Appendix D

Financial Capability and Affordability Assessment

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Memorandum

To	Megan Moir, Division Director – Water Resources, Burlington Public Works Department
Subject	Financial Capability and Affordability Assessment
From	AECOM
Date	February 17, 2021

1.0 INTRODUCTION AND BACKGROUND

This Memorandum presents the results of a Financial Capability and Affordability Assessment (FCA) that has been prepared to support the City of Burlington's Combined Sewer Overflow (CSO) Phase II Long Term Control Plan (LTCP). The FCA will be used to aid in preparation of the implementation schedule for capital projects proposed in the LTCP. This FCA addresses estimated costs associated with the City's Clean Water Act (CWA) compliance programs and provides an analysis of affordability considering the current financial and socioeconomic condition of the City and associated tributary service area.

The U.S. Environmental Protection Agency (EPA) has recognized the importance of taking a community's financial status into consideration when developing implementation schedules for compliance with CWA requirements, and to this end issued "Combined Sewer Overflows: Final Guidance for Financial Capability Assessment and Schedule Development" (EPA, 1997) (hereinafter, the "1997 EPA Guidance"). The 1997 EPA Guidance contains a two-phase approach for assessing a permittee's financial capability to implement current and proposed wastewater treatment and combined sewer overflow (CSO) controls. Phase 1 calculates the financial impact of water pollution costs (wastewater and stormwater) on individual households to determine the Residential Indicator (RI), which examines the average cost of household water pollution costs relative to benchmarks of the service area median household income (MHI). The results of this preliminary screening analysis are assessed by placing the community in one of three categories:

- Low economic impact: average household CWA costs are less than 1% of MHI;
- Mid-range economic impact: average household CWA costs are between 1% and 2% of MHI; and
- High economic impact: average household CWA costs are greater than 2% of MHI.

Phase 2 evaluates the following six Financial Capability Indicators (FCIs) regarding a permittee's debt, socioeconomic, and financial conditions: bond rating, overall net debt as a percent of full market property value (FMPV), unemployment rate, median household income, property tax revenues as a

percent of FMPV, and property tax revenue collection rate. The FCIs are compared to national benchmarks and are used to generate a score that is the average of the six FCI scores. Lower FCI scores suggest weaker economic conditions, and thus the increased likelihood that additional water pollution control costs could cause a substantial economic impact.

The results of the first and second phases are entered into a Financial Capability Matrix, which provides an overall assessment of a permittee's financial capability. The result of this combined assessment can be used to establish an appropriate CSO control implementation schedule.

EPA has recognized that its RI and FCI metrics are not the sole basis for considering an appropriate CSO compliance schedule, and the 1997 EPA Guidance encourages permittees to submit additional documentation and socioeconomic indicators that would create a more accurate and complete picture of their financial capability to implement the proposed CSO controls.

In 2012, EPA released its "Integrated Municipal Stormwater and Wastewater Planning Approach Framework" (EPA, 2012), which is supportive of a flexible approach to prioritizing projects with the greatest water quality benefits and states that "assessment of the community's financial capability should take into consideration current sewer rates, stormwater fees and other revenue, planned rate or fee increases, and the costs, schedules, anticipated financial impacts to the community of other planned stormwater or wastewater expenditures and other relevant factors impacting the utility's rate base" (EPA, 2012 at page 5).

In November of 2014, EPA released its "Financial Capability Assessment Framework" clarifying the flexibility within their CSO guidance (EPA, 2014). Although EPA did not modify the metrics established in the 1997 EPA Guidance, the 2014 EPA Framework reiterates that permittees are encouraged to supplement the core metrics with additional information that would "create a more accurate and complete picture of their financial capability" that may "affect the conclusion" of the analysis.

In January 2021, EPA issued a pre-publication notice for its 2021 Financial Capability Assessment Guidance (2021 FCA Guidance) that will effectively replace the 1997 EPA Guidance. At the time this Memorandum was prepared, the 2021 FCA Guidance was pending publication in the Federal Register. The 2021 FCA Guidance includes new metrics to inform a community's implementation schedule, including indicators that more accurately reflect how much low-income communities can afford to pay for water infrastructure upgrades. It also provides updated implementation schedule benchmarks based on the findings of the FCA, including up to 25 years for "High Burden" results. The 2021 FCA Guidance reflects a departure from heavily relying on a percent of median household income as an indicator of affordability in the CWA context, a change that has been championed by water and wastewater utilities and their advocates to better account for impacts to economically disadvantaged communities.

In light of the above-described EPA guidance and frameworks, this document presents the results of a FCA performed pursuant to the 1997 EPA Guidance, including supplemental information and analysis of local considerations affecting financial capability and affordability, including COVID-19. In Section 8, it also explores additional considerations (such as expanded consideration of costs, prevalence of poverty, and assessment of impacts at the lowest household income level) that are included in EPA's 2021 FCA Guidance.

2.0 WASTEWATER SERVICE AREA AND CONTRIBUTING MUNICIPALITIES

The Burlington Wastewater Treatment Plant (WWTP) serves a majority of the City of Burlington ("Burlington" or the "City") as well as a small portion of City of South Burlington ("South Burlington"). Figure 2-1 identifies these municipalities and illustrates the approximate existing wastewater service area boundary. Ratepayers in Burlington and South Burlington are billed the same sewer rate and are charged based on their metered water consumption.

The focus of this assessment is on the City of Burlington since it includes the vast majority of service area households, approximately 99.9% as shown in Table 2-1.

Table 2-1. Households in Service Area

Municipality	Households in Service Area
Burlington	16,102
South Burlington	16
Total	*16,118*

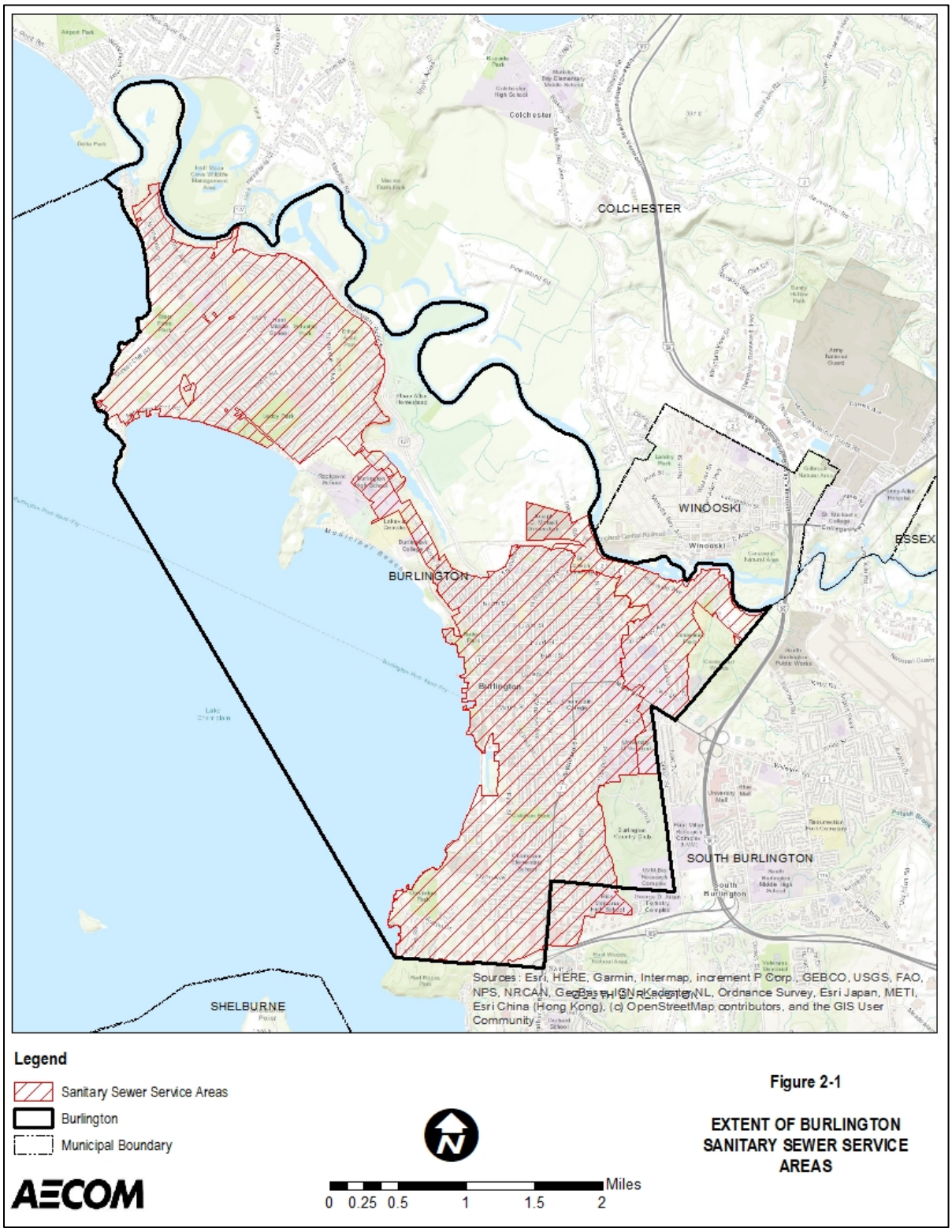


Figure 2-1. Burlington Sanitary Sewer Service Area

3.0 PHASE 1 EVALUATION – DEVELOP RESIDENTIAL INDICATOR

The Phase 1 Evaluation determines the Residential Indicator (RI), which is used to measure the financial impact of the current and future or proposed CWA compliance costs on residential users. 1997 EPA Guidance Worksheets 1 and 2 were used for this evaluation. The sources of information for the worksheets are described below, and the completed worksheets for each service area community are provided in Attachment A.

3.1 Current and Projected Annual Clean Water Act Program Costs

Current annual CWA program costs for Burlington are provided in Table 3-1. The costs reflect current wastewater management, CSO control, and stormwater management program costs as reported by the municipality.

Table 3-1. Current Clean Water Act Annual Program Costs

Municipality	Program	Cost[1]
Burlington	Wastewater Management and CSO Control	
	Annual O&M Expense (Excluding Depreciation)	$6,877,438
	Annual Debt Service (Principal and Interest)	$1,127,897
	Stormwater Management	
	Annual O&M Expense (Excluding Depreciation)	$549,750
	Annual Debt Service (Principal and Interest)	$0
	Annual Total	*$8,555,085*

[1] Information presented reflects FY2021 costs.

Projected annual CWA program costs reported by Burlington are provided in Table 3-2. The projected costs for Burlington reflect projects identified in the City's Water Resources Financial Planning Model for FY2021-2024 as well as estimated wastewater and stormwater costs from the City's Clean Water Mid-term CIP for FY2025-2035. The overall LTCP cost estimate of $11.15 million used for this FCA is comprised of the following estimated project costs:

- Combined Sewer System (CSS) Structural Best Management Practices (BMPs) – $3.9 million
- Pine Street CSO Storage Tank – $4.7 million
- Basement Surcharge Program-Backflow Preventor Retrofit Program – $1.8 million
- Re-metering Program – $0.75 million

Depending on the results of the metering and investigation work conducted by the City, conveyance pipe upsizing or distributed storage may be required with a cost of up to $13.4 million. If this cost is included, the total overall LTCP cost estimate could be up to $24.55 million. While the City believes additional investigation is needed before committing to this additional project and associated cost, its impact to the City's RI and FCA results is included in this Memorandum to help understand additional affordability considerations associated with this project should it be required in the future.

Annual operation and maintenance (O&M) costs associated with the proposed CSS Structural BMPs are estimated to be approximately $78,000. For estimating annual O&M costs associated with the

new proposed CSO storage tank, it was assumed there will be no additional staff required although a small amount of overtime might be accrued. Some of the additional O&M costs would be associated with the periodic maintenance of the new mechanical equipment, dewatering pumps, and tipping buckets, and general tank maintenance as well. Because of the additional annual capture of CSO discharge volume, there will be an incremental increase in both pumping and treatment costs. However, when compared to the annual flow that the City currently treats, this additional cost will be relatively small. Therefore, an O&M allowance of $45,000 was included. Annual O&M costs associated with the conveyance pipe upsizing and distributed storage are expected to be nominal, and no O&M costs are included in the FCA for this project.

Table 3-2. Projected Clean Water Act Annual Program Costs

Municipality	Program	Cost
Burlington	Wastewater Management	$68,769,580
	Stormwater Management	$15,725,000
	Estimated LTCP Costs	$11,150,000
	Total Cost Subtotal	*$95,644,580*
	Estimated Annual O&M Expenses	$10,464,909
	Annual Debt Service (Principal and Interest)	$5,167,411
	Total Annual Cost	*$15,632,320*

To arrive at the annual debt service value for Burlington associated with the projected CWA program costs identified above, it was assumed all projected program costs ($95,644,580) would be financed through the Vermont Clean Water State Revolving Fund (CWSRF). An average interest rate of 2.0% for CWSRF borrowing was assumed with a 20-year repayment period, resulting in a 0.0612 annualization factor (calculated using the annualization factor formula provided in the 1997 EPA Guidance).

Based on the information presented above, the total estimated current and projected annual CWA costs (inclusive of wastewater and stormwater) for the City of Burlington are $15,632,320.

3.2 Cost Per Household

The total number of households receiving wastewater service in Burlington and South Burlington is estimated to be 16,118. This is based on the 2014-2018 ACS 5-Year Estimates of occupied housing units (16,197), less the estimated number of households on septic (82 households) and households discharging wastewater to South Burlington (13 households), and including the approximate number of residential households in South Burlington that received wastewater service from Burlington (17 households). Using this information and wastewater program costs previously reported, the projected wastewater and CSO program cost per household (CPH) for Burlington is $882.02. In addition to this cost, a single family household in Burlington has a current annual stormwater fee of $79.20 that is projected to increase to $126 in the City's Water Resources Financial Planning Model by FY2039, resulting in a total annual projected CWA program CPH of $1,008.21 (see Table 3-3).

Table 3-3. Cost Per Household

Program	Residential Share of Total Annual CWA Costs	Number of Households	Cost Per Household
Wastewater and CSO	$14,216,375	16,118	$882.21
Stormwater	NA	NA	$126.00
		Total CPH	*$1,008.21*

3.3 Residential Indicator

The Residential Indicator (RI) represents CPH as a percentage of adjusted median household income (MHI). Table 3-5 shows EPA's RI criteria. When the RI is less than 1.0 percent, between 1.0 and 2.0 percent, or greater than 2.0 percent, the financial impact on residential users to implement the CWA program projects is assigned a rating of "Low", "Mid-Range", and "High", respectively.

Table 3-5. Residential Indicator Criteria

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

U.S. Census American Community Survey (ACS) data were used to determine the MHI for the City of Burlington, and the MHI value was escalated to current year (2020) dollars using the average U.S. Bureau of Labor Statistics Consumer Price Index (CPI) inflation rate for a Northeast City with a class size of B/C from the latest 5-year ACS year to the current year (U.S. Census Bureau, 2018; U.S. Bureau of Labor Statistics, 2019). Use of this EPA MHI escalation methodology results in an adjusted 2020 MHI value of $51,413.

Using the adjusted 2020 MHI value and the CPH value reported in Section 3.2 results in a RI value of 1.96%, which falls in the upper end of the "Mid-Range" financial impact category.

When accounting for the potential additional cost associated with the conveyance pipe upsizing or distributed storage, the RI value increases to 2.02%, which falls under the "High" financial impact category.

4.0 PHASE 2 EVALUATION – DEVELOP THE FINANCIAL CAPABILITY INDICATOR

The Phase 2 Evaluation uses six indicators from the following three categories to evaluate the financial capability of the service area communities, which will incur the debt for costs associated with implementation of the projected CWA program costs:

- Debt Indicators
- Socioeconomic Indicators
- Financial Management Indicators

Table 4-1 shows EPA's Financial Capability criteria used to evaluate the six Financial Capability Indicators (FCIs). A value of "3", "2", or "1" is assigned to an indicator whose assessed value falls in the "Strong", "Mid-Range", or "Weak" column, respectively. 1997 EPA Guidance Worksheets 3 through 9 were used for this evaluation. The results for the six FCIs for the service area are described below, and the completed worksheets are provided in Attachment A.

Table 4-1. Permittee Financial Capability Indicator Benchmarks

Indicator	Strong (3)	Mid-Range (2)	Weak (1)
Bond Rating	AAA-A (S&P) or Aaa-A (Moody's)	BBB (S&P) or Baa (Moody's)	BB-D (S&P) or Ba-C (Moody's)
Overall Net Debt as a Percent of Full Market Property Value	Below 2%	2% - 5%	Above 5%
Unemployment Rate	> 1% Below the National Average	± 1% of National Average	> 1% Above National Average
Median Household Income	> 25% Above Adjusted National MHI	± 25% of Adjusted National MHI	> 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%

4.1 Bond Rating

The most recent bond rating information and EPA benchmark score for Burlington is presented in Table 4-2.

Table 4-2. Bond Rating Summary

Bond	Bond Rating	Source	Benchmark Score
G.O. Bond	Aa3	Moody's; November 12, 2019	Strong / 3
Revenue Bond	A1	Moody's; August 28, 2019	Strong / 3
Summary Bond Rating	Aa3		Strong / 3

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

Overall net debt and full market property value information for Burlington, and the resulting overall net debt as a percent of full market property value, is presented in Table 4-3.

Table 4-3. Overall Net Debt as a Percent of Full Market Property Value (FMPV)

Overall Net Debt	Market Value of Property (FY 2019)	Overall Net Debt as % of FMPV	Benchmark Score
$119,656,787	$3,786,181,600	3.2%	Mid-Range / 2

4.3 Unemployment Rate

Unemployment rates for Burlington as well as the average national unemployment rate are presented in Table 4-4. This information is derived from Local Area Unemployment Statistics, not seasonally adjusted, for the Burlington-South Burlington Metropolitan NECTA and for the U.S.

Table 4-4. 2019 Annual Average Unemployment Rate

Location	Unemployment Rate (2019 Annual Value)	Compared to National Average	Benchmark Score
Burlington	1.9%	-1.8%	Strong / 3
National Average	3.7%	NA	NA

4.4 Median Household Income

MHI for Burlington as well as the national MHI are presented in Table 4-5. MHI values were obtained from the U.S. Census ACS, and the MHI values were escalated to current year (2020) dollars using the average U.S. Bureau of Labor Statistics CPI inflation rate for the a Northeast City, Class size B/C from the latest ACS year to the current year (U.S. Census Bureau, 2018; U.S. Bureau of Labor Statistics, 2019).

Table 4-5. Median Household Income

Location	MHI (2020 dollars)	Percent of National MHI	Benchmark Score
Burlington	$51,413	82.68%	Mid-Range / 2
National Average	$62,180	NA	NA

4.5 Property Tax Revenues as a Percent of Full Market Property Value

Full market property value and property tax revenue information for the service area, and the resulting property tax revenue as a percent of full market property value, is presented in Table 4-6.

Table 4-6. Property Tax Revenue as a Percent of Full Market Property Value (FMPV)

Property Tax Revenue (FY 2020)	Market Value of Property (FY 2020)	Property Tax Revenue as % of FMPV	Benchmark Score
$104,053,074	$3,786,181,600	2.75%	Strong / 3

4.6 Property Tax Collection Rate

Property tax revenue collected compared to property taxes levied for Burlington, and the resulting property tax revenue collection rate, is presented in Table 4-7.

Table 4-7. Property Tax Collection Rate

Property Tax Revenue Collected (FY 2020)	Property Taxes Levied (FY 2020)	Property Tax Collection Rate	Benchmark Score
$104,053,074	$104,952,969	99.14%	Strong / 3

4.7 Summary of Financial Capability Indicators

Per the 1997 EPA Guidance, the benchmark scores for the six FCIs discussed above are summed and then divided by the number of entries to arrive at an average score for the Phase 2 Evaluation. The resulting un-weighted average score for Burlington is presented in Table 4-8.

Table 4-8. Overall Score of Financial Capability

Average FCI Score	Benchmark
2.50	Mid-Range

5.0 SUMMARY OF THE PHASE 1 AND PHASE 2 INDICATORS

The results of the Phase 1 (Residential Indicator) and the Phase 2 (Permittee Financial Capability Indicators) evaluations are combined in the Financial Capability Matrix (see Table 5-1) to evaluate the level of financial burden the current and future CWA program costs may impose on the service area. Depending on the RI and FCI results, a “Low Burden”, “Medium Burden”, or “High Burden” score is assigned to characterize the financial burden on a permittee. These scores are used by EPA to aid in negotiations to establish implementation schedules for CSO controls. The Financial Capability Matrix Score for Burlington was determined through the use of the 1997 EPA Guidance Worksheet 10 (see Attachment A). The City of Burlington received a “Medium Burden” score based on a RI of 1.96% and a FCI score of 2.5, which indicates notable financial burden and affordability concerns.

When accounting for the potential additional cost associated with the conveyance pipe upsizing or distributed storage, the RI value increases to 2.02% and subsequently the City’s score changes to a “High Burden”, which indicates even greater financial burden and affordability concerns.

Table 5-1 Financial Capability Matrix

Permittee Financial Capability Indicators Score (Socioeconomic, Debt, and Financial Indicators)	Residential Indicator (Cost Per Household as a % of MHI)		
	Low Impact (Below 1.0%)	Mid-Range (Between 1.0 and 2.0%)	High Impact (Above 2.0%)
Weak (Below 1.5)	Medium Burden	High Burden	High Burden
Mid-Range (Between 1.5 and 2.5)	Low Burden	***Medium Burden***	High Burden
Strong (Above 2.5)	Low Burden	Low Burden	Medium Burden

6.0 ALTERNATIVE CONSIDERATIONS OF HOUSEHOLD AFFORDABILITY

There are a number of important considerations to highlight when evaluating the affordability implications of the costs associated with anticipated CWA compliance on households within the Burlington service area. The City of Burlington would experience a "Medium Burden" based on its Phase 1 and Phase 2 indicator scores presented above, with a RI of 1.96% and a FCI score of 2.50. Since the Burlington has a "Medium Burden" financial capability matrix score that is bordering on a "High Impact" designation based on a relatively high RI value, and since the City has a large number of low-income households that may experience adverse social and economic effects associated with future additional CWA charges, additional discussion of financial capability and affordability for the City of Burlington is warranted.

Burlington's citywide MHI is 17% lower than both the state and national MHI, which is an indicator of the financial and economic stress the City is experiencing. More importantly, Burlington's citywide MHI is not representative of the true financial condition of a large number of the City's households. This section provides more detail on the significant number of households with substantially lower household income than the citywide MHI, and the corresponding burden on those households to shoulder the costs of additional CWA program compliance.

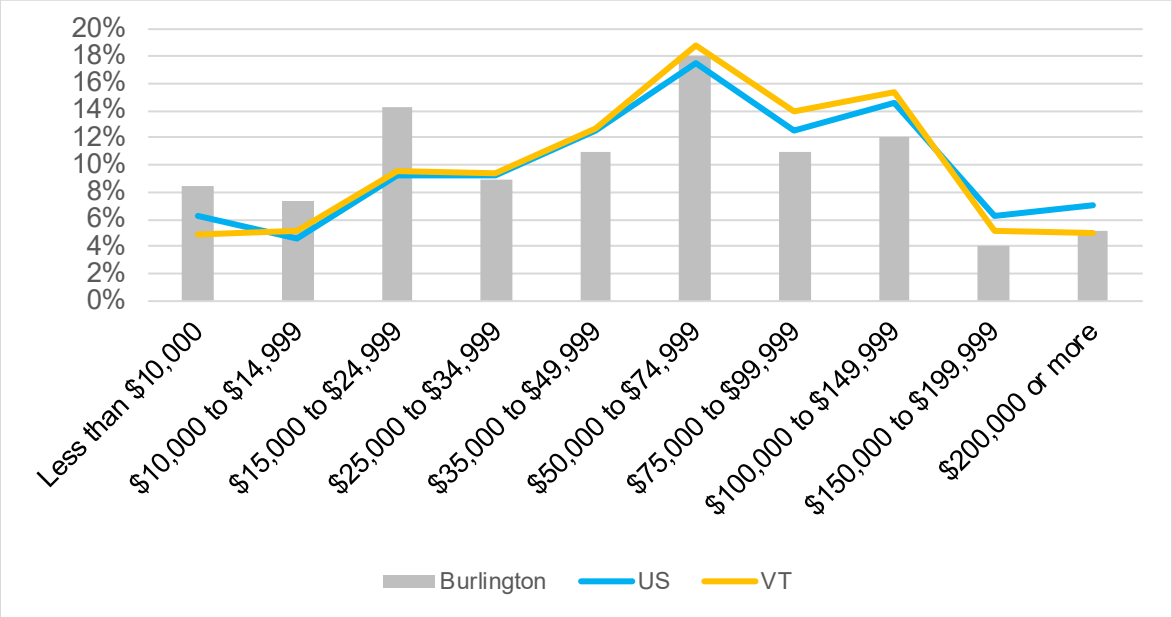
6.1 Household Income

As noted in Section 3.3, the MHI for Burlington is $51,413 (2020 inflation-adjusted dollars). While the median represents an annual household income value at which half the households fall above and half fall below, the distribution of income across households in Burlington reveals the disparate impact of additional CWA compliance costs. Figure 6-1 shows the number of households in each of ten income levels reported by the U.S. Census Bureau, compared to income distribution in the state and nationally across those same income levels. As shown in Figure 6-1, Burlington's income is clustered at the lower levels of income. Approximately 30% of households in Burlington have an income of less than $25,000, compared to approximately 20% in Vermont and the US. Conversely, while approximately 40% of households in the state and nation earn more than $75,000, only 32% of Burlington's households earn this income. Therefore, while the citywide MHI indicates the income level at which an equal number of households sit above or below, the reality is that a significant number of Burlington Households (30% percent) fall at annual income levels below $25,000.

As shown in Table 6-1, the RI for CWA program compliance (based on per household cost of $1,008 as reported in Section 3.2) for those households earning less than $25,000 is 4.2% or higher, and the RI for those households earning less than $10,000 is 10.1% or higher. This represents a significant burden on households across the lowest income categories, in other words, the City's most vulnerable population with respect to affordability issues and future increased CWA-related costs.

Another way to examine potential impacts to lower income population groups is to utilize household income quintile data. As shown in Table 6-2, the RI for CWA program compliance (again, based on per household cost of $1,008 as reported in Section 3.2) for households in the lowest and second household income quintiles is 5.6% and 2.7%, respectively. These data indicate the 2.0% benchmark for "high" financial impact is significantly exceeded for the 20% of the City's households that comprise the lowest quintile of household incomes, and this benchmark is exceeded for 40% of the City's households.

Figure 6-1 Household Income Distribution in Burlington, US, and Vermont.



Source: U.S. Census Bureau, 2018. 2014-2018 American Community Survey 5-Year Estimates Data

Table 6-1. Residential Indicator by Income Level

Income Level	Percentage of Total Households	RI[1]
Less than $10,000	8.4%	10.1%
$10,000 to $14,999	7.3%	6.7%
$15,000 to $19,999	7.3%	5.0%
$20,000 to $24,999	6.9%	4.2%
$25,000 to $29,999	4.1%	3.4%
$30,000 to $34,999	4.8%	2.9%
$35,000 to $39,999	4.1%	2.5%
$40,000 to $44,999	4.1%	2.2%
$45,000 to $49,999	2.7%	2.0%
$50,000 to $59,999	7.8%	1.7%
$60,000 to $74,999	10.3%	1.3%
$75,000 to $99,999	10.9%	1.0%
$100,000 to $124,999	7.2%	0.8%
$125,000 to $149,999	4.7%	0.7%
$150,000 to $199,999	4.1%	0.5%
$200,000	5.2%	0.5%

[1] RI is based on cost per household of $1,008 as reported in Section 3.2 and upper level of income range.

Table 6-2. Comparison of MHI RI to Household Income Quintiles

Income Level	2020 Dollars	RI[1]
Lowest Quintile Upper Limit	$18,143	5.6%
Second Quintile Upper Limit	$36,983	2.7%
Median Household Income	$51,413	1.96%

[1] RI is based on cost per household of $1,008 as reported in Section 3.2.
Source: 2014-2018 American Community Survey 5-Year Estimates Data, escalated to 2020 dollars using CPI data.

Other very important factors when analyzing MHI across the households in the City's service area are the difference in income between owners and renters, and the income status of the elderly. Both renter and elderly households are a subset of the households in the income categories noted above, but it is important to understand the particular financial condition of these sensitive population groups.

Property owners will often pass on additional utility or service costs to renters and, thus, renters are not typically in control of their housing costs, other than to potentially terminate a lease agreement and move to a lower cost unit within a community or to move outside a service area. The rental vacancy rate in the City of Burlington is just 2.0% according to recent U.S. Census data (ACS 2014-2018 5-yr estimates). This suggests that limited rental options are available in the City and renters are more likely forced to absorb increased rents rather than being able to find a lower cost option, or they may be forced to leave the City in search of lower cost rental options. These household movements

can cause deterioration in stability within a community and in the economic marketplace. Many of the elderly live on fixed incomes and cannot rely on additional sources of income to pay for increased CWA program costs. Thus, both renter and elderly households need special consideration when considering rate impacts for CWA program implementation. As shown in Table 6-3, renters comprise over 62% of households in the City of Burlington, and the income level with the highest percentage of renters (33.9%) is an annual income below $20,000. This compares to only 5.2% of all owner-occupied households having annual incomes below $20,000. The RI for households with incomes less than $20,000 is 5.0% or higher, and because there is such a large number of these households in the City of Burlington, an impact would be felt across the City.

Table 6-3. Income Distribution by Owner Type

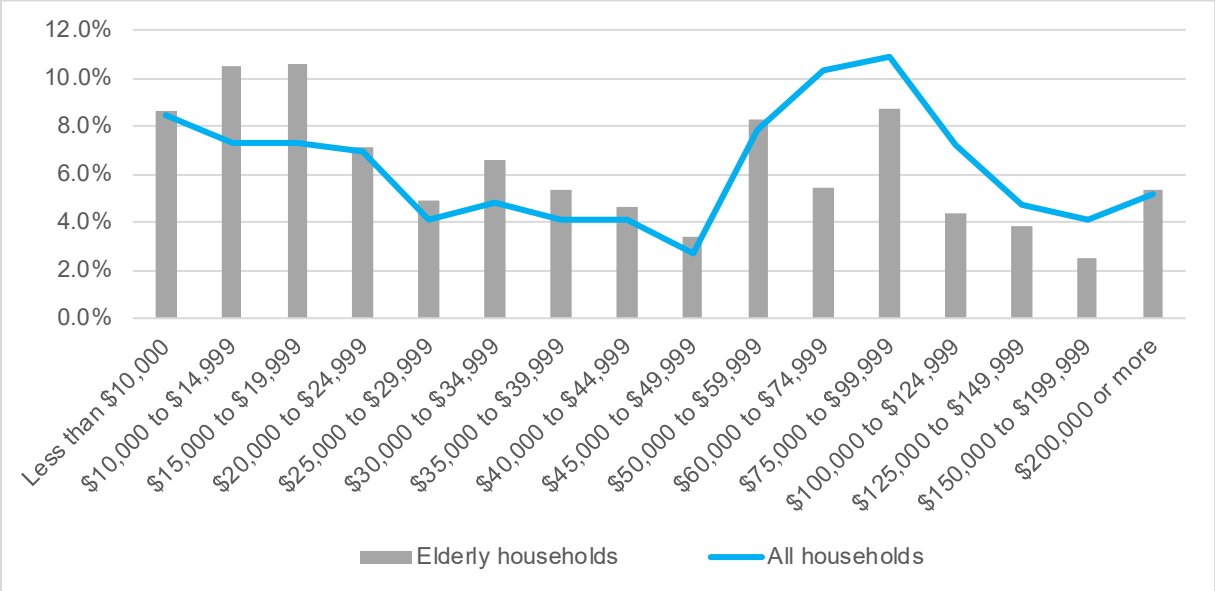
Tenure	Total Households	Less than $20,000	$20,000 to $34,999	$35,000 to $49,999	$50,000 to $74,999	$75,000 to $99,999	$100,000 or more
Owner	6,121	316	579	606	997	968	2,655
Renter	10,076	3,411	1,989	1,161	1,942	794	779

Tenure	Percentage of Total Households	Less than $20,000	$20,000 to $34,999	$35,000 to $49,999	$50,000 to $74,999	$75,000 to $99,999	$100,000 or more
Owner	37.8%	5.2%	9.5%	9.9%	16.3%	15.8%	43.4%
Renter	62.2%	33.9%	19.7%	11.5%	19.3%	7.9%	7.7%

Source: 2014-2018 American Community Survey 5-Year Estimates Data

As can be seen in Figure 6-2, a large share of elderly households (42%) have annual incomes below $30,000. The greatest number of elderly households in the City have an annual income between $15,000 and $19,999. The RI for the elderly population with annual income below $20,000 is 5.0% or higher. As noted above, many of the elderly live on fixed incomes and do not have alternate means to pay for additional costs associated with CWA compliance. Individuals ages 65 and older comprise 13.2% of the City's renter population (ACS 2014-2018 5-yr estimates).

Figure 6-2. Income Distribution, Households with Householders 65 years and older, Burlington, Vermont



Source: American Community Survey 2014-2018 5-Year Estimates Data.

6.2 Housing Burden as an indicator of Financial Capability and Affordability

The conventional public policy indicator of housing affordability in the United States is the percent of income spent on housing. Housing expenditures that exceed 30% of household income have historically been viewed as an indicator of a housing affordability problem (U.S. Census Bureau, Undated). The conventional 30% of household income that a household can devote to housing costs before the household is said to be "burdened" and evolved from the United States National Housing Act of 1937. In some cases, there is a further split of the housing-cost burden into moderate housing-cost burden (30.0% to 49.9% of income spent on housing costs) and severe housing-cost burden (50% or more of income spent on housing costs).

Table 6-4 shows the housing burden of owner- and renter-occupied households in the City of Burlington by income level. Almost 59% of all renter-occupied households in Burlington have a housing burden of greater than 30% compared to about 28% for owner-occupied households.

Table 6-4. Percent of Households with Greater than 30% Housing Burden

Income Level	Owner-occupied	Renter-occupied
Less than $20,000	93.0%	86.7%
$20,000 to $34,999	86.4%	81.8%
$35,000 to $49,999	39.8%	62.2%
$50,000 to $74,999	35.2%	30.5%
$75,000 or more	9.1%	6.5%

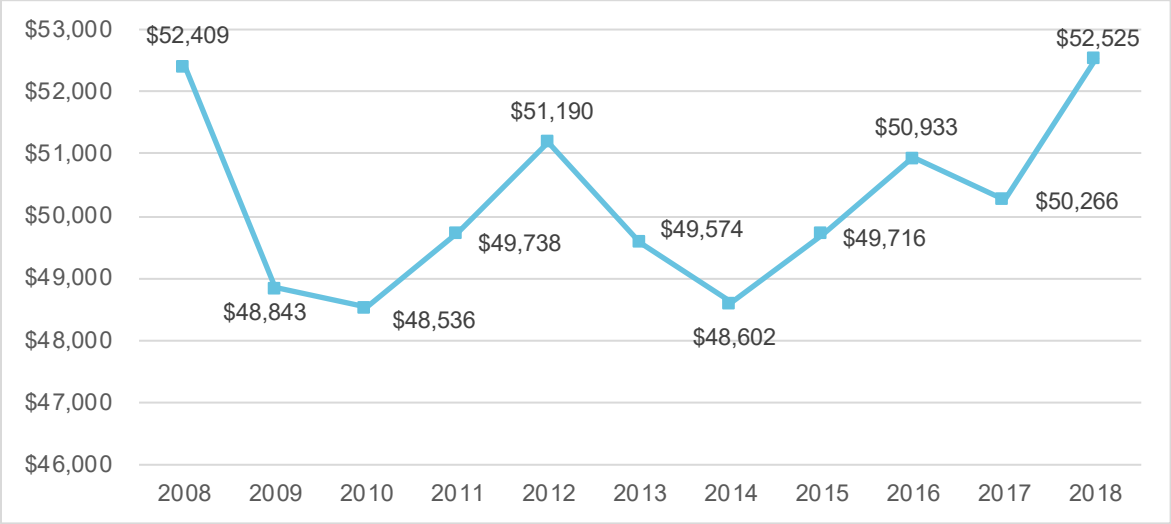
Source: American Community Survey 2014-2018 5-Year Estimates Data.

One of the elements of housing cost that goes into the calculation of housing burden is cost of electricity and heating fuel. Vermont heating fuel prices last peaked in 2014 and trended downward though 2016. Residential heating oil prices increased by approximately $1/gallon (55%) from 2016 through 2020 (EIA, 2020a). Almost six out of every ten households in Vermont heat with petroleum; two out of ten rely on natural gas, and almost one in seven burn wood for heat (EIA, 2020b). Vermont ranks 7th in the nation for average retail price of electricity to the residential sector and 22nd in the nation for residential natural gas prices (EIA, 2019). Also, New England ranks at the top in terms of high electricity prices compared to other regions of the contiguous US according to data issued by the U.S. Energy Information Agency (EIA, 2020c). There are two energy assistance programs and a fuel assistance program in Vermont. Green Mountain Power offers and energy assistance program to help lower-income customers with a gross monthly household income at or below 150% of the federal poverty level. Vermont Gas Energy Assistance provides a 20% discount off monthly natural gas bills to customers who have a monthly household income at or below 185% of the federal poverty level (DCF, 2020a). Households that earn equal to or less than 185% of the federal poverty level are eligible for fuel assistance to help heat homes. However, all residents do not receive relief through this program, and these increasing and higher than average home utility costs put additional burden on households that will also need to pay for the CWA compliance costs.

6.3 MHI Trend

There is concern that income levels among households in the City will continue to lag behind households elsewhere in the region and in the state. As shown in Figure 6-3, there has been little change in MHI in the City of Burlington since 2008, when adjusting for inflation. Between 2009 and 2018, the City's MHI increased by just 0.22% (adjusted for inflation to 2020). With the increasing burden on households due to escalating utility and service costs, there is reason to believe that many households would face significant challenges and financial hardship assuming the additional burden of CWA program compliance unless these programs are implemented with care to control both the timing and amount of rate increases.

Figure 6-3. Burlington Median Household Income Trend



Source: U.S. Census Bureau, 2009-2018 Median Household Data (adjusted for inflation to 2020 dollars).

7.0 SUPPLEMENTAL INFORMATION

The 1997 EPA Guidance and subsequent EPA guidance for preparing Financial Capability and Affordability Assessments encourages communities to provide supplemental information to document a community's unique or challenging economic circumstances. This section summarizes some of the additional information related to the economic and financial condition of the City of Burlington.

7.1 Water Service Costs

In addition to the costs associated with CWA compliance programs, City of Burlington households are also responsible for payment of water service costs to the City of Burlington. The current average annual cost for homeowners is $317 for water service. When added to the cost per household for CWA compliance, the cost per household would rise from $1,008 to $1,325. When this cost is compared to the income of many households in the lower income ranges, particularly elderly and renter households, the RI for these lower income ranges would increase substantially.

7.2 Other Socioeconomic Indicators

A number of other economic and social indicators reflect the stresses that the City is facing and are described below:

- Approximately 25% of the City's population falls below the poverty level, compared to 11.0% for the State of Vermont and 13.1% for the United States (2014-2018 American Community Survey 5-Year Estimates).
- Of the households in the City below the poverty level, 93% are renter households (2014-2018 American Community Survey 5-Year Estimates).
- Approximately 16% of households in the City receive some form of public assistance or food stamps/SNAP (2014-2018 American Community Survey 5-Year Estimates).

7.3 COVID-19 Considerations

In light of the COVID-19 pandemic and associated declarations of state and national emergencies (referred to hereinafter as "COVID-19"), the timing for LTCP schedules and initiation of the projected schedule may ultimately be impacted.

On March 13, 2020, Vermont Governor Philip Scott declared a State of Emergency in Vermont through Executive Order No. 01-20. On March 13, 2020, the Federal government declared a nationwide emergency pursuant to Sec. 501(b) of the Robert T. Stafford Disaster Relief and Emergency Assistance Act, 42 U.S.C. 5121-5207, Release number HG-20-017.

COVID-19 has disrupted travel, commerce, and financial markets globally, resulting in a worldwide economic recession adversely affecting almost all the world's major economies. While the long-term impact on the State and City of Burlington cannot be predicted, the initial economic and financial impacts have been substantial.

Personal incomes and tax receipts have been correspondingly lower, due to job losses, wage reductions, and the loss of available work hours. The City's already difficult housing conditions are under greater stress, as the non-payment of rent and mortgages grows. The reduction in cashflow for both residential and commercial renters has placed some landlords under financial pressure, contributing to additional non-payment of taxes and utility bills.

On April 14, 2020, the American Water Works Association (AWWA) and Association of Metropolitan Water Agencies published a report on the impacts of COVID-19 on water utilities, "The Financial Impact of the COVID-19 Crisis on U.S. Drinking Water Utilities." The implications cited in this report include potential increase in customer delinquencies, reduction in demand and corresponding reductions in revenue, delayed and reduced capital expenditures, increases in personnel expenses, and deferral of water rate increases. The AWWA report further states that on average, utilities across the country are experiencing decreases in non-Residential demand and increases in residential demand.

Due to COVID-19 and the uncertainty posed by this ongoing pandemic, the City re-evaluated its budgets and schedules for its spending portfolio. The FY21 budget was initially projected to include a shortfall of more than $10 million, representing a 16% revenue loss. However, the City has succeeded in lowering that shortfall to $8.2 million based on updated tax receipts, grants, and other adjustments. In response to the pandemic, the FY21 budget does not implement the new taxes that voters approved in March 2020 or increase water or electric rates (Weinberger, 2020) The FY21 Public Works budget is 8% less than it was in 2020 (City of Burlington, General Fund, 2020).

The COVID-19 crisis dramatically underlines the urgency for sound investment planning to maximize environmental and community benefits and minimize affordability concerns. Depending on the magnitude and duration of these COVID-19-related economic impacts, the City could be compelled to implement a more holistic adaptive asset management approach to implementing its LTCP such that expenditures are financially sustainable and balanced with operational needs and maintaining existing infrastructure.

8.0 EXPANDED FCA MATRIX

EPA issued 2021 Financial Capability Guidance (2021 FCA Guidance) that incorporates aspects of the 1997 CSO Guidance for Financial Capability Assessment and Schedule Development and the 2014 Financial Capability Assessment Framework for Municipal Clean Water Act Requirements and is intended to provide options and flexibilities to communities to meet CWA obligations. At the time this Memorandum was prepared, the 2021 FCA Guidance was pending publication in the Federal Register. The 2021 FCA Guidance includes two alternative approaches for assessing a community's financial capability to implement CWA control measures:

1) The existing 1997 FCA methodology with expanded consideration of costs, poverty, and impacts on the population in the service area with incomes in the lowest quintile; and

2) Development of a dynamic financial and rate model that looks at the impacts of rate increases over time on utility customers, including those with incomes in the lowest quintile.

Alternative 1 was applied in Burlington to evaluate the impact of including two new critical metrics: the Lowest Quintile Residential Indicator (LQRI) and the Poverty Indicator (PI), in addition to the previously assessed Residential Indicator (RI) and Financial Capability Indicator (FCI) that were determined following the 1997 EPA Guidance as described in this memo. The following tables display the results of this analysis.

As shown in Table 8-1, when the lowest quintile household costs are factored in, the LQRI easily exceeds the "High Impact" rating with a value of 4.0%. This approach incorporates the general trend of water use being correlated with household size and therefore sewerage service billed (EPA, 2021). Nationally, lowest quintile households are smaller than middle or higher quintile households due to the disproportional number of single person households with a single income. In the U.S., the middle quintile household averaged 2.52 persons, while the lowest averaged 1.77 persons, or 70.2% of the median sized household. This ratio is applied to the Cost Per Household RI calculation to estimate cost per lowest quintile household.

Table 8-1. Calculation of Lowest Quintile Residential Indicator

Ratio of Lowest Quintile HH Size to Median HH Size[1]	70.2%
Cost for Median Household	$1,008
Cost for Lowest Quintile Household	$708
Upper Limit of Lowest Income Quintile for Service Area[3]	$17,759
Cost as a Percentage of Low-Income Household	4.0%
LQRI Impact Rating	***High Impact***
Lowest Quintile Residential Indicator Benchmark	
Low Impact	*Less than 1.0%*
Mid-Range Impact	*1.0% - 2.0%*
High Impact	*Above 2.0%*

[1] 2018 value for United States based on U.S. Census Bureau Current Population Survey data
[2] Based on cost per household, as reported in Section 3.2
[3] American Community Survey 2014-2018 5-Year Estimates Data

The expanded FCA matrix also includes calculation of a Poverty Indicator (PI) score that brackets the middle 50% (+/- 25%) of national values to identify outliers. As shown in Table 8-2, the PI score for Burlington indicates a "High Impact".

Table 8-2. Calculation of the Poverty Indicator Score

Indicator	Strong (3)	Mid-Range (2)	Weak (1)	Rating
PI #1: Percentage of Population with Income Below 200% of Federal Poverty Level	More than 25% below National value	(+/-) 25% of National value	More than 25% above National value	1
PI #2: Percentage of Population with Income Below Federal Poverty Level	More than 25% below National value	(+/-) 25% of National value	More than 25% above National value	1
PI #3: Upper limit of Lowest Income Quintile	More than 25% above National value	(+/-) 25% of National value	More than 25% below National value	1
PI #4: Lowest Quintile Income as a Percentage of Aggregate Income	More than 25% below National value	(+/-) 25% of National value	More than 25% above National value	2
PI #5: Percentage of Population Receiving Food Stamps/SNAP Benefits	More than 25% below National value	(+/-) 25% of National value	More than 25% above National value	1
			Sum of ratings	6
			Poverty Indicatory Score	1.2
			Poverty Indicator Benchmarks	***High Impact***
			Low Impact (Above 2.5)	
			Mid-Range Impact (2.5-1.5)	
			High Impact (Below 1.5)	

Source: American Community Survey 2014-2018 5-Year Estimates Data.

The financial capability matrix presented earlier in Table 5-1 is included for reference below in Table 8-3. This matrix is combined with the LQRI and PI results displayed in Table 8-4 in the Expanded Financial Capability Matrix (Table 8-5). The results indicate a "High Burden". Based on this, according to the 2021 FCA Guidance, an implementation schedule of up to 25 years could be considered (Table 8-6).

Table 8-3. Financial Capability Matrix

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

Table 8-4 Lowest Quintile Burden Matrix

Poverty Indicator (PI)	Lowest Quintile Residential Indicator (LQRI)		
	Low Impact (Below 1.0%)	**Mid-Range Impact (1.0% - 2.0%)**	**High Impact (Above 2.0%)**
Strong (Above 2.5)	Low Burden	Low Burden	Medium Burden
Mid-Range (1.5-2.5)	Low Burden	Medium Burden	High Burden
Weak (Below 1.5)	Medium Burden	High Burden	***High Burden***

Table 8-5. Expanded Financial Capability Matrix

FCA Burden (RI & FCI)	LQ Burden (LQRI and PI)		
	Low Burden	**Medium Burden**	**High Burden**
Low Burden	Low Burden	Low Burden	Medium Burden
Medium Burden	Low Burden	Medium Burden	***High Burden***
High Burden	Medium Burden	High Burden	High Burden

Table 8-6. FCA Implementation Schedule Benchmarks for Expanded FCA Alternative 1

Expanded FCA Matrix Results	Recommended Implementation Schedule
Low Burden	Normal Engineering/Construction Schedule
Medium Burden	Up to 15 years
High Burden	***Up to 25 years (absent consideration of additional information)***

9.0 CONCLUSION

The evaluation of financial capability and affordability indicators for the Burlington service area demonstrates that the City of Burlington would experience a “Medium Burden” as a result of additional CWA costs per the 1997 EPA Guidance, which indicates notable financial burden concerns. When accounting for the potential additional cost associated with the conveyance pipe upsizing or distributed storage, the RI value increases to 2.02% and subsequently the City’s score changes to a “High Burden”, which indicates even greater financial burden concerns.

As stated in EPA’s 2014 Financial Capability Assessment Framework, financial capability is considered on a continuum, and additional information provided may affect the length of the proposed implementation schedule regardless of where the community is on the “high, medium, and low” continuum (EPA, 2014). While the RI for the City of Burlington is in the upper end of the Medium Burden category (1.96%) when considering citywide MHI, the RI for the upper limit of the City’s lowest household income quintile (5.6%) far exceeds the 2.0% benchmark for “High” financial impact. This quintile includes many of the vulnerable renter and elderly households in the City. Furthermore, the RI of 2.7% for the upper limit of the City’s second household income quintile indicates that the 2.0% benchmark for “High” financial impact is exceeded for at least 40% of the City’s households. In addition, when applying Alternative 1 from EPA’s 2021 FCA Guidance, a “High Burden” designation is achieved for the City of Burlington. These results clearly indicate that close examination of future CWA compliance programs and costs, and their resulting impacts upon rate payers, is necessary.

For City of Burlington households already experiencing a high financial burden, additional CWA program costs will add to their existing financial stress; such households already face difficult decisions about how to allocate their limited funds between basic needs. Financial stress on lower income households inevitably ripples through the local economy, as the fixed cost of providing basic services and utilities is shifted to other groups that, in turn, have less discretionary income and will reduce spending in areas that help to maintain or stimulate the economy.

Therefore, care will need to be taken to evaluate all the City's CWA requirements and to prioritize project implementation in a manner that results in achieving the greatest water quality benefit while still considering affordability.

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11.0 ATTACHMENTS

Completed EPA financial capability assessment worksheets from the 1997 EPA Guidance are included in Attachment A for the City of Burlington.

AECOM

Attachment A

1997 EPA Guidance Financial Capability Assessment Worksheets

Financial Capability Assessment Worksheet 1, Cost Per Household (1997 EPA Guidance)

Line Number	Item	Unit	Value
	Current Wastewater Management and CSO Costs (FY 2021)		
100	Annual O&M Expenses (Excluding Depreciation)	($)	$6,877,438
101	Annual Debt Service (Principal and Interest)	($)	$1,127,897
102	Subtotal	($)	$8,005,335
	Projected Wastewater Management and CSO Costs (2020 Dollars)		
103	Estimated Annual O&M Expenses (Excluding Depreciation)	($)	$9,125,131
104	Annual Debt Service (Principal and Interest)	($)	$4,887,619
105	Subtotal	($)	$14,012,750
106	Total Current and Projected Wastewater Management and CSO Costs	($)	$22,018,085
	Residential Share of Total Wastewater Management and CSO Costs (FY20 data)		
	Residential Flow	(CF)	77,811,197
	Total Flow	(CF)	120,512,689
	Residential Portion	(%)	64.57%
107	Cost Allocation	($)	$14,216,375
108	Total Number of Households in Service Area (2018 Census Data less households discharging wastewater to South Burlington and those on septic, and plus households served in South Burlington)	(EDUs)	16,118
109	Wastewater Management and CSO Cost Per Household	($)	$882.02
	Additional Current Stormwater Cost Per Household (FY 2020)		
	Annual Stormwater Fee for Single Family	($)	$79
	Additional Projected Stormwater Costs		
	Projected Increase in Annual Stormwater Fee for Single Family	($)	$47
	Additional Total Current and Projected Stormwater Costs	($)	$126
	Total Cost Per Household	($)	$1,008

Financial Capability Assessment Worksheet 2, Residential Indicator (1997 EPA Guidance)

Line Number	Item	Unit	Value
	Median Household Income (MHI)		
201	Census Year MHI (2018 ACS 5-year estimates)	($)	$50,324
202	MHI Adjustment Factor		1.0216
203	Adjusted MHI (2020 inflation-adjusted dollars)	($)	$51,413
204	Annual Cost Per Household (line 109)	($)	$1,008
	Residential Indicator		
205	CPH as a percentage of adjusted MHI	(%)	1.96%

Financial Capability Assessment Worksheet 3, Bond Rating (1997 EPA Guidance)

Line Number	Item	Unit	Value
	Most Recent General Obligation Bond Rating		
	Date		November 12, 2019
	Rating Agency		Moody's
301	Rating		Aa3
	Most Recent Revenue Bond		
	Date		August 28, 2019
	Rating Agency		Moody's
	Bond Insurance		
302	Rating		A1
303	Summary Bond Rating		Aa3

Financial Capability Assessment Worksheet 4, Overall Net Debt as a Percent of Full Market Property Value (1997 EPA Guidance)

Line Number	Item	Unit	Value
401	Direct Net Debt (G.O. Bonds Excluding Double-Barreled Bonds) (FY 2019)	($)	$ 80,397,505
402	Debt of Overlapping Entities (Proportionate Share of Multi-jurisdictional Debt) (FY 2019)	($)	$39,259,282
403	Overall Net Debt (FY 2019)	($)	$ 119,656,787
404	Market Value of Property (FY 2019)	($)	$3,786,181,600.0
405	Overall Net Debt as a Percent of Full Market Property Value	(%)	3.2%

Financial Capability Assessment Worksheet 5, Unemployment Rate (1997 EPA Guidance)

Line Number	Item	Unit	Value
501	Unemployment Rate - Permittee	(%)	1.9%
	Source: Local Area Unemployment Statistics, Annual rate (2019), not seasonally adjusted. Burlington-South Burlington, VT Metropolitan NECTA		
502	Unemployment Rate - County		N/A
	Benchmark		
503	Average National Unemployment Rate	(%)	3.7%
	Source: Local Area Unemployment Statistics, Annual rate (2019), not seasonally adjusted. United States.		
	Comparison of Permittee with Benchmark	(%)	-1.8%

Financial Capability Assessment Worksheet 6, Median Household Income (1997 EPA Guidance)

Line Number	Item	Unit	Value
601	MHI - Permittee (line 203)	($)	$51,413
	Source: U.S. Census 2014-2018 American Community Survey 5-Year Estimates		
	Benchmark		
602	Census Year National MHI	($)	$60,293
603	MHI Adjustment Factor (line 202)		1.0313
604	Adjusted National MHI	($)	$62,180
	Source: U.S. Census 2014-2018 American Community Survey 5-Year Estimates		
	Comparison of Permittee with Benchmark	(%)	82.68%

Financial Capability Assessment Worksheet 7, Property Tax Revenues as a Percent of Full Market Property Value (1997 EPA Guidance)

Line Number	Item	Unit	Value
701	Full Market Value of Real Property (FY 2020)	($)	$3,786,181,600
702	Property Tax Revenues (FY 2020)	($)	$104,053,074
703	Property Tax Revenues as a Percent of Full Market Property Value	(%)	2.75%

Financial Capability Assessment Worksheet 8, Property Tax Revenue Collection Rate
(1997 EPA Guidance)

Line Number	Item	Unit	Value
801	Property Tax Revenue Collected (line 702) (FY 2020)	($)	$104,053,074
802	Property Taxes Levied (FY 2020)	($)	$104,952,969
803	Property Tax Revenue Collection Rate	(%)	99.14%

Financial Capability Assessment Worksheet 9, Summary of Permittee Financial Capability Indicators
(1997 EPA Guidance)

Line Number	Item	Value	Score
901	Bond Rating (line 303)	Aa3	3
902	Overall Net Debt as a Percent of Full Market Property Value (line 405)	3.16%	2
903	Unemployment Rate Compared with National Average (from Worksheet 5)	-1.80%	3
904	Median Household Income Compared with National Average (from Worksheet 6)	82.68%	2
905	Property Tax Revenues as a Percent of Full Market Property Value (line 703)	2.75%	2
906	Property Tax Revenue Collection Rate (line 803)	99.14%	3
907	Permittee Indicators Score		2.50

Financial Capability Assessment Worksheet 10, Financial Capability Matrix Score
(1997 EPA Guidance)

Line Number	Item	Value
1001	Residential Indicator Score (line 205)	1.96%
1002	Permittee Financial Capability Indicators Score (line 907)	2.50
1003	Financial Capability Matrix Category	Medium Burden