PERSONNEL/ADMINISTRATIVE AFFAIRS COMMITTEE

NOVEMBER 21, 2016

7:00 PM Aldermanic Chamber

ROLL CALL

PUBLIC COMMENT

INTERVIEWS

Building Code Board of Appeals

Daniel Bergeron (New Appointment) Term to Expire: October 1, 2019

Scott Cote (New Appointment) Term to Expire: November 1, 2019

Downtown Improvement Committee

James Tobin (New Appointment) Term to Expire: November 2, 2019

Mine Falls Park Advisory Committee

Bruce Lund (New Appointment) Term to Expire: November 1, 2019

Nashua Arts Commission:

Marc Thayer (New Appointment) Term to Expire: April 1, 2019

Planning Board

Gerry Repucci (New Appointment) Term to Expire: March 31, 2017

COMMUNICATIONS

From: Dorothy Clarke, Deputy Corporation Counsel
Re: O-16-019, Increasing Sewer User Fees Rates and Charges

From: John L. Griffin, CFO
Re: Wastewater Fund Rate/Revenue Requirements Analysis

APPLICATION TO LICENSE HAWKER'S, PEDDLER'S, ITINERANT VENDOR'S LICENSE - None

APPOINTMENTS BY THE MAYOR

Building Code Board of Appeals

Daniel Bergeron (New Appointment) Term to Expire: October 1, 2019
27 Webster Street
Nashua, NH 03064

Scott Cote (New Appointment) Term to Expire: November 1, 2019
39 Tenby Drive
Nashua, NH 03062

Kevin Slattery (Reappointment) Term to Expire: September 1, 2018
4 Berkeley Street
Nashua, NH 03064

Downtown Improvement Committee

James Tobin (New Appointment) Term to Expire: November 2, 2019
36 Dogwood Drive
Nashua, NH 03062

Historic District Commission

Robert Sampson (Reappointment) Term to Expire: September 30, 2019
18 Sargent Avenue
Nashua, NH 03064

Mine Falls Park Advisory Committee

Bruce Lund (New Appointment) Term to Expire: November 1, 2019
2 Clocktower Place, #227
Nashua, NH 03060

Nashua Arts Commission:

Marc Thayer (New Appointment) Term to Expire: April 1, 2019
1 Clocktower Place, #416
Nashua, NH 03060

Planning Board

Gerry Repucci (New Appointment) Term to Expire: March 31, 2017
17 Badger Street, #1
Nashua, NH 03060

UNFINISHED BUSINESS – None

NEW BUSINESS – RESOLUTIONS – None

NEW BUSINESS – ORDINANCES

O-16-019
Endorser: Mayor Jim Donchess
INCREASING SEWER USE FEES RATES AND CHARGES

O-16-021
Endorsers: Alderman June M. Caron
Alderman-at-Large Lori Wilshire
Alderman Richard A. Dowd
Alderman Ken Siegel
Alderwoman Mary Ann Melizzi-Golja
Alderman Tom Lopez
CHANGING THE NAME OF THE REVIEW AND COMMENT COMMISSION TO THE CITIZENS ADVISORY COMMISSION FOR COMMUNITY GRANTS

O-16-022

Endorsers: Mayor Jim Donchess
Alderman-at-Large Lori Wilshire
Alderman Don LeBrun
Alderman-at-Large Michael B. O'Brien, Sr.
Alderwoman Mary Ann Melizzi-Golja
Alderman-at-Large Brian S. McCarthy

ESTABLISHING AN ENVIRONMENT AND ENERGY COMMITTEE

TABLED IN COMMITTEE

O-16-017

Endorsers: Alderwoman Mary Ann Melizzi-Golja
Alderman Richard A. Dowd

AMENDING THE STRATEGIC PLANNING COMMITTEE MEMBERSHIP

- Tabled – 9/19/16

DISCUSSION

PUBLIC COMMENT

REMARKS BY THE ALDERMEN

POSSIBLE NON-PUBLIC SESSION

ADJOURNMENT

CITY OF NASHUA
OFFICE OF CORPORATION COUNSEL

Memorandum

To: Board of Aldermen

From: Dorothy Clarke, Deputy Corporation Counsel

Date: October 14, 2016

RE: O-16-019, Increasing sewer user fees rates and charges

Ordinance O-16-019 "Increasing sewer user fees rates and charges" contains an incorrect date in the last sentence which sets out an effective date for the legislation. The legislation as introduced states "this legislation shall take effect on July 1, 2017"; it should instead state "this legislation shall take effect on January 1, 2017". The implementation dates are correct in the text of the proposed ordinance and in the analysis.

I apologize for any confusion caused by this incorrect date, and would appreciate the board's consideration in amending the effective date of O-16-019 to January 1, 2017. Thank you.

cc: Mayor Jim Donchess
John Griffin, CFO / Comptroller
David Fredette, Treasurer / Tax Collector

City of Nashua

Office of the Chief Financial Officer
229 Main Street - Nashua, NH 03060

(603) 589-3170
Fax (603) 589-3168

To: Board of Alderman
Mayor Donchess

From: John L. Griffin, CFO

Date: October 28, 2016

Subject: Wastewater Fund Rate/Revenue Requirements Analysis

Background

As of June 30, 2015, the Wastewater Fund had a net asset balance of $14,408,174. The Wastewater Enterprise Fund's operating expenses were projected to be approximately $13.0 million in FY16 which were offset by projected revenues of $13.0 million. The operating expenses are expected to increase to $14.2 million in FY17, and $15.5 million in FY18, necessitating a proposed increase in wastewater user fees of 15% for FY17. For the average residential customer, the proposed quarterly increase will be approximately $10.37.

Attached for your review is the September 2016 Wastewater Fund Rate/Revenue Requirements Analysis. The analysis includes a review of the Wastewater Fund for the period FY16 through FY22. The last rate analysis was completed in November 2013 and resulted in an approved rate increase of 15% effective January 1, 2014 (FY2014). Current issues impacting the Wastewater Fund include:

- EPA Consent Order
- Increase in Debt Service related to Consent Order projects
- Aging Infrastructure
- Continued Deferment of State Aid Grant Funding

Recommendation

The recommendation resulting from the current analysis is the approval of a 15% increase in the Wastewater rates for FY17. The Board of Public Works approved this increase at their September 29, 2016 meeting.

The increase is proposed to become effective on January 1, 2017. Therefore, this increase would be reflected in the April quarterly billing for residential customers and in the January billings for commercial customers as these accounts are billed monthly.

Revenue Analysis

The Wastewater Fund receives most of its revenue from user fees. The wastewater rates are comprised of two components: volumetric (variable) and demand (fixed). It is recommended that the rate increase is applied to both components:

Fiscal Year	Recommended Rate Increase	Average Quarterly Residential Billing Increase
FY17	15%	$10.37

Increasing both rate components spreads the increase more evenly among all customers and also provides the Wastewater Fund with a more consistent source of demand rate revenue. The demand charge is more constant and provides for improved revenue forecasting. The volumetric component is volatile and could result in revenues coming in lower than forecast. The average quarterly residential bill is currently $68.77. If the proposed rates are approved, the new average quarterly residential bill will be $79.14. As these new rates are proposed to become effective mid-way through this fiscal year, the average residential customer will see an increase of $20.74 in FY2017.

Additional rate increases for FY2019 through FY2022 are projected in the analysis. The projected rate increases assume a January 1st effective date for consistency. We will continue to monitor the Wastewater fund on an annual basis to determine if any changes to the projected rate increases become necessary.

Below is a comparison of user fees in communities similar to Nashua:

	Nashua *(current)*	Nashua *(proposed)*	Derry	Manchester	Concord	Keene
Volumetric Rate per CCF	$2.05	$2.36	$2.98	$3.47	$4.61	$5.69
Fixed Charge – Avg. Quarterly	$27.77	$31.94	$35.66	$21.18	$41.49	$55.15
Avg. Quarterly Residential Bill	$68.77	$79.14	$80.36	$90.58	$92.20	$168.95

In addition to user fee revenue, the fund has received State Aid Grants (SAG) towards the cost of wastewater projects. The SAG program was deferred during FY09 and as a result, the City of Nashua has not received any SAG grants on new completed projects since the deferral was put in place. The State plans to fund some of the projects that qualify for funding, but the dollar value due to Nashua is not known at this time.

Cost Analysis

The analysis includes the cost of operations, several capital projects, as well as the capital equipment replacement schedule. Capital equipment replacement (WERF) costs for the next three fiscal years are projected as follows:

- FY17 $2.1 million
- FY18 $1.9 million
- FY19 $0.4 million

The City of Nashua is under an Administrative Consent Order (Consent Decree) from the EPA to reduce combined sewer overflows to the Nashua River and Merrimack River. The cost of the components of the Consent Decree totaled approximately $65 million at the time of this study. The City has completed nearly all of the Consent Decree capital projects, many of which were funded with debt and are responsible for the increases in debt service payments in the upcoming fiscal years.

Capital Project Financing With Debt

The analysis includes debt financing needs for the larger capital projects. During the next three fiscal years, debt proceeds are projected to be used as follows:

- FY17 $13.4 million
- FY18 $0.9 million
- FY19 None

Annual Capital Expenditures Funded With Cash

The analysis includes annual capital expenditures that will be funded with cash. These annual expenditures include consent decree operational expenditures, sewer infrastructure improvements, sewer structure replacement, CSO flooding, storm water abatement and other expenditures noted within the analysis. The annual expenditures for these items over the next three years are projected to be as follows:

- FY17 $4.1 million
- FY18 $2.6 million
- FY19 $2.7 million

As shown in the analysis, the use of cash for these purposes results in a reduction in the Unrestricted Retained Earnings balance.

Summary

The recommended rate increases shown on Schedule A would allow the City to:

- Fund normal operating costs;
- Meet EPA requirements;
- Adequately fund reserves for future equipment needs;
- Fund infrastructure improvements with cash; and
- Pay for the increase in debt service payments during the next several fiscal years.

City of Nashua
Wastewater Fund
Rate/Revenue Requirements Analysis
September 2016

Wastewater Fund: Rate/Revenue Requirements Analysis

Page 3 – Schedule A – Analysis of Operations

Schedule A is the Analysis of Operations for the Wastewater Fund for the period FY2016 through FY2022.
Included in the analysis is:

1) Percentage increases projected in Retail User Fees.
2) Projected Revenues and Expenditures from operational activities resulting in the calculation of Net Surplus from Operations for each year.
3) Projected Capital Costs offset by Debt proceeds, Use of Funding from the Capital Equipment Reserve, and State Aid Grants resulting in Net Surplus or Deficit from Capital Projects and Expenditures for each year.
4) Projected Total Unrestricted Net Assets in the Fund - Unrestricted Retained Earnings and Capital Equipment Reserve.

Page 4 – Schedule B - Analysis of Capital Projects – Capital Expenditures

Schedule B is the Analysis of Capital Projects for the Wastewater Fund.
Included in the analysis is:

1) A listing of the various Combined Sewer Overflow, Collection Systems, Treatment Plant, and Other Expenditures.
2) For each project, the schedule shows the total project amount, the type and amount of financing used and the estimated spending plan for the years FY2016 to FY2022.

Page 5 - Schedule C – Analysis of Capital Projects – Capital Funding Sources

Schedule C is the Analysis of Capital Funding Sources for the Wastewater Fund.
Included in the analysis is:

1) A listing of the Projects funded by debt along with the anticipated debt proceeds for each year.
2) Use of funds from the Capital Equipment Replacement Fund for each year.
3) A listing of State Aid Grants and the amounts anticipated to be received for the years FY2016 to FY2022.

Page 6 - Schedule D – Capital Equipment Replacement Fund Schedule

This table lists all plant and mobile equipment and includes year acquired, original cost, life, year of replacement, future value (projected value at year of replacement), and amount to reserve each year in order to reach that future value (with inflation and investment earnings factored in). This equipment is categorized by plant and collections.

Page 21 - Schedule E – New Project Debt

This table shows the debt schedules for each of the projects being debt financed.

Page 22 - Schedule F – Analysis of Wastewater Fund

This table shows the year end fund balance and rate changes for FY2002 to FY2022.

City of Nashua
Analysis of Operations
FY2016 through FY2022

Schedule A

8/9/2016

Line No.	Description	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022
1	**Projected Percent Increase in Retail User Fees**		**0.00%**	**15.00%**	**0.00%**	**15.00%**	**0.00%**	**15.00%**	**0.00%**
2	**Effective Rate for the Fiscal Year Assuming a Mid-Year Rate Change**		**0.00%**	**7.50%**	**0.00%**	**7.50%**	**0.00%**	**7.50%**	**0.00%**
3	**Projected Percent Increase in Other Revenue**		**3.00%**	**3.00%**	**3.00%**	**3.00%**	**3.00%**	**3.00%**	**3.00%**
4									
5	**Revenue**								
6	Retail User Fee Revenue - Base	$ 12,491,875	$ 12,491,875	$ 12,491,875	$ 14,365,656	$ 14,365,656	$ 16,520,505	$ 16,520,505	$ 18,998,580
7	Retail User Fee Revenue - Increase		-	936,891	-	1,077,424	-	1,239,038	-
8	Other Revenue		604,582	631,040	649,971	669,470	689,554	710,241	731,548
9	**Total Revenues**		**$ 13,096,457**	**$ 14,059,806**	**$ 15,015,627**	**$ 16,112,551**	**$ 17,210,059**	**$ 18,469,784**	**$ 19,730,129**
10									
11	**Projected Percent Increase in Operating Expenditures**				**3.00%**	**3.00%**	**3.00%**	**3.00%**	**3.00%**
12	**Expenditures**								
13	**Operating Expenditures**								
14	Personnel Related Expenditures		$ 3,502,423	$ 3,824,804	$ 3,939,548	$ 4,057,735	$ 4,179,467	$ 4,304,851	$ 4,433,996
15	Operations and Maintenance		3,222,575	3,281,234	3,379,671	3,481,061	3,585,493	3,693,058	3,803,850
16	**Subtotal - Operating Expenditures**		**$ 6,724,998**	**$ 7,106,038**	**$ 7,319,219**	**$ 7,538,796**	**$ 7,764,960**	**$ 7,997,908**	**$ 8,237,846**
17									
18	**Non-Operating Expenditures**								
19	Reserve for Replacements		$ 1,607,129	$ 1,607,129	$ 2,055,600	$ 2,055,600	$ 2,055,600	$ 2,055,600	$ 2,055,600
20	Buildings and Improvements		235,000	275,000	275,000	275,000	275,000	275,000	275,000
21	**Debt Service Payments (Schedule E)**		**4,187,167**	**5,247,739**	**5,887,703**	**6,411,424**	**6,351,550**	**6,220,890**	**5,628,962**
22	**Subtotal - Non-Operating Expenditures**		**$ 6,029,296**	**$ 7,129,868**	**$ 8,218,303**	**$ 8,742,024**	**$ 8,682,150**	**$ 8,551,490**	**$ 7,959,562**
23									
24	**Total Expenditures**		**$ 12,754,294**	**$ 14,235,906**	**$ 15,537,522**	**$ 16,280,820**	**$ 16,447,110**	**$ 16,549,398**	**$ 16,197,408**
25									
26	**Net Surplus From Operations**		**$ 342,163**	**$ (176,101)**	**$ (521,894)**	**$ (168,269)**	**$ 762,949**	**$ 1,920,386**	**$ 3,532,721**
27									
28	**Captial Projects and Expenditures**								
29	Capital Costs (Schedule B - Lines 13, 34, and 60)		$ (3,900,000)	$ (17,251,498)	$ (155,000)	$ (700,000)	$ -	$ -	$ -
30	**Debt Proceeds (Schedule C - Line 25)**		**3,800,000**	**13,379,000**	**155,000**	**700,000**	**-**	**-**	**-**
31	**Capital Costs Funded by Cash**		**$ (100,000)**	**$ (3,872,498)**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
32									
33	**Annual Capital Expenditures Funded by Cash (Schedule B - Lines 17 & 41)**		**$ (2,426,646)**	**$ (4,090,185)**	**$ (2,621,366)**	**$ (2,725,798)**	**$ (2,829,342)**	**$ (2,849,034)**	**$ (2,849,034)**
34									
35	Capital Equipment Replacement Expenditures (Schedule B - Line 67)		$ (405,661)	$ (2,097,867)	$ (1,926,770)	$ (369,257)	$ (508,979)	$ (238,235)	$ (390,172)
36	Funding from Capital Equipment Reserve (Schedule C - Line 28)		405,661	2,097,867	1,926,770	369,257	508,979	238,235	390,172
37	**Net Proceeds (Costs) from Capital Equipment Reserve**		**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
38									
39	**State Aid Grants (Schedule C - Line 33)**		**$ 329,491**	**$ 328,393**	**$ 327,295**	**$ 95,547**	**$ 94,450**	**$ 93,353**	**$ 93,353**
40									
41	**Net Surplus (Deficit) From Captial Projects and Expenditures**		**$ (2,197,155)**	**$ (7,634,290)**	**$ (2,294,071)**	**$ (2,630,251)**	**$ (2,734,892)**	**$ (2,755,681)**	**$ (2,755,681)**
42									
43	**Unrestricted Retained Earnings**								
44	**Beginning Balance**		**$ 3,855,493**	**$ 2,000,501**	**$ (5,809,889)**	**$ (8,625,855)**	**$ (11,424,375)**	**$ (13,396,317)**	**$ (14,231,613)**
45	Net Surplus (Deficit) From Operations (Line 26 above)		342,163	(176,101)	(521,894)	(168,269)	762,949	1,920,386	3,532,721
46	Net Surplus (Deficit) From Capital Projects and Expenditures (Line 41 above)		(2,197,155)	(7,634,290)	(2,294,071)	(2,630,251)	(2,734,892)	(2,755,681)	(2,755,681)
47	**Ending Balance**	**$ 3,855,493**	**$ 2,000,501**	**$ (5,809,889)**	**$ (8,625,855)**	**$ (11,424,375)**	**$ (13,396,317)**	**$ (14,231,613)**	**$ (13,454,572)**
48									
49	**Capital Equipment Reserve**								
50	**Beginning Balance**		**$ 10,552,681**	**$ 11,754,149**	**$ 11,263,412**	**$ 11,392,242**	**$ 13,078,585**	**$ 14,625,206**	**$ 16,442,570**
51	Capital Equipment Additions Funded by Sewer Rates (Schedule D)		1,607,129	1,607,129	2,055,600	2,055,600	2,055,600	2,055,600	2,055,600
52	Payments for Capital Equipment Expenditures (Schedule D)		(405,661)	(2,097,867)	(1,926,770)	(369,257)	(508,979)	(238,235)	(390,172)
53	**Ending Balance**	**$ 10,552,681**	**$ 11,754,149**	**$ 11,263,412**	**$ 11,392,242**	**$ 13,078,585**	**$ 14,625,206**	**$ 16,442,570**	**$ 18,107,999**
54									
55	**Total Unrestricted Net Assets**	**$ 14,408,174**	**$ 13,754,650**	**$ 5,453,522**	**$ 2,766,387**	**$ 1,654,210**	**$ 1,228,888**	**$ 2,210,958**	**$ 4,653,426**

City of Nashua
Analysis of Capital Projects
CSO, Collection Systems, and Treatment Plant Projects

Schedule B

Line No.	Description	Total	<<<< PROJECT FUNDING >>>> Other	Debt	Cash	PROJECT CASH FLOW >>>> FY2016	FY2017	FY2018	FY2019	FY2020	FY2021	FY2022
	I. Combined Sewer Overflow (CSO) Expenditures											
	Completed Projects											
1	Wet Weather Facility	$ 32,375,000	$ -	$ 26,700,000	$ 5,675,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -
2	Sluice Gate	897,000	-	-	897,000	-	-	-	-	-	-	-
3	Drop Over Structures	1,634,000	-	-	1,634,000	-	-	-	-	-	-	-
4	System Optimization	1,810,000	-	-	1,810,000	-	-	-	-	-	-	-
5	Harbor Ave Sewer Separation	5,581,405	700,000	4,519,057	362,348	-	-	-	-	-	-	-
6	Storage Tank	1,700,000	-	1,700,000	-	-	-	-	-	-	-	-
7	Screening & Disinfection Facility	15,160,000	-	15,000,000	160,000	-	-	-	-	-	-	-
8	**Subtotal - Completed Projects**	**$ 59,157,405**	**$ 700,000**	**$ 47,919,057**	**$ 10,538,348**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
9												
10	**In Progress Projects**											
11	Inflow and Infiltration	$ 500,000	$ -	$ -	$ 500,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -
12	Burke St. Sewer Improvements	4,064,964	-	4,064,964	-	-	-	-	-	-	-	-
13	**Subtotal - In Progress Projects**	**$ 4,564,964**	**$ -**	**$ 4,064,964**	**$ 500,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
14												
15	**Annual Expenditures**											
16	Consent Decree Operational Expenditures	$ 1,504,862	$ -	$ -	$ 1,504,862	$ 121,555	$ 125,202	$ 128,958	$ 132,827	$ 136,812	$ 140,916	$ 140,916
17	**Subtotal -Annual Expenditures**	**$ 1,504,862**	**$ -**	**$ -**	**$ 1,504,862**	**$ 121,555**	**$ 125,202**	**$ 128,958**	**$ 132,827**	**$ 136,812**	**$ 140,916**	**$ 140,916**
18												
19	**Total - Combined Sewer Overflow Expenditures**	**$ 65,227,231**	**$ 700,000**	**$ 51,984,021**	**$ 12,543,210**	**$ 121,555**	**$ 125,202**	**$ 128,958**	**$ 132,827**	**$ 136,812**	**$ 140,916**	**$ 140,916**
20												
21												
22	**II. Collection Systems Expenditures**											
23												
24	**Completed Projects**											
25	Haines Street	$ 1,499,657	$ -	$ 1,338,066	$ 161,591	$ -	$ -	$ -	$ -	$ -	$ -	$ -
26	Hazard Mitigation	50,593	50,593	-	-	50,593	-	-	-	-	-	-
27	**Subtotal - Completed Projects**	**$ 1,550,250**	**$ 50,593**	**$ 1,338,066**	**$ 161,591**	**$ 50,593**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
28												
29	**In Progress Projects**											
30	Pump Stations Rehab	$ 8,500,000	$ -	$ 8,400,000	$ 100,000	$ 100,000	$ 8,400,000	$ -	$ -	$ -	$ -	$ -
31	Merrimack River Levee	150,000	-	-	150,000	-	128,174	-	-	-	-	-
32	Bridge Street Overflow Detention Basin	2,590,000	-	-	2,590,000	-	2,534,323	-	-	-	-	-
33	Capacity Management O&M (CMOM) Plan	300,000	-	-	300,000	-	300,000	-	-	-	-	-
34	**Subtotal - In Progress Projects**	**$ 11,540,000**	**$ -**	**$ 8,400,000**	**$ 3,140,000**	**$ 100,000**	**$ 11,362,498**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
35												
36	**Annual Expenditures**											
37	Annual Sewer Infrastructure Improvements	$ 13,174,084	$ -	$ -	$ 13,174,084	$ 1,458,608	$ 3,100,000	$ 1,608,115	$ 1,688,521	$ 1,772,947	$ 1,772,947	$ 1,772,947
38	Sewer Structure Replacement	2,031,513	-	-	2,031,513	255,256	268,019	281,420	295,491	304,356	313,486	313,486
39	CSO Flooding	2,800,000	-	-	2,800,000	400,000	400,000	400,000	400,000	400,000	400,000	400,000
40	Storm Water Abatement	1,458,621	-	-	1,458,621	191,227	196,964	202,873	208,959	215,228	221,685	221,685
41	**Subtotal - Annual Expenditures**	**$ 19,464,218**	**$ -**	**$ -**	**$ 19,464,218**	**$ 2,305,091**	**$ 3,964,983**	**$ 2,492,408**	**$ 2,592,971**	**$ 2,692,530**	**$ 2,708,118**	**$ 2,708,118**
42												
43	**Total - Combined Sewer Overflow Expenditures**	**$ 32,554,468**	**$ 50,593**	**$ 9,738,066**	**$ 22,765,809**	**$ 2,455,684**	**$ 15,327,481**	**$ 2,492,408**	**$ 2,592,971**	**$ 2,692,530**	**$ 2,708,118**	**$ 2,708,118**
44												
45	**III. Treatment Plant Expenditures**											
46												
47	**Completed Projects**											
48	Aeration Blowers & Tank Upgrade	$ 4,160,973	$ -	$ 4,160,973	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
49	Net Metering	494,339	-	494,339	-							
50	Dewatering Equipment Replacement	5,666,516	-	5,566,516	100,000	-	-	-	-	-	-	-
51	**Subtotal - Completed Projects**	**$ 10,321,828**	**$ -**	**$ 10,221,828**	**$ 100,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
52												
53	**In Progress Projects**											
54	Plant Headworks Upgrade	$ 3,800,000	$ -	$ 3,800,000	$ -	$ 3,800,000	$ -	$ -	$ -	$ -	$ -	$ -
55	Effluent Defoamant Chemical Building	565,000	-	-	565,000	-	565,000	-	-	-	-	-
56	Primary Tank Upgrades	4,200,000	-	4,200,000	-	-	4,200,000	-	-	-	-	-
57	Wastewater Plant Water Booster Station	779,000	-	779,000	-	-	779,000	-	-	-	-	-
58	AC & Air Handling Units	345,000	-	-	345,000	-	345,000	-	-	-	-	-
59	Phosphorus Removal & Storage Facility	855,000	-	855,000	-	-	-	155,000	700,000	-	-	-
60	**Subtotal - In Progress Projects**	**$ 10,544,000**	**$ -**	**$ 9,634,000**	**$ 910,000**	**$ 3,800,000**	**$ 5,889,000**	**$ 155,000**	**$ 700,000**	**$ -**	**$ -**	**$ -**
61												
62	**Total - Treatment Plant Expenditures**	**$ 20,865,828**	**$ -**	**$ 19,855,828**	**$ 1,010,000**	**$ 3,800,000**	**$ 5,889,000**	**$ 155,000**	**$ 700,000**	**$ -**	**$ -**	**$ -**
63												
64	**Total Capital Expenditures**	**$ 118,647,527**	**$ 750,593**	**$ 81,577,915**	**$ 36,319,020**	**$ 6,377,239**	**$ 21,341,683**	**$ 2,776,366**	**$ 3,425,798**	**$ 2,829,342**	**$ 2,849,034**	**$ 2,849,034**
65												
66												
67	**Capital Equipment Replacement Expenditures**	**$ 5,936,941**				**$ 405,661**	**$ 2,097,867**	**$ 1,926,770**	**$ 369,257**	**$ 508,979**	**$ 238,235**	**$ 390,172**

City of Nashua
Analysis of Use of Debt Proceeds, Capital Equipment Reserve and State Aid Grants **Schedule C**
CSO, Collection Systems, and Treatment Plant Projects

Line No.	Project Description	Funding	Total	Debt	FY2016	FY2017	FY2018	FY2019	FY2020	FY2021	FY2022
1	**I. Combined Sewer Overflow (CSO) Projects**										
2	Wet Weather Facility	SRF	$ 32,375,000	$ 26,700,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -
3	Screening & Disinfection Facility	SRF	15,160,000	15,000,000	-	-	-	-	-	-	-
4	Storage Tank/Burke St. Sewer Rehab	Bonds	5,764,964	5,764,964	-	-	-	-	-	-	-
5	Harbor Ave	SRF	5,581,405	4,519,057	-	-	-	-	-	-	-
6	**Subtotal - Combined Sewer Overflow Projects**		**$ 58,881,369**	**$ 51,984,021**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
7											
8											
9	**II. Collection Systems Projects**										
10	Haines Street	SRF	$ 1,499,657	$ 1,338,066	$ -	$ -	$ -	$ -	$ -	$ -	$ -
11	Pump Stations Rehab	SRF	8,500,000	8,400,000	-	8,400,000	-	-	-	-	-
12	**Subtotal - Collections Systems Projects**		**$ 9,999,657**	**$ 9,738,066**	**$ -**	**$ 8,400,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
13											
14											
15	**III. Treatment Plant Projects**										
16	Aeration Blowers & Tank Upgrade	Bonds	$ 4,160,973	$ 4,160,973	$ -	$ -	$ -	$ -	$ -	$ -	$ -
17	Net Metering	SRF	$ 494,339	$ 494,339							
18	Dewatering Equipment Replacement	Bonds	5,666,516	5,567,000	-	-	-	-	-	-	-
19	Plant Headworks Upgrade	SRF	3,800,000	3,800,000	3,800,000	-	-	-	-	-	-
20	Primary Tank Upgrades	SRF/Bnd	4,200,000	4,200,000	-	4,200,000	-	-	-	-	-
21	Phosphorus Removal & Storage Facility	SRF/Bnd	855,000	855,000	-	-	155,000	700,000	-	-	-
22	Wastewater Plant Water Booster Station	SRF/Bnd	779,000	779,000	-	779,000	-	-	-	-	-
23	**Subtotal - Treatment Plant Projects**		**$ 19,955,828**	**$ 19,856,312**	**$ 3,800,000**	**$ 4,979,000**	**$ 155,000**	**$ 700,000**	**$ -**	**$ -**	**$ -**
24											
25	**Total Capital Projects**		**$ 88,836,854**	**$ 81,578,399**	**$ 3,800,000**	**$ 13,379,000**	**$ 155,000**	**$ 700,000**	**$ -**	**$ -**	**$ -**
26											
27											
28	**Capital Equipment Replacement Fund**		**$ 5,936,941**		**$ 405,661**	**$ 2,097,867**	**$ 1,926,770**	**$ 369,257**	**$ 508,979**	**$ 238,235**	**$ 390,172**
29											
30	**State Aid Grants**										
31	Current State Aid Grants		$ 1,361,882		$ 329,491	$ 328,393	$ 327,295	$ 95,547	$ 94,450	$ 93,353	$ 93,353
32	Estimated State Aid Grants		-		-	-	-	-	-	-	-
33	**Total State Aid Grants**		**$ 1,361,882**		**$ 329,491**	**$ 328,393**	**$ 327,295**	**$ 95,547**	**$ 94,450**	**$ 93,353**	**$ 93,353**

	Nashua Wastewater Treatment Facility									
	Schedule D - Wastewater Equipment Replacement Fund									
	As of 5/4/2016									
							RENEWAL/REPLACEMENT STRATEGY			
	Major Systems	**Major System Facilities**	**Asset Name**	**Collections or Operations**	**Date Installed**	**Estimated Effective Life**	**Cost of Renewal Option**	**Recommended Renewal Date (FY)**	**Future Cost of Renewal**	**ANNUAL RESERVE PAYMENT**
					year	**years**	**$**	**Calibrated Column**		
						Tab A-1	**Estimate**	**Calculated**	**2.00%**	**0.50%**
1	HW	Eqpt	Mechanical Bar Screen No. 1	Operations	1999	21	$ 108,000	2016	$ 110,160	$ 6,200
2	HW	Eqpt	Mechanical Bar Screen No. 2	Operations	1999	21	$ 108,000	2016	$ 110,160	$ 6,200
3	HW	Eqpt	Screenings Wash Press No. 1	Operations	1999	21	$ 91,800	2016	$ 93,636	$ 5,300
4	HW	Eqpt	Screenings Wash Press No. 2	Operations	1999	21	$ 91,800	2016	$ 93,636	$ 5,300
5	HW	Eqpt	Screenings Roll-Off Container No. 1	Operations	1999	21	$ 33,000	2016	$ 33,660	$ 1,900
6	HW	Eqpt	Screenings Roll-Off Container No. 2	Operations	1999	21	$ 33,000	2016	$ 33,660	$ 1,900
7	HW	Eqpt	Screenings Roll-Off Winch	Operations	1999	21	$ 23,625	2016	$ 24,098	$ 1,400
8	HW	G/A	Influent WWTF Sluice Gate	Operations	1972	53	$ 162,000	2024	$ 193,605	$ 3,300
9	HW	G/A	HW-SLG-1 Hydraulic Power Plant Actuator	Operations	1999	20	$ 114,750	2018	$ 121,774	$ 6,100
10	HW	G/A	Influent SCR Slide Gate No. 1	Operations	1972	53	$ 27,000	2024	$ 32,267	$ 500
11	HW	G/A	HW-SLD-1 Electric Actuator	Operations	1999	35	$ 7,425	2036	$ 11,254	$ 300
12	HW	G/A	Influent SCR Slide Gate No. 2	Operations	1972	53	$ 27,000	2024	$ 32,267	$ 500
13	HW	G/A	HW-SLD-2 Electric Actuator	Operations	1999	35	$ 7,425	2036	$ 11,254	$ 300
14	HW	G/A	Effluent SCR Slide Gate No. 1	Operations	1972	53	$ 27,000	2024	$ 32,267	$ 500
15	HW	G/A	Effluent SCR Slide Gate No. 2	Operations	1972	53	$ 27,000	2024	$ 32,267	$ 500
16	HW	G/A	Wet Well XC Sluice Gate	Operations	1972	53	$ 27,000	2024	$ 32,267	$ 500
17	HW	G/A	HW-SLG-2 Electric Actuator	Operations	1999	35	$ 7,425	2036	$ 11,254	$ 300
18	RSPS	Eqpt	Bridge Crane No. 1 (3-Ton)	Operations	1972	50	$ 135,000	2022	$ 155,073	$ 2,700
19	RSPS	Eqpt	Monorail System No. 1 (3-Ton) **(part of Headworks project)**	Operations	1972	41	$ 67,500	2016	$ 68,850	$ 1,400
20	RSPS	Instr	Influent Magnetic Flow Meter	Operations	1995	35	$ 20,250	2031	$ 27,799	$ 700
21	RSPS	MCC	MCC-101	Operations	1999	40	$ 162,000	2041	$ 271,094	$ 5,800
22	RSPS	MCC	MCC-Headworks	Operations	1999	40	$ 108,000	2040	$ 177,185	$ 3,900
23	RSPS	MCC	MCC-1A	Operations	1998	40	$ 81,000	2039	$ 130,283	$ 2,900
24	RSPS	MCC	MCC-1B	Operations	1998	40	$ 81,000	2039	$ 130,283	$ 2,900
25	RSPS	Pump	Raw Sewage Pump No. 1	Operations	2012	40	$ 229,500	2054	$ 496,809	$ 10,700
26	RSPS	Pump	Raw Sewage Pump No. 2	Operations	2016	40	$ 120,000	2057	$ 270,264	$ 6,000
27	RSPS	Pump	Raw Sewage Pump No. 3	Operations	2016	40	$ 120,000	2057	$ 270,264	$ 6,000
28	RSPS	Pump	Raw Sewage Pump No. 4	Operations	2013	40	$ 229,500	2055	$ 506,745	$ 10,900
29	RSPS	Pump	Sump Pump No. 1	Operations	2015	15	$ 27,000	2031	$ 37,065	$ 2,200
30	TPS	Eqpt	Thickened Primary Sludge Grinder No. 1	Operations	1989	40	$ 16,200	2031	$ 22,239	$ 500
31	TPS	Eqpt	Thickened Primary Sludge Grinder No. 2	Operations	1989	40	$ 16,200	2031	$ 22,239	$ 500
32	TPS	Eqpt	Thickened Primary Sludge Grinder No. 3	Operations	1989	40	$ 16,200	2031	$ 22,239	$ 500
33	TPS	Eqpt	Primary Thickener Drive Mechanism No. 1	Operations	2014	40	$ 89,000	2056	$ 204,455	$ 4,400
34	TPS	Eqpt	Primary Thickener Drive Mechanism No. 2	Operations	2014	40	$ 89,000	2056	$ 204,455	$ 4,400
35	TPS	Eqpt	Primary Thickener Structure No. 1	Operations	1972	53	$ 47,250	2028	$ 61,123	$ 900
36	TPS	Eqpt	Primary Thickener Structure No. 2	Operations	1972	53	$ 47,250	2028	$ 61,123	$ 900
37	TPS	HVAC	Dry Well Supply Fan	Operations	1999	40	$ 24,300	2042	$ 41,477	$ 900
38	TPS	HVAC	Wet Well Supply Fan	Operations	1999	40	$ 24,300	2042	$ 41,477	$ 900
39	TPS	HVAC	Dry Well Exhaust Fan	Operations	1999	40	$ 6,750	2042	$ 11,521	$ 200
40	TPS	HVAC	Wet Well Exhaust Fan	Operations	1999	40	$ 27,000	2042	$ 46,086	$ 1,000
41	TPS	HVAC	Primary Thickener OCS No. 1	Operations	2005	20	$ 40,500	2024	$ 48,401	$ 2,400

	Nashua Wastewater Treatment Facility										
	Schedule D - Wastewater Equipment Replacement Fund										
	As of 5/4/2016										
							RENEWAL/REPLACEMENT STRATEGY				
	Major Systems	**Major System Facilities**	**Asset Name**	**Collections or Operations**	**Date Installed**	**Estimated Effective Life**	**Cost of Renewal Option**	**Recommended Renewal Date (FY)**	**Future Cost of Renewal**	**ANNUAL RESERVE PAYMENT**	
					year	**years**	**$**	**Calibrated Column**			
						Tab A-1	**Estimate**	**Calculated**	**2.00%**	**0.50%**	
42	TPS	MCC	MCC-TPS	Operations	2016	40	$ 81,000	2058	$ 189,798	$ 4,100	
43	TPS	Pump	Thickened Primary Sludge Transfer Pump No. 1	Operations	2015	40	$ 67,500	2056	$ 152,024	$ 3,400	
44	TPS	Pump	Thickened Primary Sludge Transfer Pump No. 2	Operations	2015	40	$ 67,500	2056	$ 152,024	$ 3,400	
45	TPS	Pump	Thickened Primary Sludge Transfer Pump No. 3	Operations	2015	40	$ 67,500	2056	$ 152,024	$ 3,400	
46	TPS	Valves	Supply Primary Thickener No. 1	Operations	2014	30	$ 1,620	2046	$ 2,993	$ 100	
47	TPS	Valves	Drain Primary Thickener No. 1	Operations	1972	50	$ 1,620	2017	$ 3,949	$ 100	
48	TPS	Valves	Supply Primary Thickener No. 2	Operations	2014	30	$ 1,620	2046	$ 2,993	$ 100	
49	TPS	Valves	Drain Primary Thickener No. 2	Operations	1972	50	$ 1,620	2017	$ 3,949	$ 100	
50	TPS	Valves	Supply Cross Connect Primary Thickener	Operations	1972	50	$ 1,620	2017	$ 1,685	$ -	
51	WAC	Eqpt	WWTF Air Compressor No. 1	Operations	2010	25	$ 40,500	2036	$ 61,384	$ 2,200	
52	WAC	Eqpt	WWTF Air Compressor No. 2	Operations	2010	25	$ 20,250	2034	$ 29,500	$ 1,200	
53	WAC	Eqpt	Air Receiver No. 1	Operations	1972	53	$ 1,350	2021	$ 1,520	$ -	
54	WAC	EE	Transformer NG-T2	Operations	2000	40	$ 7,425	2043	$ 12,927	$ 300	
55	NG	Eqpt	North Emergency Generator (25MW)	Operations	2009	30	$ 324,000	2040	$ 598,619	$ 17,900	
56	NG	MCC	MCC-North Generator	Operations	2009	40	$ 70,200	2051	$ 161,267	$ 3,500	
57	NG	SWBD	SWBD-NG	Operations	2009	40	$ 70,200	2051	$ 161,267	$ 3,500	
58	NG	SWBD	SWBD-CB	Operations	2009	40	$ 70,200	2051	$ 161,267	$ 3,500	
59	NG	Tank	Underground Storage Tank (Diesel Fuel)	Operations	2002	40	$ 108,000	2045	$ 195,627	$ 4,100	
60	CB	HVAC	Air Handling Unit	Operations	1988	33	$ 101,250	2017	$ 105,341	$ 3,400	
61	CB	HVAC	AC Unit	Operations	1988	33	$ 47,250	2017	$ 49,159	$ 1,600	
62	CB	HVAC	Boiler No. 1	Operations	2015	40	$ 67,500	2058	$ 158,165	$ 3,300	
63	CB	HVAC	Boiler No. 2	Operations	2015	40	$ 67,500	2058	$ 158,165	$ 3,300	
64	Lab	Eqpt	Chemical Exhaust Hood No. 1	Operations	1988	35	$ 13,500	2019	$ 14,613	$ 400	
65	Lab	Eqpt	Chemical Exhaust Hood No. 2	Operations	1988	35	$ 13,500	2019	$ 14,613	$ 400	
66	Lab	Eqpt	Chemical Exhaust Hood No. 3	Operations	1988	35	$ 6,750	2019	$ 7,306	$ 200	
67	Lab	Eqpt	Chemical Exhaust Hood No. 4	Operations	1988	35	$ 6,750	2019	$ 7,306	$ 200	
68	Lab	Eqpt	Muffler Furnace Exhaust Hood No. 1	Operations	1988	35	$ 6,750	2019	$ 7,306	$ 200	
69	Lab	Eqpt	Deionized System No. 1	Operations	2000	20	$ 12,150	2020	$ 13,415	$ 600	
70	Lab	Eqpt	Deionized System No. 2	Operations	2000	20	$ 12,150	2020	$ 13,415	$ 600	
71	Lab	Eqpt	Raw Influent Sampler	Operations	2015	15	$ 5,400	2031	$ 7,413	$ 400	
72	Lab	Eqpt	Primary Effluent Sampler	Operations	2015	15	$ 5,400	2031	$ 7,413	$ 400	
73	Lab	Eqpt	Secondary Effluent Sampler	Operations	2015	15	$ 5,400	2031	$ 7,413	$ 400	
74	Lab	Eqpt	Bypass Sampler	Operations	2015	15	$ 4,185	2031	$ 5,745	$ 300	
75	Lab	Eqpt	Portable Sampler No. 1	Operations	2015	15	$ 4,185	2031	$ 5,745	$ 300	
76	Lab	Eqpt	Portable Sampler No. 2	Operations	2015	15	$ 4,185	2031	$ 5,745	$ 300	
77	Lab	Eqpt	Portable Sampler No. 3	Operations	2015	15	$ 4,185	2031	$ 5,745	$ 300	
78	Lab	Eqpt	Portable Sampler No. 4	Operations	2015	15	$ 4,185	2031	$ 5,745	$ 300	
79	CR	Instr	SCADA System - Phase 1	Operations	1998	21	$ 270,000	2016	$ 275,400	$ 14,700	
80	CR	Instr	SCADA System - Phase 2	Operations	1998	21	$ 468,500	2017	$ 477,870	$ 24,000	
81	CR	Instr	SCADA System - Phase 3	Operations	1998	21	$ 174,000	2018	$ 181,030	$ 8,600	
82	WMBS	Eqpt	Water Meter Booster Station	Operations	1995	**23**	$ 101,250	2017	$ 156,530	$ 6,700	

	Nashua Wastewater Treatment Facility									
	Schedule D - Wastewater Equipment Replacement Fund									
	As of 5/4/2016									
							RENEWAL/REPLACEMENT STRATEGY			
	Major Systems	**Major System Facilities**	**Asset Name**	**Collections or Operations**	**Date Installed**	**Estimated Effective Life**	**Cost of Renewal Option**	**Recommended Renewal Date (FY)**	**Future Cost of Renewal**	**ANNUAL RESERVE PAYMENT**
					year	**years**	**$**	**Calibrated Column**		
						Tab A-1	**Estimate**	**Calculated**	**2.00%**	**0.50%**
83	GR	Blwr	Aerated Grit Blower No. 1	Operations	2014	20	$ 27,000	2033	$ 39,334	$ 2,000
84	GR	Blwr	Aerated Grit Blower No. 2	Operations	2014	20	$ 27,000	2033	$ 39,334	$ 2,000
85	GR	Eqpt	Grit Chamber Screw Conveyor No. 1	Operations	2014	20	$ 60,750	2032	$ 86,766	$ 4,600
86	GR	Eqpt	Grit Chamber Screw Conveyor No. 2	Operations	2014	20	$ 60,750	2032	$ 86,766	$ 4,600
87	GR	Eqpt	Grit Washing Unit No. 1	Operations	2014	20	$ 128,250	2034	$ 190,573	$ 9,100
88	GR	Eqpt	Grit Washing Unit No. 2	Operations	2014	20	$ 128,250	2034	$ 190,573	$ 9,100
89	GR	Eqpt	Grit Roll-Off Container No. 1	Operations	1998	22	$ 40,500	2018	$ 42,979	$ 2,000
90	GR	Eqpt	Grit Roll-Off Container No. 2	Operations	1998	22	$ 40,500	2018	$ 42,979	$ 2,000
91	GR	Eqpt	Grit Chamber Aeration Diffusers No. 1	Operations	2014	20	$ 27,000	2034	$ 40,121	$ 1,900
92	GR	Eqpt	Grit Chamber Aeration Diffusers No. 2	Operations	2014	20	$ 27,000	2034	$ 40,121	$ 1,900
93	GR	G/A	Slide Gate No. 1	Operations	2014	30	$ 27,000	2045	$ 49,885	$ 1,500
94	GR	G/A	Slide Gate No. 2	Operations	2014	30	$ 27,000	2045	$ 49,885	$ 1,500
95	GR	G/A	GC-SLD-1 Actuator	Operations	2014	30	$ 7,425	2045	$ 13,718	$ 400
96	GR	G/A	GC-SLD-2 Actuator	Operations	2014	30	$ 7,425	2045	$ 13,718	$ 400
97	GR	Pump	Grit Pump No. 1	Operations	2014	10	$ 32,400	2021	$ 37,217	$ 5,200
98	GR	Pump	Grit Pump No. 2	Operations	2014	10	$ 32,400	2021	$ 37,217	$ 5,200
99	GR	Instr	Flow Meter No. 1	Operations	2014	40	$ 4,050	2056	$ 9,304	$ 200
100	GR	Instr	Flow Meter No. 2	Operations	2014	40	$ 4,050	2056	$ 9,304	$ 200
101	PC	Blwr	Odor Control Blower No. 1	Operations	2005	22	$ 13,500	2023	$ 15,817	$ 800
102	PC	Blwr	Odor Control Blower No. 2	Operations	2005	20	$ 13,500	2021	$ 15,203	$ 900
103	PC	Eqpt	Collector Drive Mechanism / Chain & Flights No. 1	Operations	2007	13	$ 94,500	2017	$ 98,318	$ 9,600
104	PC	Eqpt	Collector Drive Mechanism / Chain & Flights No. 2	Operations	2007	13	$ 94,500	2017	$ 98,318	$ 9,600
105	PC	Eqpt	Collector Drive Mechanism / Chain & Flights No. 3	Operations	2007	13	$ 148,500	2017	$ 154,499	$ 15,100
106	PC	Eqpt	Collector Drive Mechanism / Chain & Flights No. 4	Operations	2007	13	$ 148,500	2017	$ 154,499	$ 15,100
107	PC	Eqpt	Collector Drive Mechanism / Chain & Flights No. 5	Operations	2007	13	$ 148,500	2017	$ 154,499	$ 15,100
108	PC	Eqpt	Cross Collector Drive Mechanism / Chain & Flights No. 3A	Operations	2007	13	$ 33,750	2017	$ 35,114	$ 3,400
109	PC	Eqpt	Cross Collector Drive Mechanism / Chain & Flights No. 3B	Operations	2007	13	$ 33,750	2017	$ 35,114	$ 3,400
110	PC	Eqpt	Cross Collector Drive Mechanism / Chain & Flights No. 4A	Operations	2007	13	$ 33,750	2017	$ 35,114	$ 3,400
111	PC	Eqpt	Cross Collector Drive Mechanism / Chain & Flights No. 4B	Operations	2007	13	$ 33,750	2017	$ 35,114	$ 3,400
112	PC	Eqpt	Cross Collector Drive Mechanism / Chain & Flights No. 5A	Operations	2007	13	$ 33,750	2017	$ 35,114	$ 3,400
113	PC	Eqpt	Cross Collector Drive Mechanism / Chain & Flights No. 5B	Operations	2007	13	$ 33,750	2017	$ 35,114	$ 3,400
114	PC	Eqpt	Grease / Scum Grinder No. 1	Operations	2008	40	$ 27,000	2047	$ 50,883	$ 1,200
115	PC	Eqpt	Odor Control Scrubber Tower No. 1	Operations	2005	20	$ 20,250	2025	$ 24,685	$ 1,200
116	PC	G/A	Influent Slide Gate No. 1 (12" X 48")	Operations	2007	30	$ 10,800	2038	$ 17,031	$ 500
117	PC	G/A	Influent Slide Gate No. 2 (12" X 24")	Operations	2007	30	$ 6,750	2038	$ 10,644	$ 300
118	PC	G/A	Influent Slide Gate No. 3 (12" X 24")	Operations	2007	30	$ 6,750	2038	$ 10,644	$ 300
119	PC	G/A	Influent Slide Gate No. 4 (12" X 24")	Operations	2007	30	$ 6,750	2038	$ 10,644	$ 300
120	PC	G/A	Influent Slide Gate No. 5 (12" X 24")	Operations	2007	30	$ 6,750	2038	$ 10,644	$ 300
121	PC	G/A	Influent Slide Gate No. 6 (12" X 24")	Operations	2007	30	$ 6,750	2038	$ 10,644	$ 300
122	PC	G/A	Influent Slide Gate No. 7 (12" X 24")	Operations	2007	30	$ 6,750	2038	$ 10,644	$ 300
123	PC	G/A	Influent Slide Gate No. 8 (12" X 24")	Operations	2007	30	$ 6,750	2038	$ 10,644	$ 300

	Nashua Wastewater Treatment Facility									
	Schedule D - Wastewater Equipment Replacement Fund									
	As of 5/4/2016									
							RENEWAL/REPLACEMENT STRATEGY			
	Major Systems	**Major System Facilities**	**Asset Name**	**Collections or Operations**	**Date Installed**	**Estimated Effective Life**	**Cost of Renewal Option**	**Recommended Renewal Date (FY)**	**Future Cost of Renewal**	**ANNUAL RESERVE PAYMENT**
					year	**years**	**$**	**Calibrated Column**		
						Tab A-1	**Estimate**	**Calculated**	**2.00%**	**0.50%**
124	PC	G/A	Influent Slide Gate No. 9 (12" X 24")	Operations	2007	30	$ 6,750	2038	$ 10,644	$ 300
125	PC	G/A	Influent Slide Gate No. 10 (12" X 24")	Operations	2007	30	$ 6,750	2038	$ 10,644	$ 300
126	PC	G/A	Influent Slide Gate No. 11 (12" X 24")	Operations	2007	30	$ 6,750	2038	$ 10,644	$ 300
127	PC	G/A	Influent Slide Gate No. 12 (12" X 24")	Operations	2007	30	$ 6,750	2038	$ 10,644	$ 300
128	PC	G/A	Influent Slide Gate No. 13 (12" X 24")	Operations	2007	30	$ 6,750	2038	$ 10,644	$ 300
129	PC	G/A	Influent Slide Gate No. 14 (12" X 24")	Operations	2007	30	$ 6,750	2038	$ 10,644	$ 300
130	PC	G/A	Influent Slide Gate No. 15 (12" X 24")	Operations	2007	30	$ 6,750	2038	$ 10,644	$ 300
131	PC	G/A	Influent Slide Gate No. 16 (12" X 24")	Operations	2007	30	$ 6,750	2038	$ 10,644	$ 300
132	PC	G/A	Influent Slide Gate No. 17 (12" X 24")	Operations	2007	30	$ 6,750	2038	$ 10,644	$ 300
133	PC	G/A	Influent Slide Gate No. 18 (12" X 24")	Operations	2007	30	$ 6,750	2038	$ 10,644	$ 300
134	PC	G/A	Influent Slide Gate No. 19 (12" X 24")	Operations	2007	30	$ 6,750	2038	$ 10,644	$ 300
135	PC	G/A	Influent Slide Gate No. 20 (12" X 24")	Operations	2007	30	$ 6,750	2038	$ 10,644	$ 300
136	PC	G/A	Influent Slide Gate No. 21 (12" X 24")	Operations	2007	30	$ 6,750	2038	$ 10,644	$ 300
137	PC	G/A	Influent Slide Gate No. 22 (12" X 48")	Operations	2007	30	$ 10,800	2038	$ 17,031	$ 500
138	PC	G/A	PC-SLD-1 Actuator	Operations	2007	30	$ 7,425	2036	$ 11,254	$ 400
139	PC	G/A	PC-SLD-22 Actuator	Operations	2007	30	$ 7,425	2036	$ 11,254	$ 400
140	PC	G/A	Primary Sludge Low Suction Valve No. 1 Actuator	Operations	2007	30	$ 2,700	2036	$ 4,092	$ 100
141	PC	G/A	Primary Sludge Suction Valve No. 1 Actuator	Operations	2007	30	$ 2,700	2036	$ 4,092	$ 100
142	PC	G/A	Primary Sludge Suction Valve No. 2 Actuator	Operations	2007	30	$ 2,700	2036	$ 4,092	$ 100
143	PC	G/A	Primary Sludge Suction Valve No. 3 Actuator	Operations	2007	30	$ 2,700	2036	$ 4,092	$ 100
144	PC	G/A	Primary Sludge Suction Valve No. 4 Actuator	Operations	2007	30	$ 2,700	2036	$ 4,092	$ 100
145	PC	G/A	Primary Sludge Suction Valve No. 5 Actuator	Operations	2007	30	$ 2,700	2036	$ 4,092	$ 100
146	PC	G/A	Primary Effluent Weir Gate No. 1 (120" X 36")	Operations	1988	30	$ -	2019	$ -	$ -
147	PC	G/A	PEWG-1 Actuator	Operations	2016	30	$ 8,370	2047	$ 15,774	$ 500
148	PC	HVAC	Primary Gallery Air Handling Unit No. 1	Operations	2007	40	$ 27,000	2045	$ 48,907	$ 1,200
149	PC	Instr	Primary Effluent Flow Meter (36" Venturi)	Operations	1988	40	$ 60,750	2030	$ 81,762	$ 1,800
150	PC	Pump	Primary Clarifier Scum Pump No. 1	Operations	2007	35	$ 22,950	2039	$ 36,914	$ 1,100
151	PC	Pump	Primary Sludge Pump No. 1 (25 HP)	Operations	2007	35	$ 60,750	2041	$ 101,660	$ 2,800
152	PC	Pump	Primary Sludge Pump No. 2 (25 HP)	Operations	2007	35	$ 60,750	2041	$ 101,660	$ 2,800
153	A	Blwr	Blower No. 1	Operations	2015	30	$ 305,100	2046	$ 563,699	$ 16,900
154	A	Blwr	Blower No. 2	Operations	2015	30	$ 305,100	2046	$ 563,699	$ 16,900
155	A	Blwr	Blower No. 3	Operations	2015	30	$ 305,100	2046	$ 563,699	$ 16,900
156	A	Eqpt	Diffusers No. 1	Operations	2015	30	$ 95,850	2046	$ 177,091	$ 5,300
157	A	Eqpt	Diffusers No. 2	Operations	2015	30	$ 95,850	2046	$ 177,091	$ 5,300
158	A	Eqpt	Diffusers No. 3	Operations	2015	30	$ 95,850	2046	$ 177,091	$ 5,300
159	A	Eqpt	Diffusers No. 4	Operations	2015	30	$ 95,850	2046	$ 177,091	$ 5,300
160	A	G/A	Splitter Structure Sluice Gate No. 1 (60" X 60")	Operations	1988	40	$ 27,000	2025	$ 35,626	$ 900
161	A	G/A	Splitter Structure Sluice Gate No. 2 (60" X 60")	Operations	1988	40	$ 27,000	2025	$ 35,626	$ 900
162	A	G/A	Influent Sluice Gate No. 1A (12" X 15")	Operations	1988	40	$ 6,750	2025	$ 8,906	$ 200
163	A	G/A	Influent Sluice Gate No. 1B (12" X 15")	Operations	1988	40	$ 6,750	2025	$ 8,906	$ 200
164	A	G/A	Influent Sluice Gate No. 1C (12" X 15")	Operations	1988	40	$ 6,750	2025	$ 8,906	$ 200

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					year	**years**	**$**	**Calibrated Column**		
						Tab A-1	**Estimate**	**Calculated**	**2.00%**	**0.50%**
165	A	G/A	Influent Sluice Gate No. 1D (12" X 15")	Operations	1988	40	$ 6,750	2025	$ 8,906	$ 200
166	A	G/A	Influent Sluice Gate No. 2A (12" X 15")	Operations	1988	40	$ 6,750	2025	$ 8,906	$ 200
167	A	G/A	Influent Sluice Gate No. 2B (12" X 15")	Operations	1988	40	$ 6,750	2025	$ 8,906	$ 200
168	A	G/A	Influent Sluice Gate No. 2C (12" X 15")	Operations	1988	40	$ 6,750	2025	$ 8,906	$ 200
169	A	G/A	Influent Sluice Gate No. 2D (12" X 15")	Operations	1988	40	$ 6,750	2025	$ 8,906	$ 200
170	A	G/A	Influent Sluice Gate No. 3A (12" X 15")	Operations	1988	40	$ 6,750	2025	$ 8,906	$ 200
171	A	G/A	Influent Sluice Gate No. 3B (12" X 15")	Operations	1988	40	$ 6,750	2025	$ 8,906	$ 200
172	A	G/A	Influent Sluice Gate No. 3C (12" X 15")	Operations	2015	13	$ 6,750	2027	$ 9,266	$ 800
173	A	G/A	Influent Sluice Gate No. 3D (12" X 15")	Operations	1988	40	$ 6,750	2025	$ 8,906	$ 200
174	A	G/A	Influent Sluice Gate No. 4A (12" X 15")	Operations	1988	40	$ 6,750	2025	$ 8,906	$ 200
175	A	G/A	Influent Sluice Gate No. 4B (12" X 15")	Operations	1988	40	$ 6,750	2025	$ 8,906	$ 200
176	A	G/A	Influent Sluice Gate No. 4C (12" X 15")	Operations	1988	40	$ 6,750	2025	$ 8,906	$ 200
177	A	G/A	Influent Sluice Gate No. 4D (12" X 15")	Operations	1988	40	$ 6,750	2025	$ 8,906	$ 200
178	A	G/A	Aeration Motor Operated Butterfly Valve No. 1A (5")	Operations	2015	15	$ 11,745	2030	$ 15,807	$ 1,000
179	A	G/A	Aeration Motor Operated Butterfly Valve No. 1B (6")	Operations	2015	15	$ 12,555	2030	$ 16,897	$ 1,100
180	A	G/A	Aeration Motor Operated Butterfly Valve No. 1A (8")	Operations	2015	15	$ 13,770	2030	$ 18,533	$ 1,200
181	A	G/A	Aeration Motor Operated Butterfly Valve No. 2A (5")	Operations	2015	15	$ 11,745	2030	$ 15,807	$ 1,000
182	A	G/A	Aeration Motor Operated Butterfly Valve No. 2B (6")	Operations	2015	15	$ 12,555	2030	$ 16,897	$ 1,100
183	A	G/A	Aeration Motor Operated Butterfly Valve No. 2A (8")	Operations	2015	15	$ 13,770	2030	$ 18,533	$ 1,200
184	A	G/A	Aeration Motor Operated Butterfly Valve No. 3A (5")	Operations	2015	15	$ 11,745	2030	$ 15,807	$ 1,000
185	A	G/A	Aeration Motor Operated Butterfly Valve No. 3B (6")	Operations	2015	15	$ 12,555	2030	$ 16,897	$ 1,100
186	A	G/A	Aeration Motor Operated Butterfly Valve No. 3A (8")	Operations	2015	15	$ 13,770	2030	$ 18,533	$ 1,200
187	A	G/A	Aeration Motor Operated Butterfly Valve No. 4A (5")	Operations	2015	15	$ 11,745	2030	$ 15,807	$ 1,000
188	A	G/A	Aeration Motor Operated Butterfly Valve No. 4B (6")	Operations	2015	15	$ 12,555	2030	$ 16,897	$ 1,100
189	A	G/A	Aeration Motor Operated Butterfly Valve No. 4A (8")	Operations	2015	15	$ 13,770	2030	$ 18,533	$ 1,200
190	A	G/A	Blower Outlet Motor Operated Butterfly Valve No. 1 (14")	Operations	2015	30	$ 21,600	2044	$ 38,358	$ 1,200
191	A	G/A	Blower Outlet Motor Operated Butterfly Valve No. 2 (14")	Operations	2015	30	$ 21,600	2044	$ 38,358	$ 1,200
192	A	G/A	Blower Outlet Motor Operated Butterfly Valve No. 3 (14")	Operations	2015	30	$ 21,600	2044	$ 38,358	$ 1,200
193	A	HVAC	Aeration Building Air Handling Unit No. 1	Operations	1989	40	$ 67,500	2029	$ 89,065	$ 2,000
194	A	Instr	Dissolved Oxygen Probe No. 1A	Operations	2015	5	$ 4,860	2019	$ 5,261	$ 1,300
195	A	Instr	Dissolved Oxygen Probe No. 1B	Operations	2015	5	$ 4,860	2019	$ 5,261	$ 1,300
196	A	Instr	Dissolved Oxygen Probe No. 1C	Operations	2015	5	$ 4,860	2019	$ 5,261	$ 1,300
197	A	Instr	Dissolved Oxygen Probe No. 2A	Operations	2015	5	$ 4,860	2019	$ 5,261	$ 1,300
198	A	Instr	Dissolved Oxygen Probe No. 2B	Operations	2015	5	$ 4,860	2019	$ 5,261	$ 1,300
199	A	Instr	Dissolved Oxygen Probe No. 2C	Operations	2015	5	$ 4,860	2019	$ 5,261	$ 1,300
200	A	Instr	Dissolved Oxygen Probe No. 3A	Operations	2015	5	$ 4,860	2019	$ 5,261	$ 1,300
201	A	Instr	Dissolved Oxygen Probe No. 3B	Operations	2015	5	$ 4,860	2019	$ 5,261	$ 1,300
202	A	Instr	Dissolved Oxygen Probe No. 3C	Operations	2015	5	$ 4,860	2019	$ 5,261	$ 1,300
203	A	Instr	Dissolved Oxygen Probe No. 4A	Operations	2015	5	$ 4,860	2019	$ 5,261	$ 1,300
204	A	Instr	Dissolved Oxygen Probe No. 4B	Operations	2015	5	$ 4,860	2019	$ 5,261	$ 1,300
205	A	Instr	Dissolved Oxygen Probe No. 4C	Operations	2015	5	$ 4,860	2019	$ 5,261	$ 1,300

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					year	**years**	**$**	**Calibrated Column**		
						Tab A-1	**Estimate**	**Calculated**	**2.00%**	**0.50%**
206	A	Instr	DO Probe Controller No. 1 (SC-1000)	Operations	2015	5	$ 3,375	2019	$ 3,653	$ 900
207	A	Instr	DO Probe Controller No. 2 (SC-1000)	Operations	2015	5	$ 3,375	2019	$ 3,653	$ 900
208	A	Instr	MLSS Probe No. 1	Operations	2015	5	$ 13,500	2019	$ 14,613	$ 3,600
209	A	Instr	MLSS Probe No. 2	Operations	2015	5	$ 13,500	2019	$ 14,613	$ 3,600
210	A	Instr	MLSS Probe Controller No. 1	Operations	2015	5	$ 2,160	2019	$ 2,338	$ 600
211	A	Instr	MLSS Probe Controller No. 2	Operations	2015	5	$ 2,160	2019	$ 2,338	$ 600
212	A	Instr	Flow Meter No. 1A	Operations	2015	15	$ 2,700	2030	$ 3,634	$ 200
213	A	Instr	Flow Meter No. 1B	Operations	2015	15	$ 2,700	2030	$ 3,634	$ 200
214	A	Instr	Flow Meter No. 1C	Operations	2015	15	$ 2,700	2030	$ 3,634	$ 200
215	A	Instr	Flow Meter No. 2A	Operations	2015	15	$ 2,700	2030	$ 3,634	$ 200
216	A	Instr	Flow Meter No. 2B	Operations	2015	15	$ 2,700	2030	$ 3,634	$ 200
217	A	Instr	Flow Meter No. 2C	Operations	2015	15	$ 2,700	2030	$ 3,634	$ 200
218	A	Instr	Flow Meter No. 3A	Operations	2015	15	$ 2,700	2030	$ 3,634	$ 200
219	A	Instr	Flow Meter No. 3B	Operations	2015	15	$ 2,700	2030	$ 3,634	$ 200
220	A	Instr	Flow Meter No. 3C	Operations	2015	15	$ 2,700	2030	$ 3,634	$ 200
221	A	Instr	Flow Meter No. 4A	Operations	2015	15	$ 2,700	2030	$ 3,634	$ 200
222	A	Instr	Flow Meter No. 4B	Operations	2015	15	$ 2,700	2030	$ 3,634	$ 200
223	A	Instr	Flow Meter No. 4C	Operations	2015	15	$ 2,700	2030	$ 3,634	$ 200
224	A	MCC	Blower Building Motor Control Center	Operations	2015	40	$ 162,000	2057	$ 372,154	$ 8,000
225	A	MCC	Ampgaurd Medium Voltage Motor Center	Operations	2015	40	$ 162,000	2057	$ 372,154	$ 8,000
226	SEG	Eqpt	South Emergency Generator	Operations	2000	40	$ 283,500	2042	$ 651,269	$ 14,000
227	SEG	FT	Unleaded Fuel Tank No. 1	Operations	2000	30	$ 47,250	2031	$ 87,299	$ 2,600
228	SEG	FT	Diesel (No. 2) Fuel Tank No. 2	Operations	2000	30	$ 24,300	2031	$ 44,896	$ 1,300
229	CEG	Eqpt	Central Emergency Generator	Operations	2000	25	$ 209,250	2023	$ 329,966	$ 13,600
230	CEG	SWBD	SWBD-CEG	Operations	2000	25	$ 108,000	2025	$ 177,185	$ 6,700
231	CEG	FT	Diesel (No. 2) Fuel Tank No. 1	Operations	2000	30	$ 24,300	2031	$ 44,896	$ 1,300
232	SC	Eqpt	Drive Mechanism No. 1	Operations	2014	20	$ 70,180	2034	$ 104,284	$ 5,000
233	SC	Eqpt	Drive Mechanism No. 2	Operations	2014	20	$ 70,180	2034	$ 104,284	$ 5,000
234	SC	Eqpt	Drive Mechanism No. 3	Operations	2014	20	$ 70,180	2034	$ 104,284	$ 5,000
235	SC	Eqpt	Structure No. 1 (63'-10" Radius)	Operations	1988	50	$ 283,500	2041	$ 474,414	$ 7,800
236	SC	Eqpt	Structure No. 2 (63'-10" Radius)	Operations	1988	50	$ 283,500	2041	$ 474,414	$ 7,800
237	SC	Eqpt	Structure No. 3 (63'-10" Radius)	Operations	1988	50	$ 283,500	2041	$ 474,414	$ 7,800
238	SC	G/A	Splitter Structure Weir Gate No. 1 (144" X 42")	Operations	1988	35	$ 40,500	2020	$ 48,401	$ 1,400
239	SC	G/A	Splitter Structure Weir Gate No. 2 (144" X 42")	Operations	1988	35	$ 40,500	2020	$ 48,401	$ 1,400
240	SC	G/A	Splitter Structure Weir Gate No. 3 (144" X 42")	Operations	1988	35	$ 40,500	2020	$ 48,401	$ 1,400
241	SC	G/A	Splitter Structure Weir Gate No. 4 (144" X 42")	Operations	1988	35	$ 40,500	2020	$ 48,401	$ 1,400
242	SC	G/A	Splitter Structure Weir Gate No. 5 (144" X 42")	Operations	1988	35	$ 40,500	2020	$ 48,401	$ 1,400
243	SC	G/A	Splitter Structure Influent Slide Gate No. 1	Operations	1988	35	$ 29,700	2020	$ 35,494	$ 1,000
244	SC	HVAC	Pump Building Air Handling Unit No. 1	Operations	1988	40	$ 67,500	2025	$ 82,282	$ 2,000
245	SC	Instr	Secondary Effluent Flow Meter (60" Venturi)	Operations	1988	35	$ 189,000	2025	$ 230,390	$ 5,700
246	SC	Pump	Return Activated Sludge Pump No. 1	Operations	2015	30	$ 78,300	2046	$ 144,666	$ 4,300

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					year	**years**	**$**	**Calibrated Column**		
						Tab A-1	**Estimate**	**Calculated**	**2.00%**	**0.50%**
247	SC	Pump	Return Activated Sludge Pump No. 2	Operations	2015	30	$ 78,300	2046	$ 144,666	$ 4,300
248	SC	Pump	Return Activated Sludge Pump No. 3	Operations	2015	30	$ 78,300	2046	$ 144,666	$ 4,300
249	SC	Pump	Return Activated Sludge Pump No. 4	Operations	2015	30	$ 78,300	2046	$ 144,666	$ 4,300
250	SC	Pump	Waste Activated Sludge Pump No. 1	Operations	2015	30	$ 22,950	2046	$ 42,402	$ 1,300
251	SC	Pump	Waste Activated Sludge Pump No. 2	Operations	2015	30	$ 22,950	2046	$ 42,402	$ 1,300
252	SC	Pump	Waste Activated Sludge Pump No. 3	Operations	2015	30	$ 22,950	2046	$ 42,402	$ 1,300
253	SC	Pump	WAS Thickening Polymer Pump No. 1	Operations	2015	30	$ 20,925	2045	$ 37,903	$ 1,200
254	SC	Pump	WAS Thickening Polymer Pump No. 2	Operations	2015	30	$ 20,925	2045	$ 37,903	$ 1,200
255	SC	Pump	WAS Thickening Polymer Pump No. 3	Operations	2015	30	$ 20,925	2045	$ 37,903	$ 1,200
256	SC	Pump	WAS Thickening Polymer Pump No. 4	Operations	2015	30	$ 20,925	2045	$ 37,903	$ 1,200
257	PWS	Eqpt	Plant Water Dual Basket Strainer	Operations	2014	20	$ 16,200	2034	$ 24,072	$ 1,100
258	PWS	Eqpt	Plant Water System Skid	Operations	2014	20	$ 114,750	2034	$ 170,512	$ 8,100
259	Dis	G/A	Slide Gate No. 1 (60" X 60")	Operations	1988	35	$ 27,000	2020	$ 32,267	$ 900
260	Dis	G/A	Slide Gate No. 2 (60" X 60")	Operations	1988	35	$ 27,000	2020	$ 32,267	$ 900
261	Dis	G/A	CCT-SLD-1 Actuator	Operations	2008	15	$ 8,775	2021	$ 9,882	$ 700
262	Dis	G/A	CCT-SLD-2 Actuator	Operations	1988	35	$ 8,775	2021	$ 9,882	$ 300
263	Dis	HVAC	Dechlor Building Air Handling Unit No. 1	Operations	1989	40	$ 40,500	2029	$ 53,439	$ 1,200
264	Dis	MCC	MCC-PB1	Operations	1988	40	$ 162,000	2028	$ 209,564	$ 4,700
265	Dis	MCC	MCC-PB2	Operations	1988	40	$ 162,000	2028	$ 209,564	$ 4,700
266	Dis	MCC	Pump Building Automatic Transfer Switch	**Collections**	2000	40	$ -	2041	$ -	$ -
267	Dis	Mix	Sodium Hypochlorite Mixer No. 1	Operations	2015	20	$ 8,100	2035	$ 12,036	$ 600
268	Dis	Mix	Sodium Hypochlorite Mixer No. 2	Operations	2015	20	$ 8,100	2035	$ 12,036	$ 600
269	Dis	Mix	Sodium Bisulfite Mixer No. 1	Operations	2015	20	$ 8,100	2035	$ 12,036	$ 600
270	Dis	Mix	Sodium Bisulfite Mixer No. 2	Operations	2015	20	$ 8,100	2035	$ 12,036	$ 600
271	Dis	Pump	Sodium Hypochlorite Metering Pump No. 1	Operations	2008	12	$ 5,400	2019	$ 5,845	$ 500
272	Dis	Pump	Sodium Hypochlorite Metering Pump No. 2	Operations	2008	12	$ 5,400	2019	$ 5,845	$ 500
273	Dis	Pump	Sodium Hypochlorite Metering Pump No. 3	Operations	2008	12	$ 5,400	2019	$ 5,845	$ 500
274	Dis	Pump	Sodium Hypochlorite Metering Pump No. 4	Operations	2008	12	$ 5,400	2019	$ 5,845	$ 500
275	Dis	Pump	Sodium Hypochlorite Metering Pump No. 5	Operations	2008	12	$ 5,400	2019	$ 5,845	$ 500
276	Dis	Pump	Sodium Hypochlorite Metering Pump No. 6	Operations	2008	12	$ 5,400	2019	$ 5,845	$ 500
277	Dis	Pump	Sodium Hypochlorite Metering Pump No. 7	Operations	2008	12	$ 5,400	2019	$ 5,845	$ 500
278	Dis	Pump	Sodium Bisulfite Metering Pump No. 1	Operations	2008	12	$ 22,950	2019	$ 24,842	$ 2,200
279	Dis	Pump	Sodium Bisulfite Metering Pump No. 2	Operations	2008	12	$ 22,950	2019	$ 24,842	$ 2,200
280	Dis	Pump	Sodium Bisulfite Metering Pump No. 3	Operations	2008	12	$ 22,950	2019	$ 24,842	$ 2,200
281	Dis	Tank	Sodium Hypochlorite Tank No. 1	Operations	1998	30	$ 101,250	2028	$ 130,978	$ 4,100
282	Dis	Tank	Sodium Hypochlorite Tank No. 2	Operations	1998	30	$ 101,250	2028	$ 130,978	$ 4,100
283	Dis	Tank	Sodium Bisulfite Tank No. 1	Operations	1998	30	$ 67,500	2028	$ 87,318	$ 2,700
284	Dis	Tank	Sodium Bisulfite Tank No. 2	Operations	2000	30	$ 67,500	2030	$ 90,846	$ 2,800
285	Dis	Tank	Sodium Bisulfite Tank No. 3	Operations	1998	30	$ 67,500	2028	$ 87,318	$ 2,700
286	ER	Eqpt	Primary Digester Draft Tube Mixer	Operations	2014	10	$ 218,700	2023	$ 261,367	$ 28,500
287	ER	Eqpt	Primary Digester Spiral Heat Exchanger	Operations	2011	10	$ 48,600	2020	$ 58,081	$ 6,300

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					year	**years**	**$**	**Calibrated Column**		
						Tab A-1	**Estimate**	**Calculated**	**2.00%**	**0.50%**
288	ER	Eqpt	Digester Sludge Grinder No. 1	Operations	2014	40	$ 47,250	2051	$ 98,312	$ 2,400
289	ER	Eqpt	Digester Sludge Grinder No. 2	Operations	2014	40	$ 47,250	2051	$ 98,312	$ 2,400
290	ER	Eqpt	Digester Sludge Grinder No. 3	Operations	2014	40	$ 47,250	2057	$ 110,716	$ 2,300
291	ER	Eqpt	Digester Sludge Grinder No. 4	Operations	2014	40	$ 47,250	2057	$ 110,716	$ 2,300
292	ER	Eqpt	Digester Sludge Grinder No. 5	Operations	2014	40	$ 47,250	2051	$ 98,312	$ 2,400
293	ER	Eqpt	Digester Sludge Grinder No. 6	Operations	2014	40	$ 47,250	2051	$ 98,312	$ 2,400
294	ER	Eqpt	Methane Gas Purifier	Operations	2000	45	$ 67,500	2048	$ 129,751	$ 2,400
295	ER	Eqpt	Methane Gas Mist Eliminator	Operations	2000	45	$ 54,000	2045	$ 97,814	$ 1,900
296	ER	Eqpt	Energy Recovery Generator	Operations	2000	22	$ 607,500	2018	$ 867,660	$ 46,200
297	ER	Eqpt	Iron Sponge	Operations	2000	20	$ 67,500	2019	$ 98,335	$ 4,900
298	ER	HVAC	Boiler No. 1	Operations	2000	40	$ 135,000	2039	$ 292,241	$ 6,800
299	ER	HVAC	Boiler No. 2	Operations	2000	40	$ 135,000	2039	$ 292,241	$ 6,800
300	ER	HVAC	Digester Complex Air Handling Unit No. 1	Operations	2000	40	$ 67,500	2039	$ 108,570	$ 2,500
301	ER	MCC	Energy Recovery Motor Control Center	Operations	2000	40	$ 108,000	2042	$ 184,344	$ 4,000
302	ER	MCC	ENICON	Operations	2010	40	$ 168,750	2052	$ 387,660	$ 8,300
303	ER	Pump	Primary Digester Mixer Grease Pump	Operations	2014	10	$ 13,500	2023	$ 16,134	$ 1,800
304	ER	Pump	Primary Digester Scum Suppression Pump No. 1	Operations	2000	25	$ 13,500	2021	$ 15,203	$ 700
305	ER	Pump	Primary Digester Scum Suppression Pump No. 2	Operations	2000	25	$ 13,500	2021	$ 15,203	$ 700
306	ER	Pump	Digested Sludge Transfer Pump No. 1	Operations	2015	20	$ 58,050	2035	$ 86,259	$ 4,100
307	ER	Pump	Digested Sludge Transfer Pump No. 2	Operations	2015	20	$ 58,050	2035	$ 86,259	$ 4,100
308	ER	Pump	Digested Sludge Transfer Pump No. 3	Operations	2000	25	$ 58,050	2021	$ 65,374	$ 3,000
309	ER	Pump	Heating/Cooling Pump No. 1	Operations	2013	20	$ 27,000	2033	$ 40,121	$ 1,900
310	ER	Pump	Heating/Cooling Pump No. 2	Operations	2000	21	$ 27,000	2018	$ 29,810	$ 1,600
311	ER	Pump	Heating/Cooling Pump No. 3	Operations	2000	21	$ 27,000	2018	$ 29,810	$ 1,600
312	ER	Pump	Heating/Cooling Pump No. 4	Operations	2000	21	$ 27,000	2018	$ 29,810	$ 1,600
313	ER	Pump	Heating/Cooling Pump No. 5	Operations	2013	20	$ 27,000	2033	$ 40,121	$ 1,900
314	ER	Pump	Heating/Cooling Pump No. 6	Operations	2013	20	$ 27,000	2033	$ 40,121	$ 1,900
315	ER	Pump	Primary Digester Sludge Recirculation Pump No. 1	Operations	2014	10	$ 56,700	2022	$ 66,433	$ 8,200
316	ER	Pump	Primary Digester Sludge Recirculation Pump No. 2	Operations	2014	10	$ 56,700	2022	$ 66,433	$ 8,200
317	ER	Pump	Secondary Digester Mixing Pump No. 1	Operations	2014	20	$ 84,375	2033	$ 122,918	$ 6,200
318	ER	Pump	Secondary Digester Mixing Pump No. 2	Operations	2014	20	$ 84,375	2033	$ 122,918	$ 6,200
319	ER	Pump	Primary Digester Sump Pump No. 1	Operations	2000	18	$ 27,000	2017	$ 28,091	$ 1,600
320	ER	Pump	Primary Digester Sump Pump No. 2	Operations	2000	18	$ 27,000	2017	$ 28,091	$ 1,600
321	Dwtr	Eqpt	Polymer Bulk Storage Tank Mixer No. 1	Operations	1988	40	$ 13,500	2027	$ 17,121	$ 400
322	Dwtr	Eqpt	Screw Press No. 1	Operations	2014	20	$ 418,500	2034	$ 621,869	$ 29,600
323	Dwtr	Eqpt	Screw Press No. 2	Operations	2014	20	$ 418,500	2034	$ 621,869	$ 29,600
324	Dwtr	Eqpt	Screw Press No. 3	Operations	2014	20	$ 418,500	2034	$ 621,869	$ 29,600
325	Dwtr	Eqpt	Electric Hoist No. 1 (3-Ton)	Operations	1988	42	$ 13,500	2024	$ 15,817	$ 400
326	Dwtr	Eqpt	Electric Hoist No. 2 (3-Ton)	Operations	1988	31	$ 13,500	2017	$ 13,770	$ 400
327	Dwtr	Eqpt	Electric Hoist No. 3 (2,000 lbs)	Operations	1959	67	$ 6,000	2017	$ 6,120	$ 100
328	Dwtr	Eqpt	Manual Hoist No. 1 (2-Ton Low-Profile)	Operations	2014	40	$ 2,295	2056	$ 5,272	$ 100

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	Major Systems	**Major System Facilities**	**Asset Name**	**Collections or Operations**	**Date Installed**	**Estimated Effective Life**	**Cost of Renewal Option**	**Recommended Renewal Date (FY)**	**Future Cost of Renewal**	**ANNUAL RESERVE PAYMENT**
					year	**years**	**$**	**Calibrated Column**		
						Tab A-1	**Estimate**	**Calculated**	**2.00%**	**0.50%**
329	Dwtr	Eqpt	Manual Hoist No. 2 (2-Ton Low-Profile)	Operations	2014	40	$ 2,295	2056	$ 5,272	$ 100
330	Dwtr	Eqpt	Manual Hoist No. 3 (2-Ton Low-Profile)	Operations	2014	40	$ 2,295	2056	$ 5,272	$ 100
331	Dwtr	Eqpt	Manual Hoist No. 4 (2-Ton Low-Profile)	Operations	2014	40	$ 2,295	2056	$ 5,272	$ 100
332	Dwtr	Eqpt	Manual Hoist No. 5 (2-Ton Low-Profile)	Operations	2014	40	$ 2,295	2056	$ 5,272	$ 100
333	Dwtr	Eqpt	Manual Hoist No. 6 (2-Ton Low-Profile)	Operations	2014	40	$ 2,295	2056	$ 5,272	$ 100
334	Dwtr	Eqpt	Screw Conveyor No. 1	Operations	2014	20	$ 67,500	2034	$ 100,301	$ 4,800
335	Dwtr	Eqpt	Screw Conveyor No. 2	Operations	2014	20	$ 87,750	2034	$ 130,392	$ 6,200
336	Dwtr	Eqpt	Screw Conveyor No. 3	Operations	2015	20	$ 129,600	2035	$ 192,579	$ 9,200
337	Dwtr	Eqpt	Screw Conveyor No. 4	Operations	2015	20	$ 129,600	2035	$ 192,579	$ 9,200
338	Dwtr	Eqpt	Electric Personnel Lift No. 1	Operations	2000	20	$ 13,500	2020	$ 14,905	$ 700
339	Dwtr	Eqpt	WAS Belt Thickener No. 1	Operations	2013	20	$ 175,500	2033	$ 250,657	$ 11,900
340	Dwtr	Eqpt	WAS Belt Thickener No. 2	Operations	2014	20	$ 175,500	2034	$ 255,670	$ 12,200
341	Dwtr	Eqpt	WAS Belt Thickener No. 3	Operations	2014	20	$ 175,500	2034	$ 255,670	$ 12,200
342	Dwtr	Eqpt	Dewatering Polymer Make-Up Unit No. 1	Operations	2014	20	$ 62,100	2034	$ 92,277	$ 4,400
343	Dwtr	Eqpt	WAS Polymer Make-up Unit No. 1	Operations	2014	20	$ 54,000	2034	$ 80,241	$ 3,800
344	Dwtr	Eqpt	Sludge Storage Tank Grinder No. 1	Operations	2014	40	$ 47,250	2057	$ 110,716	$ 2,300
345	Dwtr	Eqpt	Sludge Storage Tank Grinder No. 2	Operations	2014	40	$ 47,250	2057	$ 110,716	$ 2,300
346	Dwtr	Eqpt	Sludge Storage Tank Grinder No. 3	Operations	2014	40	$ 47,250	2057	$ 110,716	$ 2,300
347	Dwtr	Eqpt	Sludge Storage Tank Grinder No. 4	Operations	2014	40	$ 47,250	2057	$ 110,716	$ 2,300
348	Dwtr	Eqpt	Sludge Storage Tank Grinder No. 5	Operations	2014	40	$ 47,250	2057	$ 110,716	$ 2,300
349	Dwtr	Eqpt	Sludge Storage Tank Mixing System	Operations	2014	25	$ 175,500	2040	$ 293,685	$ 10,600
350	Dwtr	HVAC	Air Handling Unit No. 5	Operations	2014	40	$ 13,500	2056	$ 31,013	$ 700
351	Dwtr	HVAC	AC Unit No. 1	Operations	2014	40	$ 2,700	2056	$ 6,203	$ 100
352	Dwtr	HVAC	Sludge Storage Tank OCS Fan	Operations	2014	20	$ 8,100	2034	$ 12,036	$ 600
353	Dwtr	HVAC	Building Scrubber No. 1	Operations	1988	40	$ 27,000	2027	$ 34,243	$ 800
354	Dwtr	HVAC	Transfer Fan No. 1	Operations	2014	20	$ 7,425	2034	$ 11,033	$ 500
355	Dwtr	HVAC	Building Scrubber Fan No. 1	Operations	2014	40	$ 28,350	2056	$ 65,127	$ 1,400
356	Dwtr	HVAC	Air Handling Unit No. 1	Operations	1988	42	$ 40,500	2024	$ 48,401	$ 1,200
357	Dwtr	HVAC	Air Handling Unit No. 2	Operations	1988	42	$ 27,000	2024	$ 32,267	$ 800
358	Dwtr	HVAC	Air Handling Unit No. 3	Operations	1988	40	$ 27,000	2022	$ 31,015	$ 800
359	Dwtr	MCC	MCC-CBR	Operations	1988	40	$ 108,000	2028	$ 139,710	$ 3,200
360	Dwtr	MCC	MCC-CB1	Operations	1988	40	$ 162,000	2028	$ 209,564	$ 4,700
361	Dwtr	MCC	MCC-SP1	Operations	1988	40	$ 162,000	2028	$ 209,564	$ 4,700
362	Dwtr	MCC	MCC-SP2	Operations	1988	40	$ 162,000	2028	$ 209,564	$ 4,700
363	Dwtr	MCC	MCC-SP3	Operations	1988	40	$ 162,000	2028	$ 209,564	$ 4,700
364	Dwtr	MCC	MCC-SP4	Operations	2014	40	$ 243,000	2056	$ 558,230	$ 12,000
365	Dwtr	Pump	Plant Water Booster Pump No. 1	Operations	2014	20	$ 10,800	2034	$ 16,048	$ 800
366	Dwtr	Pump	Plant Water Booster Pump No. 2	Operations	2014	20	$ 10,800	2034	$ 16,048	$ 800
367	Dwtr	Pump	SST OCS Recirculation Pump No. 1	Operations	2014	20	$ 8,100	2034	$ 12,036	$ 600
368	Dwtr	Pump	SST OCS Recirculation Pump No. 2	Operations	2014	20	$ 8,100	2034	$ 12,036	$ 600
369	Dwtr	Pump	Building Scrubber Recirculation Pump No. 1	Operations	2014	20	$ 18,900	2034	$ 28,084	$ 1,300

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					year	**years**	**$**	**Calibrated Column**			
						Tab A-1	**Estimate**	**Calculated**	**2.00%**	**0.50%**	
370	Dwtr	Pump	Building Scrubber Recirculation Pump No. 2	Operations	2014	20	$ 18,900	2034	$ 28,084	$ 1,300	
371	Dwtr	Pump	Polymer Transfer Pump No. 1	Operations	2013	20	$ 22,950	2033	$ 33,434	$ 1,600	
372	Dwtr	Pump	TWAS Pump No. 1	Operations	2015	20	$ 67,500	2035	$ 102,307	$ 4,900	
373	Dwtr	Pump	TWAS Pump No. 2	Operations	2015	20	$ 67,500	2035	$ 102,307	$ 4,900	
374	Dwtr	Pump	Digester Feed Pump 1	Operations	2015	20	$ 67,500	2035	$ 102,307	$ 4,900	
375	Dwtr	Pump	Digester Feed Pump 2	Operations	2015	20	$ 67,500	2035	$ 102,307	$ 4,900	
376	Dwtr	Pump	Screw Press Feed Pump No. 1	Operations	2014	20	$ 25,650	2034	$ 38,115	$ 1,800	
377	Dwtr	Pump	Screw Press Feed Pump No. 2	Operations	2014	20	$ 25,650	2034	$ 38,115	$ 1,800	
378	Dwtr	Pump	Screw Press Feed Pump No. 3	Operations	2014	20	$ 25,650	2034	$ 38,115	$ 1,800	
379	Dwtr	Pump	Screw Press Feed Pump No. 4	Operations	2014	20	$ 25,650	2034	$ 38,115	$ 1,800	
380	Dwtr	Pump	Dewatering Polymer Pump No. 1	Operations	2014	20	$ 21,600	2034	$ 32,096	$ 1,500	
381	Dwtr	Pump	Dewatering Polymer Pump No. 2	Operations	2014	20	$ 21,600	2034	$ 32,096	$ 1,500	
382	Dwtr	Pump	Dewatering Polymer Pump No. 3	Operations	2014	20	$ 21,600	2034	$ 32,096	$ 1,500	
383	Dwtr	Pump	Dewatering Polymer Pump No. 4	Operations	2014	20	$ 21,600	2034	$ 32,096	$ 1,500	
384	Dwtr	Pump	Dewatering Polymer Plant Water Booster Pump No. 1	Operations	2014	20	$ 10,800	2034	$ 16,048	$ 800	
385	Dwtr	Pump	Dewatering Polymer Plant Water Booster Pump No. 2	Operations	2014	20	$ 10,800	2034	$ 16,048	$ 800	
386	Dwtr	Tank	WAS Thickening Polymer Tank No. 1	Operations	1988	40	$ 40,500	2027	$ 51,364	$ 1,200	
387	Dwtr	Tank	Dewatering Polymer Tank No. 1	Operations	1988	40	$ 40,500	2027	$ 51,364	$ 1,200	
388	Dwtr	Tank	Dewatering Polymer Tank No. 2	Operations	1988	40	$ 40,500	2027	$ 51,364	$ 1,200	
389	Dwtr	Tank	OCS Sodium Hypochlorite Tank No. 1	Operations	2004	40	$ 13,500	2046	$ 24,942	$ 500	
390	Dwtr	Tank	OCS Sodium Hypochlorite Tank No. 2	Operations	2004	40	$ 13,500	2046	$ 24,942	$ 500	
391	Dwtr	Tank	Polymer Bulk Storage Tank No. 1	Operations	1988	40	$ 81,000	2027	$ 102,728	$ 2,400	
392	WW	Eqpt	Mechanical Bar Screen No. 1	**Collections**	2009	20	$ 492,750	2027	$ 703,768	$ 37,500	
393	WW	Eqpt	Mechanical Bar Screen No. 2	**Collections**	2009	20	$ 492,750	2027	$ 703,768	$ 37,500	
394	WW	Eqpt	Screenings Wash Press No. 1 **(may eliminate-being evaluated)**	**Collections**	2009	20	$ 162,000	2025	$ 222,391	$ 13,400	
395	WW	Eqpt	Screenings Wash Press No. 2 **(may eliminate-being evaluated)**	**Collections**	2009	20	$ 162,000	2025	$ 222,391	$ 13,400	
396	WW	Eqpt	Screenings Conveyor No. 1 **(may eliminate-being evaluated)**	**Collections**	2009	20	$ 108,000	2025	$ 148,261	$ 8,900	
397	WW	Eqpt	Screenings Container	Operations	2009	20	$ 8,100	2028	$ 11,800	$ 600	
398	WW	Eqpt	Odor Control Carbon Absorber Unit No. 1	**Collections**	2009	20	$ 357,750	2029	$ 531,598	$ 25,300	
399	WW	Eqpt	Bridge Crane No. 1	**Collections**	2009	40	$ 94,500	2051	$ 217,090	$ 4,700	
400	WW	Eqpt	Hoist No. 1	**Collections**	2009	40	$ 13,500	2051	$ 31,013	$ 700	
401	WW	Eqpt	Hoist No. 2	**Collections**	2009	40	$ 6,750	2051	$ 15,506	$ 300	
402	WW	Eqpt	Hoist No. 3	**Collections**	2009	40	$ 13,500	2051	$ 31,013	$ 700	
403	WW	Eqpt	Polymer Batch Unit No. 1	Operations	2009	20	$ 74,250	2027	$ 106,047	$ 5,600	
404	WW	Eqpt	Polymer Batch Unit No. 2	Operations	2009	20	$ 74,250	2027	$ 106,047	$ 5,600	
405	WW	Eqpt	Bulk Bag Unloader No. 1	Operations	2009	20	$ 124,200	2027	$ 177,388	$ 9,400	
406	WW	Eqpt	Hydrocyclone No. 1-1	Operations	2009	20	$ 47,250	2029	$ 70,211	$ 3,300	
407	WW	Eqpt	Hydrocyclone No. 1-2	Operations	2009	20	$ 47,250	2029	$ 70,211	$ 3,300	
408	WW	Eqpt	Hydrocyclone No. 1-3	Operations	2009	20	$ 47,250	2029	$ 70,211	$ 3,300	
409	WW	Eqpt	Hydrocyclone No. 2-1	Operations	2009	20	$ 47,250	2029	$ 70,211	$ 3,300	
410	WW	Eqpt	Hydrocyclone No. 2-2	Operations	2009	20	$ 47,250	2029	$ 70,211	$ 3,300	

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					year	**years**	**$**	**Calibrated Column**		
						Tab A-1	**Estimate**	**Calculated**	**2.00%**	**0.50%**
411	WW	Eqpt	Hydrocyclone No. 2-3	Operations	2009	20	$ 47,250	2029	$ 70,211	$ 3,300
412	WW	Eqpt	Clarifier No. 1	Operations	2009	20	$ 233,550	2029	$ 347,043	$ 16,500
413	WW	Eqpt	Clarifier No. 2	Operations	2009	20	$ 233,550	2029	$ 347,043	$ 16,500
414	WW	Eqpt	Sludge Thickener No. 1	Operations	2009	20	$ 364,500	2029	$ 541,628	$ 25,800
415	WW	Eqpt	Ferric Chloride Metering Pump Skid No. 1	Operations	2009	20	$ 117,450	2028	$ 171,102	$ 8,600
416	WW	Eqpt	Ferric Chloride Metering Pump Skid No. 2	Operations	2009	20	$ 117,450	2028	$ 171,102	$ 8,600
417	WW	Eqpt	Caustic Soda Metering Pump Skid No. 1	Operations	2009	20	$ 117,450	2028	$ 171,102	$ 8,600
418	WW	Eqpt	Chemical Room Duplex Strainer No. 1	Operations	2009	20	$ 13,500	2028	$ 19,667	$ 1,000
419	WW	Eqpt	Chemical Room Duplex Strainer No. 2	Operations	2009	20	$ 13,500	2028	$ 19,667	$ 1,000
420	WW	Eqpt	Vortex Flow Unit	**Collections**	2009	40	$ 124,200	2051	$ 285,318	$ 6,100
421	WW	Eqpt	Scum Collection Equipment	Operations	2009	20	$ 70,200	2029	$ 104,314	$ 5,000
422	WW	Eqpt	Wet Weather Wet Weather Facility - Pump Building Odor Control Fan No. 1	**Collections**	2009	20	$ 29,700	2029	$ 44,133	$ 2,100
423	WW	G/A	Slide Gate No. 1 (CI) (60" X 120")	**Collections**	2009	30	$ 202,500	2040	$ 374,137	$ 11,200
424	WW	G/A	Slide Gate No. 2 (CI) (48" X 48")	Operations	2009	30	$ 114,750	2040	$ 212,011	$ 6,300
425	WW	G/A	Slide Gate No. 3 (CI) (48" X 48")	Operations	2009	30	$ 114,750	2040	$ 212,011	$ 6,300
426	WW	G/A	Slide Gate No. 4 (48" X 48")	Operations	2009	30	$ 33,750	2040	$ 62,356	$ 1,900
427	WW	G/A	Slide Gate No. 5 (48" X 48")	Operations	2009	30	$ 33,750	2040	$ 62,356	$ 1,900
428	WW	G/A	WW-SG-1 Hydraulic Actuator	**Collections**	2009	30	$ 135,000	2040	$ 249,424	$ 7,500
429	WW	G/A	WW-SG-2 Electric Actuator	Operations	2009	30	$ 8,775	2040	$ 16,213	$ 500
430	WW	G/A	WW-SG-3 Electric Actuator	Operations	2009	30	$ 8,775	2040	$ 16,213	$ 500
431	WW	G/A	RWWP-1 Effluent Gate Valve Operator	**Collections**	2009	30	$ 5,400	2040	$ 9,977	$ 300
432	WW	G/A	RWWP-2 Effluent Gate Valve Operator	**Collections**	2009	30	$ 5,400	2040	$ 9,977	$ 300
433	WW	G/A	RWWP-3 Effluent Gate Valve Operator	**Collections**	2009	30	$ 5,400	2040	$ 9,977	$ 300
434	WW	G/A	RWWP-4 Effluent Gate Valve Operator	**Collections**	2009	30	$ 5,400	2040	$ 9,977	$ 300
435	WW	HVAC	Air Handling Unit No. 1	**Collections**	2009	40	$ 27,000	2051	$ 62,026	$ 1,300
436	WW	HVAC	Air Handling Unit No. 2	**Collections**	2009	40	$ 27,000	2051	$ 62,026	$ 1,300
437	WW	HVAC	Air Handling Unit No. 3	**Collections**	2009	40	$ 27,000	2051	$ 62,026	$ 1,300
438	WW	HVAC	Air Handling Unit No. 4	**Collections**	2009	40	$ 27,000	2051	$ 62,026	$ 1,300
439	WW	HVAC	Boiler No. 1	**Collections**	2009	40	$ 108,000	2051	$ 248,102	$ 5,300
440	WW	HVAC	Boiler No. 2	**Collections**	2009	40	$ 108,000	2051	$ 248,102	$ 5,300
441	WW	Instr	Instrumentation*	**Collections**	2009	10	$ 263,250	2018	$ 314,608	$ 34,300
442	WW	Instr	Pressure Monitoring Assemblies	**Collections**	2009	10	$ 60,750	2018	$ 72,602	$ 7,900
443	WW	Instr	Actiflo Control Panel	Operations	2009	20	$ 175,500	2029	$ 260,784	$ 12,400
444	WW	Instr	Raw Water Turbidmeter	**Collections**	2009	10	$ 22,950	2018	$ 27,427	$ 3,000
445	WW	Instr	Settled Water Turbidmeter	**Collections**	2009	10	$ 22,950	2018	$ 27,427	$ 3,000
446	WW	Instr	pH Meters	**Collections**	2009	10	$ 22,950	2018	$ 27,427	$ 3,000
447	WW	MCC	Primary Feeders	**Collections**	2009	40	$ 60,750	2051	$ 139,558	$ 3,000
448	WW	MCC	WWTF - Motor Control Center B*	**Collections**	2009	40	$ 203,850	2051	$ 468,293	$ 10,000
449	WW	MCC	Wet Weather Facility-Sedimentation Building Motor Control Center	**Collections**	2009	40	$ 425,250	2051	$ 976,903	$ 21,000
450	WW	MCC	Site Feeders	Operations	2009	40	$ 276,750	2051	$ 635,762	$ 13,600
451	WW	Pump	Raw Wastewater Pump No. 1	**Collections**	2009	20	$ 141,750	2029	$ 210,633	$ 10,000

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					year	**years**	**$**	**Calibrated Column**		
						Tab A-1	**Estimate**	**Calculated**	**2.00%**	**0.50%**
452	WW	Pump	Raw Wastewater Pump No. 2	**Collections**	2009	20	$ 141,750	2029	$ 210,633	$ 10,000
453	WW	Pump	Raw Wastewater Pump No. 3	**Collections**	2009	20	$ 141,750	2029	$ 210,633	$ 10,000
454	WW	Pump	Raw Wastewater Pump No. 4	**Collections**	2009	20	$ 141,750	2029	$ 210,633	$ 10,000
455	WW	Pump	Dewatering Sump Pump	**Collections**	2009	20	$ 20,250	2025	$ 27,799	$ 1,700
456	WW	Pump	Sump Pump System No. 1	**Collections**	2009	20	$ 27,000	2027	$ 38,563	$ 2,100
457	WW	Pump	Sump Pump System No. 2	**Collections**	2009	20	$ 27,000	2027	$ 38,563	$ 2,100
458	WW	Pump	Sump Pump System No. 3	**Collections**	2009	20	$ 27,000	2027	$ 38,563	$ 2,100
459	WW	Pump	Polymer Metering Pump No. 1	Operations	2009	20	$ 27,000	2029	$ 40,121	$ 1,900
460	WW	Pump	Polymer Metering Pump No. 2	Operations	2009	20	$ 27,000	2029	$ 40,121	$ 1,900
461	WW	Pump	Polymer Metering Pump No. 3	Operations	2009	20	$ 27,000	2029	$ 40,121	$ 1,900
462	WW	Pump	Polymer Metering Pump No. 4	Operations	2009	20	$ 27,000	2029	$ 40,121	$ 1,900
463	WW	Pump	Polymer Metering Pump No. 5	Operations	2009	20	$ 27,000	2029	$ 40,121	$ 1,900
464	WW	Pump	Polymer Metering Pump No. 6	Operations	2009	20	$ 27,000	2029	$ 40,121	$ 1,900
465	WW	Pump	Polymer Metering Pump No. 7	Operations	2009	20	$ 27,000	2029	$ 40,121	$ 1,900
466	WW	Pump	Polymer Metering Pump No. 8	Operations	2009	20	$ 27,000	2029	$ 40,121	$ 1,900
467	WW	Pump	Polymer Metering Pump No. 9	Operations	2009	20	$ 27,000	2029	$ 40,121	$ 1,900
468	WW	Pump	Polymer Transfer Pump No. 1	Operations	2009	20	$ 27,000	2029	$ 40,121	$ 1,900
469	WW	Pump	Polymer Transfer Pump No. 2	Operations	2009	20	$ 27,000	2029	$ 40,121	$ 1,900
470	WW	Pump	Recycle Pump No. 1-1	Operations	2009	20	$ 36,450	2027	$ 52,060	$ 2,800
471	WW	Pump	Recycle Pump No. 1-2	Operations	2009	20	$ 36,450	2027	$ 52,060	$ 2,800
472	WW	Pump	Recycle Pump No. 1-3	Operations	2009	20	$ 36,450	2027	$ 52,060	$ 2,800
473	WW	Pump	Recycle Pump No. 2-1	Operations	2009	20	$ 36,450	2027	$ 52,060	$ 2,800
474	WW	Pump	Recycle Pump No. 2-2	Operations	2009	20	$ 36,450	2027	$ 52,060	$ 2,800
475	WW	Pump	Recycle Pump No. 2-3	Operations	2009	20	$ 36,450	2027	$ 52,060	$ 2,800
476	WW	Pump	Thickened Sludge Pump No. 1	Operations	2009	20	$ 67,500	2029	$ 100,301	$ 4,800
477	WW	Pump	Thickened Sludge Pump No. 2	Operations	2009	20	$ 67,500	2029	$ 100,301	$ 4,800
478	WW	Pump	Sand Slurry Booster Pump No. 1	Operations	2009	20	$ 13,500	2029	$ 20,060	$ 1,000
479	WW	Tank	Caustic Soda Tank No. 1	**Collections**	2009	40	$ 40,500	2051	$ 93,038	$ 2,000
480	WW	Tank	Ferric Chloride Tank No. 1	**Collections**	2009	40	$ 40,500	2051	$ 93,038	$ 2,000
481	WW	Tank	Polymer Feed Tank No. 1	**Collections**	2009	40	$ 20,250	2051	$ 46,519	$ 1,000
482	WW	Tank	Polymer Feed Tank No. 2	**Collections**	2009	40	$ 20,250	2051	$ 46,519	$ 1,000
483	WW	Tank	Polymer Mix Tank No. 1	**Collections**	2009	40	$ 14,850	2051	$ 34,114	$ 700
484	WW	Tank	Polymer Mix Tank No. 2	**Collections**	2009	40	$ 14,850	2051	$ 34,114	$ 700
485	WW	Mix	POLMT-1 Mixer	Operations	2009	20	$ 8,100	2029	$ 12,036	$ 600
486	WW	Mix	POLMT-1 Mixer	Operations	2009	20	$ 8,100	2029	$ 12,036	$ 600
487	WW	Mix	Injection Tank No. 1 Mixer	Operations	2009	20	$ 87,750	2029	$ 130,392	$ 6,200
488	WW	Mix	Injection Tank No. 2 Mixer	Operations	2009	20	$ 87,750	2029	$ 130,392	$ 6,200
489	WW	Mix	Coagulation Tank No. 1 Mixer	Operations	2009	20	$ 87,750	2029	$ 130,392	$ 6,200
490	WW	Mix	Coagulation Tank No. 2 Mixer	Operations	2009	20	$ 87,750	2029	$ 130,392	$ 6,200
491	WW	Mix	Maturation Tank No. 1 Mixer	Operations	2009	20	$ 87,750	2029	$ 130,392	$ 6,200
492	WW	Mix	Maturation Tank No. 2 Mixer	Operations	2009	20	$ 87,750	2029	$ 130,392	$ 6,200

	Nashua Wastewater Treatment Facility										
	Schedule D - Wastewater Equipment Replacement Fund										
	As of 5/4/2016										
							RENEWAL/REPLACEMENT STRATEGY				
	Major Systems	**Major System Facilities**	**Asset Name**	**Collections or Operations**	**Date Installed**	**Estimated Effective Life**	**Cost of Renewal Option**	**Recommended Renewal Date (FY)**	**Future Cost of Renewal**	**ANNUAL RESERVE PAYMENT**	
					year	**years**	**$**	**Calibrated Column**			
						Tab A-1	**Estimate**	**Calculated**	**2.00%**	**0.50%**	
493	WW	Mix	Flocculation Tank No. 1 Mixer	Operations	2009	20	$ 164,700	2029	$ 244,736	$ 11,700	
494	MB	EE	Transformer	Operations	2000	40	$ 7,425	2040	$ 12,181	$ 300	
495	MB	Eqpt	Industrial Part Cleaner No. 1	Operations	2010	15	$ 1,000	2025	$ 1,219	$ 100	
496	WW	MCC	WWTF - Motor Control Center A*	**Collections**	2009	8	$ 113,400	2016	$ 130,261	$ 18,300	
497	WW	Instr	Instrumentation (flow Meter & related components)*	**Collections**	2016	30	$ 36,350	2043	$ 71,271	$ 2,500	
498	MB	Eqpt	Dewatering Flood Pump No. 2	Operations	2015	20	$ 5,000	2036	$ 7,578	$ 300	
499	MB	HVAC	Boiler No. 1	Operations	2000	40	$ 67,500	2041	$ 112,956	$ 2,500	
500	MB	HVAC	Boiler No. 2	Operations	2000	40	$ 67,500	2041	$ 112,956	$ 2,500	
501	SE	EE	Transformer No. 1	Operations	1988	40	$ 29,700	2029	$ 39,189	$ 900	
502	SE	EE	Transformer No. 2	Operations	1988	40	$ 24,975	2029	$ 32,954	$ 700	
503	SE	EE	Transformer No. 3	Operations	1988	40	$ 67,500	2029	$ 89,065	$ 2,000	
504	SE	EE	Transformer No. 4	Operations	1988	40	$ 24,975	2029	$ 32,954	$ 700	
505	SE	EE	Transformer No. 5	Operations	2010	40	$ 24,975	2052	$ 51,965	$ 1,100	
506	SE	EE	Transformer No. 6	Operations	2007	40	$ 51,975	2048	$ 99,908	$ 2,200	
507	Misc	Boat	Terhi Nordic 6020 with Mercury 30 HP and Trailer	Operations	2001	40	$ 5,500	2043	$ 12,635	$ 300	
508	Misc	PEG	Portable Emergency Generator No. 1	**Collections**	1979	41	$ 20,000	2017	$ 20,808	$ 500	
509	Misc	PEG	Portable Emergency Generator No. 2	Operations	2013	30	$ 25,000	2045	$ 45,284	$ 1,300	
510	Misc	PEG	Portable Emergency Generator No. 3	Operations	2000	30	$ 20,000	2028	$ 34,820	$ 1,200	
511	Misc	Veh	Car 3 Ford Fusion - Hybrid	Operations	2011	10	$ 28,000	2021	$ 31,533	$ 3,100	
512	Misc	Veh	Truck 4 CB Cleaner with Clam Shell Bucket (chassis-floor boards)	Operations	2004	14	$ 90,250	2017	$ 92,055	$ 6,900	
513	Misc	Veh	Truck 62 2WD Chevy Plant Operations	Operations	2014	10	$ 17,340	2024	$ 20,723	$ 2,000	
514	Misc	Veh	Truck 82 Ford 550 CNG with Crane	**Collections**	2012	10	$ 62,000	2022	$ 71,219	$ 7,000	
515	Misc	Veh	Truck 87 Vacuum Truck No. 1	**Collections**	2014	10	$ 300,000	2024	$ 358,528	$ 35,100	
516	Misc	Veh	Truck 112 TV Video Monitor & Support Truck	**Collections**	2000	16	$ 180,000	2017	$ 187,272	$ 10,600	
517	Misc	Veh	Collection System Video Camera, pole camera, pencil camera	**Collections**	2010	10	$ 40,800	2020	$ 45,046	$ 4,400	
518	Misc	Veh	Truck 135 3/4 Ton Chevy	**Collections**	2012	12	$ 30,200	2023	$ 35,384	$ 3,100	
519	Misc	Veh	Truck 136 1/2 Ton Chevy with Crane	**Collections**	2006	12	$ 50,328	2017	$ 52,361	$ 4,600	
520	Misc	Veh	Truck 171 Vacuum Truck No. 2	**Collections**	2005	15	$ 20,000	2020	$ 22,082	$ 1,400	
521	Misc	Veh	Truck 176 4WD Ford F350 Wet Weather Facility - Pump Building Truck with Plow	**Collections**	2014	12	$ 45,000	2026	$ 55,952	$ 4,500	
522	Misc	Veh	Truck 186 4WD Ford with Plow	**Collections**	2015	10	$ 30,000	2025	$ 36,570	$ 3,600	
523	Misc	Veh	Freightliner M2 112 Roll-off Truck	**Collections**	2013	10	$ 172,000	2023	$ 201,525	$ 19,700	
524	Misc	Veh	Kubota Tractor	**Collections**	2004	15	$ 15,000	2018	$ 15,918	$ 1,100	
525	Misc	Veh	Street Sweeper	**Collections**	2004	15	$ 90,000	2018	$ 95,509	$ 6,600	
526	SDF	EE	Transfer Switch	**Collections**	2014	40	$ 10,800	2056	$ 24,810	$ 500	
527	SDF	EE	Main Breaker Panel	**Collections**	2014	40	$ 5,400	2056	$ 12,405	$ 300	
528	SDF	EE	Transformer No. 1	**Collections**	2014	40	$ 5,400	2056	$ 12,405	$ 300	
529	SDF	EE	Emergency Generator	**Collections**	2014	40	$ 48,600	2056	$ 111,646	$ 2,400	
530	SDF	EE	Avtron Spirit Load Bank	**Collections**	2014	40	$ 5,400	2056	$ 12,405	$ 300	
531	SDF	Eqpt	Fine Combing Screen No. 1	**Collections**	2014	20	$ 259,200	2034	$ 385,158	$ 18,400	
532	SDF	Eqpt	Fine Combing Screen No. 2	**Collections**	2014	20	$ 259,200	2034	$ 385,158	$ 18,400	
533	SDF	Eqpt	Fine Combing Screen Hydraulic Power Unit	**Collections**	2014	35	$ 21,600	2051	$ 44,943	$ 1,100	

	Nashua Wastewater Treatment Facility									
	Schedule D - Wastewater Equipment Replacement Fund									
	As of 5/4/2016									
							RENEWAL/REPLACEMENT STRATEGY			
	Major Systems	**Major System Facilities**	**Asset Name**	**Collections or Operations**	**Date Installed**	**Estimated Effective Life**	**Cost of Renewal Option**	**Recommended Renewal Date (FY)**	**Future Cost of Renewal**	**ANNUAL RESERVE PAYMENT**
					year	**years**	**$**	**Calibrated Column**		
						Tab A-1	**Estimate**	**Calculated**	**2.00%**	**0.50%**
534	SDF	Eqpt	Tipping Bucket No. 1	**Collections**	2014	20	$ 21,600	2034	$ 32,096	$ 1,500
535	SDF	Eqpt	Tipping Bucket No. 2	**Collections**	2014	20	$ 21,600	2034	$ 32,096	$ 1,500
536	SDF	Eqpt	Electric Fork Lift	**Collections**	2014	40	$ 16,200	2056	$ 37,215	$ 800
537	SDF	G/A	Grande Flush Gate No. 1	**Collections**	2014	30	$ 10,125	2045	$ 18,707	$ 600
538	SDF	G/A	Grande Flush Gate No. 2	**Collections**	2014	30	$ 10,125	2045	$ 18,707	$ 600
539	SDF	G/A	Grande Flush Gate No. 3	**Collections**	2014	30	$ 10,125	2045	$ 18,707	$ 600
540	SDF	G/A	Grande Flush Gate No. 4	**Collections**	2014	30	$ 10,125	2045	$ 18,707	$ 600
541	SDF	G/A	Grande Flush Gate No. 5	**Collections**	2014	30	$ 10,125	2045	$ 18,707	$ 600
542	SDF	G/A	Grande Flush Gate No. 6	**Collections**	2014	30	$ 10,125	2045	$ 18,707	$ 600
543	SDF	G/A	Grande Flush Gate No. 7	**Collections**	2014	30	$ 10,125	2045	$ 18,707	$ 600
544	SDF	G/A	Grande Flush Gate No. 8	**Collections**	2014	30	$ 10,125	2045	$ 18,707	$ 600
545	SDF	G/A	Flush Gate Hydraulic Power Unit	**Collections**	2014	35	$ 10,125	2051	$ 21,067	$ 500
546	SDF	G/A	Drain Gate No. 1	**Collections**	2014	30	$ 54,000	2045	$ 99,770	$ 3,000
547	SDF	G/A	Drain Gate No. 2	**Collections**	2014	30	$ 54,000	2045	$ 99,770	$ 3,000
548	SDF	G/A	Drain Gate Hydraulic Power Unit	**Collections**	2014	35	$ 21,600	2051	$ 44,943	$ 1,100
549	SDF	G/A	Overflow Slide Gate	**Collections**	2014	30	$ 37,800	2045	$ 69,839	$ 2,100
550	SDF	G/A	Flap Gate No. 1 (CSO-005/006)	**Collections**	2014	30	$ 43,200	2045	$ 79,816	$ 2,400
551	SDF	G/A	Flap Gate No. 2 (CSO-006)	**Collections**	2014	30	$ 37,800	2045	$ 69,839	$ 2,100
552	SDF	HVAC	Electric Wall Heater No. 1	**Collections**	2014	20	$ 10,800	2034	$ 16,048	$ 800
553	SDF	HVAC	Electric Duct Heater No. 1	**Collections**	2014	20	$ 16,200	2034	$ 24,072	$ 1,100
554	SDF	HVAC	Electric Unit Heater No. 1	**Collections**	2014	20	$ 10,800	2034	$ 16,048	$ 800
555	SDF	HVAC	Electric Unit Heater No. 2	**Collections**	2014	20	$ 10,800	2034	$ 16,048	$ 800
556	SDF	HVAC	AC Unit No. 1	**Collections**	2014	20	$ 21,600	2034	$ 32,096	$ 1,500
557	SDF	Instr	Chlorine Analyzer No. 1	Operations	2014	10	$ 5,400	2023	$ 6,453	$ 700
558	SDF	Instr	Chlorine Analyzer No. 2	Operations	2014	10	$ 5,400	2023	$ 6,453	$ 700
559	SDF	Instr	SHS Magnetic Flow Meter	**Collections**	2014	40	$ 2,700	2056	$ 6,203	$ 100
560	SDF	Instr	SBS Magnetic Flow Meter	**Collections**	2014	40	$ 2,700	2056	$ 6,203	$ 100
561	SDF	Instr	Force Flow SHS Scale No. 1	**Collections**	2014	20	$ 2,160	2034	$ 3,210	$ 200
562	SDF	Instr	Force Flow SHS Scale No. 2	**Collections**	2014	20	$ 2,160	2034	$ 3,210	$ 200
563	SDF	Instr	Force Flow SHS Scale No. 3	**Collections**	2014	20	$ 2,160	2034	$ 3,210	$ 200
564	SDF	Instr	Force Flow SBS Scale No. 1	**Collections**	2014	20	$ 2,160	2034	$ 3,210	$ 200
565	SDF	Instr	Force Flow SBS Scale No. 2	**Collections**	2014	20	$ 2,160	2034	$ 3,210	$ 200
566	SDF	Instr	Level Sensor No. 1	Operations	2014	10	$ 5,400	2023	$ 6,453	$ 700
567	SDF	Instr	Level Sensor No. 2	Operations	2014	10	$ 5,400	2023	$ 6,453	$ 700
568	SDF	Instr	Level Sensor No. 3	Operations	2014	10	$ 5,400	2023	$ 6,453	$ 700
569	SDF	Instr	Level Sensor No. 4	Operations	2014	10	$ 5,400	2023	$ 6,453	$ 700
570	SDF	Instr	Level Sensor No. 5	Operations	2014	10	$ 5,400	2023	$ 6,453	$ 700
571	SDF	Instr	Level Sensor No. 6	Operations	2014	10	$ 5,400	2023	$ 6,453	$ 700
572	SDF	Instr	Level Sensor No. 7	Operations	2014	10	$ 5,400	2023	$ 6,453	$ 700
573	SDF	Instr	Level Sensor No. 8	Operations	2014	10	$ 5,400	2023	$ 6,453	$ 700
574	SDF	Instr	Level Sensor No. 9	Operations	2014	10	$ 5,400	2023	$ 6,453	$ 700

	Nashua Wastewater Treatment Facility									
	Schedule D - Wastewater Equipment Replacement Fund									
	As of 5/4/2016									
							RENEWAL/REPLACEMENT STRATEGY			
	Major Systems	**Major System Facilities**	**Asset Name**	**Collections or Operations**	**Date Installed**	**Estimated Effective Life**	**Cost of Renewal Option**	**Recommended Renewal Date (FY)**	**Future Cost of Renewal**	**ANNUAL RESERVE PAYMENT**
					year	**years**	**$**	**Calibrated Column**		
						Tab A-1	**Estimate**	**Calculated**	**2.00%**	**0.50%**
575	SDF	Instr	Level Sensor No. 10	Operations	2014	10	$ 5,400	2023	$ 6,453	$ 700
576	SDF	Instr	Influent Flow Meter No. 1	**Collections**	2014	40	$ 9,450	2056	$ 21,709	$ 500
577	SDF	Instr	Influent Flow Meter No. 2	**Collections**	2014	40	$ 9,450	2056	$ 21,709	$ 500
578	SDF	Instr	Influent Flow Meter No. 3	**Collections**	2014	40	$ 9,450	2056	$ 21,709	$ 500
579	SDF	Instr	Influent Flow Meter No. 4	**Collections**	2014	40	$ 9,450	2056	$ 21,709	$ 500
580	SDF	Instr	Programmable Logic Controller	**Collections**	2014	20	$ 27,000	2034	$ 40,121	$ 1,900
581	SDF	Instr	Sodium Hypochlorite Vacuum Doser No. 1	Operations	2014	10	$ 27,000	2023	$ 32,267	$ 3,500
582	SDF	Instr	Sodium Hypochlorite Vacuum Doser No. 2	Operations	2014	10	$ 27,000	2023	$ 32,267	$ 3,500
583	SDF	Instr	Sodium Bisulfite Vacuum Doser No. 1	Operations	2014	10	$ 27,000	2023	$ 32,267	$ 3,500
584	SDF	Instr	Sodium Bisulfite Vacuum Doser No. 2	Operations	2014	10	$ 27,000	2023	$ 32,267	$ 3,500
585	SDF	Instr	Sample Pump No. 1	Operations	2014	10	$ 29,700	2023	$ 35,494	$ 3,900
586	SDF	Instr	Sample Pump No. 2	Operations	2014	10	$ 29,700	2023	$ 35,494	$ 3,900
587	Misc	Instr	Gas Monitoring Systems	Operations	2014	10	$ 120,000	2024	$ 146,279	$ 14,300
588	TD	Pump	Tank Drain Pump Station No. 1	Operations	2016	15	$ 49,300	2032	$ 69,032	$ 4,200
589	TD	Pump	Tank Drain Pump Station No. 2	Operations	2016	15	$ 49,300	2032	$ 69,032	$ 4,200
	Plans reviewed:							**Grand Total**	**$ 51,240,963**	**$ 2,055,600**
	1959 - Sewage Works Improvements (CDM)									
	1972 - Treatment Plant Addition (CDM)									
	1985 - Secondary Wastewater Treatment Plant (CDM)									
	1998 - Anaerobic Digester Project (Stearns & Wheeler)									
	2006 - Wet Weather Flow Treatment Facility (AECOM)									
	2012 - Dewatering and Grit Systems Upgrade (WP)									
		NOTES:	* MCC-PS: Replace breakers 1, 2 & 3 in Wet Weather Electric Rm 1 in FY 2016							
			* MCC-PSB: Replace remaining breakers & control panels in Wet Weather Electric Rm							
			* -WW-INST: Replaces mag flow meter with extra for unaticipated failure of another instrument in Wet Weather Facility							
			* -WW-INST-B: Replaces other instrumentation in Wet Weather Facility							

City of Nashua
Debt Service Schedule
FY2016 through FY2022

Schedule E

EXISTING DEBT

Line No.	Project	Debt Amount	Debt Type	FY2016	FY2017	FY2018	FY2019	FY2020	FY2021	FY2022
1	Sewer Component Refunding	$ 186,478	SRF	$ -	$ -	$ -	$ -	$ -	$ -	$ -
2										
3	Storage Tank	$ 5,162,772	Bonds	450,238	439,871	426,915	413,958	401,000	388,043	375,085
4										
5	Aeration Blowers & Tank Upgrade	$ 3,726,330	Bonds	249,844	244,092	236,901	229,710	222,520	215,330	208,140
6										
7	Dewatering Equipment Replacement	$ 2,864,898	Bonds	324,968	317,487	308,134	298,782	289,430	280,077	270,725
8										
9	Dewatering Equipment	$ 2,200,000	Bonds	183,700	181,500	179,300	177,100	174,900	171,600	168,300
10										
11	Sludge Digestor	$ 3,690,163	SRF	494,206	488,716	483,227	477,737	472,249	466,759	-
12										
13	Haines Street	$ 608,422	SRF	47,040	46,172	45,304	44,436	43,568	42,700	41,833
14										
15	Net Metering	$ 224,984	SRF	27,179	26,841	26,505	26,166	25,830	25,491	25,154
16										
17	Wet Weather Facility	$ 12,495,000	SRF	1,011,889	993,046	974,202	955,359	936,515	917,672	898,828
18										
19	Wet Weather Facility	$ 12,000,000	SRF	1,040,700	1,021,320	1,001,940	982,560	963,180	943,800	924,420
20										
21	Harbor Ave	$ 4,600,077	SRF	$ 357,402	$ 355,163	$ 348,575	$ 341,988	$ 335,401	$ 328,814	$ 322,226
22										
23	**Subtotal - Existing Debt Service**			**$ 4,187,167**	**$ 4,114,208**	**$ 4,031,003**	**$ 3,947,796**	**$ 3,864,593**	**$ 3,780,286**	**$ 3,234,711**
24										
25										
26	**NEW DEBT**									
27										
28		**Debt Amount**		**FY2016**	**FY2017**	**FY2018**	**FY2019**	**FY2020**	**FY2021**	**FY2022**
29										
30	Disinfection Facility	$ 15,009,686	SRF	-	1,133,531	1,114,379	1,095,227	1,076,074	1,056,922	1,037,770
31										
32	Plant Headworks Upgrade	$ 3,800,000	SRF	-	-	-	304,000.00	298,300	292,600	286,900
33										
34	Pump Stations Rehab	$ 8,500,000	SRF/Bond	-	-	680,000	667,250	654,500	641,750	629,000
35										
36	Primary Tank Upgrades	$ 4,200,000	SRF/Bond	-	-	-	336,000	329,700	323,400	317,100
37										
38	Phosphorus Removal & Storage Facility	$ 855,000	SRF/Bond	-	-	-	-	68,400	67,118	65,835
39										
40	Wastewater Plant Booster Stations	$ 779,000	SRF/Bond	-	-	62,320	61,152	59,983	58,815	57,646
41										
42	**Subtotal - New Debt Service**			**$ -**	**$ 1,133,531**	**$ 1,856,699**	**$ 2,463,628**	**$ 2,486,957**	**$ 2,440,604**	**$ 2,394,251**
43										
44	**Total Debt Service**			**$ 4,187,167**	**$ 5,247,739**	**$ 5,887,703**	**$ 6,411,424**	**$ 6,351,550**	**$ 6,220,890**	**$ 5,628,962**

City of Nashua
Analysis of Wastewater Fund
FY2002 to FY2022
Increases Every Other Year

Schedule F

Line No.	Fiscal Year		Year End Balance	Rate Change	% Change	Type of Rate Change	Volumetric Change
1	2002		$ 24,023,769				
2	2003		$ 24,007,147				
3	2004		$ 25,885,082	(Decrease)	-27%	Volumetric Rate Only	$1.66 to $1.22
4	2005		$ 26,563,313				
5	2006		$ 25,038,320				
6	2007		$ 13,463,254				
7	2008		$ 1,036,825				
8	2009		$ (6,211,530)				
9	2010		$ 8,629,973	Increase	27%	Volumetric Rate Only	$1.22 to $1.55
10	2011		$ 4,608,016				
11	2012		$ 5,044,891	Increase	15%	Demand and Volumetric	$1.55 to $1.78
12	2013		$ 5,500,000				
13	2014		$ 17,704,956	Increase	15%	Demand and Volumetric	$1.78 to $2.05
14	2015		$ 14,408,174				
15	2016	Est	$ 13,754,650				
16	2017	Est	$ 5,453,522	Increase	15%	Demand and Volumetric	$2.05 to $2.36
17	2018	Est	$ 2,766,387				
18	2019	Est	$ 1,654,210	Increase	15%	Demand and Volumetric	$2.36 to $2.71
19	2020	Est	$ 1,228,888				
20	2021	Est	$ 2,210,958	Increase	15%	Demand and Volumetric	$2.71 to $3.12
21	2022	Est	$ 4,653,426				

City of Nashua
Analysis of Wastewater Fund
FY2002 to FY2022
Annual Increases

Schedule F

Line No.	Fiscal Year		Year End Balance	Rate Change	% Change	Type of Rate Change	Volumetric Change
1	2002		$ 24,023,769				
2	2003		$ 24,007,147				
3	2004		$ 25,885,082	(Decrease)	-27%	Volumetric Rate Only	$1.66 to $1.22
4	2005		$ 26,563,313				
5	2006		$ 25,038,320				
6	2007		$ 13,463,254				
7	2008		$ 1,036,825				
8	2009		$ (6,211,530)				
9	2010		$ 8,629,973	Increase	27%	Volumetric Rate Only	$1.22 to $1.55
10	2011		$ 4,608,016				
11	2012		$ 5,044,891	Increase	15%	Demand and Volumetric	$1.55 to $1.78
12	2013		$ 5,500,000				
13	2014		$ 17,704,956	Increase	15%	Demand and Volumetric	$1.78 to $2.05
14	2015		$ 14,408,174				
15	2016	Est	$ 13,754,650				
16	2017	Est	$ 4,985,077	Increase	7.5%	Demand and Volumetric	$2.05 to $2.20
17	2018	Est	$ 1,864,630	Increase	7.5%	Demand and Volumetric	$2.20 to $2.37
18	2019	Est	$ 286,643	Increase	7.5%	Demand and Volumetric	$2.37 to $2.55
19	2020	Est	$ (558,618)	Increase	7.5%	Demand and Volumetric	$2.55 to $2.74
20	2021	Est	$ (27,984)	Increase	7.5%	Demand and Volumetric	$2.74 to $2.94
21	2022	Est	$ 2,022,120	Increase	7.5%	Demand and Volumetric	$2.94 to $3.16

City of Nashua
Analysis of Wastewater Fund
FY2002 to FY2022
No Increase(s)

Schedule F

Line No.	Fiscal Year		Year End Balance	Rate Change	% Change	Type of Rate Change	Volumetric Change
1	2002		$ 24,023,769				
2	2003		$ 24,007,147				
3	2004		$ 25,885,082	(Decrease)	-27%	Volumetric Rate Only	$1.66 to $1.22
4	2005		$ 26,563,313				
5	2006		$ 25,038,320				
6	2007		$ 13,463,254				
7	2008		$ 1,036,825				
8	2009		$ (6,211,530)				
9	2010		$ 8,629,973	Increase	27%	Volumetric Rate Only	$1.22 to $1.55
10	2011		$ 4,608,016				
11	2012		$ 5,044,891	Increase	15%	Demand and Volumetric	$1.55 to $1.78
12	2013		$ 5,500,000				
13	2014		$ 17,704,956	Increase	15%	Demand and Volumetric	$1.78 to $2.05
14	2015		$ 14,408,174				
15	2016	Est	$ 13,754,650				
16	2017	Est	$ 4,516,632				
17	2018	Est	$ (44,285)				
18	2019	Est	$ (4,107,667)				
19	2020	Est	$ (8,561,619)				
20	2021	Est	$ (12,847,217)				
21	2022	Est	$ (16,911,454)				

City of Nashua
Wastewater Fund Rate/Revenue Requirement Analysis
September 2016

Presented on 7/25/2016 to the Mayor and Director of Public Works
Presented on 9/29/2016 to the Board of Public Works

Wastewater Fund Rate/Revenue Requirements Analysis

- Analysis of the Wastewater Fund for FY16 through FY22
  - Revenues – FY16 - $13.1M
    - Volumetric Revenues – Approximately 60% of User Fee Revenue
    - Demand (Meter) Revenues – Approximately 40% of User Fee Revenue
  - Estimated Revenues – Projected to Increase to $16.1M in FY19
  - Estimated Debt Service Payments – Increase from $4.2M in FY16 to $6.4M in FY19
  - Unrestricted Net Assets – 6/30/15 – $14,400,000 – will be reduced in next few years
  - Annual Review – November of each year after annual audit
  - Rate Increases – FY17 and FY19 would take effect on January 1
- Current issues impacting the Wastewater Fund include:
  - EPA requirements/regulations
  - Aging Infrastructure – Sewer System & Treatment Plant
  - State Aid Grant Funding – continued deferment

Wastewater Fund Rate/Revenue Requirements Analysis

Background

- Last rate analysis completed November 2013 resulted in 15% user fee rate/revenue increase effective January 1, 2014 (FY14).
  - FY14 Rate Increase was applied as follows:
    - 15% Increase in Volumetric Rate
    - 15% Increase Demand Rate
- History of Rate Adjustments:
  - FY04 Volumetric Rate Reduced from $1.66 to $1.22 per 100 cf
  - FY10 Volumetric Rate Increased from $1.22 to $1.55 per 100 cf
  - FY12 Volumetric Rate Increased from $1.55 to $1.78 per 100 cf
  - FY14 Volumetric Rate Increased from $1.78 to $2.05 per 100 cf

Wastewater Fund Rate/Revenue Requirements Analysis

Recommendation:

- Approval of a 15% increase in the wastewater user fee rates effective January 1, 2017:
  - Volumetric Rate Increase from $2.05 to $2.36 per 100 cf;
  - Average Quarterly Residential Demand Charge Increase from $27.77 to $31.94
  - Average Quarterly Residential Bill - $79.14
  - Quarterly Increase - $10.37

Wastewater Fund Rate/Revenue Requirements Analysis

Cost Analysis

- The Analysis includes the cost of operations, several capital projects, as well as an updated **WERF** (Wastewater Equipment Reserve Fund) schedule.

- Capital equipment replacement (WERF) costs for the next three fiscal years are projected as follows:
  - FY17 $2.1 million
  - FY18 $1.9 million
  - FY19 $0.4 million

Wastewater Fund Rate/Revenue Requirements Analysis

Cost Analysis

- Capital Projects & Expenditures
  - Funded with Debt:
    - FY17 $13.4 million
    - FY18 $0.9 million
    - FY19 None
  - Funded with Cash:
    - FY17 $8.0 million (of which $4.1 million relates to annual expenditures)
    - FY18 $2.6 million
    - FY19 $2.7 million

Wastewater Fund Rate/Revenue Requirements Analysis

Community Comparison

- Below is a comparison of current user fees for Nashua residents to similar communities in New Hampshire:

	Nashua *(current)*	Nashua *(proposed)*	Derry	Manchester	Concord	Keene
Volumetric Rate per CCF	$2.05	$2.36	$2.98	$3.47	$4.61	$5.69
Fixed Charge – Avg. Quarterly	$27.77	$31.94	$35.66	$21.18	$41.49	$55.15
Avg. Quarterly Residential Bill	$68.77	$79.14	$80.36	$90.58	$92.20	$168.95

- Notes:
  - Average use 20 CCFs/Quarter.
  - Concord Rates change September 1 – above uses current rates.
  - Derry & Concord have "break points"/minimums in fixed charges.

Wastewater Fund Rate/Revenue Requirements Analysis

Summary

- Moving forward with the recommended revenue increase and debt financing should allow the City to:
  - Fund normal operating costs;
  - Meet EPA requirements;
  - Adequately fund reserves for future equipment needs;
  - Fund improvements with cash; and
  - Pay for the increase in debt service payments during the next several fiscal years.

City of Nashua

Division of Public Works

Wastewater Capital Projects

- Combined Sewer Overflow (CSO)
- Collection Systems
- Wastewater Treatment Facility

September 29, 2016

Nashua Wastewater System

CSO Systems

- CSO Outfalls – 9
  - 4 Nashua River
  - 5 Merrimack River
- Storage Tank at CSO 4
- Sluice Gate at CSO 6

Collection Systems

Combined Sewers (in inner city) - 100 miles

Separate Sanitary Sewers -190 miles

Sewage Pump Stations – 13

Separate Storm Drains -130 miles

Catch Basins and Manholes - 19,500

Stormwater Detention Ponds – 35

Stormwater Green Infrastructure

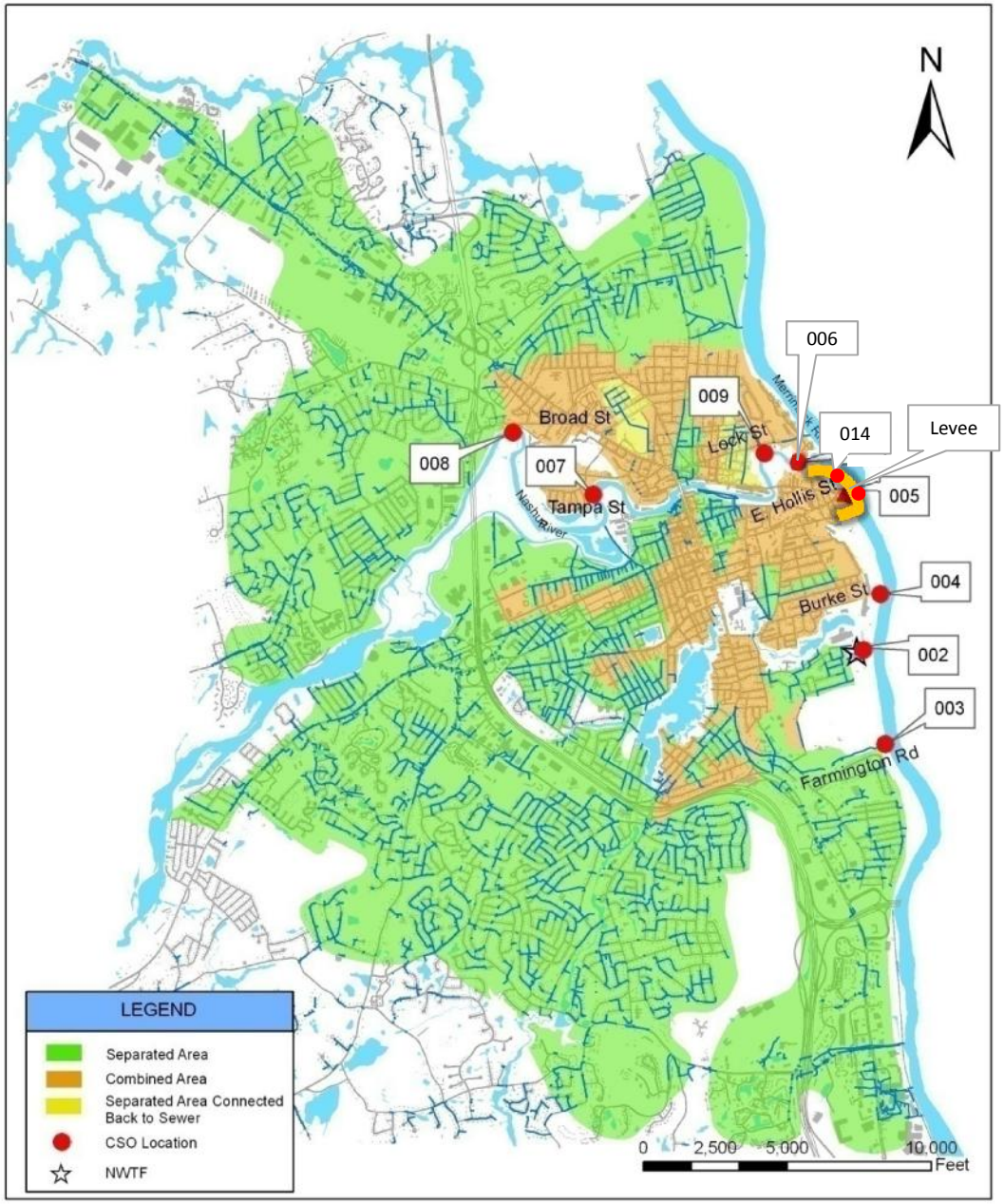
Merrimack River Flood Control (levee, CSO pump station, overflow basin, slide gate)

Wastewater Treatment Facility

Wastewater Facility

- Ave Dry Weather Flow - 11 Million Gal/Day (MGD)
- Wet Weather Capacity - 50 MGD

- Wet Weather Flow (CSO) Treatment Facility - 60 MGD capacity
- Screening and Disinfection Facility 91MGD capacity



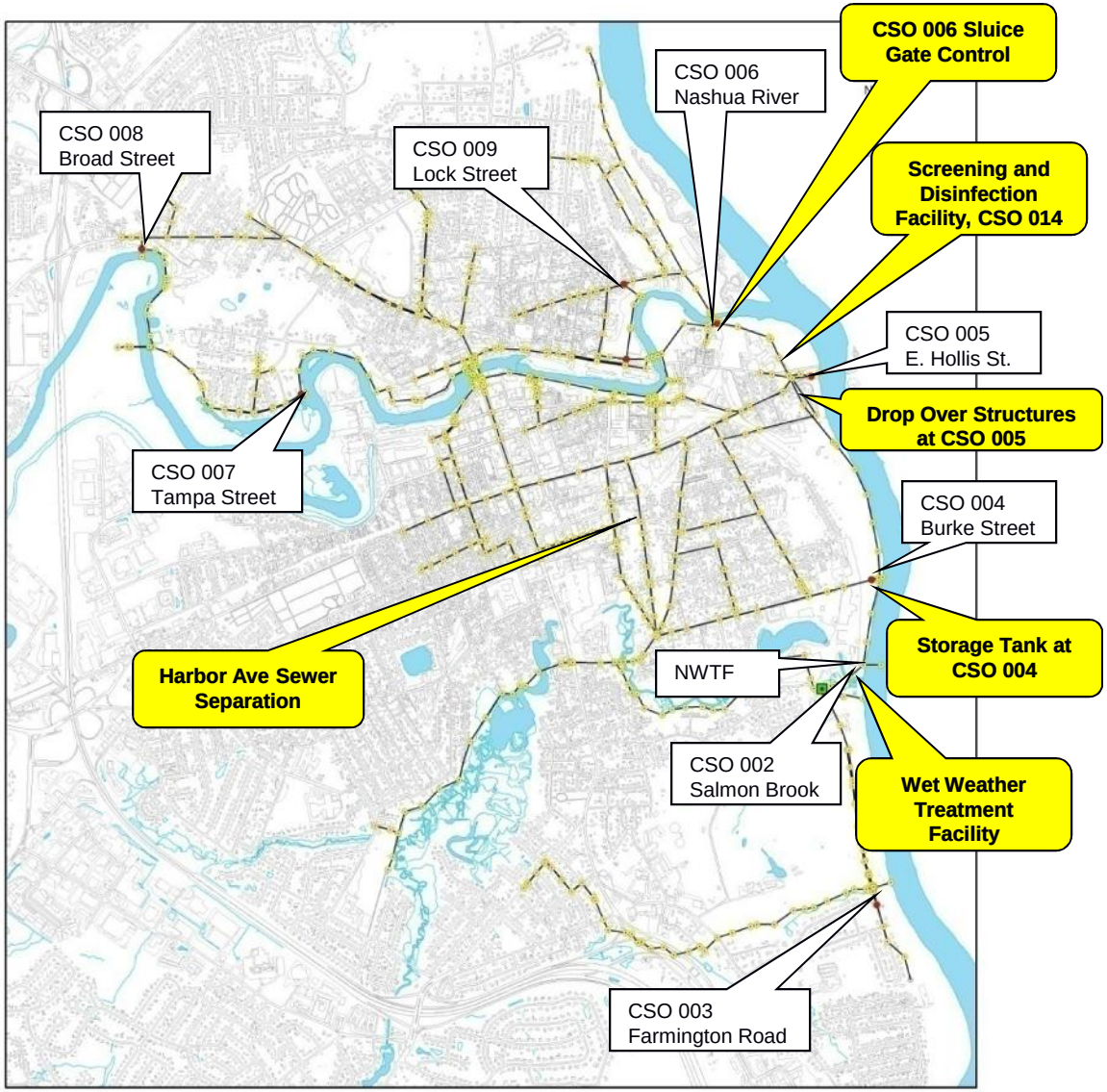
CSO Program

Purpose : EPA required City to reduce Combined Sewer Overflows (CSOs) that are discharging to the Nashua and Merrimack Rivers

Project	Total Cost in $ Million
Completed (2005 to 2015)	
Harbor Ave Sewer Separation	$5.58
Wet Weather Flow (CSO) Treatment Facility 60 MGD	$32.38
System Optimization of CSO Regulators	$1.81
Sluice Gate Control at CSO 006	$0.90
Drop Over Structures at CSO 005	$1.63
CSO 004 – 40,000 Gallon Storage Tank	$1.70
Screening and Disinfection Facility 91 MGD	$15.16
In Progress	
CSO 004 - Burke St Sewer Improvements	$4.06
Infiltration/Inflow Removal	$0.50
Annual Expenditures (Including future 6 years)	
Consent Decree Operational Expenditures	$1.36
• Post Construction Monitoring	
Total	**$65.23**

CSO Projects Completed

- Harbor Ave Sewer Separation
- Wet Weather Flow (CSO) Treatment Facility 60 MGD
- System Optimization of CSO Regulators
- Sluice Gate Control at CSO 006
- Drop Over Structures at CSO 005
- CSO 004 - 40,000 gal Storage Tank
- Screening and Disinfection Facility 91 MGD

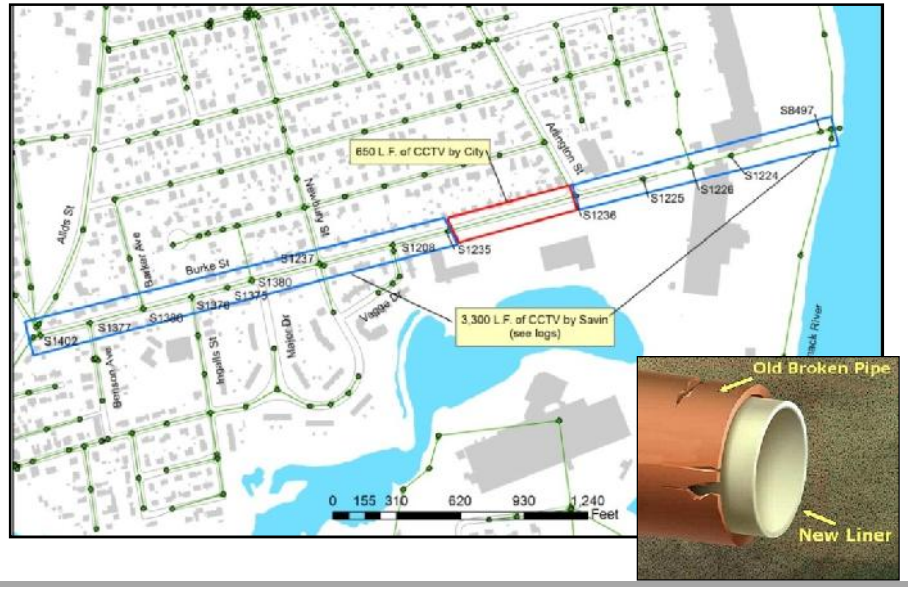


CSO Projects in Progress

CSO 4 - Burke St Infrastructure

- Pipe lining of 24” sewer main, 3,640 feet long - completed
- Manhole construction - completed
- Service lines replacement, utility upgrades, street reconstruction
- Final paving – Fall 2016

  Total Budget $ 4.1 Mil



Inflow /Infiltration Removal

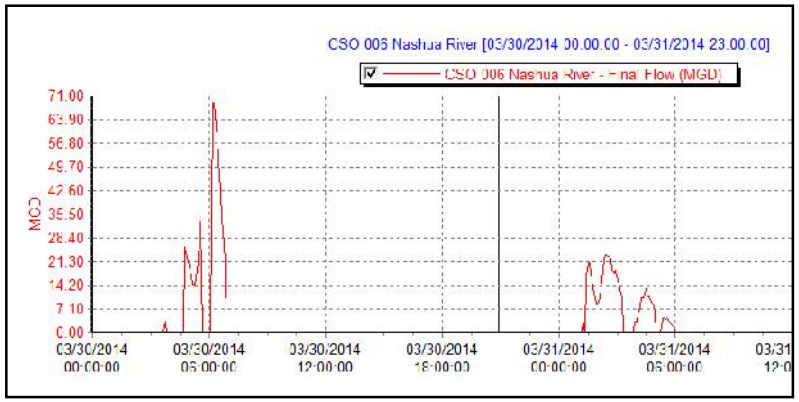
(i) I/I Study currently undertaken ($185,000)

(ii) Anticipated recommendations

- Sewer lining
- Manhole lining and grouting
- Sewer point repairs
- Disconnect catch basins from sanitary sewer

Total Project Cost $0.50 Mil

CSO Operational Projects



CSO 6 Overflow Monitoring results

- Ongoing CSO flow monitoring
- High Flow Management at Treatment Facility
- Post Construction Monitoring for water quality

CSO 9 overflow

Confluence of the Nashua and Merrimack Rivers

Collection Systems

Project	Total Cost in $ Million
Completed	
Annual Rehabilitation Projects past 5 years, approximate	$9.4
In Progress	
Pump Stations Rehabilitation	$8.40
Merrimack River Flood Control	
- Rehabilitation	$0.15
- Overflow Detention Basin, Bridge St	$2.57
Capacity Management O&M (CMOM) Plan	$0.30
Annual Expenditures	
Average Annual Sewer Rehabilitation	$1.32/yr
Sewer Structure Replacement	$0.23/yr
Combined Sewage Flooding	$0.40/yr
Stormwater Abatement	$0.18/yr

Pump Stations Rehabilitation

- City operates 13 wastewater and one CSO pump stations
- Mechanical components and facility infrastructure
- Communication systems to transmit to treatment plant

Northgate Pump Station

Merrimack River Flood Control System

Levee Deficiencies – Overgrown trees, erosion, drainage, encroachment, slide gate inoperable

CSO 5 Pump Station Upgrades

Emergency Overflow Basin – Raw sewage discharge near Renaissance development. May need to be eliminated.

Capacity Management Operation and Maintenance (CMOM) Plan and Implementation

For Wastewater and Drainage Collection Systems

(I) Plan Ongoing - Expected completion February 2017

(II) Implementation of Recommendations

- Cleaning
- Video Inspection
- Condition Assessment
- Replacement
- Rehabilitation
- Staffing and Equipment

Asset Management Software - Cartegraph

Annual Sewer Rehabilitation

Year	Budget
2017	$3.10 Mil
2018 to 2022	$1.61 Mil increasing 5% per year

- Focuses on very old, unreinforced concrete pipes and areas with sinkholes
- Coordinates with Annual Paving Program and utilities
- CMOM Plan will include recommendations on implementing a more comprehensive sewer rehabilitation program

Sewer Structure Replacement

- Replaces triangular covers and frames with round ones that meet OSHA standards
- Replaces deteriorated and/or obsolete catch basin frames and grates
- Replaces or repairs vertical structures as needed
- Annual Cost $ 268,000, increases 5%/year
- In conjunction with street paving and with sewer rehabilitation projects

Combined Sewage Flooding

- Low lying areas that remain problematic
- Issues with combined sewage surcharging during heavy rain events, basement back-ups, and street flooding
- Problem areas - Park Ave/Lawndale Ave area; Courtland St/Hall Ave area; C, D, E Sts; Marshall St (Bowers to East Hollis), Spaulding Ave.
- Annual Funding $400,000

Annual Expenditure -Recurring

Stormwater Abatement

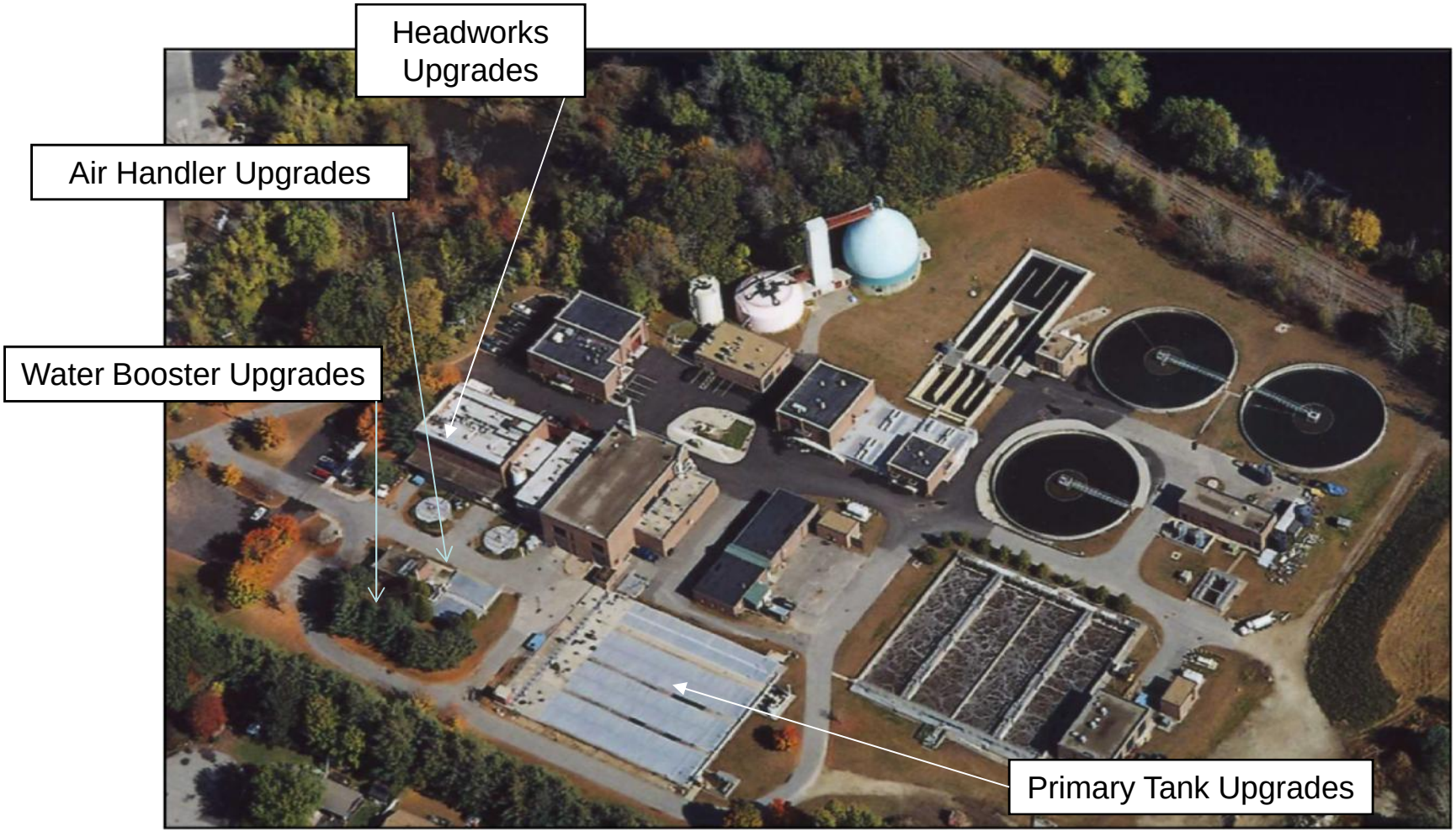
- Address locations that have drainage issues during rain events
- Demonstration projects that promote water quality and infiltration as required by the EPA
- Projects include porous pavement, rain gardens, stormwater treatment units, drainage swales, etc.
- Annual funding $197,000 increases 5% per yr

Wastewater Treatment Facility

Project	Total Cost in $ Million
Completed	
Aeration Blowers/Tank and Secondary Clarifier Upgrades	$4.16
Dewatering Equipment Replacement	$5.57
Net Metering	$0.50
In Progress	
Plant Headworks Upgrade	$3.80
Effluent Defoamant Chemical Building	$0.57
Primary Tank Upgrades	$4.20
Wastewater Plant Water Booster Station	$0.78
AC & Air Handling Units	$0.35
Phosphorus Removal & Storage Facility	$0.86
SCADA Upgrades (WERF funds)	$.088

Wastewater Treatment Facility Overview

Upcoming Plant Projects



Headworks Upgrades

Construction will begin November 2016

- Install new rake arms and screens
- Debris collected in incoming wastewater flow will be conveyed directly to dumpster at ground level – eliminates having to haul debris from intermediate level to ground level
- Replace overhead hoist
- Ventilation Upgrades
- Reconfigure hallway and relocate women's locker room to new location

Existing Grit Washer with Minors Cart – to be replaced & cart eliminated

Capital Equipment Replacement Expenditures

- $5,510,000 cost over next six years

	Nashua Wastewater Treatment Facility									
	Schedule D - Wastewater Equipment Replacement Fund									
	As of 5/4/2016									
							RENEWAL/REPLACEMENT STRATEGY			
	Major Systems	Major System Facilities	Asset Name	Collections or Operations	Date Installed	Estimated Effective Life	Cost of Renewal Option	Recommended Renewal Date (FY)	Future Cost of Renewal	ANNUAL RESERVE PAYMENT
					year	years	$	Calibrated Column		
						Tab A-1	Estimate	Calculated	2.00%	0.50%
1	HW	Eqpt	Mechanical Bar Screen No. 1	Operations	1999	21	$ 108,000	2016	$ 110,160	$ 6,200
2	HW	Eqpt	Mechanical Bar Screen No. 2	Operations	1999	21	$ 108,000	2016	$ 110,160	$ 6,200
3	HW	Eqpt	Screenings Wash Press No. 1	Operations	1999	21	$ 91,800	2016	$ 93,636	$ 5,300
4	HW	Eqpt	Screenings Wash Press No. 2	Operations	1999	21	$ 91,800	2016	$ 93,636	$ 5,300
5	HW	Eqpt	Screenings Roll-Off Container No. 1	Operations	1999	21	$ 33,000	2016	$ 33,660	$ 1,900
6	HW	Eqpt	Screenings Roll-Off Container No. 2	Operations	1999	21	$ 33,000	2016	$ 33,660	$ 1,900
7	HW	Eqpt	Screenings Roll-Off Winch	Operations	1999	21	$ 23,625	2016	$ 24,098	$ 1,400
8	HW	G/A	Influent WWTF Sluice Gate	Operations	1972	53	$ 162,000	2024	$ 193,605	$ 3,300
9	HW	G/A	HW-SLG-1 Hydraulic Power Plant Actuator	Operations	1999	20	$ 114,750	2018	$ 121,774	$ 6,100
10	HW	G/A	Influent SCR Slide Gate No. 1	Operations	1972	53	$ 27,000	2024	$ 32,267	$ 500
11	HW	G/A	HW-SLD-1 Electric Actuator	Operations	1999	35	$ 7,425	2036	$ 11,254	$ 300
12	HW	G/A	Influent SCR Slide Gate No. 2	Operations	1972	53	$ 27,000	2024	$ 32,267	$ 500
13	HW	G/A	HW-SLD-2 Electric Actuator	Operations	1999	35	$ 7,425	2036	$ 11,254	$ 300
14	HW	G/A	Effluent SCR Slide Gate No. 1	Operations	1972	53	$ 27,000	2024	$ 32,267	$ 500
15	HW	G/A	Effluent SCR Slide Gate No. 2	Operations	1972	53	$ 27,000	2024	$ 32,267	$ 500
16	HW	G/A	Wet Well XC Sluice Gate	Operations	1972	53	$ 27,000	2024	$ 32,267	$ 500
17	HW	G/A	HW-SLG-2 Electric Actuator	Operations	1999	35	$ 7,425	2036	$ 11,254	$ 300
18	RSPS	Eqpt	Bridge Crane No. 1 (3-Ton)	Operations	1972	50	$ 135,000	2022	$ 155,073	$ 2,700
19	RSPS	Eqpt	Monorail System No. 1 (3-Ton) **(part of Headworks project)**	Operations	1972	41	$ 67,500	2016	$ 68,850	$ 1,400
20	RSPS	Instr	Influent Magnetic Flow Meter	Operations	1995	35	$ 20,250	2031	$ 27,799	$ 700
21	RSPS	MCC	MCC-101	Operations	1999	40	$ 162,000	2041	$ 271,094	$ 5,800
22	RSPS	MCC	MCC-Headworks	Operations	1999	40	$ 108,000	2040	$ 177,185	$ 3,900
23	RSPS	MCC	MCC-1A	Operations	1998	40	$ 81,000	2039	$ 130,283	$ 2,900
24	RSPS	MCC	MCC-1B	Operations	1998	40	$ 81,000	2039	$ 130,283	$ 2,900
25	RSPS	Pump	Raw Sewage Pump No. 1	Operations	2012	40	$ 229,500	2054	$ 496,809	$ 10,700
26	RSPS	Pump	Raw Sewage Pump No. 2	Operations	2016	40	$ 120,000	2057	$ 270,264	$ 6,000
27	RSPS	Pump	Raw Sewage Pump No. 3	Operations	2016	40	$ 120,000	2057	$ 270,264	$ 6,000
28	RSPS	Pump	Raw Sewage Pump No. 4	Operations	2013	40	$ 229,500	2055	$ 506,745	$ 10,900
29	RSPS	Pump	Sump Pump No. 1	Operations	2015	15	$ 27,000	2031	$ 37,065	$ 2,200
30	TPS	Eqpt	Thickened Primary Sludge Grinder No. 1	Operations	1989	40	$ 16,200	2031	$ 22,239	$ 500
31	TPS	Eqpt	Thickened Primary Sludge Grinder No. 2	Operations	1989	40	$ 16,200	2031	$ 22,239	$ 500
32	TPS	Eqpt	Thickened Primary Sludge Grinder No. 3	Operations	1989	40	$ 16,200	2031	$ 22,239	$ 500
33	TPS	Eqpt	Primary Thickener Drive Mechanism No. 1	Operations	2014	40	$ 89,000	2056	$ 204,455	$ 4,400
34	TPS	Eqpt	Primary Thickener Drive Mechanism No. 2	Operations	2014	40	$ 89,000	2056	$ 204,455	$ 4,400
35	TPS	Eqpt	Primary Thickener Structure No. 1	Operations	1972	53	$ 47,250	2028	$ 61,123	$ 900
36	TPS	Eqpt	Primary Thickener Structure No. 2	Operations	1972	53	$ 47,250	2028	$ 61,123	$ 900
37	TPS	HVAC	Dry Well Supply Fan	Operations	1999	40	$ 24,300	2042	$ 41,477	$ 900
38	TPS	HVAC	Wet Well Supply Fan	Operations	1999	40	$ 24,300	2042	$ 41,477	$ 900
39	TPS	HVAC	Dry Well Exhaust Fan	Operations	1999	40	$ 6,750	2042	$ 11,521	$ 200
40	TPS	HVAC	Wet Well Exhaust Fan	Operations	1999	40	$ 27,000	2042	$ 46,086	$ 1,000
41	TPS	HVAC	Primary Thickener OCS No. 1	Operations	2005	20	$ 40,500	2024	$ 48,401	$ 2,400