6. Property tax collection rate	98.4 percent	3
Overall Financial Impact Indicator Score		1.8

8.6 Additional Socioeconomic Indicators

In addition to the traditional impacts considered in the FCA, a supplementary discussion of socioeconomic indicators has been included to provide a more complete assessment. This section outlines the financial and economic profile of the city of Bridgeport specifically to highlight the economic burden that higher sewer rates would place on this population.

In some cases, the indicators in this section expand on previously included data, such as unemployment and MHI. In other cases, data expands on the scope of the analysis to include information on demographic and social data that provides additional perspective about the City’s current and anticipated financial capability.

8.6.1 Unemployment and Labor Force Participation

Average unemployment in Bridgeport was 13.4 percent in 2019, compared to the national average of 5.9 percent according to the Bureau of Labor Statistics.

In addition to high unemployment in Bridgeport, most recent census data estimates the City’s labor force participation rate at 67.6 percent. Often individuals that are unemployed over long periods of time or are chronically unemployed, drop out of the labor force. Once individuals are no longer actively looking for employment, they are not counted in unemployment statistics, which has the effect of artificially lowering the full extent of unemployment. Taken with this additional context, the unemployment situation in the City is likely more severe than is indicated by current unemployment statistics.

8.6.2 Median Household Income - County Communities Comparison

The MHI for Bridgeport in 2018 is estimated to be \$45,411, which places the MHI for the City at 24.7 percent below national MHI. While this indicates a mid-range capability, it is at the upper limits of the threshold. To add additional context, **Table 8.6-1** lists the MHI for the communities in the same county as the City.

Table 8.6-1 MHI Comparison - 2018

Community	Median Household Income ¹
Bridgeport	\$45,411
Fairfield	\$134,559
Norwalk	\$82,474
Stamford	\$89,309

¹Census Bureau, American Community Survey

8.6.3 Poverty Statistics

In addition to MHI statistics, a useful factor in assessing a City’s financial capabilities is the rate of poverty, which indicates a lack of income to meet basic needs. Currently, the Census Bureau estimates that 21.4 percent of the City’s residents are living below the poverty line, compared to a national average of 14.1 percent.

In the context of other communities, Fairfield County has a poverty rate of 8.8 percent which is below the national average and significantly lower than Bridgeport’s. This indicates an overall financial and economic base for these communities far stronger than Bridgeport’s.

8.6.4 Educational Attainment

Educational attainment is often an indicator of an individual’s long-term earning potential. The Census estimates that 76.5 percent of Bridgeport residents have a high school degree or higher, compared to a national average of 87.7 percent. Bridgeport residents with a bachelor’s degree or higher is estimated at 18.3 percent, compared to a national average of 31.5 percent.

The relatively lower levels of educational attainment in Bridgeport complicates long term earning trends for its residents. Continuation of these trends over time suggest that Bridgeport’s MHI will continue to lag behind national averages, and further complicate the financial situation for the city and its residents.

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8.7 Overall Summary

Based on the Phase 1 and Phase 2 evaluations presented in this Section, completing projects on the current Consent Order schedules will put a high burden on the sewer rate payers in Bridgeport per current EPA guidance. As noted in Section 8.6, the City has and continues to experience economic stress as evidenced by the relatively low-income growth over the past 20 years and the very high poverty rate. The City will face a significant financial challenge implementing any significant capital program as contemplated herein. This problem is intensified if the WPCA were forced to self-fund the projects.

Staggering the design and construction of both treatment plants, with the Ash Creek and other collection system improvements (as presented above) is projected to keep sewer rates below EPA's 2 percent high burden, but only if CWF assistance is available in the form of 2 percent loans and grant funding per the current programs. Even with such assistance, the magnitude of the required rate increases is anticipated to present major financial challenges for the WPCA. **If CWF assistance is not available in the amounts assumed in this report, the financial capabilities of the WPCA, and the schedule for completion of the recommended projects, will need to be re-evaluated.**

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