

Appendix I

Final Financial Capability Assessment for North Bergen MUA –
Woodcliff Service Area



Memorandum

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1.0 Executive Summary

This Financial Capability Analysis (FCA) memorandum is in support of the Municipal Control Alternative identified in the Selection and Implementation of Alternatives (SIAR) developed by the North Bergen Township. It quantifies the projected affordability impacts of North Bergen’s proposed long term CSO controls for the North Bergen combined sewer system (CSS) and updates the 2019 preliminary FCA memo that was intended to guide the development and selection of long term controls. This memorandum jointly addresses the portions of North Bergen Township conveying wastewater to PVSC and to the Woodcliff Sewage Treatment Plant.

This analysis is premised on three assumptions:

- The North Bergen MUA has and will continue to have the same rate structure for the portion of the Township sending wastewater to PVCS as those utilizing NBMUA’s Woodcliff Wastewater Treatment Plant; and
- The primary CSO controls for the portion of North Bergen in the Woodcliff STP service area is the expansion of the plant’s capacity. This work is in progress.

As summarized in Table E-1, this FCA includes the projected impacts if the CSO controls are undertaken by North Bergen alone (Municipal Control Alternative).

While a regional alternative would result in lowered overall costs for the control of CSOs within the PVSC service area, the basis of this allocation remains under discussion as of the writing of

Baseline: Typical Household 2019	
Annual Wastewater Costs	\$557
Residential Indicator (RI)*	0.9%
Median Household Income (MHI)	\$59,600
LTCP Control Options	
Capital Costs in million current \$	\$35.0
First Year After Fully Implemented	2041
LTCP Impact on Typical Household Cost in:	2041
Projected Median Household Income	\$92,300
Annual Costs Without the LTCP	\$1,231
Annual Costs With the LTCP	\$1,280
Residential Indicator	
1.3%	1.3%
1.4%	1.4%

this memorandum. Under this approach, both the costs of the regional facilities such as a relief interceptor and the resultant savings would be allocated amongst the PVSC municipalities with combined sewer systems. As the basis of this allocation remains under discussion as of the writing of this SIAR, this FCA memorandum focuses on implementation of the Municipal Control Alternative. Should the permittees come to agreement on the cost allocation for the Regional Control Plan, the FCA will be revisited to reassess the affordability and schedule for implementation of the LTCP.

The Financial Capability assessment is a two-step process including *Affordability* which evaluates the impact of the CSO control program on the residential ratepayers and *Financial Capability* which examines a permittee's ability to finance the program. Affordability is measured in terms of the Residential Indicator (RI) which is the percentage of median household income spent on wastewater services. Total wastewater services exceeding 2.0% of the median household income are considered to impose a high burden by USEPA. The financial capability analysis uses metrics similar to the municipal bond rating agencies.

The 2019 preliminary FCA determined that future capital expenditures for CSO controls and all other capital expenditures of approximately \$110 million (current dollars) over a twenty-year period (2022 through 2041) would result in a RI exceeding 2.0% using a dynamic (time sensitive) model which accounts for future inflation.

North Bergen's SIAR projects future capital costs for the Municipal Control Alternative totaling \$35 million (current dollars) through 2040 and incremental annual O&M costs of \$200,000. The Woodcliff STP plant is being upgraded to a total capacity of 10 million gallons per day (MGD) which will provide for CSO control requirements within the Woodcliff STP service area. The cost of the upgrade is approximately \$20 million. As noted above, the plant expansion work is ongoing and the capital financing required has been incorporated into NBMUA's budget and rate structure.

It is projected that the \$35 million in future capital expenditure for the Municipal Control Alternative would result in a projected residential indicator in 2041, the first year after full implementation of the controls of 1.4%. This would constitute a medium burden under the USEPA analytical guidelines.

The second step of the financial capability analysis documents that North Bergen's current financial capability strength is "mid-range". These two metrics combine on EPA's Financial Capability Matrix to indicate a medium burden under the USEPA guidance when the \$35 million in capital expenditures proposed under North Bergen's Municipal Control Alternative.

This memorandum is based on information provided by North Bergen, PVSC and external sources such as the on-line fiscal reports available through the New Jersey Department of Community Affairs.¹

The projections and conclusions concerning the affordability of the Municipal Control Alternative proposed in this SIAR by the North Bergen Township and North Bergen's financial capability to finance the CSO control program are premised on the baseline financial conditions

¹ https://www.nj.gov/dca/divisions/dlgs/resources/fiscal_rpts.shtml

of North Bergen as well as the economic conditions in New Jersey and the United States generally at the time that work on this SIAR commenced. While the impacts of the pandemic on the long-term affordability of the CSO LTCP are obviously still unknown, it is reasonable to expect that there will be potentially significant impacts. There are several dimensions to these potential impacts, including reduced utility revenues and household incomes.

2.0 Introduction

2.1 Intent of the Financial Capability Analysis

This document presents the final Financial Capability Analysis (FCA) relating to the development of the CSO Long Term Control Plan (LTCP) required under Paragraph G(8)(a) of the Combined Sewer Management section of a permittee's NJPDES discharge permit. The assessment is based upon the EPA document "Combined Sewer Overflows – Guidance for Financial Capability Assessment and Schedule Development," (EPA Guidance Document) published February 1997², as supplemented by EPA's November 2014 memorandum entitled "Financial Capability Assessment Framework for Municipal Clean Water Act Requirements".³ A preliminary FCA memorandum was provided by PVSC to North Bergen and the other combined sewer permittees within its service area in August of 2019, with a subsequent update in December of 2019.

This final FCA and last year's preliminary versions support the twofold purposes of the FCA as envisioned in the 1994 CSO Control Policy⁴ (Policy). First, the FCA is intended to identify the upper limits of what could constitute an affordable future investment strategy as defined by the Policy and related guidance documents under an assumed LTCP implementation schedule; thereby informing the development of CSO, SSO, MS4, TMDL, and other necessary control alternatives. Second, the financial and user cost (affordability) impacts of the selected CSO controls must be assessed to support the development of a workable implementation schedule for the LTCP.⁵

2.2 EPA's Two Step Analysis Process

The Financial Capability assessment is a two phased process. The residential indicator (RI) is the percentage of median household income (MHI) expended on wastewater (including stormwater) management. The upper limit of affordability for wastewater services within the North Bergen will be the point where total wastewater management costs for the typical residential user in North Bergen exceed 2.0% of the Median Household Income (MHI). This

² EPA 832-B-97-004

³ November 24, 2014 memorandum from Ken Kopocis, Deputy Assistant Administrator, Office of Water (OW) and Cynthia Giles, Assistant Administrator, Office of Enforcement and Compliance (OECA) to Regional Administrators

⁴ Combined Sewer Overflow Policy Section II-C(8) 59 FR 18694

⁵ "Schedules for implementation of the long-term CSO control plan may be phased based on the relative importance of adverse impacts upon water quality standards and designated uses, and on a permittee's financial capability." (59 FR 18688)

metric of total wastewater management costs as a percentage of MHI is termed the Residential Indicator (RI) by USEPA.

The financial capability indicator is an assessment of the permittee's debt burden, socioeconomic conditions, and financial operations. These two measures are subsequently entered into a *financial capability matrix*, suggested by EPA, to determine the level of financial burden placed on residential customers and the permittee by the existing and projected future expenditures to operate, maintain, and enhance the wastewater management system. The EPA matrix appears in Table 5.1 of this document.

The projected future expenditures driving the RI and imposing demands upon the financial capability of North Bergen will include the implementation of CSO controls, stormwater controls, conveyance / collection system rehabilitation, in addition to the current debt service and other operational, maintenance, and planned capital improvements to the North Bergen sewer system that have been identified and provided by North Bergen Township and the North Bergen MUA for inclusion into this analysis.

2.3 Limitations to the EPA Analytical Framework

EPA's 1997 financial capability guidance calls for the use of a simplistic "snap shot" model which assumes that all future expenditures are incurred simultaneously and that costs and incomes should be based on current dollars. This approach has the advantage of eliminating the need to estimate future rates of inflation and income growth. However, this approach can understate the affordability impact of long-term programs since income growth has not kept pace with and is not projected to keep pace with water utility capital and O&M cost inflation. For example, for the period of 1999 through 2013, the national costs for typical household wastewater services increased at a rate of 4.8%.⁶ The national Consumer Price Index increased at an annual rate of around 2.4%⁷ for the period while the US median household income increased from around \$42,000 to \$52,250 at an annual rate of 1.6%.⁸

An affordability analysis that does not account for the continuing divergence between wastewater utility costs and income growth over course of a long term implementation schedule will overstate the "affordability" of the LTCP as future costs are recovered from the residential and other system users. Conversely, including current permittee expenditures or debt service payments which would end before the costs from the CSO controls are paid can understate future affordability.

EPA's November 24, 2014 memorandum encourages the use of a time-based ("dynamic" model per the memo) model to supplement the snapshot approach. PVSC has developed a time-based model that calculates annual costs and revenue requirements based on assumed program costs, schedules and economic variables such as interest and inflation rates. The residential indicator is calculated for each year based upon the costs per typical residential users which changes annually based on the annual system revenue requirements.

6 NACWA 2013 Cost of Clean Water Index

7 US Bureau of Labor Statistics

8 US Census

An additional limitation to the EPA methodology is its focus on the median household income (MHI) which therefore does not address the affordability impacts of wastewater service costs on the lower income households in North Bergen’s or any service area. By definition, one half of the households in North Bergen would be paying more than 1.0% of their household income for wastewater services when the residential indicator for the MHI equals 1.0%.

Three of the six EPA financial capability metrics focus on general obligation (G.O.) bond rating criteria which are amortized through property tax or other general revenue streams:

- Overall Net Debt as a Percentage of Full Market Property Value;
- Property Tax Revenues as a Percent of Full Market Property Value; and
- Property Tax Revenue Collection Rate.

The assumption that G.O. bonds will be used would not be appropriate for financing by municipal authorities.

For this analysis only, it is assumed that financing through the New Jersey Environmental Finance Program will be used as necessary to meet projected construction draw requirements. The actual size and timing of financing necessary to implement the CSO controls will be determined by the eventual construction schedules for the various components of the CSO Controls and other wastewater capital improvement needs and are therefore beyond the scope of this document.

In addition to following guidelines for the affordability and financial capability metrics, EPA encourages inclusion of any information that would have a financial impact on the permittee in the capability report. This assessment, therefore, includes additional discussion of socioeconomic trends in North Bergen because of the financial challenges that the municipality faces.

3.0 Affordability Assessment

3.1 Baseline (2019) Wastewater Services Affordability

The Residential Indicator is an approximation of households’ abilities to pay their total wastewater costs and is derived by dividing the total annual wastewater costs for the typical household within North Bergen’s service area by the median household income within the service area. The Residential Indicator is compared to EPA-defined criteria to determine whether total annual wastewater costs impose a low, mid-range, or high impact on residential users. Table 3-1 shows U.S. EPA’s Residential Indicator criteria, which define a “low” impact as a cost per household (CPH) less than 1.0% median household income (MHI), a “mid-range” impact between 1.0 and 2.0%, and “high” impact as greater than 2.0% of MHI.

Table 3-1. EPA Residential Indicator

Residential Indicator	Cost per Household
Low Burden	Less than 1.0 percent of MHI
Mid-Range Burden	1.0-2.0 percent of MHI
High Burden	Greater than 2.0 percent of MHI

The estimated annual cost for wastewater services for a typical single-family residential user for 2019 is \$557. This estimate is based on typical residential potable water usage is 4,500 gallons monthly. Based on the estimated MHI of \$59,600 the Residential Indicator is approximately 0.9%, or at the border between what the EPA guidance defines as a low burden and a medium burden.

In North Bergen, 15.8% of the population was living at or below the poverty line. This exceeds the national average poverty rate of 14.6%. The total Census households are broken out by income brackets on Table 3-2 below, along with the respective current Residential Indicators by income bracket. The RI for each bracket was calculated from the mid-point income within the bracket. At the lowest income levels, the current RI is already between 2.6% and 10.6%.

Table 3-2. Analysis of the Current Residential Indicator

Income Bracket	Households		Bracket Average Income	Bracket RI at Typical Cost per Household
	Number	Cumulative		
Less than \$10,000	1,887	1,887	\$5,000	10.57%
\$10,000 to \$14,999	1,050	2,937	\$12,500	4.23%
\$15,000 to \$24,999	2,117	5,054	\$20,000	2.64%
\$25,000 to \$34,999	2,004	7,058	\$30,000	1.76%
\$35,000 to \$49,999	2,623	9,681	\$42,500	1.24%
\$50,000 to \$74,999	4,171	13,852	\$62,500	0.85%
\$75,000 to \$99,999	2,859	16,711	\$87,500	0.60%
\$100,000 to \$149,999	3,290	20,001	\$125,000	0.42%
\$150,000 to \$199,999	1,007	21,008	\$175,000	0.30%
\$200,000 or more	924	21,932	\$200,000	0.26%
Total	21,932			

3.2 Affordability Impacts of the Selected CSO Control Alternatives

North Bergen MUA has identified the Municipal Control Alternative for long term CSO control in the portion of North Bergen discharging wastewater to the PVSC. This control strategy will achieve 85% capture of wet weather flows during the typical year. These controls are summarized on Table 3-3.

Table 3-3 – North Bergen’s Selected CSO Controls

Wet Weather Control Types	Municipal Control Alternative	
	Capital Costs (\$ millions)	Incremental Annual O&M Costs (\$ millions)
Storage Tank at NB003 (5.0 MG)	\$26.5	\$0.14
Storage Tank at NB008 (0.8 MG)	\$8.0	\$0.06
Closure of outfall NB014	\$0.1	\$0.0
Green infrastructure (1.0 ac)	\$0.4	\$0.0
Totals	\$35.0	\$2.0

Implementation of the \$35 million North Bergen Municipal Control Alternative results in projected annual costs per typical single family user of \$701 (without inflation) and a residential indicator of 1.2% in 2041, the first year after the projected full implementation of the controls ending in 2040. Accounting for inflation, annual costs would grow to \$1,280 with a residential indicator of 1.4% in 2041 as shown in Table 3-4. All of these figures include the projected debt service payments for North Bergen’s 58% share of the ongoing \$23 million upgrade and expansion of the Woodcliff Sewage Treatment Plant.

Table 3-4 – North Bergen Projected Annual Costs and Residential Indicator Upon Full Implementation of the Municipal Control Alternative

Metric	Baseline (2019)	Cost per Typical Residential Wastewater User in 2041			
		No LTCP		LTCP Implementation Completed in 2040	
		With Inflation	Without Inflation	With Inflation	Without Inflation
RI	0.9%	1.3%	1.1%	1.4%	1.2%
Annual \$	\$557	\$1,231	\$654	\$1,280	\$701

Key points from Table 3-4 are:

- The base year (2019) cost per typical single family wastewater user in North Bergen was calculated to be \$557 based on a monthly water consumption of 4,500 gallons. Based on a 2019 median household income of \$59,600 this works out to a RI of 0.9%.
- The costs per typical single family user in 2041 is projected to increase to \$1,231 annually without implementing the CSO controls due to inflation. This would represent a RI of 1.3%.
- Implementing a \$35 million Municipal Control Alternative would result in annual costs per typical single family user of \$1,280 in 2041, which works out to a 1.4% RI.

- Excluding inflation, the projected cost per typical single family user with the CSO controls would be around \$701 in 2041, resulting in a RI of 1.2%.
- The analysis does not reflect the current and lingering financial impacts as a result of the COVID -19 pandemic and should be revisited upon finalizing the LTCP implementation schedule.

3.3 Underlying Assumptions

Key assumptions used in the above analysis are summarized on Table 3-5. An annotated complete list of all data and assumptions used in the affordability model is provided as an appendix to this memorandum.

Table 3-5 – Affordability Model Key Inputs and Assumptions

Item	Value	Notes
Finance		
Bond Term		
Market Interest Rate	6.0%	NJFIT Financing – Smart Growth program offers 75% funding at 0% interest and 25% funding at market rates for 20 years for CSO control projects.
NJDEP	0.0%	
Blended Interest Rate	1.5%	
Target Coverage	125.00%	
O&M as % of Capital Cost	1.0%	
Economic		
LTCP O&M Inflation	4.0%	Based on national rates of wastewater system O&M costs in 2017 NACWA study.
LTCP Construction Inflation	3.7%	Based on 1984 – 2015 ENR Construction Cost Index for New York City (80%) and Philadelphia (20%).
Estimate Base Year		
MHI Data Year	2015	
Typical Household Monthly Consumption	4,500	Typical urban water consumption.
Demographic		
North Bergen Residential Connections		Municipal account data
North Bergen MHI	\$57,300	American Community Survey Five Year Estimate 2013 – 2017 (inflated by Census to 2017)
Residential Share of Billed Water Consumption	4,500	

4.0 Analysis of Financial Capability Indicators

The second part of the financial capability assessment - calculation of the financial capability indicator for the permittee - includes six items that fall into three general categories of debt, socioeconomic, and financial management indicators. The six items are:

- Bond rating
- Total net debt as a percentage of full market real estate value

- Unemployment rate
- Median household income
- Property tax revenues as a percentage of full market property value
- Property tax revenue collection rate

Each item is given a score of three, two, or one, corresponding to ratings of strong, mid-range, or weak, according to EPA-suggested standards. The overall financial capability indicator is then derived by taking a simple average of the ratings. This value is then entered into the financial capability matrix to be compared with the residential indicator for an overall capability assessment). Table 4-1 contains the six criteria and the ratings that categorize the permittee as strong, mid-range, or weak in each category. A discussion of each item follows.

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% to 5%	Above 5%
Unemployment Rate	More than 1% below the National Average	+/- 1% of the National Average	More than 1% above the National Average
Median Household Income	More than 25% above National MHI	+/- 25% above National MHI	More than 25% below National MHI
Property Tax as a Percent of Full Market Property Value	Below 2%	2% to 4%	Above 4%
Property Tax Collection Rate	Above 98%	94% to 98%	Below 94%

This assessment covers North Bergen Township.

4.1 Bond Rating – Indicator 1

North Bergen’s bond rating is Aa3 by Moody’s Investor Services as of 2017. This rating results in a strong indicator rating under the EPA guidance.

4.2 Overall Direct Net Debt as a Percent of Full Market Value – Indicator 2

Debt Burden is measured by overall net debt as a percent of the three year average valuation, which evaluates the ability of local government to issue additional debt. Overall Net Debt is defined as current total liability to be repaid by property taxes divided by the municipality’s full market property value. This indicator is relevant as a metric for municipalities issuing general obligation bonds which are substantially repaid through property tax revenues.

Overall direct net debt includes overlapping debt, which is the indebtedness of North Bergen, school district debt and that of Hudson County net of deductions. The North Bergen Township

net debt was \$58.3 million.⁹ The three year average property valuation (2015 – 2017) was \$5.1 billion. The percent of total net debt to full market value was 1.14%, also a strong value for this measure.

4.3 Unemployment Rate – Indicator 3

The unemployment rate is used as an assessment of the economic well-being of residential users in the service area. The U.S. EPA Guidance criteria for unemployment are described in Table 5-1, Unemployment Indicator Criteria.

The dataset for the municipal unemployment rates is taken from the US Census American Community Survey 2013-2017 estimates. The American Community Survey gathers data over a 5-year period. The prevailing unemployment rate provided by the ACS for that timeframe more closely represents the actual strength of the economy in a municipality. The unemployment rate for North Bergen at 9.2% was 2.6% percent higher the national rate of 6.6% for the same time period. The “weak” rating is triggered in the EPA table when the local unemployment rate is one percent above the national average. It should also be noted that the above statistics are for North Bergen and should not be confused with Bureau of Labor Statistics data for the New York – Newark SMSA.

4.4 Median Household Income – Indicator 4

Median Household Income (MHI) divides the relevant incomes of a population into two parts so that half of the incomes are below the median and half of the incomes are above the median. Unlike average income, median income is not skewed by extremely high or extremely low incomes in the dataset. Table 4-2 shows that the MHI within the North Bergen was close to the national average, resulting in a midrange rating per the EPA metric.

Table 4-2 Median Household Income

	Median Household Income ¹⁰
North Bergen	\$57,300
United States	\$57,650
% Difference	-1%
Categorization	Midrange

4.5 Property Tax Revenues as a % of Full Market Value – Indicator 5

The three-year average property valuation in North Bergen was \$5.1 billion in 2017. A tax of \$138.3 million was levied by all taxing jurisdictions resulting in an overall tax levy of approximately 2.71% of the three year average equalization value provided on the municipal information sheet. This is considered a midrange result under the EPA guidance.

⁹ Source: NJDCA 2017 User Friendly Budget - Sheet UFB-10.

¹⁰ Source: US Census – National Community Survey estimates for 2013 - 2017

4.6 Property Tax Collection Rate – Indicator 6

North Bergen’s rate is estimated to be 98.6%, which places it in the strong range for real estate tax collections.

4.7 Financial Indicator Score

As shown on Table 4-3, the overall score for the financial indicators is 2.3, yielding an EPA Qualitative Score of midrange. This calculation is based on the use all six of the indicators that are applicable to North Bergen Township.

Table 5-3 – Permittee Financial Capability Indicator Benchmarks

Indicator	Rating	Numeric Score
Bond Rating	Strong	3
Overall Net Debt as a Percent of Full Market Property Value	Strong	3
Unemployment Rate	Weak	1
Median Household Income	Midrange	2
Property Tax as a Percent of Full Market Property Value	Midrange	2
Property Tax Collection Rate	Strong	3
Total		14
Overall Indicator Score: (numeric score / number of applicable indicators)		2.3
EPA Qualitative Score		Midrange

5.0 Financial Capability Matrix

In this section the results of the step 1 affordability analysis which goes towards the residential ratepayers’ ability to afford CSO controls within the context of other capital investment needs is integrated with the step 2 (Financial Capability) analysis which goes towards the permittee’s ability to finance the implementation of the LTCP.

It was established previously that the proposed CSO control capital expenditures for the \$35 million North Bergen Municipal Control Alternative would result in a Residential Indicator of 1.4% for North Bergen. This RI indicates a mid-range burden under the EPA framework.

The overall North Bergen financial capability rating would be considered to be midrange under the EPA framework. The intersection of these two ratings on the EPA financial capability matrix places the North Bergen sewer system in the category of medium financial burden, as shown on Table 5-1.

Table 5.1 The Financial Capability Matrix - (Shaded areas Indicate North Bergen’s Ratings)

Permittee Financial Capability Indicators Score	Residential Indicator		
	Low (Below 1.0%)	Mid-Range (Between 1.0 and 2.0%)	High (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 Additional Economic Factors

In addition to following EPA guidelines for completion of the financial capability assessment matrix, a discussion of socioeconomic trends in the North Bergen sewer system area is essential to the consideration of scheduling and compliance levels with CSO guidelines.

6.1 Cost of Living Factors

6.1.1 Cost of Living Index

Specific cost of living comparisons of North Bergen and national averages are not available. However, the cost of living for the Cities of Elizabeth and Newark is approximately 30% higher than the national average.¹¹ Using this value as a proxy, households in North Bergen face costs of living that are about 30% higher than the national average while earning an income that is about 1.0% lower than the national median income. Put another way, adjusting for the cost of living, the effective MHI in North Bergen is about 76% of the national MHI.

6.1.2 Housing Costs

One of the major drivers in the higher cost of living in North Bergen is the cost of housing. Housing costs in North Bergen are approximately 169%¹² of the national average. The Residential Indicator is a national screening parameter and does not account for localized factors which erode the effective household income. Based upon a 2017 study¹³ by the National Low Income Housing Coalition, the fair market value of a two bedroom apartment in Hudson County was \$1,519 per month which works out to 32% of the North Bergen median household income.

6.1.3 Local Tax Burdens

The property tax burdens within the combined sewer municipalities of the PVSC service area are substantial. The average residential tax for 2017 in North Bergen was \$7,654. This includes North Bergen municipal purpose taxes of \$3,424 along with Hudson County and school district

¹¹ http://www.infloplease.com/business/economy/cost_of_living_index.us-cities.html

¹² Using the Newark – Elizabeth cost of living indices.

¹³ Out of Reach 2017 – The High Cost of Housing National Low Income Housing Coalition.

taxes.¹⁴ This compares with a national average local property tax levy of \$3,500 for a similarly priced home. Moreover, as housing prices are higher in the New York – Newark metropolitan area than nationally, houses costing well over the national median value of \$193,500 are purchased by families of modest incomes.

The high housing costs and tax burdens facing North Bergen households reduces their effective household income. Consequently, measuring the household burden imposed by wastewater costs as a percentage of the median household income may underestimate the financial burden of the projected wastewater costs per household. As was noted in an analysis of the impacts of CSO controls in the Boston region:

“The greater are the costs of other necessities as a share of MHI, the greater will be the economic burden associated with sewer charges equal to a given percent of MHI.”¹⁵

6.2 Poverty Factors

6.2.1 Poverty Rate

In 2017 15.8% of the population in North Bergen was living at or below the poverty line. This compares to the national average poverty rate of 14.6%.

6.2.2 Household Income Brackets

When the Residential Indicator is 1.4% of median household income, by definition half of the households in North Bergen would be paying more than 1.4% of their household incomes for wastewater services. In areas with large percentages of low income households, the impacts of a 1.4% RI can be severe. As shown on Table 6-1 around 7,100 or about one third of the households would be paying well around 2.7 % of their household incomes for wastewater services.

Table 6-1 – Impact of the Municipal Control Alternative on the Residential Indicator

Income Bracket	Households		Estimated Population		RI Resulting from \$35 Million in Capital Expenditures Through 2040	Bracket Average Income
	Number	Cumulative	Number	Cumulative		
Less than \$10,000	1,887	1,887	5,229	5,229	16.5%	\$5,000
\$10,000 to \$14,999	1,050	2,937	2,910	8,138	6.6%	\$12,500
\$15,000 to \$24,999	2,117	5,054	5,866	14,005	4.1%	\$20,000
\$25,000 to \$34,999	2,004	7,058	5,553	19,558	2.8%	\$30,000
\$35,000 to \$49,999	2,623	9,681	7,268	26,826	1.9%	\$42,500

¹⁴ Source: 2017 NJDCA User Friendly Budget sheet UFB-1

¹⁵ Assessment of the Economic Impact of Additional Combined Sewer Overflow Controls in the Massachusetts Water Resource Authority Service Area (page 13) prepared by Robert N. Stavins, Genia Long, and Judson Jaffee. Analysis Group Incorporated, August 2004.

Income Bracket	Households		Estimated Population		RI Resulting from \$35 Million in Capital Expenditures Through 2040	Bracket Average Income
	Number	Cumulative	Number	Cumulative		
\$50,000 to \$74,999	4,171	13,852	11,558	38,384	1.3%	\$62,500
\$75,000 to \$99,999	2,859	16,711	7,922	46,306	0.9%	\$87,500
\$100,000 to \$149,999	3,290	20,001	9,117	55,422	0.7%	\$125,000
\$150,000 to \$199,999	1,007	21,008	2,790	58,213	0.5%	\$175,000
\$200,000 or more	924	21,932	2,560	60,773	0.4%	\$200,000
Total	21,932		60,773			

6.2.3 New Jersey Department of Community Affairs Municipal Revitalization Index

New Jersey’s Municipal Renewal Index⁶⁻¹⁶ measures the social, economic, physical and financial conditions of the 565 municipalities within New Jersey. The MRI is compiled by the NJ Department of Community Affairs and is used in the distribution of needs based funding. Six primary along with four secondary criteria are used:

Primary Criteria

- Children on TANF (Temporary Assistance for Needy Families) per 1,000 persons
- Unemployment Rate
- Poverty Rate
- High school diploma or higher
- Median Household Income
- Percent of households receiving SNAP (food stamps)

Secondary Criteria

- Ten year rate of change in population
- Non-seasonal housing vacancy rate
- Equalized three year effective property tax rate
- Equalized property valuation per capita

⁶⁻¹⁶ Measuring Distress in New Jersey: the 2017 Municipal Revitalization Index Office of Policy and Regulatory Affairs, New Jersey Department of Community Affairs.

The 2017 state-wide MRI rankings for the combined sewered municipalities within the PVSC service area are shown on Table 6-2. North Bergen has a ranking of 80th most distressed municipality out of 565.

Table 6-2 – Municipal Renewal Index for the PVSC Combined Sewered Municipalities

Municipality	2017 Municipal Revitalization Index			Percentile of Least Resourced Municipalities
	MRI Score	MRI Distress Score	MRI Rank	
Bayonne	-4.56	40.2	82	15%
East Newark	-5.71	43.4	65	12%
Guttenberg	-5.12	41.8	70	12%
Harrison	-4.49	40.0	87	15%
Jersey City	-5.80	43.7	64	11%
Kearny	-3.67	37.7	106	19%
Newark	-16.53	73.5	12	2%
North Bergen	-4.65	40.5	80	14%
Paterson	-19.43	81.6	8	1%

6.3 Implications of the Additional Economic Factors

The additional economic factors presented above were intended to provide additional context to the affordability and financial capability scores determined in this initial FCA. The context of this FCA and of the implementation of the LTCP is a combined sewered community with high cost of living and tax burdens that will limit the affordability of future CSO control facilities.

7.0 Potential Impacts of the COVID-19 Pandemic on Affordability

The projections and conclusions concerning the affordability of the Municipal Control Alternative proposed in this SIAR by the North Bergen Township and North Bergen’s financial capability to finance the CSO control program are premised on the baseline financial conditions of North Bergen as well as the economic conditions in New Jersey and the United States generally at the time that work on this SIAR commenced. While the impacts of the pandemic on the long-term affordability of the CSO LTCP are obviously still unknown, it is reasonable to expect that there will be potentially significant impacts. There are several dimensions to these potential impacts, including reduced utility revenues and household incomes.

7.1 Potential Wastewater Utility Revenue Impacts

This Financial Capability Assessment cannot reflect the currently unknowable impacts on wastewater utility revenues stemming from the national economic upheaval resulting from the COVID-19 pandemic. It is however extremely likely that North Bergen and municipal wastewater utilities in general across the United States will face significant and potentially

permanent declines in revenues from households unable to pay their water and sewer bills and the sudden decline in industrial and commercial demands for potable water and wastewater treatment.

On March 20, 2020 the National Association of Clean Water Agencies (NACWA) issued a press release stating that:

“NACWA conservatively estimates the impact to clean water utilities nationwide of lost revenues due to coronavirus at \$12.5 Billion. This is a low-end estimate, assuming an average loss of revenue of 20% which is well within the range of what individual utilities are already projecting. Some utilities are anticipating closer to a 30% or 40% loss in revenue. This estimate is based on the substantial historical utility financial data NACWA has on file through its Financial Survey and recent reports from NACWA members on the decrease in usage they are observing in their systems over the last few weeks.”¹⁷

The impact of a 20% to 40% revenue loss, along with increased costs that have been and will continue to be experienced by water and wastewater utilities such as overtime and the writing off of customer accounts receivable could have a profound impact on the affordability of the proposed CSO controls and North Bergen’s ability to finance them.

Most of the costs of a municipal wastewater system are relatively fixed within broad operating ranges. Debt service and other capital costs are fixed once incurred. Some operating costs are somewhat variable with wastewater flows, e.g. chemical and electrical power usage but this variability is lessened by the reality that inflow, infiltration and stormwater flow in a combined system are not affected by billed water consumption. Labor costs are not directly variable, e.g. a twenty percent reduction in billed flow would not result in a need for twenty percent less labor. Maintenance costs might go down somewhat as equipment operating times may be reduced.

As costs do not decline proportionately to billed flow, it can be expected that user charge rates must be raised to generate sufficient revenue to sustain current operations. The relationship between changes in costs and revenues and the resultant changes in user charge rates is complex and has not yet been fully analyzed. At this point it can be assumed that user rate increases may be necessary to simply maintain current operations, and these rate increases will likely erode the financial capability of North Bergen to fund the CSO LTCP.

7.2 Potential Median Household Income Impacts

The impacts of the pandemic on median household incomes in North Bergen cannot be determined at this point. Historical analogies may provide some useful, albeit disturbing, context but are not presented as predictive:

- U.S. median household income fell by 6.2% from \$53,000 in 2007 to \$49,000 in 2010. In New Jersey, the MHI decreased by around 4.0% for the same period.¹⁸

¹⁷ NACWA press release: [Coronavirus Impacting Clean Water Agencies; Local Utilities and Ratepayers Need Assistance](#) March 20, 2020

¹⁸ Source: [Fact Sheet: Income and Poverty Across the States, 2010](#) Joint Economic Committee, United States Congress, Senator Robert P. Casey, Jr. Chairman.

- The U.S. unemployment rates rose from 5.0% in December of 2007 to 9.9% in December of 2009.¹⁹
- Data on impacts of the Great Depression on median household income are not available. As a proxy, the personal income per capita data are available. For 1929 this was \$700. By 1933 this figure bottomed out at \$376, a decline of 46%. Unemployment for the same period rose from around 3.0% to 25%.²⁰

While a quantifiable assessment of the impact of the pandemic on median household income is not feasible at this time, reduction in base year MHI can be expected. This will further exacerbate the impacts of the revenue reductions described above on LTCP affordability, as higher base user charge rates will absorb an increased portion of lower MHI.

7.3 Implications for the Long Term CSO Control Program

North Bergen anticipates that the financial implications of the COVID-19 pandemic will be discussed with NJDEP during the review of the SIAR and as the 2021 – 2025 NJPDES permit is developed. Based on the October 1, 2020 revised due date for the SIAR, additional revenue data should be available to support a more specific refinement of this analysis in the SIAR.

Given the current and likely continuing uncertainties as to the New Jersey and national economic conditions, North Bergen will be reticent to commit to long term capital expenditures for CSO controls without the incorporation of adaptive management provisions, including provisions to revise and reschedule the long term CSO controls proposed in this SIAR based on emergent economic conditions beyond the permittees' control. As detailed in Section F of North Bergen's SIAR, these provisions could include scheduling the implementation of specific CSO control measures to occur during the five year NJPDES permit cycles. A revised affordability assessment should be performed during review of the next NJPDES permit to identify controls that are financially feasible during that next permit period.

8.0 Conclusion

The 1997 EPA guidance indicates that ratepayers and permittees who are highly burdened future expenditures added to their current wastewater treatment, conveyance, and collection costs can be allowed 15 years to complete capital projects to handle CSOs. In extreme cases, the guidance suggested a 20-year compliance schedule might be negotiated.²¹

The affordability analysis detailed above has documented that the \$35 million (current dollars) Municipal Control Alternative documented in North Bergen's SIAR along with related operation and maintenance costs would result in a Residential Indicator of "medium impact" under EPA's criteria. Using the potential regional control approach would also result in a "medium impact".

¹⁹ Source: Bureau of Labor Statistics data series LNS1400000

²⁰ Source: Federal Reserve Economic Data (FRED) data series: A792RC0A052NBEA

²¹ Combined Sewer Overflows – Guidance for Financial Capability Assessment and Schedule Development, EPA 832-B-97-004, Page 46.

Circa 1997 EPA metrics notwithstanding, the reality of the high poverty rates, low household incomes compared to the rest of New Jersey and nationally and the high costs of living in North Bergen argue strongly that the EPA metric understates the impacts of the CSO control costs on the residents of the City. As evidenced by its New Jersey Municipal Revitalization Index score in the top 86th percentile, North Bergen’s capacity for additional CSO controls beyond those proposed in the SIAR is limited.