Appendix O

Financial Capability Assessment and Affordability Study

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City of Lancaster

Division of Water Pollution Control • 800 Lawrence Street • Lancaster, OH 43130

Financial Capability Assessment and Affordability Study

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A. Financial Capability Assessment Worksheets

1. Introduction

1.1. Introduction

This report summarizes the financial capability assessment and affordability study that was completed for the City of Lancaster, Ohio (City). The goal of the study was to assess the current and projected future customer affordability and community financial capability for implementing the proposed Long Term Control Plan (LTCP), and to provide justification to support a regulatory implementation schedule for the LTCP.

As described in the report, the assessment and study evaluated affordability from a broad perspective, including the assessment outlined in the 1997 United States Environmental Protection Agency (USEPA) guidance document *Combined Sewer Overflows – Guidance for Financial Capability Assessment and Schedule Development*. The USEPA Financial Capability Assessment methodology is intended to assess customer affordability and the financial capability of the utility and its community to pay for a LTCP. While this assessment is focused on wastewater and LTCP costs, our analysis included a broader assessment of affordability and financial capability by considering the cost of combined water, wastewater, and stormwater service, and the community's ability to pay for these services.

The scope of this study included the following:

1. Financial capability assessment for the wastewater utility
2. Financial capability assessment considering the combined water, wastewater, and stormwater systems
3. Rate impact analysis for wastewater, water, and stormwater utilities

1.2. Methodology

The financial capability assessment was completed in accordance with the method outlined in the USEPA guidance document that specifies a two-phase process for assessing the financial capability to fund a CSO LTCP. Phase I of the analysis assesses residential customer financial capability as measured by the Residential Indicator. The Residential Indicator is calculated by dividing the total projected residential cost by the median household income (MHI). If the costs are at or above one percent of the MHI, a Phase II analysis is completed. The Phase II analysis assesses community financial capacity (i.e., financial strength and financing capacity) to afford the program.

In addition, the USEPA encourages inclusion of any additional information related to the unique financial conditions of the permittee. Therefore, this assessment includes a year-by-year rate impact analysis, a discussion of additional socioeconomic indicators and trends of the City, and a discussion of financial challenges that the City and region faces, which are relevant to the recommended LTCP schedule. Thus, this assessment focuses on important socioeconomic indicators that can help to provide a more complete picture of a community's economic and social characteristics such as population, labor force, unemployment, income distribution, public assistance, and other economic indicators discussed later in this report.

The assessment is presented in this report in the following order:

1. Current Socioeconomic Conditions – First, the results of research on important economic and social characteristics of the City that provides an indication of current socioeconomic conditions is presented, such as population, labor force, unemployment, median household income, income distributions, and public assistance, was performed. The United States (U.S.) Census Bureau and the Bureau of Labor Statistics were some of the sources used for gathering this data.

2. Financial Capability Assessment – Next, the results of the analysis completed to determine the capability of the City and the community it serves to pay for a potential LTCP is presented. These results are presented in accordance with the USEPA guidance document for assessing the community's financial capability. The financial capability assessment was considered with respect to the wastewater system, as well as with respect to the combined impact when considering the wastewater, water and stormwater systems jointly.

3. Rate Impact Analysis – Finally, the results of a wastewater, water, and stormwater rate impact analysis was completed. This includes forecasts for annual rate revenue increase needs to meet the City's annual revenue requirements. The analysis calculates the year-by-year costs, compares customer costs to customer income levels, and provides an assessment of the affordability of a customer's annual wastewater, water, and stormwater utility service bill over time.

1.3. Conventions

The City's fiscal year begins on January 1st and ends on December 31st. Throughout this report, fiscal year is identified as FY, i.e. FY2014.

2. Overview of City Utilities

2.1. Introduction

The City owns and separately operates wastewater, water, and stormwater utilities to serve its customers. A brief description of these utilities is provided in this section.

2.2. Wastewater

2.2.1. System Description

The original wastewater system that serves the central part of the City is a combined wastewater and stormwater system. As the community grew and expanded outward, separate sewers were constructed for the new areas of development but routed through the combined system on the way to the Lawrence Street Water Pollution Control Facility (WPCF). There is approximately 52,631 linear feet of combined sewers and 850,900 linear feet of separated sewers in the City's wastewater collection system that serves an area of over 18 square miles. The combined sewer system was reduced by 36,000 linear feet over the last 20 years due to separation projects.

The City owns and operates the Lawrence Street WPCF, located on the south side of the City, and Upper Hocking WPCF, located on the northwest side of the City. The City also owns and operates five major wastewater pumping stations. The Lawrence Street WPCF is designed to treat an average flow of 10 million gallons per day (MGD) with a peak hydraulic capacity of 18 MGD, 12 MGD of which goes to secondary treatment. The Lawrence Street WPCF was originally constructed in the late 1930s with the most recent upgrades occurring in 1997. The Upper Hocking WPCF was completed in 2011 and is designed to treat an average flow of 2 MGD with a peak hydraulic capacity of 8 MGD, 2 MGD of which goes to equalization.

The wastewater utility is the only wastewater collection and treatment service in the City and it requires all businesses and residences located in the City to connect to the wastewater utility. As of December 31, 2013, the wastewater utility served 17,747 customers, approximately 16,362 (92.2 percent) residential, 1,356 (7.6 percent) commercial, and 29 (0.2 percent) industrial.

Much of the City's infrastructure is nearing the end of its useful life and will need to be replaced or repaired within the next twenty years. The City graded the physical condition of the following infrastructure components in 2012 in order to estimate its replacement and repair costs: bridges, culverts, roads, stormwater collection, water distribution, and wastewater collection. Although the City did not grade the physical condition of the

water supply and wastewater treatment system, it did estimate those replacement and repair costs. The total estimated replacement and repair cost for the wastewater utility is $526M. Figure 2-1 shows that there is a large percentage of its infrastructure with a fair to critical rating.

Figure 2-1: Age of Infrastructure

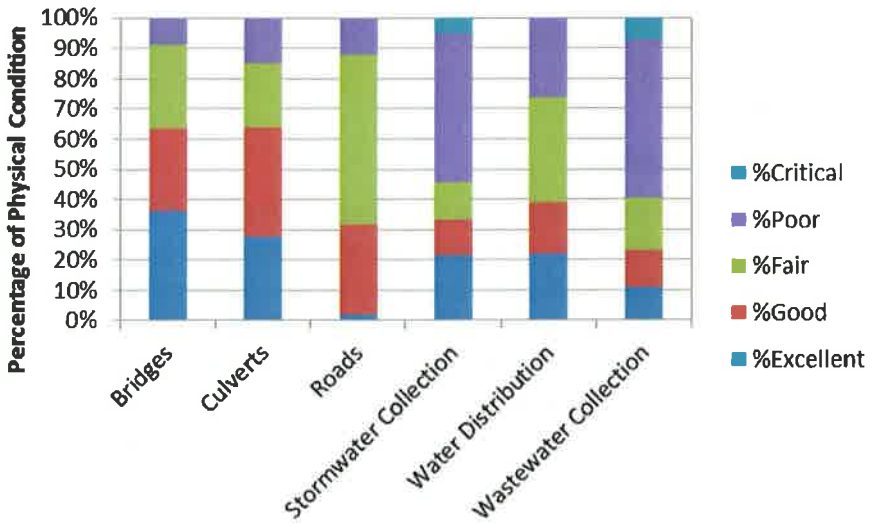


Table 2-1 lists recommended replacement and repair guidelines for the ratings used to estimate the schedule of replacement and repair costs. However, in order to prioritize the LTCP, the City is planning to only make critical repairs as they occur and delay the remainder of the replacement and repairs for at least 20 years. The total estimated critical replacement and repair cost for the wastewater utility is $29M.

Table 2-1: Replacement and Repair Guidelines

Physical Condition Grade	Time Period to Replace or Repair
Critical	1 – 2 Years
Poor	1 – 5 Years
Fair	6 – 10 Years
Good	11 – 20 Years
Excellent	> 20 Years

2.2.2. Regulatory Compliance Obligations

The City is required to comply with its National Pollutant Discharge Elimination System (NPDES) permit (Permit No. 4PD00001*LD) which has an effective date of August 1,

2012. The permit lists the regulatory compliance obligations for the City, which include the following:

1. Submit Phase II Long Term Control Plan that will include a further assessment of the costs, effectiveness and water quality benefits of a wide range of alternatives for eliminating, reducing and treating any and all of the City's remaining Combined Sewer Overflows (CSO) or CSO outfalls. The City agrees to complete construction of the additional recommended alternative as soon as practical, but in no case later than January 1, 2025.

2. Complete the Broad Street Express Sewer Construction Project by December 1, 2016.

3. Complete the CSO 1014 Closure Project by December 1, 2015.

4. Complete the CSO 1033 Closure Project by June 1, 2017.

5. Complete construction of Flow Equalization Facilities by December 1, 2024.

The wastewater utility must also comply with industry regulations, which are as follows:

- Biosolids
- Permit and Monitoring
- CSO Advertisement, Notices, and Signs
- Operator Training/CEU
- CSO Monitoring
- Pretreatment
- Minimum Staffing
- SSO Reporting
- Biomonitoring

Future regulatory issues that could increase the wastewater utility's cost, but are currently unknown at the time of preparing this report include nutrient removal, greenhouse gases, personal pharmaceuticals, more stringent biosolids, and more stringent Total Maximum Daily Load (TMDL) discharge limits.

2.2.3. Wastewater Rates and Customer Bill Comparison

The City has exclusive jurisdiction over wastewater rates and operations of the wastewater system within the City's service boundaries. Wastewater rates are approved by City Council and no other Federal, State, County or regulatory agency has jurisdiction over the rates charged. However, the City must comply with rate requirements as outlined in the bond covenant of their Official Statement. The existing rates and charges for the

Wastewater Utility are as defined in the City's Codified Ordinance Chapter 915 (Sewer Rates). The City's wastewater rates consist of a fixed monthly customer charge, and a commodity (or treatment) rate that is uniform per unit of billed water consumption for residential, commercial and industrial customers.

Residential wastewater system users without metered water service or from whom accurate meter readings are not available are charged a flat monthly customer charge, which is based on 800 cubic feet per month of billed consumption. The current and historic wastewater rate structure is shown in Table 2-3 and Table 2-4.

Table 2-2: Wastewater Rate Structure – Basic Monthly Customer Charge per Customer

Rate Schedule	FY2010	FY2011	FY2012	FY2013	FY2014
Residential, Commercial, and Industrial	$12.39	$13.84	$15.46	$16.11	$16.78
Non-metered Residential	$46.63	$52.08	$58.18	$60.59	$63.10

Table 2-3: Wastewater Rate Structure – Treatment Rater per 100 CF

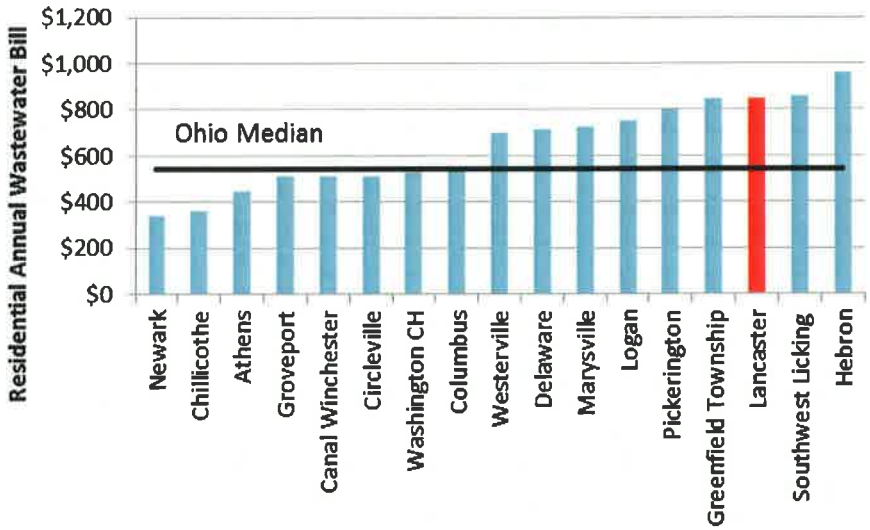
Rate Schedule	FY2010	FY2011	FY2012	FY2013	FY2014
Residential, Commercial, and Industrial	$4.28	$4.78	$5.34	$5.56	$5.79

The wastewater rates have shown an upward trend from FY2010 to FY2014. Both monthly customer charges and treatment rates have increased by 35 percent over the past five years. Residential customers of the City have wastewater bills that are the third highest among similar sized cities and economic competitors as shown in Figure 2-2.

The City's wastewater rate covenant contained in its Wastewater Trust Agreement requires that the City prescribe and charge rates, charges, and rentals for the services and facilities of the wastewater utility that result in Net Revenues available for debt charges in each year to be at least equal to or greater than the following:

- 120% of the maximum amount required to be paid into the Wastewater Bond Service Fund during the then current or any succeeding Fiscal Year (less any amount of interest for that Year that has been capitalized).
- 100% of the amount required to be paid into the Wastewater Bond Service Fund during the then current Fiscal Year (less any amount of interest for that Year that has been capitalized) plus 100% of the debt charges on any general obligation bonds or notes payable and scheduled to be paid from Wastewater Net Revenues during the then current Fiscal Year.

Figure 2-2: Residential Annual Wastewater Bill Survey[1]



2.2.4. Historical and Projected Customer Growth

The wastewater utility has experienced very little customer growth over the past five years, as shown in Table 2-5. The compound annual growth rate (CAGR) was fairly small over this five year period. In fact the number of industrial customers has actually decreased over this period.

Table 2-4: Wastewater Customers

Customer Class	2009	2010	2011	2012	2013	CAGR (Percent)
Residential	16,320	16,444	16,457	16,383	16,362	0.06
Commercial	1,280	1,317	1,324	1,316	1,356	1.45
Industrial	32	32	33	31	29	-2.43
Total	17,632	17,793	17,814	17,730	17,747	0.16

Since the CAGR of the total amount of customers was only 0.16 percent, and the City does not expect significant future customer growth, 0.5 percent growth was assumed for future projections.

[1] Ohio EPA rate survey published in 2012 based on monthly billed usage of 7,756 gallons per month.

The top industrial wastewater customers are listed in Tables 2-5 and 2-6 along with the revenues that the wastewater utility collects from them. The top four customers account for a significant amount of usage and revenue when compared to the remainder of the list. Therefore, the City would experience a significant impact, if it were to lose one of these customers. Sonoco Products actually closed its business in 2010.

Table 2-5: Top Wastewater Customers' Billed Flow

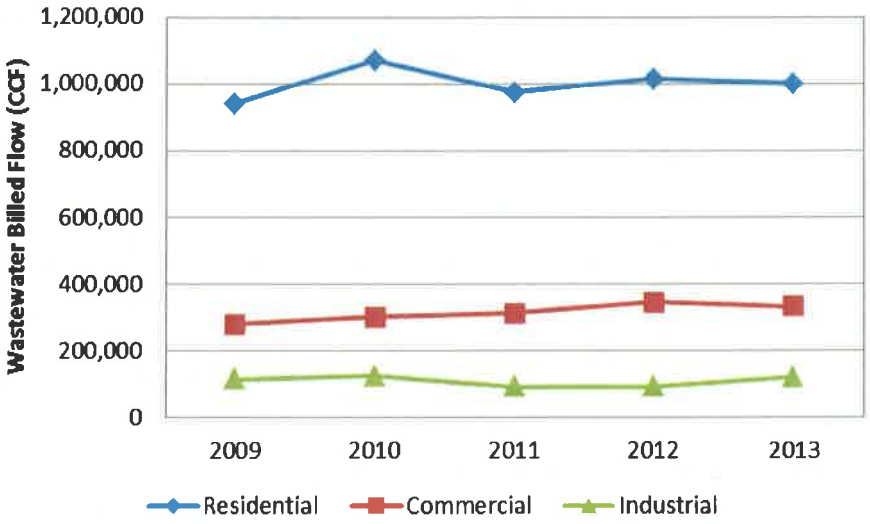
Customer	Usage (100 CF)					2013 Percent of Billed Flow	Customer Trend
	2009	2010	2011	2012	2013		
Anchor Hocking Corporation	57,847	46,073	44,881	162,630	60,577	28	
Fairfield Medical Center	64,743	67,752	55,222	80,359	40,163	18	
Ralston Foods	34,770	31,503	30,685	84,299	36,281	17	
Fairfield County Utilities	29,564	--	--	28,679	36,227	17	
Sonoco Products	14,270	--	--	--	--	--	
Cintas / U.S. Energy Services	11,507	13,666	12,796	29,324	12,685	6	
Zane Villa Co	10,339	9,939	10,435	--	--	--	
Eckert Enterprieses, LTD	--	10,538	9,274	13,652	--	--	
New Club Housing, LTD	--	--	--	11,110	--	--	
Fairfield County Commissioner	--	9,529	9,434	--	12,064	6	
Lancaster Camp Ground	--	--	--	--	10,180	5	
Lancaster Midtown, LLC	--	--	--	--	9,260	4	
Lancaster Board of Education	--	7,371	8,018	10,886	--	--	
Somerford Square Apartments	10,116	--	--	--	--	--	

Table 2-6: Top Wastewater Customers' Sales Revenue

Customer	Amount Billed					2013 Percent of Total Sales Revenue	Customer Trend
	2009	2010	2011	2012	2013		
Anchor Hocking Corporation	$222,085	$197,752	$212,893	$585,938	$294,945	26	
Fairfield Medical Center	$247,800	$289,330	$264,072	$150,861	$225,438	20	
Ralston Foods	$131,726	$134,183	$145,991	$375,094	$201,648	18	
Fairfield County Utilities	$111,905	--	--	$150,224	$200,800	18	
Sonoco Products	$53,677	--	--	--	--	--	
Cintas / U.S. Energy Services	$43,929	$58,368	$60,968	$117,584	$70,660	6	
Zane Villa Co	$39,731	$42,688	$50,045	--	--	--	
Eckert Enterprieses, LTD	--	$45,549	$44,786	$34,440	--	--	
New Club Housing, LTD	--	--	--	$47,088	--	--	
Fairfield County Commissioner	--	$42,860	$47,373	--	$63,318	6	
Lancaster Camp Ground	--	--	--	--	$53,163	5	
Lancaster Midtown, LLC	--	--	--	--	$24,162	2	
Lancaster Board of Education	--	$34,138	$41,167	$48,739	--	--	
Somerford Square Apartments	$38,159	--	--	--	--	--	

The trend in billed wastewater flow for all customer classes has shown very little growth as shown in Figure 2-3. Some of the factors contributing to a drop in billed flow between 2010 and 2011 were home foreclosures and vacancies, both of which lead to the City discontinuing service to customers.

Figure 2-3: Billed Wastewater Flow (100 CF)



2.2.5. Operating Expenses

The wastewater utility's budgeted O&M expenditures for FY2014 total $4,780,374. The historical trend in wastewater O&M expenditures has been an upward trend with a CAGR of 7.5 percent since FY2010 as shown in Table 2-8. Thus far, this trend has largely been addressed by increasing wastewater rates, but this has placed the City's wastewater rates as the third highest among similar sized cities and economic competitors as shown in Figure 2-2.

Table 2-7: Historic and Budgeted O&M Expenditures[2]

	FY2010	FY2011	FY2012	FY2013	FY2014 Budgeted
O&M Expenditures	$3,577,891	$3,489,286	$4,038,448	$3,963,953	$4,780,374
Annual Percent Change	--	(2.5 percent)	15.7 percent	(1.8 percent)	20.6 percent

[2] City of Lancaster, Ohio – Annual Information Statement – 5/27/14

2.2.6. Wastewater Capital Improvement Program

The City's wastewater capital improvement program (CIP) takes into consideration a) current and future infrastructure and operational needs, and b) regulatory commitments. The CIP for permit compliance by 2025 is summarized in Table 2-9.

Table 2-8: Wastewater CIP

	2014	2015	2016	2017	2018	2019
CSO Reduction	$30,000	$10,000	$342,300	$0	$0	$0
Growth	500,000	1,993,669	882,330	7,403,814	27,628,200	300,000
O&M	650,000	800,000	650,000	650,000	650,000	650,000
Total	$1,180,000	$2,803,669	$1,874,630	$8,053,814	$28,278,200	$950,000

	2020	2021	2022	2023	2024	2025
CSO Reduction	$0	$10,704,690	$0	$0	$0	$542,868
Growth	10,240,321	0	0	0	0	24,375,275
O&M	962,000	650,000	650,000	650,000	650,000	650,000
Total	$11,202,321	$11,354,690	$650,000	$650,000	$650,000	$25,568,143

	2030	2035	2040	2045	2050
CSO Reduction	$0	$0	$0	$0	$10,000
Growth	33,821,889	0	0	0	0
O&M	3,250,000	3,250,000	3,250,000	3,250,000	3,250,000
Total	$37,071,889	$3,250,000	$3,250,000	$3,250,000	$3,260,000

2.2.7. Wastewater Debt Service Obligations

As of December 31, 2013, the City's Wastewater Fund had a total of $68M in outstanding debt, which is comprised of Revenue Bonds and Ohio Water Development Authority (OWDA) loans. In FY2014, the City is obligated to pay $5.3M annual principal and interest payments (debt service) on the outstanding debt[3]. A summary of the outstanding debt is provided in the table below.

Table 2-9: Wastewater Debt Service Obligations[4]

Debt Service Obligations	Maturity (Year)	Remaining Principal
Series 2004 Revenue Bonds	2014	$165,000
Series 2008 Revenue Bonds	2033	$18,430,000
Series 2012 Revenue Bonds	2029	$3,665,000
OWDA Loan No. 2312	2016	$1,731,387
OWDA Loan No. 2313	2017	$1,026,040
OWDA Loan No. 5035	2031	$31,214,890

[3] City of Lancaster, Ohio – Annual Information Statement – 5/27/14
[4] 2012 CAFR and Official Statement, City of Lancaster, Series 2012 Water and Wastewater Revenue Bonds

2.2.8. Historical Financial Results

The historical financial results for the wastewater utility over the past five years are summarized in Table 2-10. These results indicate that although revenues have increased, the margin between the revenues and expenditures has remained approximately the same. The wastewater utility is also keeping more cash available for reserves in order to cover existing debt obligations.

Table 2-10: Historical Wastewater Utility Operating Results[5]

	2009	2010	2011	2012	2013
Total Revenues	$8,186,585	$8,704,524	$9,941,393	$10,546,511	$10,883,706
Total Expenditures	$7,781,353	$7,432,841	$8,638,211	$9,159,551	$10,204,735
Revenues Over (Under) Expenditures	$405,232	$1,271,683	$1,308,182	$1,386,960	$678,971
Beginning Balance (January 1)	$2,423,257	$2,828,489	$4,100,172	$5,403,354	$6,790,314
Ending Balance (December 31)	$2,828,489	$4,100,172	$5,403,354	$6,790,314	$7,469,285

2.3. Water

2.3.1. System Description

The City owns and operates the Miller Park Water Treatment Plant, located along the Hocking River in Lancaster, and the South Wellfield and Water Treatment Plant, located south of Lancaster near Horns Mill. The City's water supply is groundwater, with wellfields located at both plants. The Miller Park Water Treatment Plant has a design capacity of 9 MGD, currently treats approximately 2.5 MGD of groundwater, and has 604,000 gallons of finished water storage at the plant site. The South Wellfield and Water Treatment Plant has a design capacity of 8 MGD, treats groundwater, and has 2 million gallons (MG) of finished water storage at the plant site.

The water distribution system consists of pipe ranging from 4-inch to 30-inch in diameter, 9.8 MG of water storage, and two 565 gallon per minute (gpm) booster pump stations. Water storage is composed of a 1 MG standpipe, a 2.3 MG reservoir, a 4 MG ground storage tank, a 2 MG ground storage tank, and a 0.5 MG composite hydropillar on Rainbow Drive.

[5] City of Lancaster, Ohio – Annual Information Statement – 5/27/14

The water utility is the only supplier of water service in the City, and it requires all businesses and residences located in the City to connect to the water utility. As of December 31, 2013, the water utility served 18,035 customers. The total number and percentages of users by category are estimated to be: 16,622 (92.2 percent) residential; 1,376 (7.6 percent) commercial; and 37 (0.2 percent) industrial.

Much of the City's infrastructure is nearing the end of its useful life and will need to be replaced or repaired within the next twenty years. The City graded the physical condition of the infrastructure components in 2012 in order to estimate its replacement and repair costs. The total estimated replacement and repair cost for the water utility is $355M. However, in order to prioritize the LTCP, the City is planning to only make critical repairs as they occur and delay the remainder of the replacement and repairs for at least 20 years. The water utility does not have any infrastructure in need of critical repairs.

2.3.2. Regulatory Compliance Obligations

The water utility must comply with industry regulations, which are as follows:

- Permit and Monitoring
- Lead and Copper
- Operator Training/CEU
- Lab Certification
- Wellhead Protection
- Backflow Prevention
- Consumer Confidence Report
- Groundwater Monitoring

Future regulatory issues that could increase the water utility's cost, but are currently unknown at the time of preparing this report include chlorine byproducts, greenhouse gases, personal pharmaceuticals, and emerging contaminants.

2.3.3. Water Rates and Customer Bill Comparison

The City's water rates are organized by customer class. Each customer is billed a fixed monthly customer charge based on customer class and meter size, a fixed monthly wellhead protection charge based on customer class and meter size, and a commodity charge according to the customer class. The commodity charge for inside- and outside-city residential customers is a uniform rate. However, the commodity charge for commercial and industrial customers is a declining block structure. A summary of the existing FY2014 water rates is provided in Tables 2-11 and 2-12.

Table 2-11: Existing Residential Water Customer Charges

Meter Size	Inside Corp. Monthly Customer Charge	Outside Corp. Monthly Customer Charge	Monthly Wellhead Protection Charge
5/8 inch	$10.08	$15.11	$0.50
3/4 inch	$11.37	$17.05	$0.75
1 inch	$13.92	$20.88	$1.00
1-1/2 inch	$16.64	$24.96	$2.00
2 inch	$21.21	$31.82	$3.00
3 inch	$24.33	$36.49	$3.00
4 inch	$29.50	$44.26	$4.00
6 inch	$36.21	$54.31	$6.00
8 inch	$55.34	$83.01	$8.00
10 inch	$80.68	$121.02	$10.00
12 inch	$101.84	$152.76	$10.00

The commodity charge for residential customers located inside and outside City Corporation Limits is $4.40 and $6.60 per 100 cubic feet (CF), respectively.

Table 2-12: Commercial and Industrial Water Rate Structure

Meter Size	Monthly Customer Charge	Monthly Wellhead Protection Charge
5/8 inch	$10.08	$0.50
3/4 inch	$11.37	$0.75
1 inch	$13.92	$1.00
1-1/2 inch	$16.64	$2.00
2 inch	$21.21	$3.00
3 inch	$24.33	$3.00
4 inch	$29.50	$4.00
6 inch	$36.21	$6.00
8 inch	$55.34	$8.00
10 inch	$80.68	$10.00
12 inch	$101.84	$10.00

The commodity charge for commercial and industrial customers is as follows:

- Block 1: 1 – 100 (100 CF), $4.40 per 100 CF
- Block 2: 101 – 250 (100 CF), $3.80 per 100 CF
- Block 3: 251 – 2,500 (100 CF), $2.95 per 100 CF
- Block 4: Greater than 2,501 (100 CF), $2.77 per 100 CF

The existing FY2014 residential water rates have been effective since FY2013, and before that period they were last revised in FY2008. The water rates for residential customers located inside City Corporation Limits increased by approximately 4.8 percent with the FY2013 revision. From 2000 to 2014, Table 2-13 shows that water rates for residential customers grew by a compound annual growth rate of 4.9 percent.

Table 2-13: Residential Water Rate per 100 CF for Inside-City Customers

	Rate per 100 CF		Rate per 100 CF
FY2000	$2.15	FY2008	$4.20
FY2001	$2.70	FY2009	$4.20
FY2002	$2.70	FY2010	$4.20
FY2003	$3.30	FY2011	$4.20
FY2004	$3.70	FY2012	$4.20
FY2005	$3.96	FY2013	$4.20
FY2006	$4.04	FY2014	$4.20
FY2007	$4.11	**CAGR**	**4.9 percent**

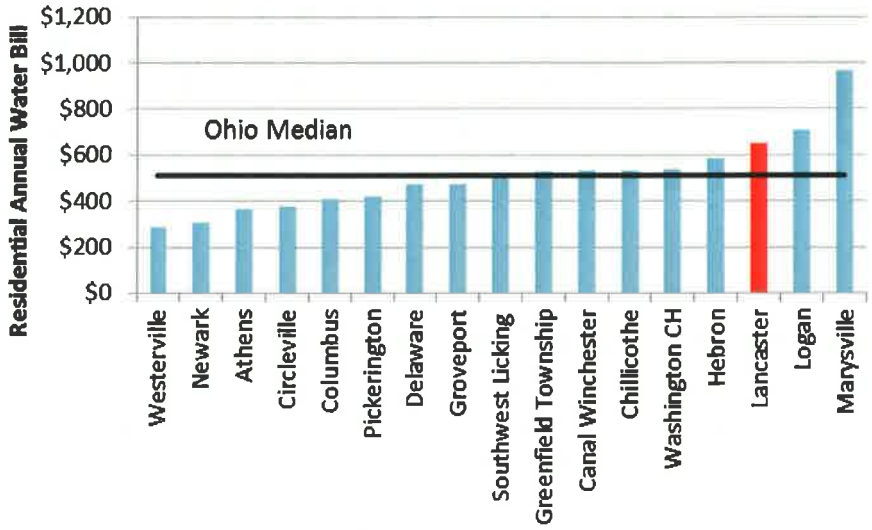
Although the City has not increased water rates since 2008, residential water customers still have the third highest water bills among similar sized cities and economic competitors, as shown in Figure 2-4. Despite having relatively high water rates, the City has been unable to replace some key staff members it has lost due to attrition in order to avoid raising rates.

The City's water rate covenant contained in its Water Trust Agreement requires that the City prescribe and charge rates, charges, and rentals for the services and facilities of the water utility that result in Net Revenues available for debt charges in each year to be at least equal to or greater than the following:

- 120% of the maximum amount required to be paid into the Water Bond Service Fund during the then current or any succeeding Fiscal Year (less any amount of interest for that Year that has been capitalized).

- 100 percent of the amount required to be paid into the Water Bond Service Fund during the then current Fiscal Year (less any amount of interest for that Year that has been capitalized) plus 100% of the debt charges on any general obligation bonds or notes payable and scheduled to be paid from Water Net Revenues during the then current Fiscal Year.

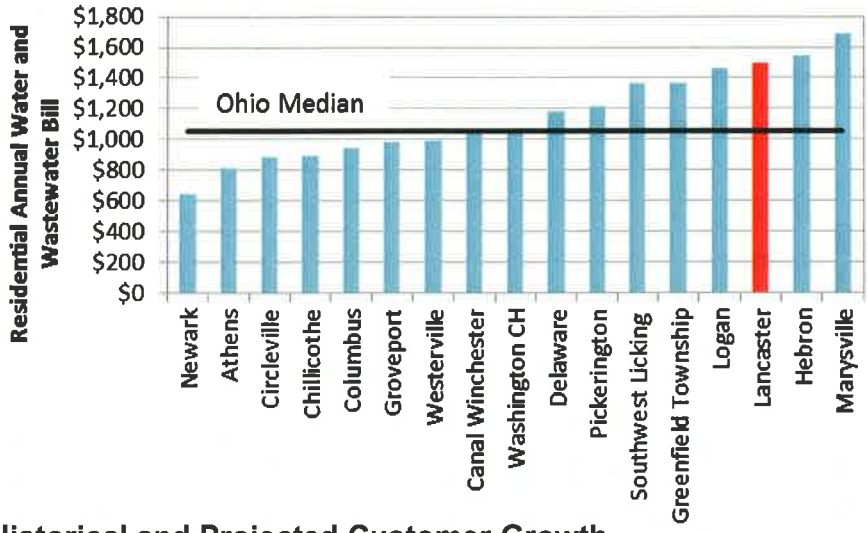
Figure 2-4: Residential Annual Water Bill Survey[6]



The City ranks third highest among similar communities when the residential annual water and wastewater bills are combined as shown in Figure 2-5.

[6] Ohio EPA rate survey published in 2012 based on monthly billed usage of 7,756 gallons per month.

Figure 2-5: Residential Annual Wastewater and Water Bill Survey



2.3.4. Historical and Projected Customer Growth

The City has experienced very little customer growth over the past five years as shown in Table 2-14. Similar to the wastewater trend, the CAGR was fairly small over this five year period, and the number of industrial customers has decreased.

Table 2-14: Water Customers

Customer Class	2009	2010	2011	2012	2013	CAGR (Percent)
Residential	16,607	16,699	16,722	16,640	16,622	0.02
Commercial	1,313	1,349	1,356	1,348	1,376	1.18
Industrial	40	41	41	39	37	-1.93
Total	17,960	18,089	18,119	18,027	18,035	0.10

Since the CAGR of the total amount of customers was only 0.10 percent, and the City does not expect significant future growth, no growth was assumed for future projections.

The top industrial water customers are listed in the following tables along with the revenues that the water utility collects from them. The top three customers account for a significant amount of usage when compared to the remainder of the list. Therefore, the City would experience a significant impact, if it were to lose one of these customers.

Table 2-15: Top Water Customers' Billed Flow

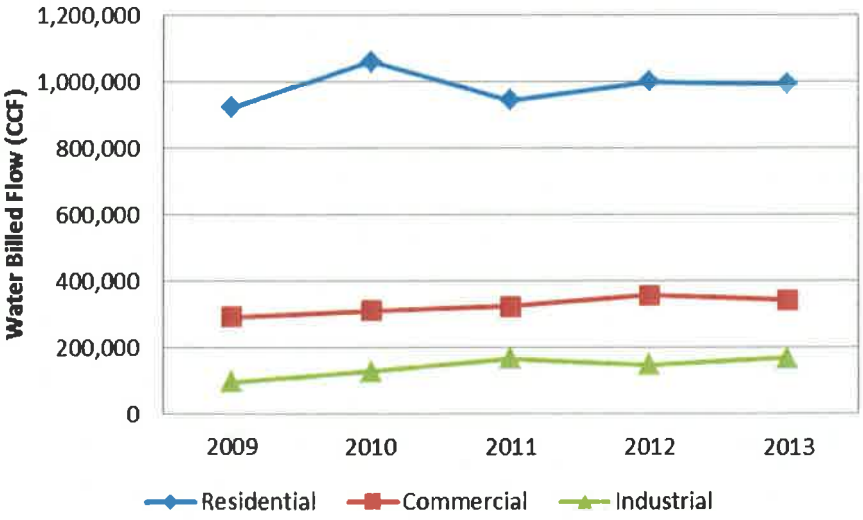
Customer	Usage (100 CF) 2009	2010	2011	2012	2013	2013 Percent of Billed Flow	Customer Trend
Anchor Hocking Corporation	97,720	93,129	115,540	68,625	41,166	23	
Fairfield Medical Center	64,717	67,752	55,222	40,492	40,163	23	
Ralston Foods	58,285	43,803	40,003	45,525	39,488	22	
Cintas / U.S. Energy Services	13,461	15,294	15,171	17,257	14,303	8	
Zane Villa Co	10,339	9,939	10,435	--	--	--	
New Club Housing, LTD	--	--	--	11,110	--	--	
Fairfield County Commissioner	9,178	9,529	9,434	10,054	12,064	7	
Eckert Enterprieses, LTD	--	10,538	9,274	--	--	--	
Lancaster Camp Ground	--	--	--	9,808	10,180	6	
Lancaster Board of Education	8,320	8,420	8,993	10,750	9,915	6	
Lancaster Midtown, LLC	--	--	--	--	9,260	5	
Crestview Nursing Home	8,951	--	--	--	--	--	

Table 2-16: Top Water Customers' Sales Revenue

Customer	Amount Billed 2009	2010	2011	2012	2013	2013 Percent of Total Sales Revenue	Customer Trend
Anchor Hocking Corporation	$359,760	$343,270	$424,890	$254,674	$137,833	22	
Fairfield Medical Center	$238,861	$250,018	$204,398	$150,861	$126,703	21	
Ralston Foods	$213,095	$160,585	$146,809	$166,815	$120,258	20	
Cintas / U.S. Energy Services	$50,119	$56,733	$56,300	$53,568	$46,880	8	
Zane Villa Co	$38,641	$37,189	$38,990	--	--	--	
New Club Housing, LTD	--	--	--	$47,088	--	--	
Fairfield County Commissioner	$39,043	$40,376	$39,684	$42,549	$46,526	8	
Eckert Enterprieses, LTD	--	$40,370	$35,606	--	--	--	
Lancaster Camp Ground	--	--	--	$42,997	$46,450	8	
Lancaster Board of Education	$39,116	$39,603	$41,907	$48,739	$47,507	8	
Lancaster Midtown, LLC	--	--	--	--	$41,098	7	
Crestview Nursing Home	$34,630	--	--	--	--	--	

The following figure shows that the trend in billed water flow for residential customers has shown very little growth. However, it has increased slightly for commercial and industrial customers.

Figure 2-6: Billed Water Flow (100 CF)



Some of the factors contributing to a drop in billed flow between 2010 and 2011 are home foreclosures and vacancies. Both of those factors lead to the City removing meters and discontinuing service to some customers.

2.3.5. Operating Expenses

The water utility's budgeted O&M expenditures for FY2014 total $6,633,601. The historical trend of water O&M expenditures has shown an upward trend over the previous four years and are projected to increase by 1.9 percent from FY2013 to FY2014, as shown in Table 2-17.

Table 2-17: Historic and Budgeted O&M Expenditures[7]

	FY2010	FY2011	FY2012	FY2013	FY2014 Budgeted
O&M Expenditures	$5,751,867	$6,108,248	$5,952,789	$6,512,099	$6,633,601
Annual Percent Change	--	6.2 percent	(2.5 percent)	9.4 percent	1.9 percent

[7] City of Lancaster, Ohio – Annual Information Statement – 5/27/14

2.3.6. Water Capital Improvement Program

The water CIP developed for the City takes into consideration a) current and future infrastructure and operational needs, and b) regulatory commitments. The City's CIP is summarized in Table 2-18.

Table 2-18: Water CIP

	2014	2015	2016	2017	2018	2019
Growth		$978,521	$533,554	$1,914,834	$694,992	$757,945
Reliability				868,864		
Miscellaneous	545,930	546,930	492,386	492,386	492,386	492,386
Total	$545,930	$1,525,451	$1,025,940	$3,276,083	$1,187,378	$1,250,331

	2020	2021	2022	2023	2024	2025
Growth	$5,673,960					$3,422,844
Reliability						5,034,806
Miscellaneous	492,386	499,250	506,563	545,930	546,930	972,386
Total	$6,166,346	$499,250	$506,563	$545,930	$546,930	$9,430,036

	2030	2035	2040	2045	2050
Growth	$3,356,603				
Reliability					
Miscellaneous	1,212,386	1,212,386	1,212,386	1,212,386	1,219,250
Total	$4,568,989	$1,212,386	$1,212,386	$1,212,386	$1,219,250

2.3.7. Water Debt Service Obligations

As of December 31, 2013, the City's Water Fund had a total of $22M in outstanding debt, which is comprised of Revenue Bonds and OWDA loans. In FY2014, the City is obligated to pay approximately $2.5M annual principal and interest payments (debt service) on the outstanding debt[8]. A summary of the outstanding debt is provided in Table 2-19.

[8] City of Lancaster, Ohio – Annual Information Statement – 5/27/14

Table 2-19: Water Debt Service Obligations[9]

Debt Service Obligations	Maturity (Year)	Remaining Principal
Series 2004 Revenue Bonds	2018	$265,000
Series 2012 Revenue Bonds	2029	$5,770,000
OWDA Loan No. 3408	2022	$14,262,930
OWDA Loan No. 3458	2023	
OWDA Loan No. 3704	2032	

2.3.8. Historical Financial Results

The historical financial results for the water utility over the past five years are summarized in Table 2-20. These results indicate a small downward trend in revenues and expenditures, which appears to correspond with the loss of residential and commercial customers. The water utility is also keeping less cash available for reserves.

Table 2-20: Historical Water Utility Operating Results[10]

	2009	2010	2011	2012	2013
Total Revenues	$8,661,376	$8,247,811	$8,013,832	$8,432,338	$7,998,271
Total Expenditures	$9,361,116	$8,287,763	$8,642,582	$8,450,355	$7,951,729
Revenues Over (Under) Expenditures	($699,740)	($39,952)	($628,750)	($18,017)	$46,053
Beginning Balance (January 1)	$4,391,749	$3,692,008	$3,652,056	$3,023,306	$3,005,289
Ending Balance (December 31)	$3,692,008	$3,652,056	$3,023,306	$3,005,289	$3,051,342

2.4. Stormwater

2.4.1. System Description

The stormwater management system includes all man-made facilities, structures, and natural watercourses owned by the City, and used for collecting and conveying stormwater from drainage areas to the points of final outlet. The final outlets include, but

[9] 2012 CAFR and City of Lancaster, Ohio – Annual Information Statement – 5/27/14
[10] City of Lancaster, Ohio – Annual Information Statement – 5/27/14

are not limited to, any and all of the following: conduits and appurtenant features, canals, creeks, catch basins, ditches, streams, gulches, gullies, flumes, culverts, siphons, streets, curbs, gutters, dams, floodwalls, levees, and pumping stations.

The stormwater infrastructure, according to the 2013 inventory, consists of 141 culverts, 346,754 linear feet of storm sewer, and two pump stations. The majority of the system is reaching the end of useful life as shown in the following table.

Table 2-21: Stormwater Age of Infrastructure

	> 40 Years	20 – 40 Years	10 – 20 Years	< 10 Years
Culverts	51 percent	16 percent	20 percent	13 percent
Storm Sewers	56 percent	13 percent	15 percent	16 percent
Pump Stations	-	-	50 percent	50 percent

Much of the City's infrastructure is nearing the end of its useful life and will need to be replaced or repaired within the next twenty years. The City graded the physical condition of the infrastructure components in 2012 in order to estimate its replacement and repair costs. The total estimated replacement and repair cost for the stormwater utility is $180M. However, in order to prioritize the LTCP, the City is planning to only make critical repairs as they occur and delay the remainder of the replacement and repairs for at least 20 years. The total estimated critical replacement and repair cost for the stormwater utility is $9M.

The City estimates there is approximately 1.7 million feet of curb and 219,000 feet of ditches and streams. Tarhee Dam and the associated diversion system located south of the City is the only flood control project.

Stormwater is billed by the amount of impervious area on a property, with 1 Equivalent Residential Unit (ERU) being 2,600 square feet. A credit program is available for customers over 5 ERUs. As of December 31, 2013 the stormwater utility served 14,744 customers. The total number and percentage of users by category are estimated to be 13,704 (92.93 percent) residential, 1,014 (6.87 percent) commercial, 6 (0.05 percent) county, and 20 (0.13 percent) industrial. By contrast, residential customers comprise 48 percent of the total ERUs.

2.4.2. Regulatory Compliance Obligations

The stormwater utility must comply with industry regulations, which are as follows:

Table 2-22: Stormwater Compliance Obligations

	Annual Cost
Permit Administration	$65,322
Public Education	$15,280 plus $39,056 in credits
Public Awareness	$46,114 plus $50,332 in credits
Construction Management	$99,845
Post Construction Management	$35,573 plus $17,969 in credits
System Mapping and Illicit Discharge Detection	$77,099
Good Housekeeping	$737,052
Total	$968,928

Future regulatory issues that could increase the stormwater utility's cost, but are currently unknown at the time of preparing this report include more stringent TMDL discharge limits and Construction Stormwater Limits.

2.4.3. Stormwater Rates and Customer Bill Comparison

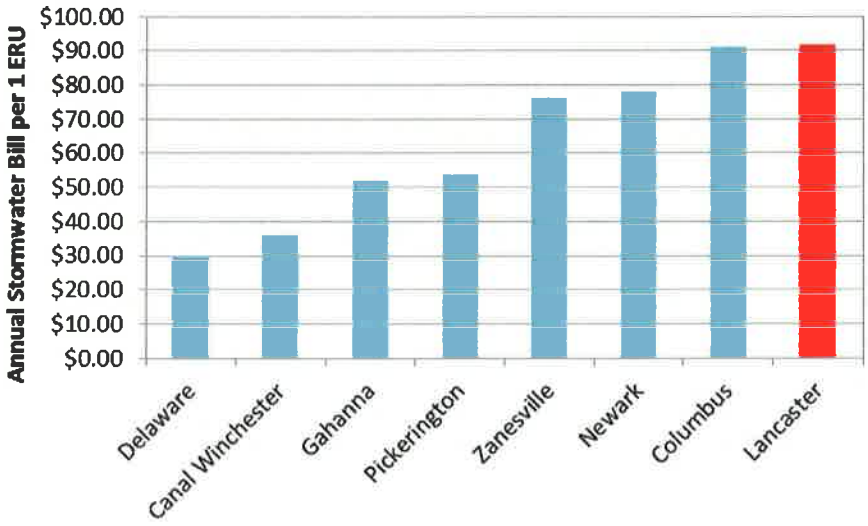
The City's stormwater utility charges a monthly rate of $7.64 per equivalent residential unit (ERU). The rates increased by a CAGR of 8.6 percent from FY2010 to FY2014. The stormwater rates over the past five years are shown in Table 2-23.

Table 2-23: Stormwater Rate Structure per Customer

Rate Schedule	FY2010	FY2011	FY2012	FY2013	FY2014
Charge per ERU	$5.50	$6.25	$7.00	$7.64	$7.64

A stormwater rate survey is shown in Figure 2-7 that compares the City's stormwater utility rates to other communities in the region. This figure shows that the City has the highest average monthly stormwater bill among similar sized cities and economic competitors.

Figure 2-7: Residential Annual Stormwater Bill Survey[11]



2.4.4. Historical and Projected Customer Growth

Over the past five years, customer growth for the stormwater utility has shown an upward trend as shown in Table 2-24. The CAGR was 0.85 percent for total ERUs.

Table 2-24: Stormwater Customers (ERUs)

Customer Class	2009	2010	2011	2012	2013	CAGR (Percent)
Residential	15,436	16,009	15,560	15,798	15,760	0.52
Commercial	14,149	14,675	13,958	14,338	14,904	1.31
County	8	4	1	2	6	-6.94
Industrial	2,321	2,454	2,381	2,387	2,347	0.28
Total	31,914	33,142	31,900	32,525	33,017	0.85

The stormwater utility faces a unique challenge when it loses a commercial or industrial customer. The impervious area created by this type of customer must still be accounted

[11] Zanesville and Columbus both have an additional CSO or wet weather fee that was added to the monthly stormwater charge.

for even though they are no longer conducting business within the City. However, it is very difficult to continue collecting stormwater fees once the business is gone.

2.4.5. Operating Expenses

The stormwater utility's budgeted O&M expenditures for FY2014 totals $1,574,770. The historical trend of stormwater O&M expenditures over the past five years is shown in Table 2-25.

Table 2-25: Historic and Budgeted O&M Expenditures

	FY2010	FY2011	FY2012	FY2013	FY2014 Budgeted
O&M Expenditures	$1,571,983	$1,617,587	$1,343,370	$1,439,079	$1,574,770
Annual Percent Change	--	2.9 percent	(17.0 percent)	7.1 percent	9.4 percent

2.4.6. Stormwater Capital Improvement Program

The stormwater CIP developed for the City takes into consideration a) current and future infrastructure and operational needs, and b) regulatory commitments. The CIP for permit compliance by 2025 is summarized in Table 2-26.

Table 2-26: Stormwater CIP

	2014	2015	2016	2017	2018	2019
CSO Reduction	$58,000	$507,004	$100,000	$750,000	$2,208,740	$881,370
Environmental	250,000	0	250,000	0	0	0
O&M	600,000	600,000	600,000	600,000	600,000	600,000
WIB	2,600,000	300,000	335,000	0	2,000,000	0
Total	$3,508,000	$1,407,004	$1,285,000	$1,350,000	$4,808,740	$1,481,370

	2020	2021	2022	2023	2024	2025
CSO Reduction	$1,544,517	$1,030,680	$602,640	$0	$0	$1,988,041
Environmental	0	0	0	0	0	0
O&M	600,000	600,000	600,000	600,000	600,000	600,000
WIB	300,000	0	0	1,000,000	0	0
Total	$2,444,517	$1,630,680	$1,202,640	$1,600,000	$600,000	$2,588,041

	2030	2035	2040	2045	2050
CSO Reduction	$1,153,748	$1,179,350	$5,237,250	$379,260	$0
Environmental	0	0	0	0	0
O&M	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000
WIB	0	0	0	0	0
Total	$4,153,748	$4,179,350	$8,237,250	$3,379,260	$3,000,000

WIB is water in basement.

2.4.7. Stormwater Debt Service Obligations

As of December 31, 2013, the City's Stormwater Fund had a total of $1.8M in outstanding debt, which is comprised of General Obligation (GO) Bond Anticipation

Notes in the amount of $1,411,000 and an OWDA loan in the amount of $353,968. In FY2014, the City Stormwater Fund will pay $311,221 in principal and interest payments (debt service) on the outstanding debt[12]. The Department of Transportation/General Fund will pay an additional $13,632 toward the OWDA loan. A summary of the outstanding debt is provided in Table 2-27.

Table 2-27: Stormwater Debt Service Obligations

Debt Service Obligations	Maturity (Year)	Remaining Principal
GO Bond Anticipation Notes	2018	$1,411,000
OWDA Loan	2031	$353,968

The GO Bond Anticipation Notes mature annually and are scheduled to be retired by 2018. The OWDA loan payments are split between the stormwater utility (50 percent), Lancaster Department of Transportation (25 percent), and the General Fund (25 percent). The loan is scheduled to be retired in 2031.

2.4.8. Historical Financial Results

The historical financial results for the stormwater utility over the past five years are summarized in Table 2-28. These results show that although revenues and expenditures have continued to increase, the expenditures exceeded the revenues in 2013. The stormwater utility is also increasing the amount of cash that it keeps for reserves.

Table 2-28: Historical Stormwater Utility Operating Results[13]

	2009	2010	2011	2012	2013
Total Revenues	$1,882,252	$2,101,474	$2,241,784	$2,620,394	$2,925,870
Total Expenditures	$1,636,660	$2,059,379	$2,296,824	$1,986,592	$3,308,830
Revenues Over (Under) Expenditures	$245,592	$42,095	($55,040)	$633,802	($382,960)
Beginning Balance (January 1)	$426,018	$671,610	$713,705	$658,666	$1,292,467
Ending Balance (December 31)	$671,610	$713,705	$658,666	$1,292,467	$909,507

[12] Financial Capability Information 06052014.xls from the City
[13] Financial Capability Information 06052014.xls from the City

3. Socioeconomic Conditions

3.1. Introduction

This section of the report describes the economy and the current socioeconomic conditions of the City.

3.1.1. Economy of Lancaster

The economic condition of the City of Lancaster, Ohio, is diverse in its economic drivers. Since it is the County Seat for Fairfield County, it has the economic benefit of government jobs as well as the benefit of regional citizens visiting for government services. The City is also a manufacturing community that provides direct manufacturing jobs and indirect jobs servicing the manufacturing companies. It is also a regional hub for healthcare and retail. Both sectors provide a regional attraction for a steady influx of customers for health services and retail opportunities.

In 2012, major building projects were announced and are in various stages. Voters approved a levy to build five new elementary school buildings at a cost of approximately $85 million. Other 2012 announcements include a $35 million expansion of the Fairfield Medical Center's Surgery wing. The Veteran Heath Center invested approximately $500,000 to renovate and move to a more central location in the City. Fairfield County Municipal Court purchased a building in downtown and will invest $7 million to renovate it.

The SRI Ohio Corporation is expanding its manufacturing capabilities to include a sleeving and frosting process for higher end liquor bottles. Phoenix Electrotek built manufacturing operations in the City, which opened in June 2014. A Big Sandy Superstore began construction in 2013, and numerous small businesses in service and retail opened in 2012.

In an effort to open the door for more industries to consider expanding in the City, a premier site certification was completed on one-hundred eighty acres in Rock Mill Industrial Park. This premier designation has only been given to eight Industrial Sites within the United States. The certification covered over two hundred factors and certified the site as truly shovel ready for food processing and manufacturing operations.

The City is making every effort possible to attract new industries and highlight itself as a place of opportunity in order to offset their reliance on a few major industries. Since there are only a few large industries, the City's economy is sensitive to losing them. For instance, if the City were to lose Anchor Hocking, it would lose the second largest

employer in Fairfield County, and the largest industrial customer for the wastewater and water utilities. The City would also be impacted from a loss of tax revenues.

While the private sector has seen slight growth, the public sector has experienced reductions in funding and staffing due to the national economic conditions and loss of revenue. Revenue was lost due to decreased tax collections and loss of funds from the State of Ohio, which were historically diverted to local governments.

The major sources of revenues for the General Fund are property tax, income tax and local government assistance funds. Taxes make up 73 percent of the General Fund, up from 65 percent in 2005 while local government assistance funds have dropped from 13 percent of the budget in 2005 to 9 percent in 2012. Since 2008 property taxes have been reduced by state initiatives such as Homestead Exemption, the elimination of tangible property taxes, and a reduction in utility taxes. Additional reductions are expected in 2014 as part of the mandated property reappraisal.

Income taxes have remained steady, reflecting the private sector growth. The State of Ohio has eliminated the estate tax which resulted in a drop of revenues of approximately $500,000 per year. Further proposed changes to the State law may result in a loss of up to $1 million of income tax funds.

Local government assistance funds had for a short period of time been adjusted to help phase in the changes to property taxes. However, the State of Ohio budget act for 2012-2013 biennium reduced the allocation to the local government fund. The City is now allocated a minimum of $750,000 in local government assistance down from the 2009 allocation of $1,607,407 in 2009.

The City also experienced decreases in investment income from a high of $1.2 million in 2007 to $297,793 in 2012 reflecting nationwide interest rate reductions. Permit fees have also seen reductions due to construction slow-downs. As a result General Fund Revenues have fallen to the 2006 level (not adjusted for inflation) as shown in the table below.

The City is also faced with an aging population with more retirees and a large population of single parent homes. Both of those demographic categories typically have lower incomes. Over one quarter of the population is made up of people that are 55 years of age or older. Other family households account for 19 percent of the total number of households.

Table 3-1: General Fund Revenues

Year	Revenues
2005	$23,002,970
2006	$23,954,828
2007	$24,774,838
2008	$25,631,814
2009	$25,687,187
2010	$25,167,455
2011	$23,480,967
2012	$23,784,296

As a result of the decrease in the General Fund, the City has re-organized several departments and negotiated staff reductions culminating in the 2009 layoff of ten employees and reduction of both police and fire staffing. In addition, several positions within the utility departments remain vacant as sufficient funds are not available to pay the wages and benefits.

3.1.2. Population and Households

The population estimate for the City has shown a slight upward trend according to the American Community Survey (ACS) three-year estimates. The annualized population growth is 0.7% over this five year period.

Table 3-2: Population Trend[14]

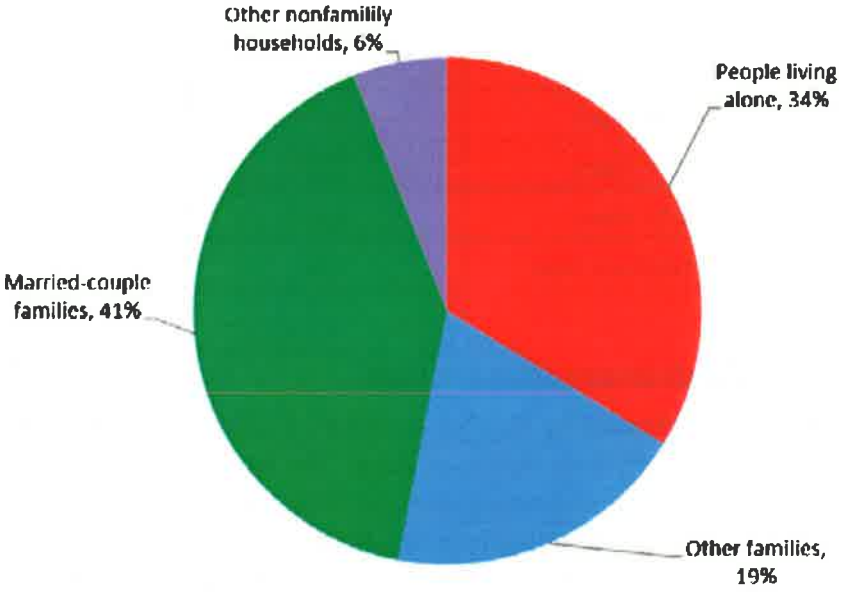
Year	Population
2012	38,865
2011	38,866
2010	38,748
2009	37,064
2008	36,961
2007	37,549

[14] 2012 ACS 3-Year Estimate: DP05

According to the Population and Housing Narrative Profile: 2010 – 2012 provided by ACS, there were 16,000 households in the City over this time period, and the average household size was 2.4 people.

Families made up 60 percent of the households, and this consisted of 41 percent married-couple families and 19 percent other families (see Figure 3-1: Types of Households in Lancaster). Of the other families, 10 percent are female householder families with no husband and with children under the age of 18 years. Nonfamily households make up the remaining 40 percent of households in the City.[15]

Figure 3-1: Types of Households in Lancaster



The following table shows the age range of the City's population. Approximately 40 percent of the population is between the ages of 25 and 54 and approximately 27 percent of the population is 55 or older.[16]

[15] 2012 ACS 3-Year Estimate: NP01
[16] 2012 ACS 3-Year Estimate: DP05

Table 3-3: Age Range

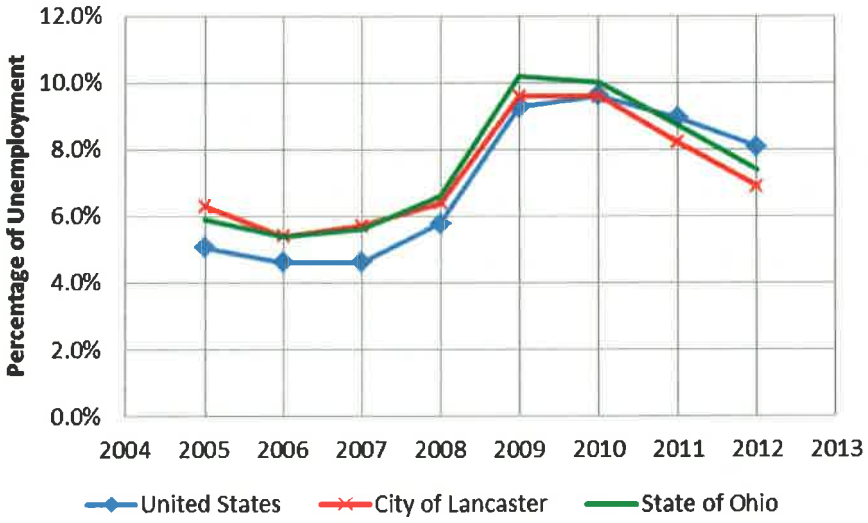
	Percent
Under 5 Years	7.2
5 to 9 Years	6.4
10 to 14 Years	6.8
15 to 19 Years	7.1
20 to 24 Years	6.5
25 to 34 Years	13.8
35 to 44 Years	12.2
45 to 54 Years	13.0
55 to 59 Years	6.1
60 to 64 Years	5.7
65 to 74 Years	7.5
75 to 84 Years	5.1
85 Years and Over	2.5

3.1.3. Labor Force and Unemployment Rate

The population growth experienced by the City is, in part, a reflection of continuing growth in the Columbus Metropolitan Statistical Area. The local labor force has benefitted by access to jobs in the Columbus area. In 2012, the unemployment rate for Ohio was 7.4 percent, while the unemployment rate for the City was slightly below the state rate at 6.9 percent. Approximately 10.5 percent of the civilian labor force within the City is employed outside the City of Lancaster.[17] Figure 3-2 shows that the unemployment rate for the City has followed a similar trend as compared to Ohio and the U.S.

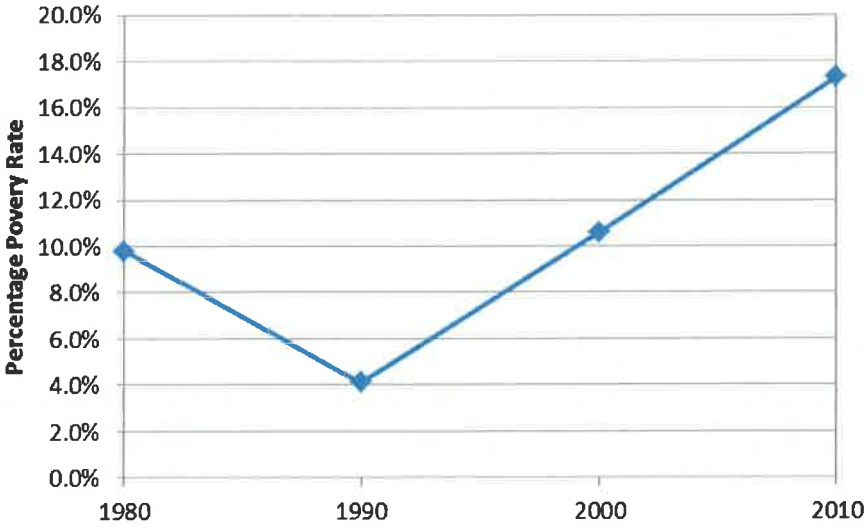
[17] FY 2013 – FY 2017 Consolidated Housing and Community Development Plan (CHCDP)

Figure 3-2: Unemployment Rate Trend[18]



Despite modest population growth and moderate unemployment rates, the poverty rates for the City have increased since 1990 as shown in Figure 3-3.

Figure 3-3: Poverty Rate Trend[19]



[18] U.S. Bureau of Labor Statistics: U.S. Series ID: LNU04000000; L,OH Series ID: LAUCT394172000000003; OH Series ID: LAUST390000000000003

[19] FY 2013 – FY 2017 Consolidated Housing and Community Development Plan (CHCDP)

In the City, 55.8 percent of the households are defined as low and moderate income, indicating that many households would experience added hardship by increasing utility rates.

One of the reasons that the City may have a high poverty rate is because of education. Poverty rates are the lowest for those with a bachelor's degree or higher[20] and are the highest for those without a degree of higher education. The City has a lower percentage of people in this category when compared to Ohio and the U.S.

Table 3-4: Percentage of Population with a Bachelor's Degree or Higher

	Percentage with Bachelor's Degree or Higher[21]
Lancaster	14.8 percent
Ohio	24.9 percent
United States	28.6 percent

Another contributing factor to the City's high poverty rate could be because poverty rates are higher for families without a full-time, year-around worker such as in a single-parent household, especially those with a female head of household.[22] Figure 3-1 showed that married-couple households only comprise 41 percent of all households in the City.

3.1.4. Income Distribution

The median household income (MHI) is one measure of the wealth of the community. However, relying solely on the MHI as an indicator of a community's ability to pay for added wastewater costs due to regulatory mandates may be highly misleading. Some of the limitations of the MHI are the following:

- MHI bears little relationship to poverty or other measures of economic need within a community.
- MHI does not capture impacts across diverse populations.
- MHI provides a "snapshot" that does not account for the historical and future trends of a community's economic, demographic, and/or social conditions. This is particularly relevant in areas that may be experiencing economic declines or population losses.

[20] The Ohio Poverty Report, February 2014
[21] 2012 ACS 3-Year Estimate: DP02
[22] The Ohio Poverty Report, February 2014

In many cities, incomes are less centered on the median compared to incomes in the national average. Although this is the case in many larger urban communities, this may also be the case for many rural/nonmetropolitan communities, which tend to have a higher percentage of households in low-income categories compared to the national average. Therefore, in addition to the MHI, an analysis on alternative income metrics must be considered to adequately measure a community's affordability levels.

3.1.4.1. Median Household Income

The MHI for the City is low as compared to the national average MHI, as shown in Table 3-5. As of 2012, the average earned income in the City was 20 percent below the Ohio average and 27 percent below the national average. In 2007, the City was 15 percent and 22 percent below the Ohio average and national average, respectively. Therefore, the gap between both the state and national average MHI and the City's MHI is widening.

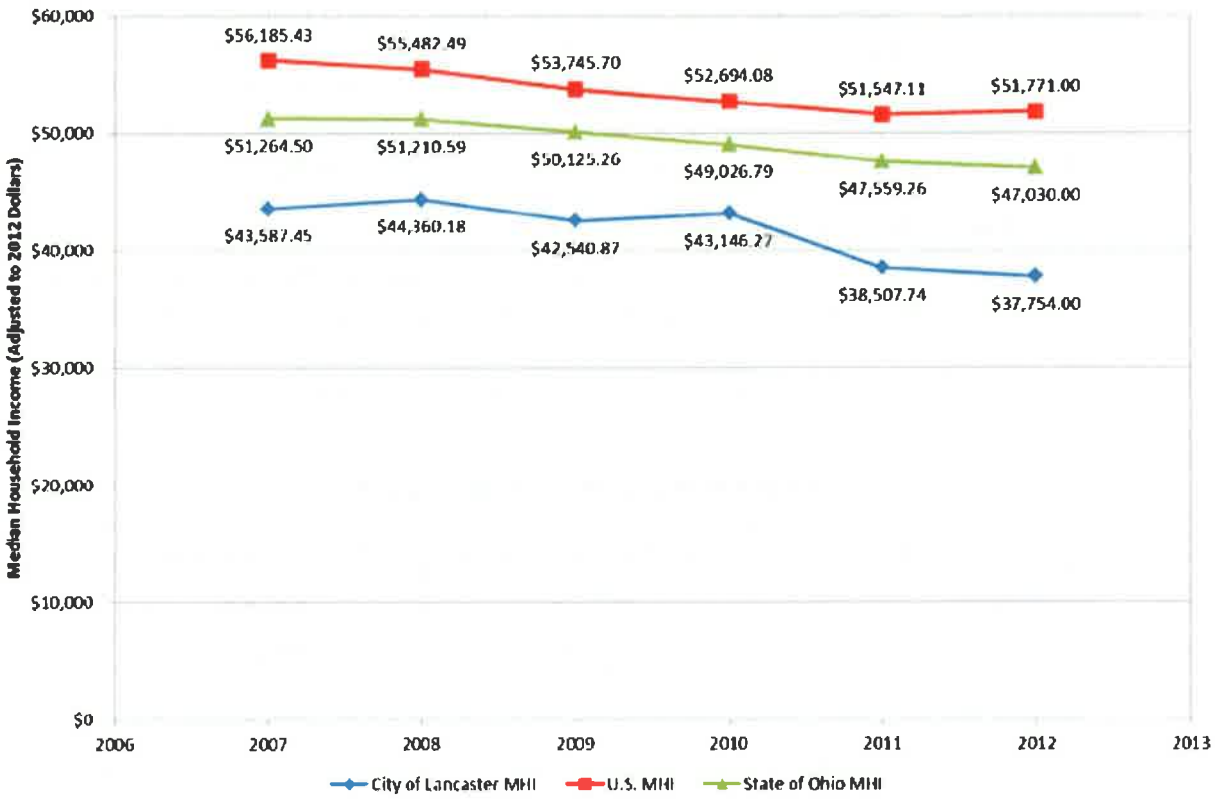
Table 3-5: Median Household Income[23]

Description	2012 ACS 3-Year Estimate	2007 ACS 3-Year Estimate
Lancaster	$37,754	$39,363
Ohio	$47,030	$46,296
United States	$51,771	$50,740

A graph of the MHI trend from 2007 to 2012 in the City is shown below in Figure 3-4. Overall, the MHI trend has been declining with a significant decrease after 2010.

[23] 2012 ACS 3-Year Estimate: S1903

Figure 3-4: Median Household Income Trend for the U.S. and City of Lancaster[24]



It is possible that the City's decreasing trend in MHI can be contributed to an aging population, a high percentage of single-parent household (see Figure 3-1), and a loss of higher paying jobs.

3.1.4.2. Income Quintiles

Analyzing the household income distributions of the community, in addition to MHI, provides a better view of the community's affordability. The upper limits of household income quintiles for the City, Ohio and the U.S. are shown below in Table 3-6. The lowest quintile in the City is much lower than both Ohio and the U.S. This quintile indicates that the lowest 20 percent of households in the City earn less than $16,034 per year. All household incomes quintiles in the City are between 18 percent to 26 percent and 24 percent to 37 percent below Ohio and the U.S., respectively.[25]

[24] 2012 ACS 3-Year Estimate: S1903
[25] 2012 ACS 3-Year Estimate: B19080

Table 3-6: Income Quintiles

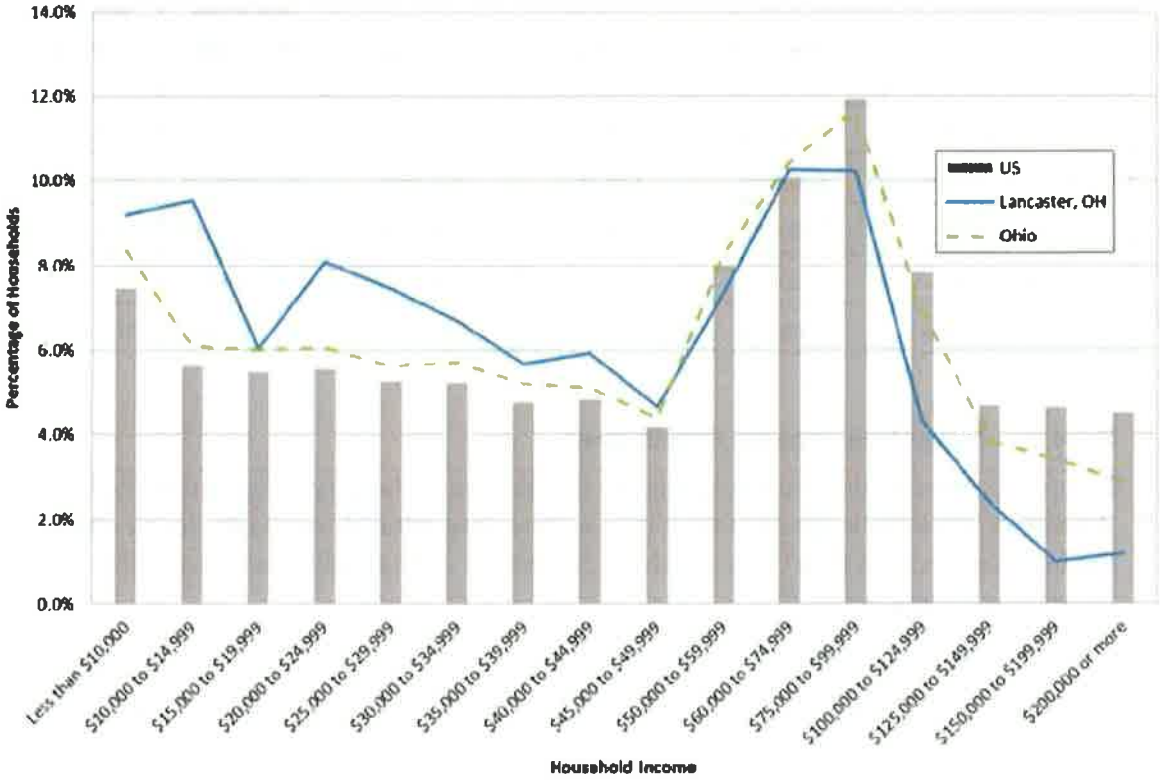
Household income quintile upper limits (2012$)				Percent Below the Ohio Limit	Percent Below the U.S. Limit
	Lancaster, OH	Ohio	United States		
Lowest Quintile	$16,034	$19,611	$21,195	18.2 percent	24.4 percent
Second Quintile	$29,729	$36,901	$40,569	19.4 percent	26.7 percent
Third Quintile	$46,642	$58,827	$64,847	20.7 percent	28.1 percent
Fourth Quintile	$72,683	$92,314	$104,062	21.3 percent	30.2 percent
Lower Limit of Top 5	$119,798	$162,063	$191,391	26.1 percent	37.4 percent

3.1.4.3. Household Income Distribution

Figure 3-5 presents the household income distribution in the City compared to the U.S. As shown, the income levels in the City are more concentrated toward the lower end of the income spectrum than Ohio and the U.S., and are substantially lower than the incomes at the upper end.[26]

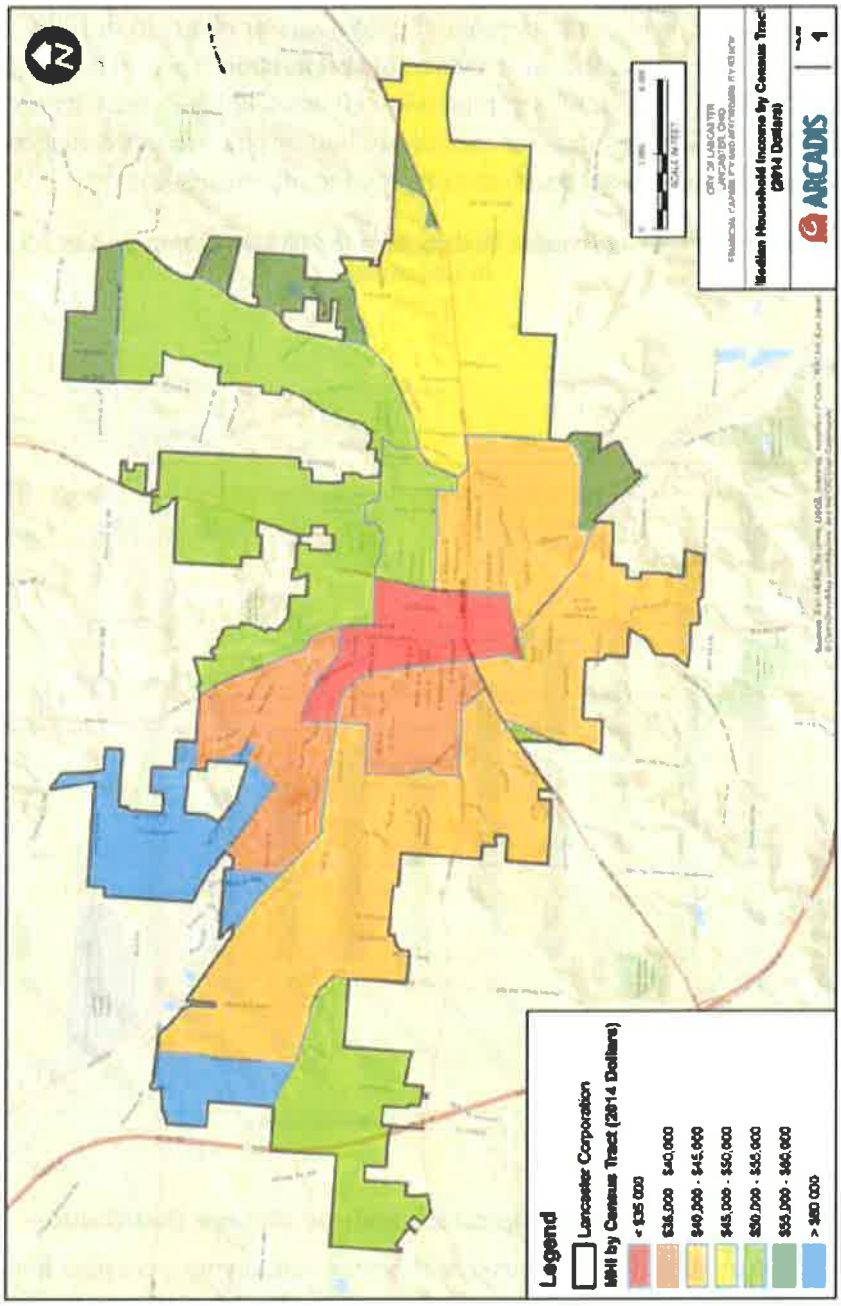
[26] 2012 ACS 3-Year Estimate: B19001

Figure 3-5: Income Distribution in Lancaster, Ohio, and the United States (2012)



The MHI was also analyzed by Census tract levels in order to identify specific areas in the City with high concentrations of low-income households. Figure 3-6 shows the most recent Census tract data as reported by ACS for 2009. Census tracts levels are combination of census tracts and are the smallest geographic entity for published sample data. Census tracts are formed by streets, railroads, streams and other bodies of water, other visible and cultural features, and legal boundaries. The red and orange areas visibly show that a large portion of the City has incomes on the lower end of the income spectrum.

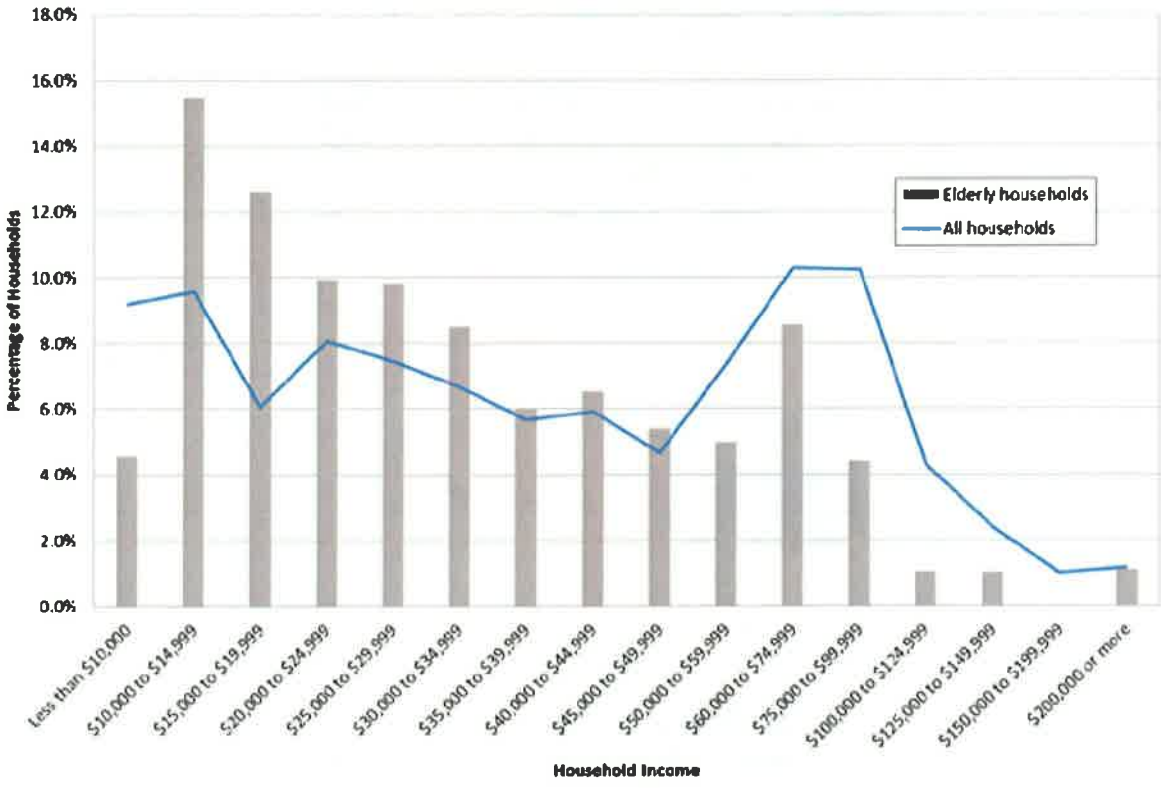
Figure 3-6: Median Household Income by Census Tract (2014 Dollars)



3.1.4.4. Elderly Income Distribution

The evaluation of income distribution across different household types can help further evaluate the affordability of a community. The income distribution of the elderly households (where the head of the household is 65 years or older) in the City was evaluated because it is one of the most vulnerable population types. The income distributions for elderly households compared to all households in the City are shown below in Figure 3-7. The incomes for the elderly households are more concentrated in the lower end of the income spectrum as compared to all households.[27]

Figure 3-7: Elderly Household Income Distribution in 2012 As Compared to All Households in Lancaster



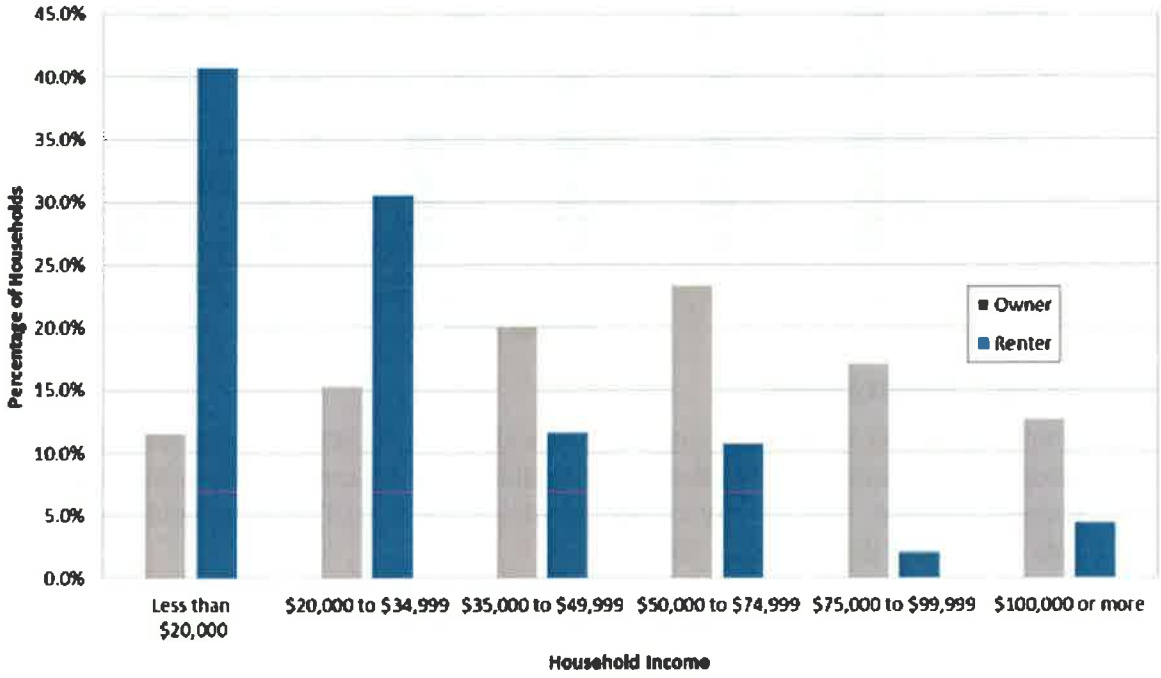
3.1.4.5. Renter- and Owner-occupied Household Income Distribution

The evaluation of income distributions across renter- and owner-occupied households is also important because renter-occupied households tend to have lower incomes. The MHI in the past 12 months in 2012 dollars is $28,867 for renter-occupied households and

[27] 2012 ACS 3-Year Estimate: B19037

$53,477 for owner-occupied households[28]. Figure 3-8 shows the income distribution for renter- and owner-occupied households in the City, where 45 percent of all households are renter-occupied. As shown, renter-occupied household have incomes that are more concentrated in the lower end of the income spectrum as compared to owner-occupied households. Over 40 percent of renter-occupied households have incomes less than $20,000 per year.

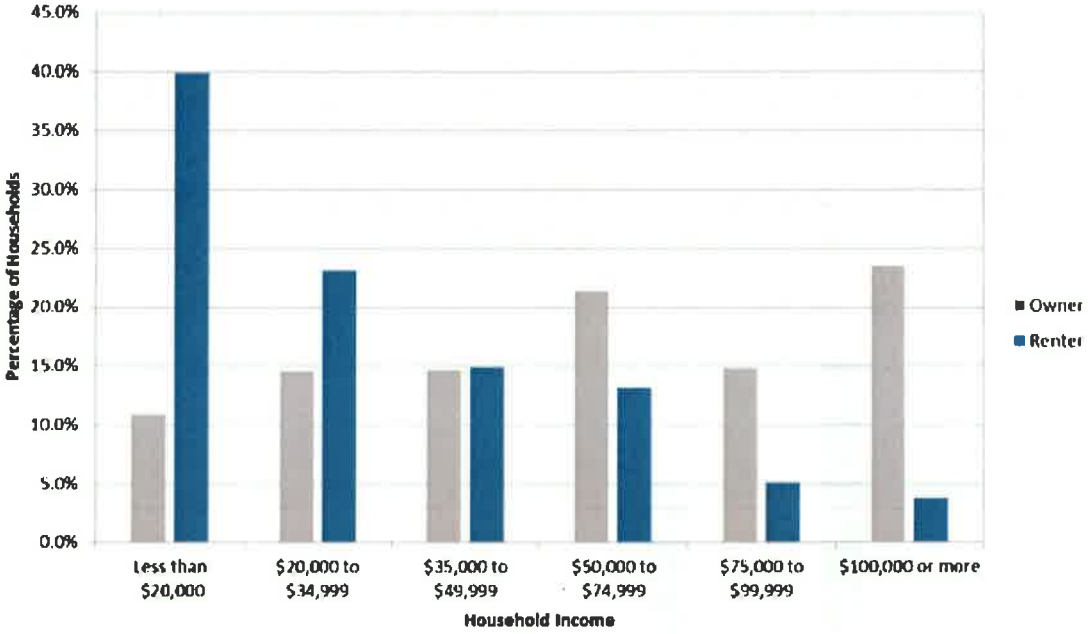
Figure 3-8: 2012 City of Lancaster Income Distribution of Renter- and Owner-occupied Households



The income distribution of renter- and owner-occupied households is similar to the trend for Ohio. Figure 3-9 shows that the biggest difference between the City and Ohio is for owner-occupied households earning $100,000 or more.

[28] 2012 ACS 3-Year Estimate: B25118

Figure 3-9: 2012 Ohio Income Distribution of Renter- and Owner-occupied Households



3.1.4.6. Poverty Rates

Another pertinent indicator of a community's affordability is the poverty rate. The poverty rate measures the number of households reporting earnings lower than the national standard. The poverty threshold varies by the size of the household. Table 3-7 lists the poverty thresholds for 2012.[29]

Table 3-7: 2012 Poverty Thresholds

Household Size	Poverty Threshold
1	$12,119
2	$15,600
3	$18,222
4	$24,028
5	$28,977
6	$33,329
7	$38,349
8	$42,890

[29] U.S. Census Bureau - https://www.census.gov/hhes/www/poverty/data/threshld/

If the disposable income for households below the poverty level is reduced, it could impact public health, since reducing the disposable income for these households adversely affects their ability to pay for food, heat, and medical care. The FY2013 – FY2017 Consolidated Housing and Community Development Plan reported the following trend for poverty rates in the City:

Table 3-8: City Poverty Rate Trend

Year	Poverty Rate
1980	9.8 percent
1990	4.1 percent
2000	10.6 percent
2010	17.3 percent

Table 3-8 shows how different categories of residents are affected by poverty.[30]

Table 3-9: Residents below Poverty Level in 2012

	Lancaster, OH	Ohio
All residents	20.2 percent	16.1 percent
Under 18 years	31.7 percent	23.6 percent
Residents age 65 or older	6.0 percent	7.9 percent

With the exception of residents age 65 and older, the City has a higher percentage of residents below the poverty level when compared to Ohio.

3.1.4.7. Housing Burden

Another indicator used to analyze the affordability and financial capacity of a community is the housing cost as a percentage of household income.[31] Figures 3-10 and 3-11 show the City housing burden for renter- and owner-occupied households, respectively. Figure 3-10 shows that renter-occupied households have a large number of households where housing costs are greater than 30 percent or more of their income. Whereas, Figure 3-11 shows that a majority of owner-occupied households have housing costs that are less than 20 percent of their income.

[30] 2012 ACS 3-Year Estimate: S1701
[31] 2012 ACS 3-Year Estimate: B25106

Figure 3-10: Housing Burden by Income Category for Renter-occupied Households

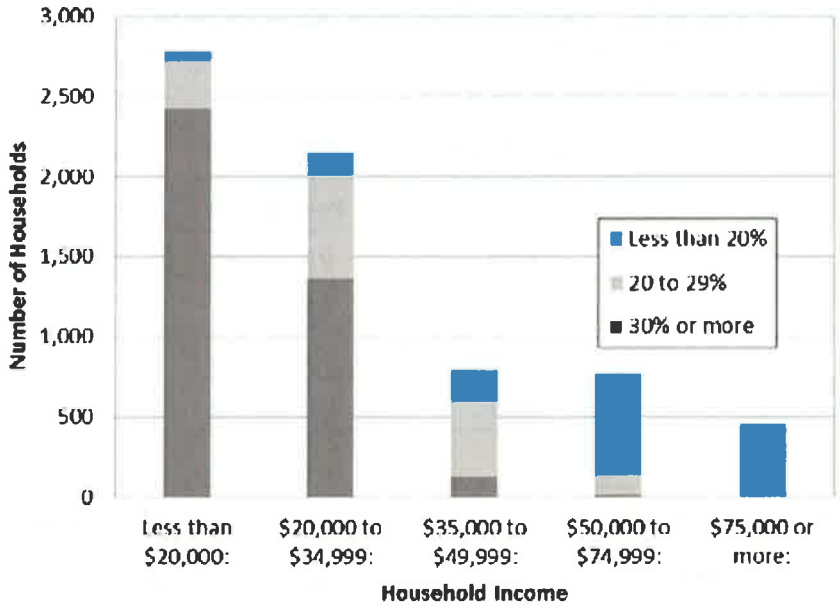
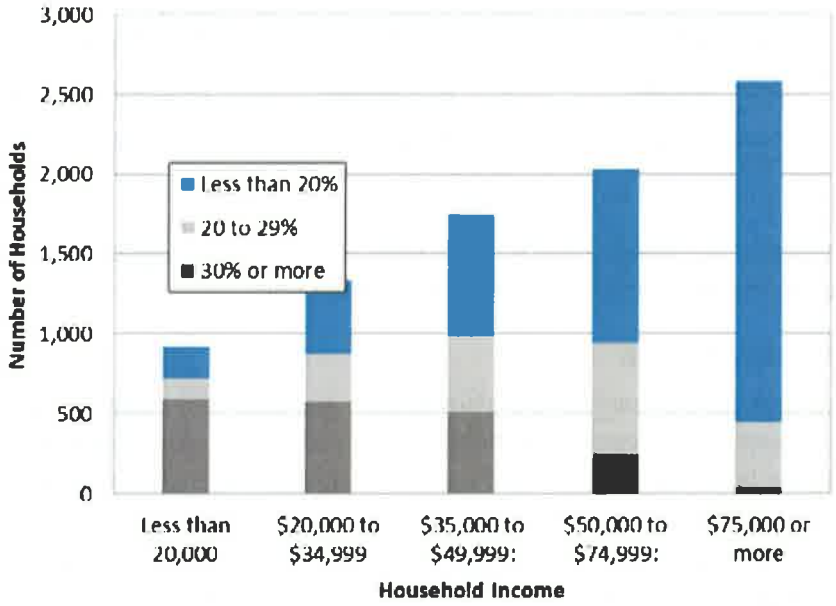
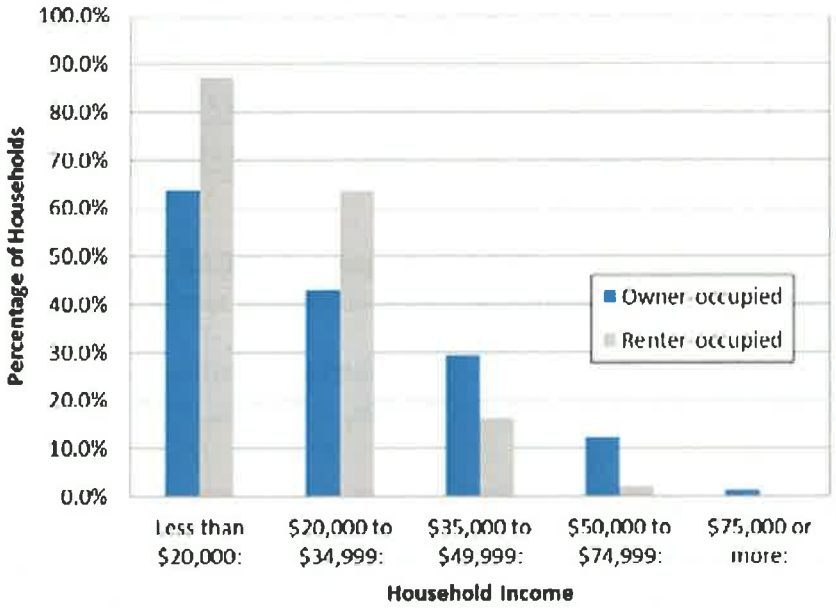


Figure 3-11: Housing Burden by Income Category for Owner-occupied Households



However, when both renter- and owner-occupied households are combined in Figure 3-12, it shows a large number of households with housing costs which are greater than 30 percent of their income.

Figure 3-12: Households Paying More Than 30 percent of Their Income for Housing



3.1.5. Home Energy Assistance Program

The Home Energy Assistance Program (HEAP) is a social service provided by the Lancaster – Fairfield Community Action Agency. HEAP offers heating bill assistance during the winter heating season. Whether an eligible household heats with electric, gas, firewood, coal, propane, fuel oil or kerosene, this program is available to households that are at or below 175 percent of the federal poverty threshold. The number of households eligible for HEAP provides an indication of the extent of economic hardship within the service area. Customers who receive utility services from American Electric Power (AEP) or Columbia Gas may also be referred for the Percentage of Income Payment Plan (PIPP). The Summer Crisis Program also assists low-income households with residents who are age 60 and over and Ohioans with a qualifying medical condition – people who are the most vulnerable to serious health problems resulting from summer's extreme temperatures. Households eligible for the program may receive electric bill payment assistance. Table 3-10 shows that a significant number and percentage of households in Lancaster participated in HEAP because they satisfy the hardship requirements.[32]

[32] City of Lancaster

Table 3-10: Households Participating in HEAP

Season	Number of Households	Percentage of Households
2012 - 2013	1,700	10.2 percent
2013 - 2014	1,512	9.5 percent

The number and percentage of households participating in HEAP indicates that there are significant economic hardships within the City's wastewater service area.

Utility services are billed differently than most other communities. In the City of Lancaster, customers receive one utility bill for gas, sanitation, stormwater, wastewater, and water.

3.1.6. Other Economic Indicators

Annual average gas, sanitation, stormwater, wastewater, and water bills were compared to the MHI for income category, federal poverty threshold incomes, and MHI for household type in order to examine household affordability.[33] The following table shows the annual average utility bills used in this analysis. The total utility bill is the sum of the gas, sanitation, stormwater, wastewater, and water utility bills. Note that the cost of natural gas appears on City customer utility bills because the City owns and operates its own gas utility.

Table 3-11: Annual Average Utility Bills

Utility	Annual Average Bill
Gas	$730.15
Sanitation	$162.00
Stormwater	$91.68
Wastewater	$534.10
Water	$370.79
Total Utility Bill	$1,888.72

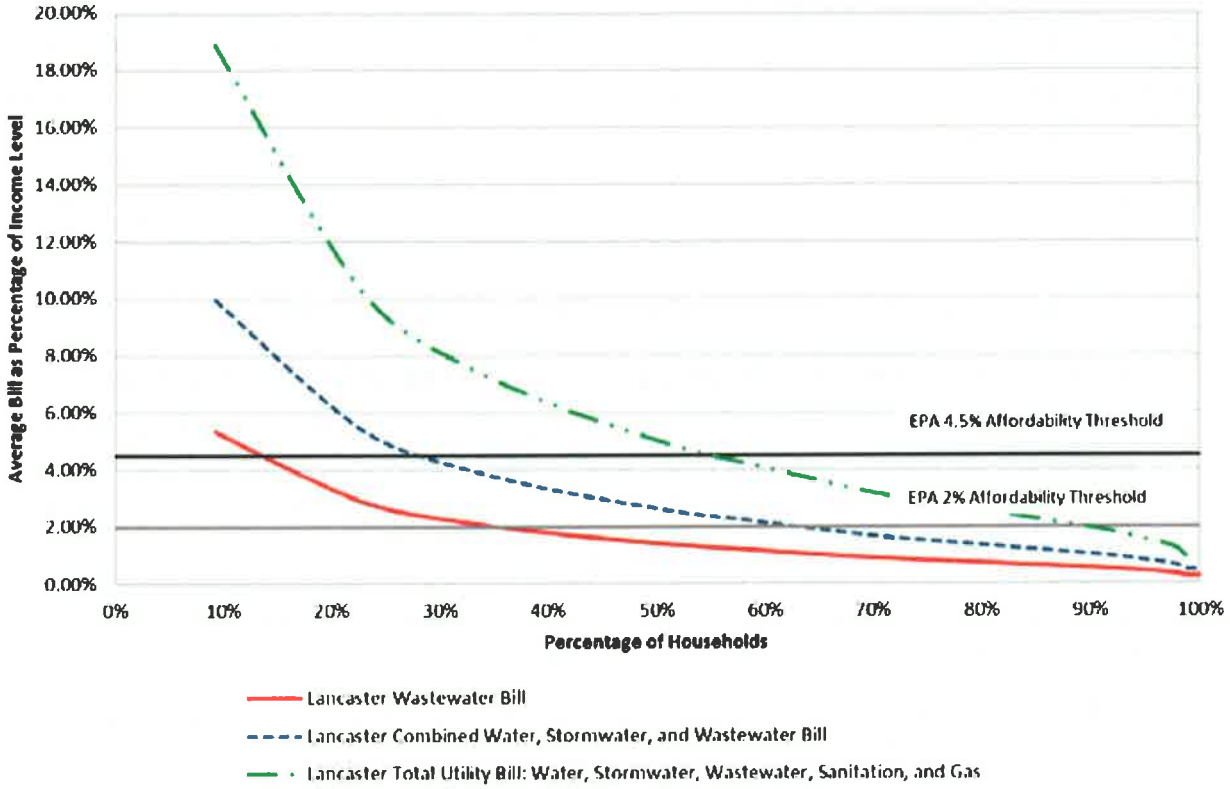
3.1.6.1. Percentage of Households at Different Levels of Affordability

This analysis shows how many households are paying more than 2 percent of their income for wastewater services and more than 4.5 percent for combined utility services.

[33] Household data from 2012 ACS 3-Year Estimate: B19001

Figure 3-13 shows that approximately 35 percent of households pay more than 2 percent of their income for wastewater services and about 30 percent pay more than 4.5 percent of their income for combined services.

Figure 3-13: Percentage of Households at Different Levels of Affordability



3.1.6.2. Average Bill as a Percentage of MHI Income Category

The average bill as a percentage of MHI income category shows how vulnerable lower income homes are to raising utility costs. Table 3-12 shows that the lowest income category, representing 25 percent of households, already has an average wastewater bill amounting to more than 5.3 percent of their MHI. The total utility bill is approximately 19 percent of their MHI.

Table 3-12: Average Utility Bill as a Percentage of MHI by Income Category

Income Category	Percentage of Households	MHI within Income Category	Average Wastewater Bill as a Percentage of MHI	Average Water, Stormwater, and Wastewater Bill as a Percentage of MHI	Average Total Utility Bill as a Percentage of MHI
Less than $20,000	25 percent	$10,000	5.3 percent	10.0 percent	18.9 percent
$20,000 to $39,999	28 percent	$29,999	1.8 percent	3.3 percent	6.3 percent
$40,000 to $74,999	28 percent	$57,499	0.9 percent	1.7 percent	3.3 percent
$75,000 to $99,999	10 percent	$87,499	0.6 percent	1.1 percent	2.2 percent
$100,000 to More	9 percent	$149,999	0.4 percent	0.7 percent	1.3 percent

This analysis assumes that MHI within each income quintile is the mid-point.

3.1.6.3. Average Bill as a Percentage of Federal Poverty Threshold Incomes

Examining the average utility bills as a percentage of poverty level income also provides insight into the number of people facing unaffordable wastewater, water, and stormwater bills. As stated earlier poverty thresholds vary by the size of the household. To perform this analysis, the utility bills were adjusted to account for differences in household size using 2.39 average persons per household. Table 3-13 shows that the annual average wastewater and combined bill ranges between 1.8 percent to 4.2 percent and 3.4 percent to 7.8 percent, respectively, of poverty threshold incomes.

Table 3-13: Average Utility Bill as a Percentage of Federal Poverty Threshold Incomes

Household Size	Poverty Threshold	Average Wastewater Bill as a Percentage of MHI	Average Combined Bill as a Percentage of MHI
1	$12,119	1.8 percent	3.4 percent
2	$15,600	2.9 percent	5.3 percent
3	$18,222	3.7 percent	6.9 percent
4	$24,028	3.7 percent	6.9 percent
5	$28,977	3.9 percent	7.2 percent
6	$33,329	4.0 percent	7.5 percent
7	$38,349	4.1 percent	7.6 percent
8	$42,890	4.2 percent	7.8 percent

3.1.6.4. Average Bill as a Percentage of MHI for Household Type

As mentioned earlier, incomes can vary significantly between renter-occupied and owner-occupied households including elderly households. Table 3-14 shows the average utility bills as a percentage of MHI across different household types. It confirms that renter-occupied and elderly households are using a larger portion of their income for utility bills when compared to the other types.

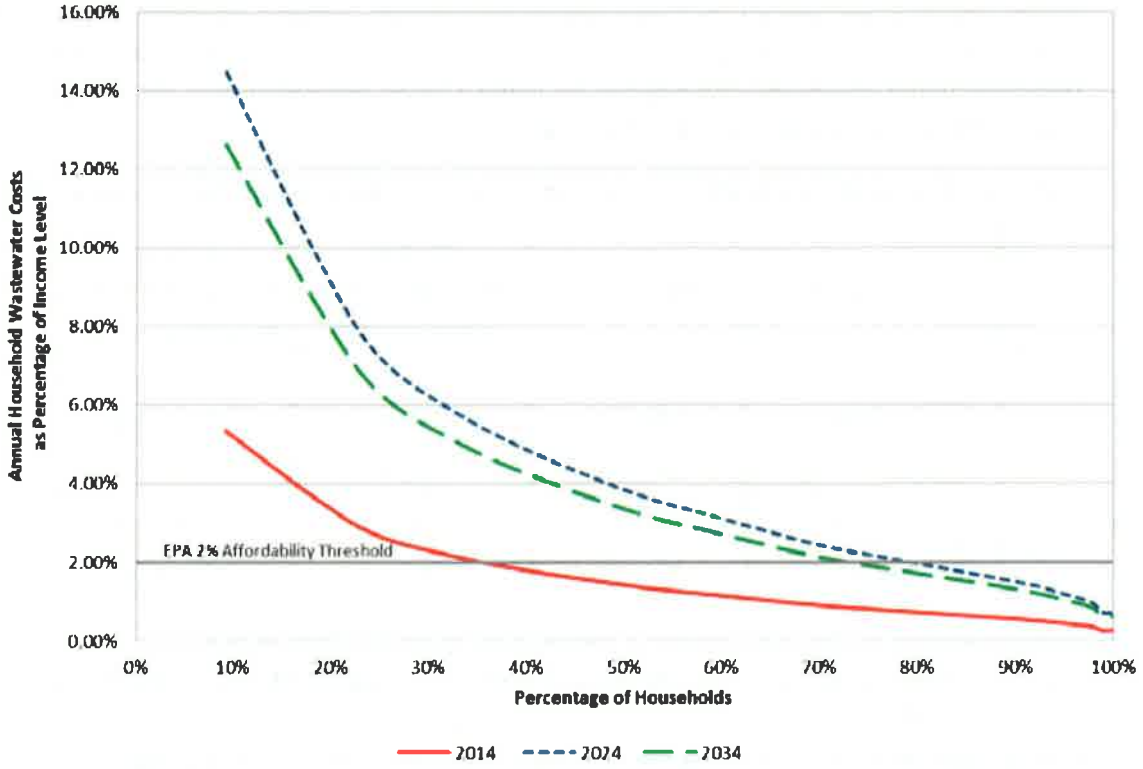
Table 3-14: Average Utility Bill as a Percentage of Household Income by Household Type

Household Type	MHI, 2012	Average Wastewater Bill as a Percentage of MHI	Average Combined Bill as a Percentage of MHI
All Households	$37,754	1.4 percent	2.6 percent
Elderly Households	$28,295	1.9 percent	3.5 percent
Renter-occupied	$23,867	2.2 percent	4.2 percent
Owner-occupied	$53,477	1.0 percent	1.9 percent

3.1.6.5. Percentage of Households at Different Levels of Affordability, Future Years

It is also important to analyze customer affordability over time in order to have a complete understanding of the impact of increasing utility bills due to regulatory mandates. A long-term financial plan was plan was prepared for the City's wastewater system, and was used to estimate the wastewater rate increase needs in future years. Although the total households will likely increase over time, it was assumed for this analysis that the distribution of households within each income category will remain constant. It was also assumed that the average household billed water consumption will not change. Figure 3-14 shows that the percentage of all households paying more than 2 percent of their income for wastewater bills is projected to increase significantly from FY2014 to FY2024. The MHI was projected by comparing it to the Consumer Price Index (CPI) from 2007 to 2012. The ratio during this period shows that income levels decreased as CPI increased. Therefore, it was assumed that MHI would remain flat through 2019 and then escalate at one half of the rate of CPI escalation through 2024, and then income levels will resume increasing at the same rate as the CPI according to projections made by the Congressional Budget Office (CBO).

Figure 3-14: Percentage of Households at Different Levels of Affordability for Current and Future Years



3.1.6.6. Utility Billing Process and Trends

Gas, Water, Sewer, Wellhead, Sanitation, Landfill and Stormwater accounts are billed in arrears. Bills for utility service are rendered monthly for the actual amount shown by the gas and/or water meter reading, except estimated bills may be rendered if access to a customer's meter was unobtainable for a timely reading. The monthly bill also includes non-metered charges for Sanitation, Non-Metered Sewer, Landfill, Stormwater and Wellhead.

Each gas and/or water service account bill represents the quantity used as determined by the actual meter reading, an estimated reading based upon previously used gas or water at the same premises, or a minimum service charge. When a gas and/or water meter has been estimated for six months, a letter is sent to the customer requesting they contact the billing office to schedule an appointment for an actual reading. Estimated readings are noted as such on the bill. Bills for each service account are mailed to customers on a monthly basis.

All bills are due and payable on or before the specified due date on the bill. The City allows fifteen days between the date of the bill and the due date specified on the bill.

Any utility bill not paid on the due date specified is considered delinquent, and a late fee of 5 percent of the current charges is assessed on the tenth day past due. A Final Notice before termination for non-payment is issued for utility accounts with an outstanding balance ten days after the due date. Gas and/or water service is not restored until all service charges and deposits are paid in full. A Notice of Termination of Utility Service is left at the premises if the service has been terminated.

Level Billing

Level billing is an option that allows eligible residential customers to pay for utilities in equal monthly amounts rather than experience the seasonal fluctuations of normal billing. The level billing amount is calculated on the most recent eleven months usage and current rate for each service. Payment amounts are subject to evaluation after six months. To be eligible for level billing, the customer must have lived at the current residence for one year and have a zero dollar balance. Eligible accounts are placed on level billing July through August 31 of each year. The June billing of each year is the settlement bill.

Level billing customers must pay the level bill amount in full, each month, by the due date to remain on the level billing plan. In the event a level billing charge remains unpaid ten days after the due date, the customer forfeits their level billing privilege until next year's level billing season. The account returns to regular billing, and the total account balance will be due on the due date for the bill.

Payment Arrangements and Responsibility

Requests for payment arrangements must be made by the due date of the bill. Customers who have not made the required minimum payment for the previous due date, are not eligible for any additional extensions for the current month's due date. Utilities are used and billed monthly, and payment is required monthly.

Extended Payment Agreements must be requested by the date listed on the termination notice. All Extended Payment Agreement's must be signed to be valid. The City exercises discretion in granting Extended Payment Arrangements based upon the following:

1. The amount of the delinquent account;

2. The length of time that the balance has been outstanding;

3. The customer's recent payment history;

4. The reasons why payment has not been made.

Extended Payment Arrangements will not be granted:

1. If a previous Extended Payment Agreement was not paid per the agreement;

2. If the Extended Payment Agreement was not requested by the date specified on the termination notice.

The City shall offer:

1. A plan that requires either six equal monthly payments on the arrears in addition to full payment of current bills; or

2. A plan that requires three equal monthly payments on the arrears in addition to full payment of current bills.

Extended Payment Agreements provide a specific date when payment must be received to avoid termination of service. Failure to pay per the Extended Payment Agreement will result in a 24-hour, Courtesy Scheduled Termination Notice to be issued and will result in denial of additional Extended Payment Arrangements. If terminated for non-payment of an Extended Payment Agreement, services will not be reconnected until the entire account balance and reconnection fees have been paid. Reconnection on the same day as payment is not guaranteed.

Payments

Payments received first pay off any existing penalty balances according to aged date. Once the penalty is paid, the payment then pays off past due amounts in all other Income Centers according to aged date. When the aged date balance cannot be paid in full (partial payment), the payment is applied as a percent of the total aged balance by the Income Centers.

Final Bills

A customer who intends to move or discontinue the use of utility services or in any way terminate their contractual obligation with the City must specify a final date, which is at least one working day after the date on which the customer notified the City to have service finalized. The customer must provide a forwarding address to which the City may mail the final service bill. The customer will be responsible for all utility services used at the premise until such notice is given and the customer has provided access so that the Utilities Collection Office may obtain the final meter readings.

The City reads the gas and water meter, and finalizes the service as near as possible to the requested final date. A final bill is prepared, mailed and due 15 days after the final bill date. Final bills not paid by the due date will be sent to collections.

Final balances not paid by the due date will be transferred to an active account whenever an active account for the same customer exists.

Property Assessment

When a property is owner-occupied or the owner is financially responsible for water, sewer and stormwater charges not paid when due; the Utilities Collection Office may place a lien upon the real property for the unpaid charges and penalties, to the Fairfield County Auditor each March and September. Thirty days prior to the certification, the owner is notified by letter, at the mailing address on file, of the unpaid water, sewer and stormwater charges. Failure of the owner to receive this notice will not prevent the certification process from proceeding. The county auditor will then place the certified amount on the real property tax list and duplicate against the property served by the connection. The amount placed on the tax list and duplicate will be a lien on the property, which is collected in the same manner as other taxes. The lien is released immediately upon payment in full of the certified amount.

In 2013, the Utilities Collection Office certified $3,513.72 in sewer charges and $18,009.42 in stormwater charges.

Termination

Except for emergency terminations, termination of service shall not occur after twelve-thirty p.m. on any day, which precede a holiday or weekend, or any other day on which all services necessary to restore service are not available. During winter months, services are not terminated when temperatures are below 32 degrees.

In 2013, the average number of notices generated per month was 2, 271, which is approximately 13 percent of all customers and a strong indicator that some customers are struggling to pay their current utility bills. The average number of monthly shut-offs was 19.

Table 3-15 shows the amount of money represented by delinquent accounts on a monthly basis. The amounts tend to be higher in the fall and winter months when heating bills are also the highest.

Table 3-15: 2013 Monthly Delinquency Amount

Month	58 – 68 Days Delinquency Amount
January	$6,238.36
February	$5,392.73
March	$4,244.54
April	$5,009.66
May	$6,306.88
June	$6,201.51
July	$6,349.93
August	$7,207.33
September	$9,732.50
October	$6,985.95
November	$10,517.65
December	$6,788.11

Although the City is doing everything possible to provide relief to those with affordability problems, the number of Notices of Termination generated each month from delinquent accounts show that affordability is a major concern. Even with different options for customers to pay delinquent bills, the City still has to terminate utility service for some of its customers.

4. USEPA Financial Capability Assessment

4.1. USEPA Financial Capability Assessment

As a principal part of this affordability study, a financial capability assessment was completed in accordance with the February 1997 USEPA guidance document – "CSO Guidance for Financial Capability Assessment and Schedule Development". The USEPA recognizes that the implementation and scheduling of a combined sewer overflow (CSO) LTCP directly influences a community's ability to afford any proposed remediation activities. The financial capability assessment measures the capability of the utility and community to pay for a proposed LTCP in addition to other O&M costs and any existing or planned capital improvements.

While the USEPA guidance document is focused on the financial capability as it pertains to wastewater systems and CSO LTCP, the assessment was completed two ways. First, the assessment was completed only considering wastewater system costs. Second, the assessment was also completed considering the combined impact paying for water, wastewater, and stormwater system costs. While the financial capability threshold discussed in the USEPA guidance document is not intended to be applied directly to combined water, wastewater, and stormwater systems, the residential indicator for the combined water, wastewater, and stormwater systems can serve as a measure of the financial capability of paying for capital improvements and other system costs for each of the systems in total.

The USEPA guidance document outlines a two-phased process for assessing the financial capability to fund a LTCP. Phase I of the analysis assesses residential customer financial capability as measured by the Residential Indicator. The Residential Indicator is calculated by dividing the total projected residential cost by the MHI. If the costs are at or above one percent of the MHI, a Phase II analysis is completed. The Phase II analysis assesses community financial capacity (i.e., financial strength and financing capacity) to afford the program.

In this section, the methodology and results of the following analyses is presented:

1. Financial capability assessment for the City's wastewater CIP and potential CSO LTCP.

2. Financial capability assessment for the City's combined water, wastewater, and stormwater systems CIP.

4.1.1. Residential Indicator for the Wastewater System

The Residential Indicator (residential cost as a percentage of MHI) was calculated by first determining the total cost of wastewater treatment (WWT). A portion of the total cost was then allocated to residential customers based on the percentage of total flow generated from these customers. Finally, the total residential cost was allocated among the total number of households in the community to determine the wastewater treatment cost per household (CPH) including LTCP costs. Once the CPH was estimated, the Residential Indicator was calculated by dividing the CPH by the MHI of the community. The calculated Residential Indicator was then compared to the USEPA defined criteria for classifying the financial impacts as "Low," "Mid-range" or "High" as shown in Table 4-1.

Table 4-1:
USEPA Residential Indicator Financial Impacts

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

4.1.1.1. Current and Projected Wastewater Treatment Costs

The USEPA defines current wastewater treatment costs as the current annual O&M expenses (excluding depreciation) plus current annual debt service payments (principal and interest) and capital expenditures. These costs are intended to represent the cash expenditures of current wastewater collection and treatment operations. Capital expenses, including debt service and capital outlay, are considered in the assessment since they represent a cash cost associated with the wastewater system.

The projected capital costs consist of wastewater treatment and collection system capital projects and the LTCP capital program. The LTCP capital program consists of approximately $143M for the wastewater utility and CSO control related projects. The portion of the LTCP ($47M) for the stormwater utility is included and discussed under Section 4.1.4. The total estimated critical replacement and repair cost for the wastewater utility is $29M over 20 years.

Total current and projected annual wastewater treatment and LTCP costs are summarized in Table 4-2.

Table 4-2: Current and Projected Annual Wastewater Treatment and LTCP Costs

Description	Amount
FY2014 Projected WWT Costs:	
O&M Expense	$4,780,374
Debt Service	5,287,382
Subtotal	**$10,067,756**
Projected WWT and LTCP Costs	
Incremental O&M Expense	$1,718,269
Debt Service	13,787,836
Subtotal	**$15,506,105**
Total Current and Projected WWT and LTCP Costs	**$25,573,861**

Annual incremental O&M expenses and additional costs associated with the operation of LTCP-related assets and processes, was assumed to be one percent of the total LTCP-related costs per year. Annual debt service is an estimate based on the total projected capital cost of WWT improvements, $113M over 20 years, the total projected capital cost of potential LTCP-related costs, totaling $30M over 20 years, and the projected critical replacement and repair costs, totaling $29M over 20 years. Debt financing terms of a 5.0 percent annual interest rate and a 20-year amortization period were assumed.

4.1.1.2. Annual Residential Cost per Household

The current and projected wastewater treatment costs were proportioned to residential customers in order to estimate the residential share of these costs. The residential share of total WWT costs was calculated based on the percentage of total billed flows attributed to residential class customers. Table 4-3 lists the FY2013 wastewater sales by class in hundreds of cubic feet and the calculation of the residential percentage.

Table 4-3: Wastewater Flow Characteristics and Percent Flow Calculation

Total Billed Wastewater	100 CF	Percentage
Residential	940,301	70.5 percent
Commercial	278,394	20.9 percent
Industrial	114,306	8.6 percent
Total	**1,333,001**	**100.0 percent**

For the purpose of this financial capability analysis, 70.5 percent of total WWT costs were allocated to the residential customer class. The number of households in the City are

15,919.[34] The estimated residential cost share and the cost per household are shown in Table 4-4.

Table 4-4: Wastewater Annual Residential Cost per Household

Total Annual Cost	Residential Cost	Households	Residential Cost Per Household
$25,573,861	$18,029,572	15,919	$1,132.58

4.1.1.3. Median Household Income

Multiple statistical sources were evaluated for MHI data for the Lancaster region. Data was reviewed from the U.S. Census Bureau 2000 Census, and the U.S. Census Bureau American Community Survey for 2012. Based on the available data, the estimated MHI value for 2012 is approximately $37,754. This value was escalated to a 2014 value of $39,411. MHI was then compared to the annual CPH for WWT and LTCP costs to determine how it compares to USEPA established guidelines as shown in Table 4-1.

In addition, Census tract data was reviewed to assess the variability in the range of income levels throughout the City. The variability of income levels by Census tract is presented in Figure 3-6.

4.1.1.4. Residential Indicator

The Residential Indicator was calculated by dividing the cost per household by the MHI. As shown in Table 4-5, the Residential Indicator was calculated to be 2.9 percent.

Table 4-5: Wastewater Calculation of Residential Indicator

Adjusted MHI	$39,411
Cost per Household, Annual	$1,132.58
Residential Indicator (CPH as percent of MHI)	**2.9 percent**

The Residential Indicator was compared to the USEPA financial impact ranges provided in the USEPA guidance document (and shown below) to assess the financial impact that wastewater treatment and LTCP costs may have on the community's residential customers, and indicates a financial impact in the "High" range.

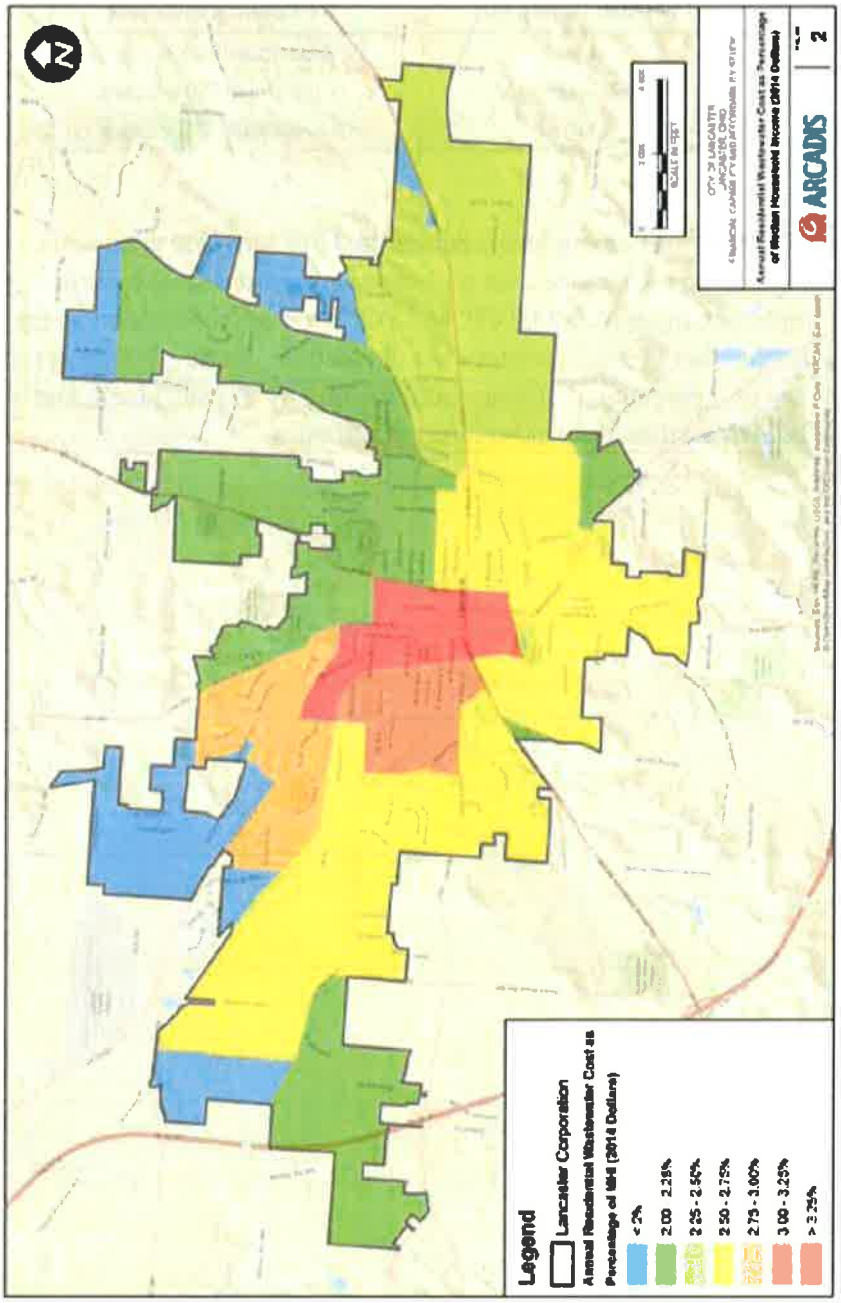
[34] 2012 ACS 3-Year Estimate: S1903

Table 4-6: USEPA Financial Impact Ranges

Financial Impact	Residential Indicator
Low	Less than 1.0 percent
Mid-Range	1.0 percent-2.0 percent
High	**Greater than 2.0 percent**

Due to the variability of income levels across the City's service area, some neighborhoods within the service area will experience more severe economic hardship as a result of implementation of the LTCP, and will have residential cost as a percentage of household income that is much greater than the median. Figure 4-1 presents the residential cost as a percentage of household income by Census block, and shows a much higher cost burden on these low income neighborhoods.

Figure 4-1: Annual Residential Wastewater Cost as Percentage of MHI by Census Tract (2014 Dollars)



4.1.2. Community Financial Capability Indicators

The USEPA guidance document states that if the Residential Indicator is greater than one percent (1 percent), Phase II of the analysis should be completed. In light of the City's residential indicator results of 2.9 percent of MHI, this subsection provides an analysis of the community financial capability indicators. These indicators characterize the permittee's debt burden, socioeconomic conditions, financial operations, and the ability to secure the funding necessary to implement the LTCP. Under this phase of the assessment, a financial capability index was developed based on six individual indicators. These six indicators are as follows:

- Debt Indicators
  - Bond rating
  - Overall net debt as a percentage of full market value of taxable property
- Socioeconomic Indicators
  - Unemployment rate
  - Median household income
- Financial Management Indicators
  - Property tax revenues as a percentage of full market property value
  - Property tax revenue collection rate

The USEPA has established guidelines for interpreting these indicators and their associated impact on the overall financial capability, and these guidelines are provided below.

4.1.2.1. Debt Indicators

Debt indicators assess the current debt burden of the community and their ability to issue additional debt to finance the proposed wastewater treatment and LTCP projects. The indicators include bond rating and the overall net debt as a percentage of full market property value.

4.1.2.1.1. Bond Rating

Bond credit ratings measure a community's credit worthiness, and are determined by any of the three major rating agencies. The City has received credit ratings from Moody's Investment Service and Standard & Poor's Ratings. The City's ratings are listed in Table 4-7.

Table 4-7:
Lancaster Credit Ratings[1]

Agency	Credit Rating
Moody's	Aa3 positive
Standard & Poor's	AA positive
Fitch	---- not listed

[1]Reflects most recent revisions published by the Rating Agencies in March of 2014

The City's credit ratings of Aa3 and AA place them in the "Strong" category of USEPA's indicator ranges, as shown in Table 4-8.

Table 4-8:
Bond Rating Indicator Results

Rating	Moody's	Standard & Poor's	Fitch[1]
Weak	Ba1, Ba2, Caa1, Ca1	BB+,B,CCC,CC,C,D	N/A
Mid-Range	Baa1, Baa2, Baa3	BBB+, BBB, BBB-	N/A
Strong	**Aaa, Aa1, Aa3, A1**	**AAA, AA, A+**	**N/A**

[1]Benchmarks not listed in CSO Guidance for Financial Capability Assessment and Schedule Development

4.1.2.1.2. Net Debt as a Percent of Full Market Value of Taxable Property

The USEPA defines overall net debt as debt repaid by property taxes. It excludes debt that is repaid by special user fees (e.g., revenue debt). This indicator provides a measure of the debt burden on residents within the service area, measures that ability of the municipality to issue additional debt, and includes the debt issued directly by the municipality as well as debt of overlapping entities, such as school districts. This indicator compares the level of debt owed by the municipalities with the full market value of the real property used to support that debt, and serves as a measure of financial capability. The utility's debt is not supported by property taxes.

Overall Net Debt

The overall net debt including debt of overlapping entities for the City was $11,862,576 as of FY2012. Overlapping entities are defined as other publicly-owned or government agencies that are funded via taxes or rates for service and share the same or partially same service area as the wastewater utility at the subject of the financial capability analysis. There are two overlapping entities outlined in the City's annual reporting: Fairfield County and the Lancaster City School District. The debt from overlapping entities is $3,844,252. Debt from overlapping entities funded by tax revenues is included in the overall net debt calculation as the debt burden is carried by residents of the service area, thus reducing the availability of funds for system improvements.

Full Market Value of Taxable Property

The real property of public utilities, other than railroads, is assessed by the County Auditor. Real property of railroads is assessed, together with tangible personal property of all public utilities, by the State Tax Commissioner. Table 4-9 shows the overall net debt as a percent of full market property value for the City.

Table 4-9:
Overall Net Debt as a Percent of Full Market Property Value

Description	Value
Overall Net Debt	$11,862,576
Market Value of Property	704,395,700
Ratio	**1.7 percent**

The City's overall net debt as a percentage of full market property value of 1.7 percent places the City in the "Strong" category, based on USEPA indictor ranges shown in Table 4-10.

Table 4-10:
Overall Net Debt as a Percent of Full Market Property Value Benchmarks

Rating	Ratio
Weak	Above 5 percent
Mid-Range	2 percent-5 percent
Strong	**Below 2 percent**

4.1.2.2. Socioeconomic Indicators

Socioeconomic indicators are indicators of the economic well-being of residential customers. They offer additional insight into the economic conditions of the City's service area. According to the USEPA guidance document, two socioeconomic indicators to be considered are the unemployment rate and the MHI. A more extensive discussion of the socioeconomic conditions of the City and its customers is provided in Section 3.

4.1.2.2.1. Unemployment Rate

Unemployment rate (percent of service area residents who are on the unemployment rolls) for the service area was compared to the U.S. national average unemployment rate, as shown in Table 4-11.

Table 4-11: Unemployment Rates

Description	Percentage
City of Lancaster	6.9 percent
Average U.S. National	8.1 percent
Difference from National Average	1.2 percent

The unemployment rate statistics show that the City's unemployment rate is high from a historical perspective, but is below the national average. A comparison of the City's unemployment rate with the national average places the City in the "Strong" range on this measure with its unemployment rate 1.2 percent lower than the U.S. national average, based on the USEPA indicator ranges shown in Table 4-12.

Table 4-12:
Service Area Rate Difference from National Average

Rating	Ratio
Weak	More than 1 percent above National Average
Mid-Range	±1 percent of National Average
Strong	**More than 1 percent below National Average**

The Columbus Dispatch reported on May 17, 2014 that Anchor Hocking temporarily shut down its Lancaster plant for at least three to four weeks. Anchor Hocking is the largest industrial wastewater and water utility customer, and the second largest employer in Fairfield County employing approximately 1,148 employees. Thus, the City is concerned about the long term stability of its largest utility customer, and the number of people that are both directly and indirectly employed by Anchor Hocking. Losing an industry in the City would significantly impact the unemployment rate.

Furthermore, increased cost burdens on non-residential users of the system will further discourage new businesses to locate within the City service area boundaries, and encourage them to locate in more cost competitive locations, thereby resulting in fewer job opportunities for residents already suffering from high unemployment rates. Also, existing businesses may consider relocation options if the cost of doing business becomes too high, further exacerbating the already relatively high unemployment rates.

4.1.2.2.2. Median Household Income

The MHI is the median annual income per household. The MHI for the service area was compared to the national average MHI as a measure of community earning capacity as shown in Table 3-25.

Table 4-13:
Median Household Income

Description	Amount
MHI, Service Area	$37,754
Adjusted MHI, Service Area	$39,411
Average National MHI	$51,771
Adjusted National MHI	$53,936
Percentage of Adjusted National Average	**73.1 percent**

The USEPA has established the following benchmarks for variation between national and service area MHI in the financial capability assessment. The City's service area's adjusted MHI is 73.1 percent of the adjusted U.S. MHI, which is more than 25 percent below the Adjusted National Average. As shown in Table 3-26, the City's service area falls in the "Weak" category.

Table 4-14:
Area Rate Difference from National Average

Rating	Ratio
Weak	**More than 25 percent below National Average**
Mid-Range	Within 25 percent of National Average
Strong	More than 25 percent above National Average

It should also be noted that 20 percent of the City's 38,158 residents are living below the poverty level. Figure 3-6 shows there are many areas potentially vulnerable to the burden caused by higher utility rates.

4.1.2.3. Financial Management Indicators

Two indicators are required by the USEPA to estimate overall ability to manage financial operations: property tax revenues as a percent of full market property value and property tax revenue collection rate.

Property Tax Revenues as a Percent of Full Market Property Value

This indicator is referred to as the "property tax burden" since it indicates the funding capacity available to support debt based on the wealth of the service area. Property tax revenues as a percent of full market property value measures the capacity to support additional debt by the community. This figure estimates the ability of the local government to levy additional property taxes for the funding of debt service.

Note that the full market value of real property figure used in this analysis, and shown in Table 4-15, is the same as the one shown in Table 4-9.

Table 4-15:
Property Tax Revenues as a Percentage of Full Market Property Value

Description	Amount
Full Market Value of Real Property	$704,395,700
Property Tax Revenues	4,137,669
Ratio	**0.59 percent**

The USEPA has established the following benchmarks for property tax revenues as a percentage of full market property value in the financial capability assessment. As shown in Table 4-16, the City's service area falls in the "Strong" category.

Table 4-16:
Property Tax Revenues as a Percent of Full Market Property Value Benchmarks

Rating	Ratio
Weak	Above 4 percent
Mid-Range	2 percent-4 percent
Strong	**Below 2 percent**

Although this indicator could be interpreted to mean that residents of this City have money available to pay for higher utility rates, the property values are much lower here as compared to the U.S. The median value of owner-occupied units in 2012 was $117,300 in the City, which is 33 percent less than the median value in the U.S. In addition, the CHCDP states that 60 percent of the houses in the City are over 44 years old, and are in need of replacement or large scale renovations. Therefore, increasing the burden on residents by increasing utility costs would decrease the funds available for much needed housing renovations.

Property Tax Revenue Collection Rate

The property tax revenue collection rate reveals inefficiencies in the tax collection system by reporting the difference between the levied tax amount and the collected tax amount. Taxes collected for previous years' assessments were included in the current year's collections. Table 4-17 lists FY2012 collections.

Table 4-17:
Property Tax Revenue Collection Rate

Description	Amount
Property Tax Revenue Collected	$4,137,669
Property Tax Levied	4,253,997
Property Tax Collection Rate	**97.3 percent**

The USEPA has established the following benchmarks for the property tax revenue

collection rate in the financial capability assessment. As shown in Table 4-18, the City's service area falls in the "Mid-Range" category.

Table 4-18:
Property Tax Revenue Collection Rate Benchmarks

Rating	Ratio
Weak	Below 94 percent
Mid-Range	**94 percent-98 percent**
Strong	Greater than 98 percent

4.1.2.4. Summary of Results of System Financial Capability Indicators

Based on this analysis, the City has an overall Financial Capability Indicator score of 2.5 which corresponds to a "Mid-Range" financial capability indicator rating based on the USEPA methodology. The following table summarizes the financial indicators, the scores associated with each indicator and the average score for all indicators. The average score is used to determine the overall indicator score. It should be noted that USEPA's methodology assigns equal weights to each category.

Table 4-19:
Financial Capability Indicator Score: Wastewater System

Indicator	Actual Value	Indicator Range	Score
Bond Rating	Aa3, AA	Strong	3
Overall Net Debt as a Percentage of Full Market Value	1.7 percent	Strong	3
Unemployment Rate	6.9 percent	Strong	3
Adjusted Median Household Income	$39,411	Weak	1
Property Tax Revenues as a Percentage of Full Market Property Value	0.59 percent	Strong	3
Property Tax Revenue Collection Rate	97.3 percent	Mid-Range	2
Overall Financial Capability Indicator Score		**Mid-Range**	**2.5**

4.1.3. The Financial Capability Matrix for Wastewater

Using the USEPA methodology, the results of the Residential Indicator and the Financial Capability Indicators assessments were combined into a Financial Capability Matrix to evaluate the level of financial burden that WWT and LTCP costs may impose on the City. The original purpose of the matrix in the 1997 CSO Guidance Document was to assist the utility and regulatory agencies in establishing a CSO control implementation schedule. The Financial Capability Matrix populated for the City is shown in Table 4-20.

Table 4-20: Wastewater Financial Capability Matrix Score

Financial Capability Indicators Score (Socioeconomic, Debt and Financial Indicators)	Residential Indicator (Cost per Household as a Percent of MHI)		
	Low (Less than 1.0%)	Mid-Range (1.0% to 2.0%)	High (Greater than 2.0%)
Weak (Below 1.5)	Medium Burden	High Burden	High Burden
Mid-Range (1.5 to 2.5)	Low Burden	Medium Burden	**High Burden**
Strong (Above 2.5)	Low Burden	Low Burden	Medium Burden

Based on a "High" financial impact Residential Indicator of 2.9 percent and a "Mid-Range" Financial Capability Indicator score of 2.5, the City's financial capability matrix score is estimated as "**High Burden**". This indicates that a typical LTCP proposed to control CSOs would be a significant burden on the City and its customers.

4.1.4. Residential Indicator for Combined Water, Wastewater, and Stormwater Systems

Similar to the wastewater financial capability analysis, the Residential Indicator was calculated for the combined water, wastewater, and stormwater systems by first determining the total cost of treatment for water and stormwater systems separately. For the water utility, a portion of the total cost was then allocated to residential customers based on the percentage of total flow generated from these customers. For the stormwater utility, the percentage of residential ERUs was used to determine the residential allocation. Finally, the total residential cost was allocated among the total number of households in the community to determine the CPH for water and stormwater. The combined CPH is the sum of the water, wastewater, and stormwater system CPHs. Once the combined CPH was estimated, the Residential Indicator was calculated by dividing the combined CPH by the MHI of the community.

4.1.4.1. Current and Projected Combined Water, Wastewater, and Stormwater System Costs

The total current and projected annual water and stormwater treatment costs are summarized in Table 4-21. The same assumptions for incremental O&M expenses and debt service that were used for the wastewater analysis were used for water and stormwater.

Table 4-21: Current and Projected Annual Water and Stormwater Treatment Costs

Description	Water Amount	Stormwater Amount
FY2014 Projected Utility Costs:		
O&M Expense	$6,633,601	$1,633,220
Debt Service	2,471,165	311,221
Subtotal	**$9,104,766**	**$1,944,441**
Projected Utility Costs		
Incremental O&M Expense	$359,316	$385,829
Debt Service	2,883,242	3,095,995
Subtotal	**$3,242,557**	**$3,481,825**
Total Current and Projected Treatment Costs for Water and Stormwater	**$12,347,323**	**$5,426,266**

4.1.4.2. Annual Residential Cost per Household for Water and Stormwater Systems

Water

The current and projected water treatment costs were proportioned to residential customers in order to estimate the residential share of these costs. The residential share of total water treatment costs was calculated based on the percentage of total billed flows attributed to residential class customers. Table 4-22 lists the FY2013 water sales by class in hundreds of cubic feet and the calculation of the residential percentage.

Table 4-22: Water Flow Characteristics and Percent Flow Calculation

Total Billed Water	100 CF	Percentage
Residential	921,109	70.4 percent
Commercial	291,510	22.3 percent
Industrial	95,415	7.3 percent
Total	**1,308,034**	**100.0 percent**

For the purpose of this financial capability analysis, 70.4 percent of total treatment costs were allocated to the residential customer class. The number of households in the City are 15,919. The estimated residential cost share and the cost per household are shown in Table 4-23.

Table 4-23: Water Annual Residential Cost per Household

Total Annual Cost	Residential Cost	Households	Residential Cost Per Household
$12,347,323	$8,692,516	15,919	$546.05

Stormwater

The residential share of total stormwater treatment costs was calculated based on the percentage of ERUs for residential customers. Table 4-24 lists the calculation of the residential percentage for stormwater.

Table 4-24: Stormwater Percentage of Customers

Customer Class	Number of ERUs	Percentage
Residential	15,760	47.7 percent
Commercial	14,904	45.1 percent
County	6	0.1 percent
Industrial	2,347	7.1 percent
Total	**33,017**	**100.0 percent**

For the purpose of this financial capability analysis, 47.7 percent of total stormwater-related treatment costs were allocated to the residential customer class. The estimated residential cost share and the cost per household are shown in Table 4-25.

Table 4-25: Stormwater Annual Residential Cost per Household

Total Annual Cost	Residential Cost	Households	Residential Cost Per Household
$5,426,266	$2,588,329	15,919	$162.59

The combined cost per household was calculated by adding together the residential cost per household for the water, wastewater and stormwater systems. The combined cost per household is $1,841.22.

4.1.4.3. Combined Water, Wastewater, and Stormwater Residential Indicator

The Combined Residential Indicator was calculated by dividing the combined cost per household by the MHI. As shown in Table 4-26, the Combined Residential Indicator was calculated to be 4.7 percent.

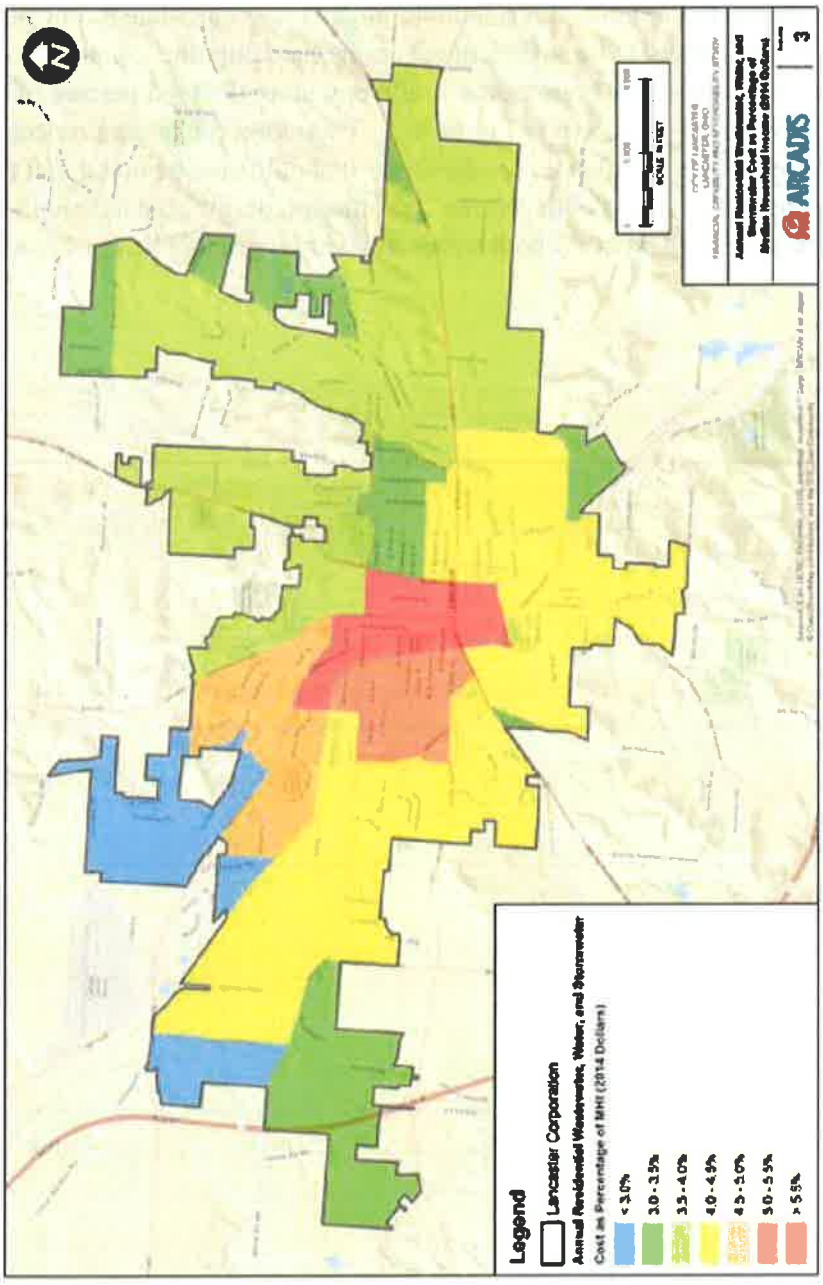
Table 4-26: Calculation of Combined Residential Indicator

Adjusted MHI	$39,411
Combined Cost per Household, Annual	$1,841.22
Combined Residential Indicator (CPH as percent of MHI)	**4.7 percent**

The EPA's stated view on potable water is that it is affordable if it costs less than 2.5 percent of a small community's MHI.[35] It is commonly inferred that EPA would consider a combined annual water and wastewater bill of less than 4.5 percent to be affordable. Since the combined residential indicator was calculated to be higher than this threshold, there is likely to be sufficient economic hardship due to implementation of the LTCP. Furthermore, many households would pay more than 4.5 percent of their income on combined utilities, as shown in Figure 4-2. Therefore, the maximum cost and schedule relief should be allowed for the City. It should also be noted that for grant review purposes, the Ohio Public Works Commission defines the threshold of affordability as 1.74 percent for both water and wastewater in District 17, which includes the City.

[35] Affordability Assessment Tool for Federal Water Mandates, USCM, AWWA, and WEF 2013.

Figure 4-2: Annual Residential Wastewater, Water, and Stormwater Cost as Percentage of MHI by Census Tract (2014 Dollars)



4.2. Non-Residential Affordability

Although the purpose of the financial capability assessment in this section focuses on the City and residential community's financial capability, non-residential affordability should not be neglected. As stated earlier, the City desires to boost its economy by attracting new industries and keeping existing ones. If the City were to lose a key customer such as Anchor Hocking, which is their largest wastewater and water customer, the effects would be devastating. For example, Anchor Hocking contributes approximately 3 percent of wastewater revenues and 2 percent of water revenues to the system. If Anchor Hocking were to shut its doors in Lancaster, these revenues would need to be collected from remaining customers. If this were to occur, it is likely that the City would need to raise rates even more that projected, which could limit their ability to bring in new industries to the City.

From a competitiveness standpoint, the City should strive to have rates that are competitive to other cities in the Midwest. This goal is challenging because rates are already high when compared to other communities in the region (Figure 2-5). For example, Anchor Hocking competes with other similar manufactures, including Libby Glass, which has a manufacturing facility in Toledo, and Libby Glass pays wastewater and water rates that are already 18 percent and 62 percent less for wastewater and water usage, respectively as shown in Table 4-27.

Table 4-27: Anchor Hocking Location Comparison

	2013 Usage (100 CF)	Cost in Toledo	Cost in Lancaster	Percent Change in Cost
Anchor Hocking - Wastewater	60,577	$243,224	$294,945	(18 percent)
Anchor Hocking - Water	41,166	$51,966	$137,833	(62 percent)

Therefore, the City is concerned that continuing to raise water and sewer rates may make doing business in Lancaster uneconomical.

4.3. Summary of Analysis

The main objective of the assessment was to analyze the financial capability of the City's proposed CIPs and LTCP, O&M costs, and repair and replacement costs using the methodology as outlined by the EPA.

The findings of the analysis are as follows:

- The residential indicator of 2.9 percent for wastewater indicates that wastewater treatment and LTCP costs would have a high impact on the community's residential customers.
- The City has an overall Financial Capability Indicator score of 2.3 which corresponds to a "Mid-Range" financial capability indicator rating based on the USEPA methodology.
- The City's financial capability matrix score is estimated as high burden based on a "High" financial impact Residential Indicator of 2.9 percent and a "Mid-Range" Financial Capability Indicator score of 2.5. This indicates that a typical LTCP proposed to control CSOs would be a significant burden on the City and its customers.
- The combined residential indicator for wastewater, water, and stormwater is 4.7 percent. Many households would pay more than 4.5 percent of their income on combined utilities.
- Commercial and Industrial communities would also experience higher bills and additional hardships if rates were increased for the proposed LTCP.
- The maximum cost and schedule relief should be allowed for the City given its limited financial capability.

5. Rate Impact Analysis

5.1. Introduction

The USEPA CSO guidance document allows consideration of unique circumstances and conditions. In order to present a more comprehensive picture of the City's financial capability and customer affordability, an analysis was completed that considered the long-term rate impacts of future capital improvements. This section provides an estimate of the annual wastewater, water and stormwater rate revenue increases required to pay for the City's planned long-term capital program for permit compliance by 2025. Year-by-year typical customer costs are also presented as a percentage of MHI.

5.2. Wastewater Long-Term Financial Plan

The wastewater utility's O&M and capital requirements are met by treatment rates and monthly customer charges. The annual rate revenue requirements anticipated for the wastewater utility were estimated using an Excel-based financial model. The model was used to project rate revenue requirements based on the cash needs of the system. These cash needs include annual O&M costs, annual debt service payments, debt service coverage requirements, adequate fund balances, and the optimal balance of cash and debt funding of capital projects. Projections were based on the budget FY2014 information provided by the City, estimates regarding customer growth and cost inflation, and the City's CIP for permit compliance by 2025.

5.2.1. Key Assumptions

5.2.1.1. Operating Reserves

The minimum operating reserve requirement is not less than one-fourth of the operating expenses for the preceding FY.[36] Therefore, six months of O&M was used as a minimum target for conservativeness.

5.2.1.2. Debt Service Coverage

The financial analysis performed for the wastewater utility included two debt service coverage test calculations. The first test is a revenue bond debt service coverage test and was calculated as net revenues divided by annual revenue bond debt service. This test is required to be maintained at not less than 120 percent. The second test is a total debt service coverage test, and is calculated by dividing net revenues by total annual debt

[36] Official Statement, City of Lancaster, Series 2012 Water and Wastewater Revenue Bonds

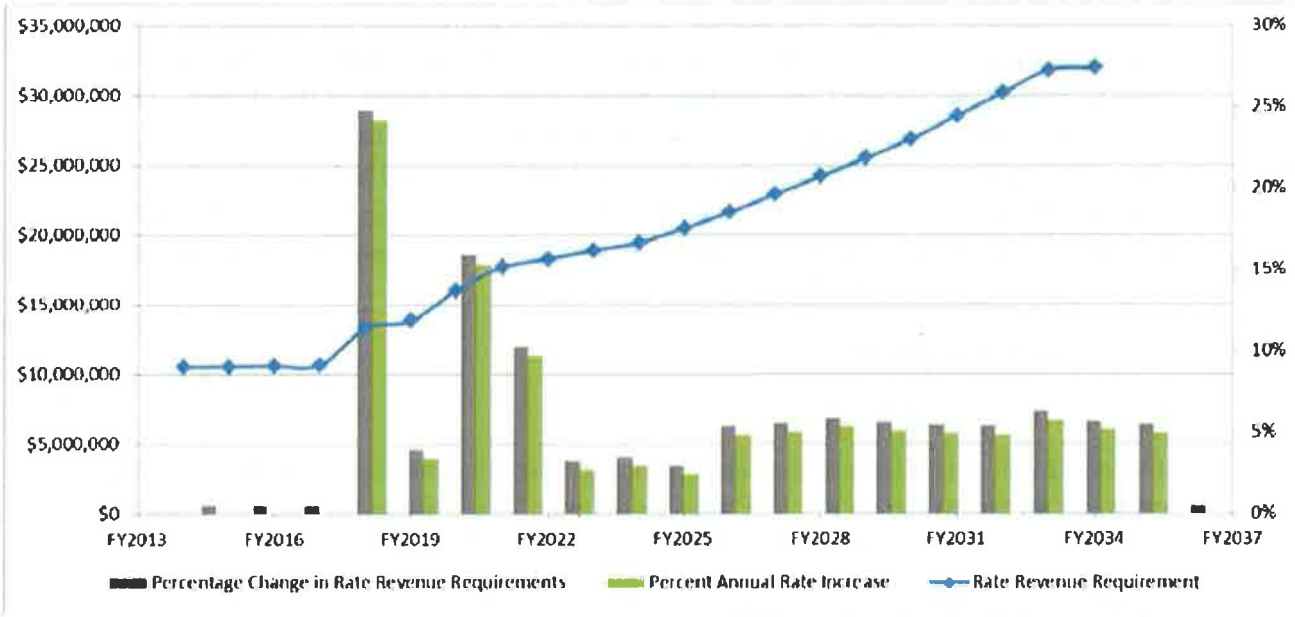
service. This test is required to be maintained at not less than 100 percent. Total debt service includes OWDA loans and revenue bonds.

In addition to these two tests, parity bond tests were calculated to determine if the debt service coverage ratios using maximum debt service amounts met the targeted coverage ratios. Recommended rate revenue increases are calculated based on maintaining a satisfactory revenue bond debt service coverage ratio of 1.20 or greater, and a total debt service coverage ratio of 1.00 or greater.

5.2.1.3. Wastewater Revenue Requirements

The annual wastewater revenue requirements and the projected annual rate increases are shown in the Figure 5-1. The percentage change in revenue requirements and the annual rate increase are projected to be significant beginning with FY2018 corresponding to the City's anticipated wastewater CIP expenditures, including LTCP costs.

Figure 5-1: Wastewater Revenue Requirements



5.2.1.4. Capital Improvements Program

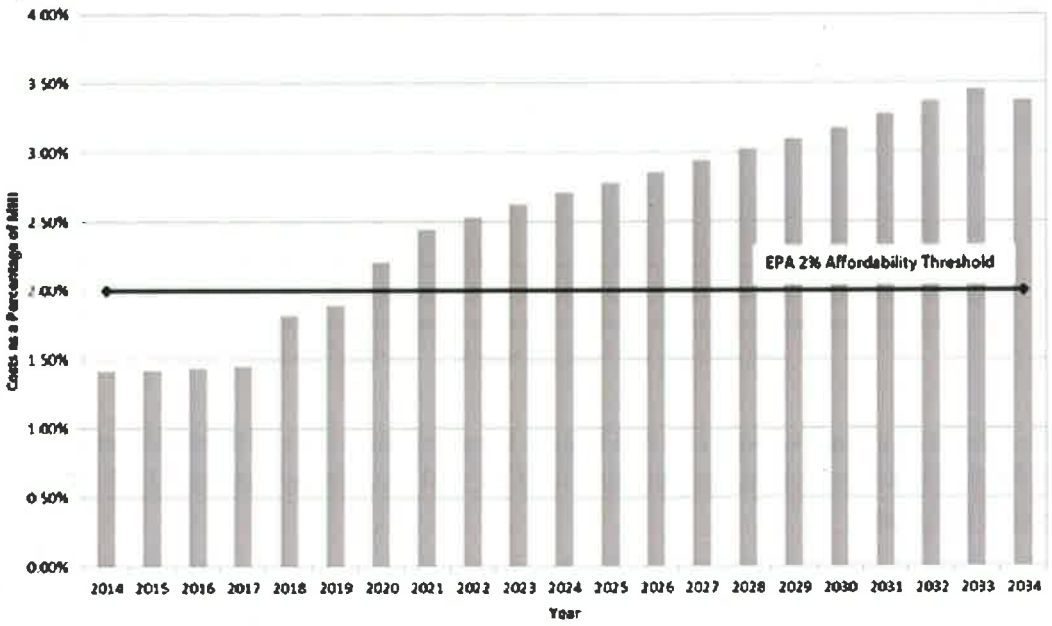
A summary of the CIP can be found in Section 2.2.6. This CIP assumes that the City must be in compliance with their permit by 2025, and it also includes anticipated replacement and repair costs.

5.2.2. Wastewater Rate Impact Analysis

Figure 5-2 shows how the current estimated average residential wastewater bill of $534.10 increases over the next 20 years as rate increases are applied in order to meet the

wastewater utility's revenue requirements. Also shown in this figure is the projected MHI for the City. The MHI was projected by comparing it to the CPI from 2007 to 2012. The ratio during this period shows that income levels decreased as CPI increased. Therefore, it was assumed that MHI would remain flat through 2019 and then escalate at one half of the rate of CPI escalation through 2024, and then income levels will resume increasing at the same rate as the CPI according to projections made by the CBO.

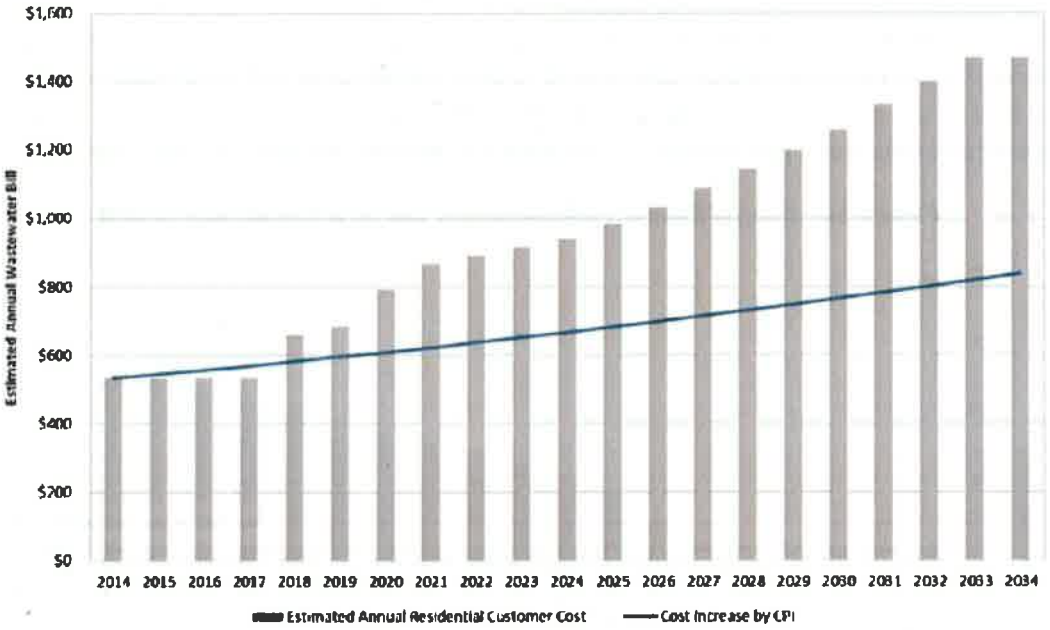
Figure 5-2: Annual Estimated Wastewater Bill as a Percentage of MHI



As shown in Figure 5-2, it is anticipated that the estimated wastewater bill will exceed the EPA affordability threshold beginning in FY2020, significant economic hardship may occur over the forecast period, and the City will have limited capacity to fund other programs or additional Federal or State mandates in the future. Therefore, the City should receive the maximum amount of schedule relief for implementing its LTCP.

The projected wastewater rate increases also are projected to exceed the historic rate of change in the CPI, as shown in Figure 5-3.

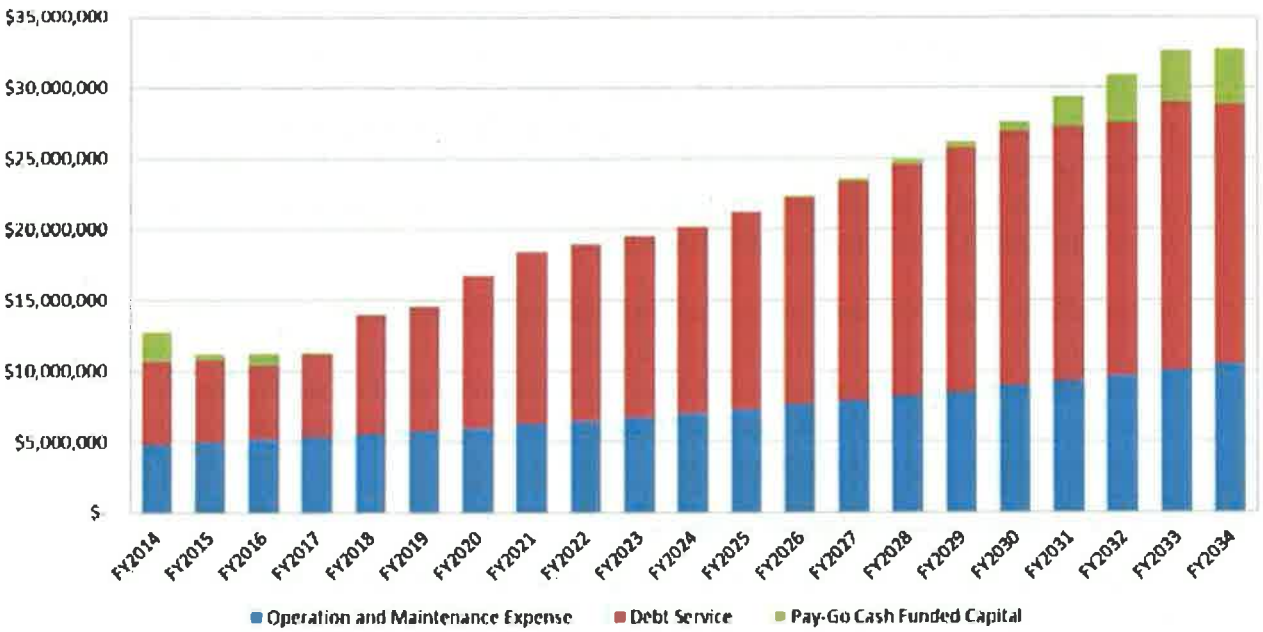
Figure 5-3: Projected Wastewater Bill Compared to Historical Change in the CPI



The estimated annual wastewater bill begins to exceed the CBO CPI projections in FY2018. These projections assume that the CPI will escalate by between 1.15 and 2.30 percent per year.

It is also anticipated that the City would need to incur a large amount of debt to fund the CIP while addressing replacement and repair concerns of aging infrastructure. As shown in Figure 5-4, debt service would significantly dominate the City's wastewater utility's budget. This increasing debt service obligation adds to the fixed cost of the utility. Any contraction in customer base (due to affordability or other factors) will not only have a very negative impact on the remaining customer base, but would also impact the City's ability to pay its debt obligations.

Figure 5-4: Wastewater Utility's Projected Budget



It is anticipated that small and large businesses would also experience significant increases in wastewater bills, similar to residential customers due to funding the City's CIP with a permit compliance schedule of 2025 as well as funding the anticipated system replacement and repair costs.

5.3. Water Long-Term Financial Plan

The water utility's O&M and capital requirements for water operations are met by usage rates and monthly customer charges. The annual rate revenue requirements anticipated for the water utility were determined using an Excel-based financial model. The model was used to project rate revenue requirements based on the water system's projected cash needs. These cash needs include annual O&M costs, annual debt service payments, debt service coverage requirements, adequate fund balances, and the optimal balance of cash and debt funding of capital projects. Projections were based on the budget FY2014 information provided by the City, estimates regarding customer growth and cost inflation, and the City's CIP.

5.3.1. Assumptions Used in the Financial Affordability Analysis

5.3.1.1. Operating Reserves

The minimum operating reserve requirement is not less than one-fourth of the operating expenses for the preceding FY. Therefore, six months of O&M was used as a minimum target for conservativeness.

5.3.1.2. Debt Service Coverage

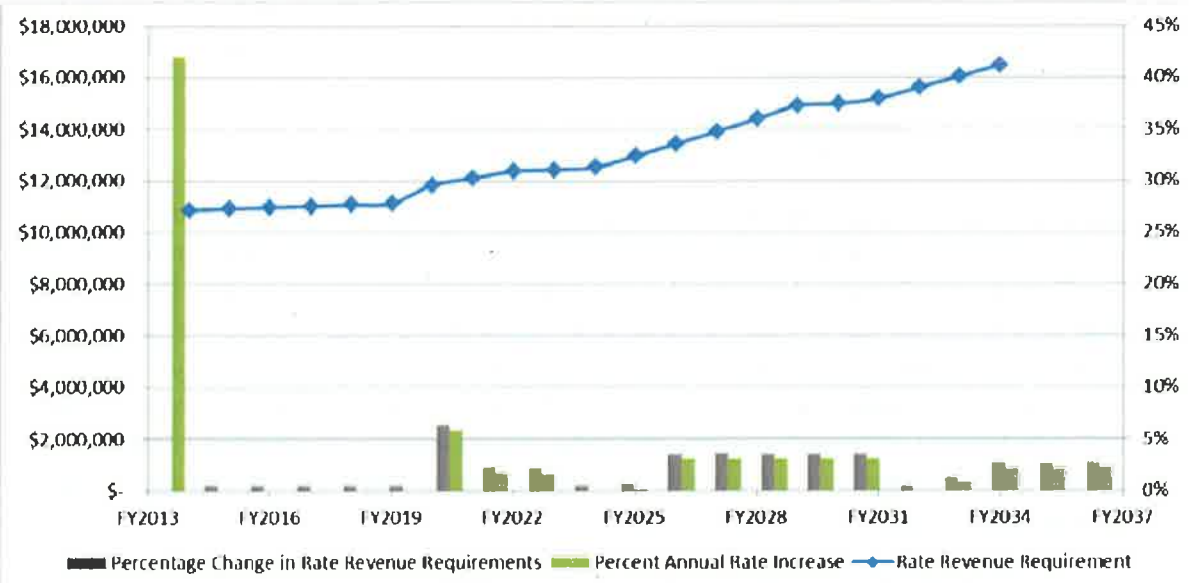
The financial analysis performed for the wastewater utility included two debt service coverage test calculations. The first test is a revenue bond debt service coverage test, and is calculated as net revenues divided by annual revenue bond debt service. This test is required to be maintained at not less than 120 percent. The second test is a total debt service coverage test, and is calculated by dividing net revenues by total annual debt service. This test is required to be maintained at not less than 100 percent. Total debt service includes OWDA loans and revenue bonds.

In addition to these two tests, parity bond tests were calculated to determine if the debt service coverage ratios using maximum debt service amounts met the targeted coverage ratios. Recommended rate revenue increases are calculated based on maintaining a satisfactory revenue bond debt service coverage ratio of 1.20 or greater, and a total debt service coverage ratio of 1.00 or greater.

5.3.1.3. Water Revenue Requirements

The annual water revenue requirements and the projected annual rate increases are shown in Figure 5-5. The revenue requirements show a significant upward trend over the next 20 years.

Figure 5-5: Water Revenue Requirements



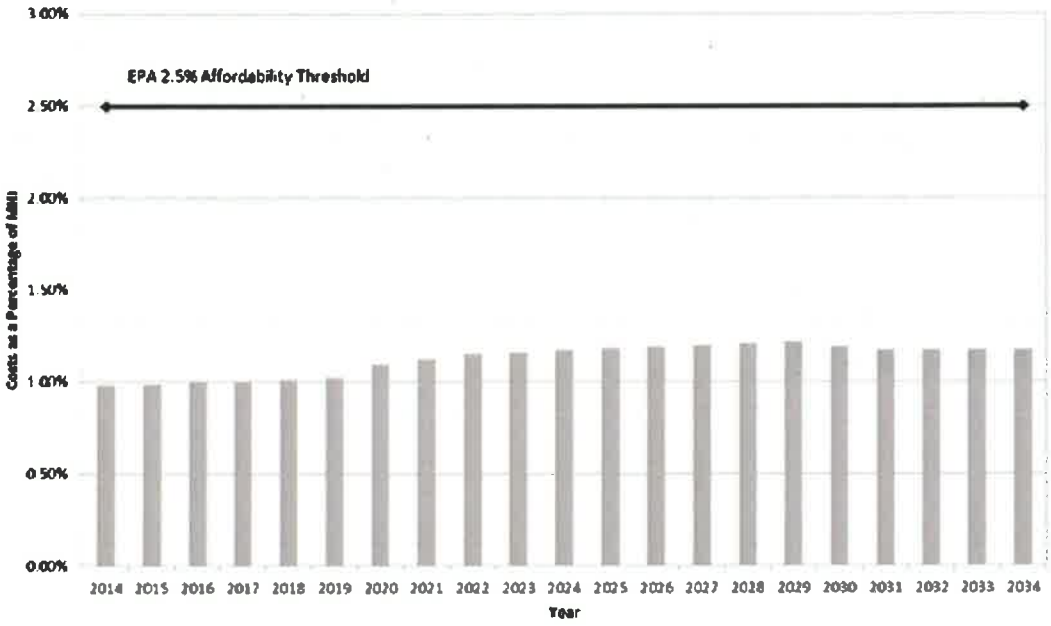
5.3.1.4. Capital Improvements Program

A summary of the CIP can be found in Section 2.3.6.

5.3.2. Water Rate Impact Analysis

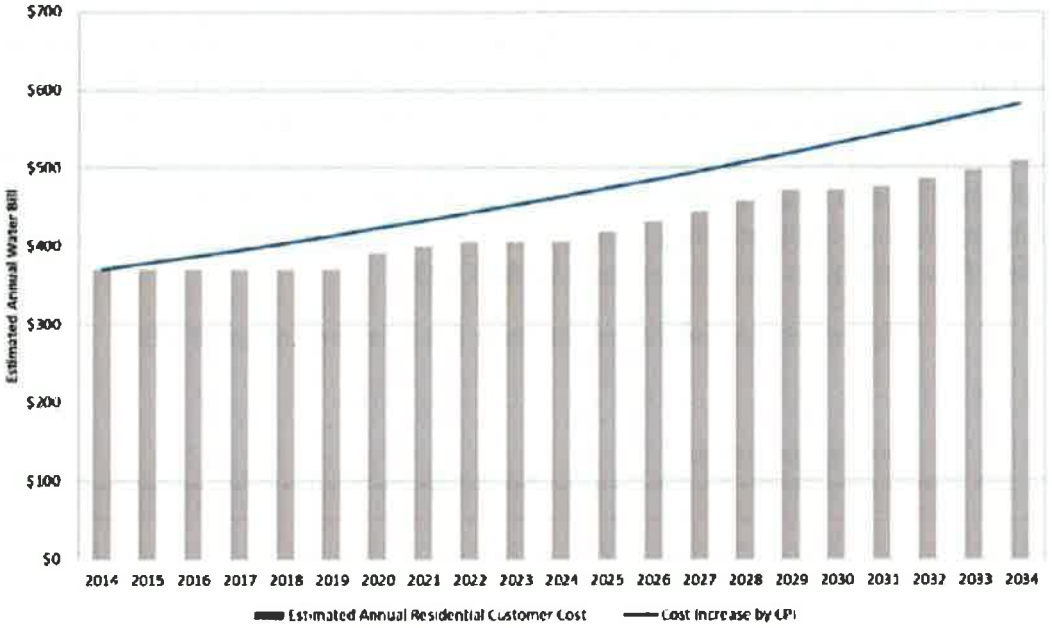
Figure 5-6 shows how the current estimated average water bill of $370.79 increases over the next 20 years as rate increases are applied in order to meet the water utility's revenue requirements. Also shown in this figure is the projected MHI for the City. The MHI was projected by comparing it to the CPI from 2007 to 2012. The ratio during this period shows that income levels decreased as CPI increased. Therefore, it was assumed that the MHI would remain flat through 2019 and then escalate at one half of the rate of CIP escalation through 2024, and then income levels will resume increasing at the same rate as the CPI according to projections made by the CBO.

Figure 5-6: Annual Estimated Water Bill as a Percentage of MHI



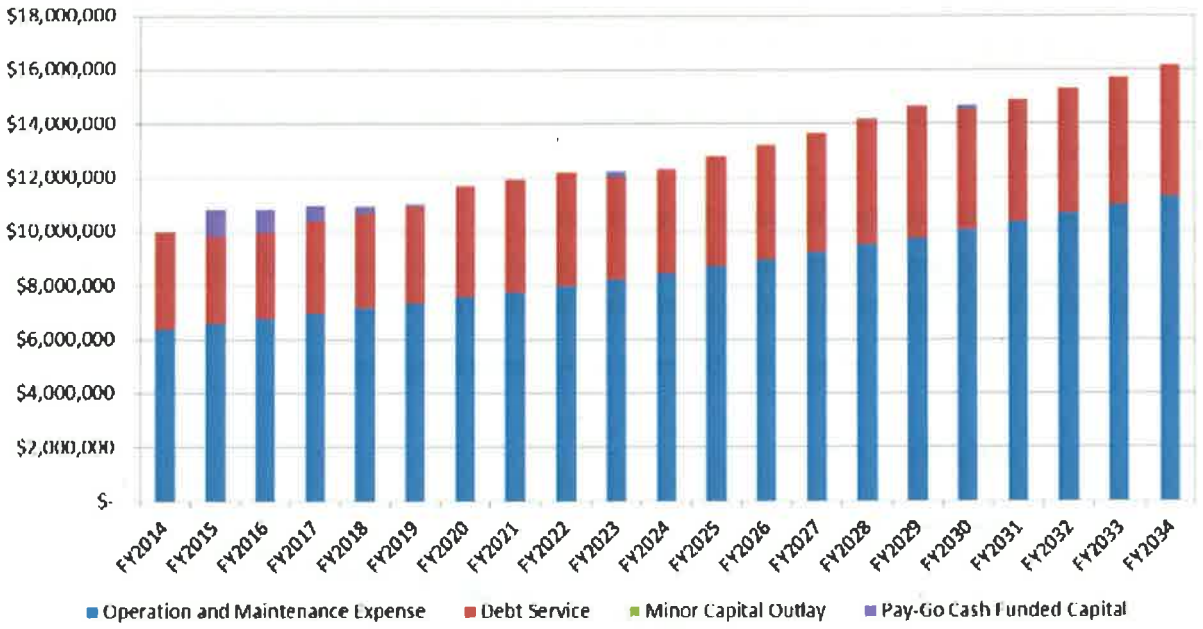
As shown in Figure 5-6, it is anticipated that the estimated water bill will remain below the EPA Affordability Threshold. It is also projected that water rates will approximately follow the historic rate of change in the CPI, as shown in Figure 5-7.

Figure 5-7: Projected Water Bill Compared to Historical Change in the CPI



It is anticipated that the City will incur a moderate amount of debt to fund the water CIP, as shown in Figure 5-8.

Figure 5-8: Water Utility's Projected Budget



5.4. Stormwater Long-Term Financial Plan

The annual rate revenue requirements anticipated for the City's stormwater utility were determined by the Stormwater Department based on a rate model developed by Environmental Rate Consultants in 2013. The model includes annual O&M costs, annual debt service payments, adequate fund balances and debt funding of capital projects for permit compliance by 2025. Projections are based on the budget FY 2014 information.

5.4.1. Assumptions Used in the Financial Affordability Analysis

The model assumes:

- 85% rate of collection including credits and delinquencies
- 3% annual growth in Equivalent Residential Units
- 3% increase in Personnel and Operation Costs

5.4.1.1. Operating Reserves

There are currently no operating reserve targets for the stormwater utility. However, anticipating the need to finance Long Term Control projects, the stormwater utility began to develop reserves that would be required for issuing debt. The model accounts for the creation of a Replacement and Improvement (R&I) Fund of $1,000,000 by 2017 by setting aside $125,000 per year. Between 2018 and 2021 the City plans to create a

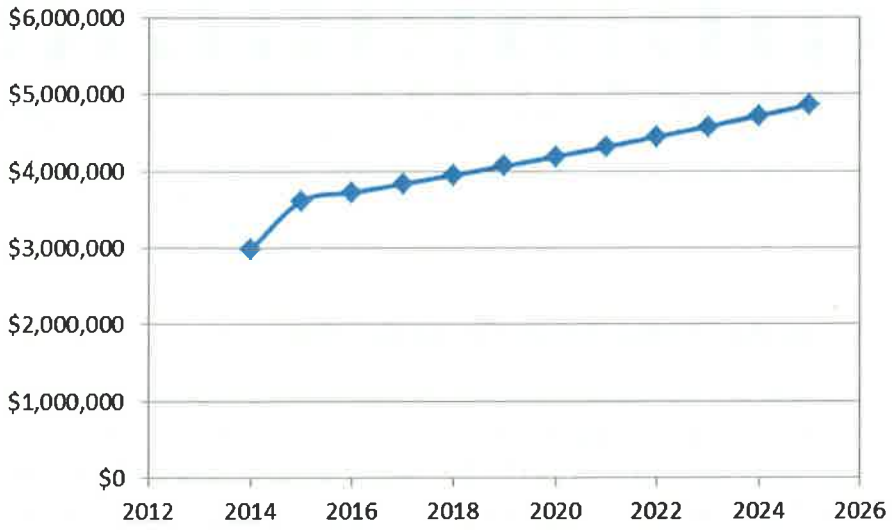
$500,000 bond reserve fund by setting aside $100,000 per year. In addition, the City plans to set aside $100,000 per year for curb replacement and $25,000 per year to a maximum of $125,000 for retirement liabilities.

The stormwater utility maintains a minimum of $300,000 fund balance for cash flow purposes.

5.4.1.2. Stormwater Revenue Requirements

The projected annual stormwater revenue requirements are shown in Figure 5-9. The requirements show an increasing trend over the entire period.

Figure 5-9: Stormwater Revenue Requirements



5.4.1.3. Capital Improvements Program

A summary of the CIP for permit compliance by 2025 can be found in Section 2.4.6.

5.4.2. Stormwater Rate Impact Analysis

The City is planning to maintain existing stormwater rate over the next ten years by postponing portions of the stormwater CIP not already in the works. Existing rates are high compared with other communities, and the City does not desire to increase rates above $8.00 per ERU. Therefore, the City intends to maintain a rate of $7.64 per ERU through 2025.

5.5. Summary of Analysis

The findings of the rate impact analysis are as follows:

- It is anticipated that the City would need to more than triple the wastewater rates between 2014 and 2034 in order to pay for the LTCP and other identified capital needs of the system. The projected rate increases are much higher than the anticipated rate of cost inflation, and would quickly increase the wastewater bill for the median residential customer above 2 percent of the MHI. By 2034, the wastewater bill as a percentage of MHI could exceed 3 percent. These increases would likely result in rate shock and economic hardship for City wastewater customers.
- Small businesses and industries would also experience significant increases to their wastewater bills over the forecast period, similar to residential bills, impacting the City's ability to provide cost competitive wastewater service to its customers, and likely placing added pressure on commercial and industrial customer's ability to be cost competitive, and possibly impacting their economic viability and ability to continue doing business in Lancaster.
- With the current LTCP costs and projected implementation schedule, the City would have limited capacity to fund other programs or additional Federal or State mandates in the future.
- It is anticipated that water rates will need to increase moderately over the forecast period (2014 through 2031) in order to keep water infrastructure in good working condition and to pay for water system operating costs.
- Although stormwater revenue requirements will continue to increase, the City is planning to keep stormwater rates flat through 2025 due to the fact that City stormwater rates are already among the highest among similar sized cities and economic competitors.
- Given these considerations, the City should receive the maximum amount of cost and schedule relief for implementing its LTCP.

6. Conclusions

The following are the conclusions of the Financial Capability Assessment and Affordability Study:

- Currently, the City's water, wastewater, and stormwater rates are already among the highest when compared similar sized cities and economic competitors.
- Despite modest population growth and moderate unemployment rates, the poverty rates for the City have significantly increased since 1990, which may be due to the fact that the City has a low percentage of population with a bachelor's degree as compared to other municipalities in Ohio and across the U.S.
- The City's median household income is low in comparison to other municipalities in Ohio and across the U.S. The distribution of income across the service area demonstrates that the population of a large portion of the City has incomes that are significantly below the MHI.
- Over half of the households are defined as low and moderate income, indicating that many households would experience added hardship by increasing utility rates to fund proposed CIP and LTCP costs associated with permit compliance by 2025.
- The City has a significant population of elderly households, and many of these households have incomes that are significantly below the MHI.
- The City has implemented assistance programs to provide relief to customers with affordability problems, but the number of "Notices of Termination" from delinquent accounts demonstrates that affordability is already a major concern.
- The City's financial capability matrix score is estimated as high burden based on a "High" financial impact Residential Indicator of 2.9 percent and a "Mid-Range" Financial Capability Indicator score of 2.5. This indicates that a typical LTCP proposed to control CSOs would be a significant burden on the City and its customers.
- The combined residential indicator for wastewater, water, and stormwater is 4.7 percent. Many households would pay more than 4.5 percent of their income on combined utilities.
- It is anticipated that the City would need to more than triple the wastewater rates between 2014 and 2034 in order to pay for the LTCP and other identified capital needs of the system. The projected rate increases are much higher than the anticipated rate of cost inflation, and would quickly increase the wastewater bill for the median residential customer above 2 percent of the MHI. By 2034, the wastewater bill as a percentage of MHI could exceed 3 percent. These increases

would likely result in rate shock and economic hardship for City wastewater customers.

- Small businesses and industries would also experience significant increases to their wastewater bills over the forecast period, similar to residential bills, impacting the City's ability to provide cost competitive wastewater service to its customers, and likely placing added pressure on commercial and industrial customer's ability to be cost competitive, and possibly impacting their economic viability and ability to continue doing business in Lancaster.
- The City's economy is sensitive to losing large industries, and thus, the City is making every effort possible to attract new industries. Increasing utility rates to fund proposed CIP and LTCP costs associated with permit compliance by 2025 would make it hard for the City to remain competitive as a destination for new and existing industries, further exacerbating the local economic issues.
- With the current LTCP costs and projected implementation schedule, the City would have limited capacity to fund other programs or additional Federal or State mandates in the future.
- It is anticipated that water rates will need to increase moderately over the forecast period (2014 through 2031) in order to keep water infrastructure in good working condition and to pay for water system operating costs.
- Although stormwater revenue requirements will continue to increase, the City is planning to keep stormwater rates flat through 2025 due to the fact that City stormwater rates are already among the highest when compared to similar sized cities and economic competitors.
- Given these considerations, the City should receive the maximum amount of cost and schedule relief for implementing its LTCP.

City of Lancaster

Division of Water Pollution Control • 800 Lawrence Street • Lancaster, OH 43130

Financial Capability Assessment and Affordability Study

Appendix A

Prepared By:

RED OAK CONSULTING
an ARCADIS group

CITY OF LANCASTER, OHIO
EPA CSO FINANCIAL CAPABILITY ASSESSMENT - PHASE 1 THE RESIDENTIAL INDICATOR

WASTEWATER

Include CSO Costs

WORKSHEET 1: CALCULATION OF COST PER HOUSEHOLD

Description				Amount	EPA Line No.	Source
Current and Projected Wastewater Costs						
Current Wastewater Treatment Costs:						
Annual O&M Expense (excluding Depreciation)				4,780,374	100	Lancaster - Wastewater Financial Plan - 041014.xlsm, 2014 BUDGET.pdf, and Lancaster 2014-2018 Rate Model Update 2014.xls (Stormwater)
Annual Debt Service (Principal & Interest)				5,287,382	101	City of Lancaster, Ohio – Annual Information Statement – 5/27/14 and Financial Capability Information 06052014.xls (Stormwater)
Subtotal			$	10,067,756	102	Calculation
Projected Wastewater Costs:						
Annual Incremental O&M Expense			$	1,718,269	103	Assumed at 1 percent
Capital Cost of WASTEWATER Improvements	$	131,657,498				2014 CIP_City Version_2014 06 05 worst case.xlsx and 2014 CIP for Water.xlsx
Capital Costs for CSO Control	$	11,639,858				2014 CIP_City Version_2014 06 05 worst case.xlsx
Other Capital Costs-R&R Projects	$	28,529,561				Ohio Public Works Commission Capital Improvement Report, 2012, Replacement and Repair Costs with Physical Conditions Grading
Annual Debt Service (Principal & Interest)				$13,787,836	104	Calculation assuming debt issued at 5 percent interest rate for 20 years.
Subtotal			$	15,506,105	105	Calculation
Total Current and Projected Wastewater Costs			$	25,573,861	106	
Allocation of Flows to Customer Classes						
WASTEWATER Flow Statistics:						
Total Billed Residential Flows:		940,301 ccf		70.5%		Water/Sewer: e-mail from Mike Nixon dated 4-10-14 / Stormwater: email from Denise Crews dated 5-27-14
Total Billed Commercial Flows:		278,394 ccf		20.9%		Water/Sewer: e-mail from Mike Nixon dated 4-10-14 / Stormwater: email from Denise Crews dated 5-27-14
Total Billed Industrial Flows:		114,306 ccf		8.6%		Water/Sewer: e-mail from Mike Nixon dated 4-10-14 / Stormwater: email from Denise Crews dated 5-27-14
Total County ERUs for Stormwater Calculation:		0				
Total Flow		1,333,001 ccf		100.0%		Calculation
Allocation of Wastewater Costs to Residential Customers:						
Residential Flow as a Percentage of Total Flow				70.5%		Calculation
Residential Share of Total Wastewater Costs			$	18,029,572	107	Calculation
Determination of Wastewater Cost Per Household:						
Total Number of Households in Service Area				15,919	108	ACS_12_3YR_S1903.pdf http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml
Cost Per Household		**Annual CPH**		**$1,132.58**	109	

CITY OF LANCASTER, OHIO
EPA CSO FINANCIAL CAPABILITY ANALYSIS - PHASE 2 - FINANCIAL CAPABILITY INDICATORS

WORKSHEET 8: PROPERTY TAX REVENUE COLLECTION RATE

Description	Amount	EPA Line No.	Source
Property Tax Revenue Collected:	$4,137,669	801	Official Statement, General Obligation Courthouse Improvement Bonds, 6-09-2014, page
Property Tax Levied	$4,253,997	802	Official Statement, General Obligation Courthouse Improvement Bonds, 6-09-2014, page per Financial Capability Analysis Information 06062014.doc
Property Tax Revenue Collection Rate	97.3%	803	

Analysis of the Property Tax Revenue Collection Rate Indicator Mid-Range

Property Tax Indicator	Property Tax Collection Rate
Strong	Greater Than 98%
Mid-Range	**Between 94% and 98%**
Weak	Below 94%

CITY OF LANCASTER, OHIO
EPA CSO FINANCIAL CAPABILITY ASSESSMENT: WASTEWATER

SUMMARY OF RESULTS

Indicator	Actual Value	Indicator Range	Score	EPA Line No.	Ref. Line No.
Worksheet 9: Summary of Permittee Financial Capability Indicators					
Bond Rating	AA, Aa3, AA	Strong	3	901	303
Overall Net Debt as a Percent of Full Market Property Value	1.7%	Strong	3	902	405
Unemployment Rate	6.90%	Strong	3	903	501
Median Household Income	$39,411	Weak	1	904	601
Property Tax Revenues as a % of Full Market Property Value	0.59%	Strong	3	905	703
Property Tax Revenue Collection Rate	97.3%	Mid-Range	2	906	803
Overall Financial Capability Indicators Score (Average)		Mid-Range	2.50	907	
Worksheet 10: Financial Capability Matrix Score					
Residential Indicator Score:	2.87%			1001	
Residential Indicator Range:		High			
Financial Capibility Indicator Score	2.50			1002	
Financial Capability Matrix Category (Financial Impact)		High Burden		1003	