

**Portland Water District
Annual Wastewater Assessment Meeting - Windham
October 31, 2023 at 3:00**

Attendees: Barry Tibbetts and staff; PWD Seth Garrison, Chris Crovo, Scott Firmin and David Kane

Agenda

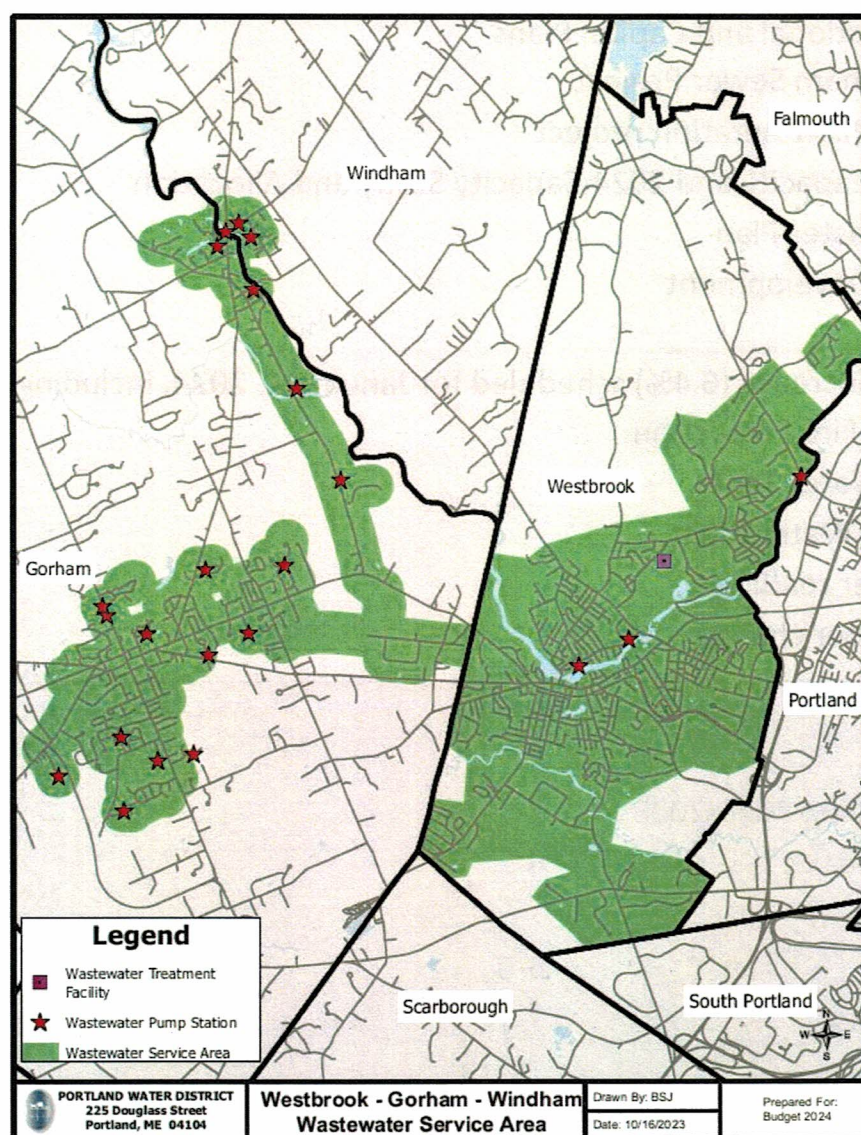
1. 2024 Wastewater Assessment - \$808,488
 - South Windham, \$488,484
 - North Windham, \$320,004
2. Wastewater Operational and Capital Plans
 - North Windham Sewer Project
 - Treatment Plant Aeration project
 - Treatment Capacity and 2024 Capacity Study and Allocation
 - Biosolids Master Plan
 - Keddy Mill Development
3. Water System
 - Water rate increase (6.4%) scheduled for January 1, 2024, including 5.7% Public Fire Protection.
 - Windham Water Tank
 - Main Street Water Main
 - Meter/meter reading
 - District charter change

Package Index	
Background	2
Assessment vs Billing 2023-2028	3
Sewer Billing Statistics	4
Operating Expense	
2024 Budget	5-6
2024-2028 Forecast	7-11
Operations Summary	12-13
Capital	
2024 Summary	14
Project Details	15-27

Fund: Wastewater – Windham

Background

The Portland Water District's charter authorizes PWD to provide wastewater treatment and collection system-interceptors service to the town. By contract with the town, PWD additionally operates and maintains the collectors in the sewer collection system. Windham's wastewater is treated at the treatment facility located in Westbrook and jointly used by Windham, the Town of Gorham and City of Westbrook. Additionally, by contract, PWD provides utility billing services.



Summary of Services Provided:

Treatment

0.188 Million
gallons/day

Collection System

2 Windham only & 3
Joint use Pump Stations
with 7.9 miles of pipe

Utility Billing

Annual Billings of
\$349,302 with 60
Customers.

Fund: Wastewater - Windham

2024 Financial Summary

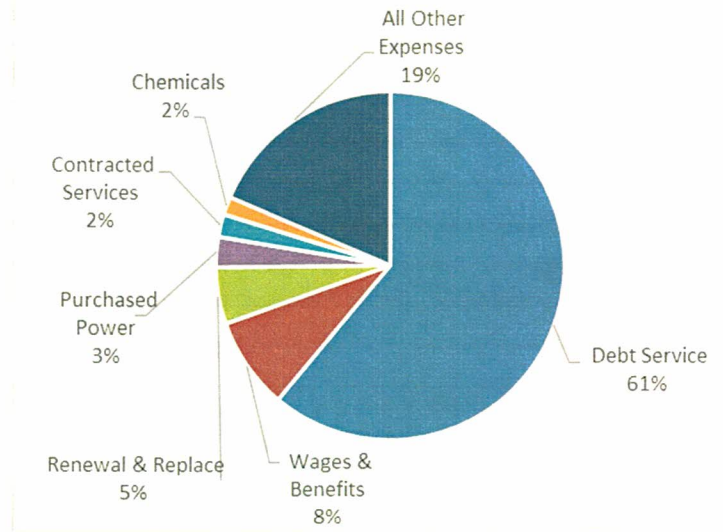
The town's proposed assessment of \$808,488 represents a 56.7% increase over the previous assessment (\$292,680). The majority of increase is related to interest cost on the bond anticipation note financing the new North Windham treatment facility.

The proposed Operating Expense and Capital budgets are \$830,596 and \$10,031,700, respectively.

Operating Expense increased by 18.1% or \$42,860. Windham's share of the flow percentages used to determine the percent of costs for the Joint Westbrook and Little Falls systems remained lower due to a decrease in flow from the correctional center that resulted from system improvements.

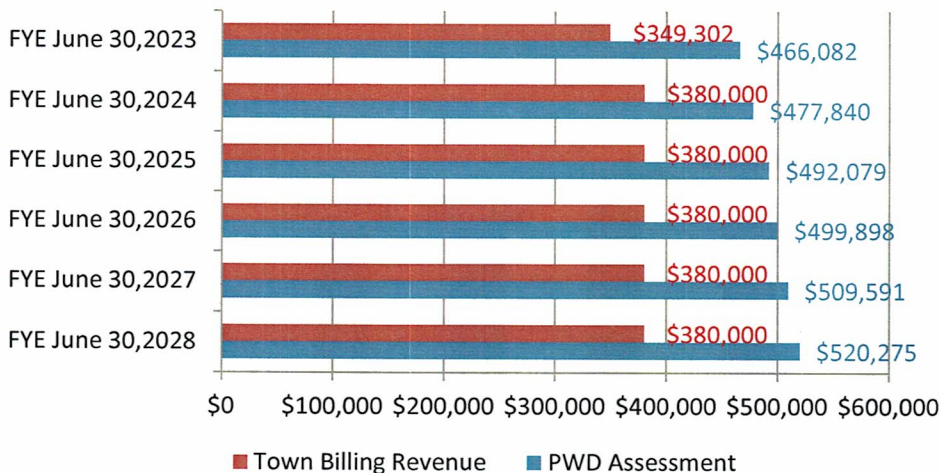
The vast majority of the Capital Budget is the \$10 million budgeted for work on the North Windham wastewater treatment and collections systems.

2024 Operating Expense



Assessment Compared to Ratepayers' Billing

The municipality's fiscal year end is June 30, while PWD's is December 31. The chart below compares the cash as collected by PWD for sewer billings on their behalf and PWD's **South Windham** assessment for services rendered. Any shortfall of billing revenue is made up from the Town's general funds.



Revenue Assumptions:

- Consumption is the 12 months ending June 30, 2023

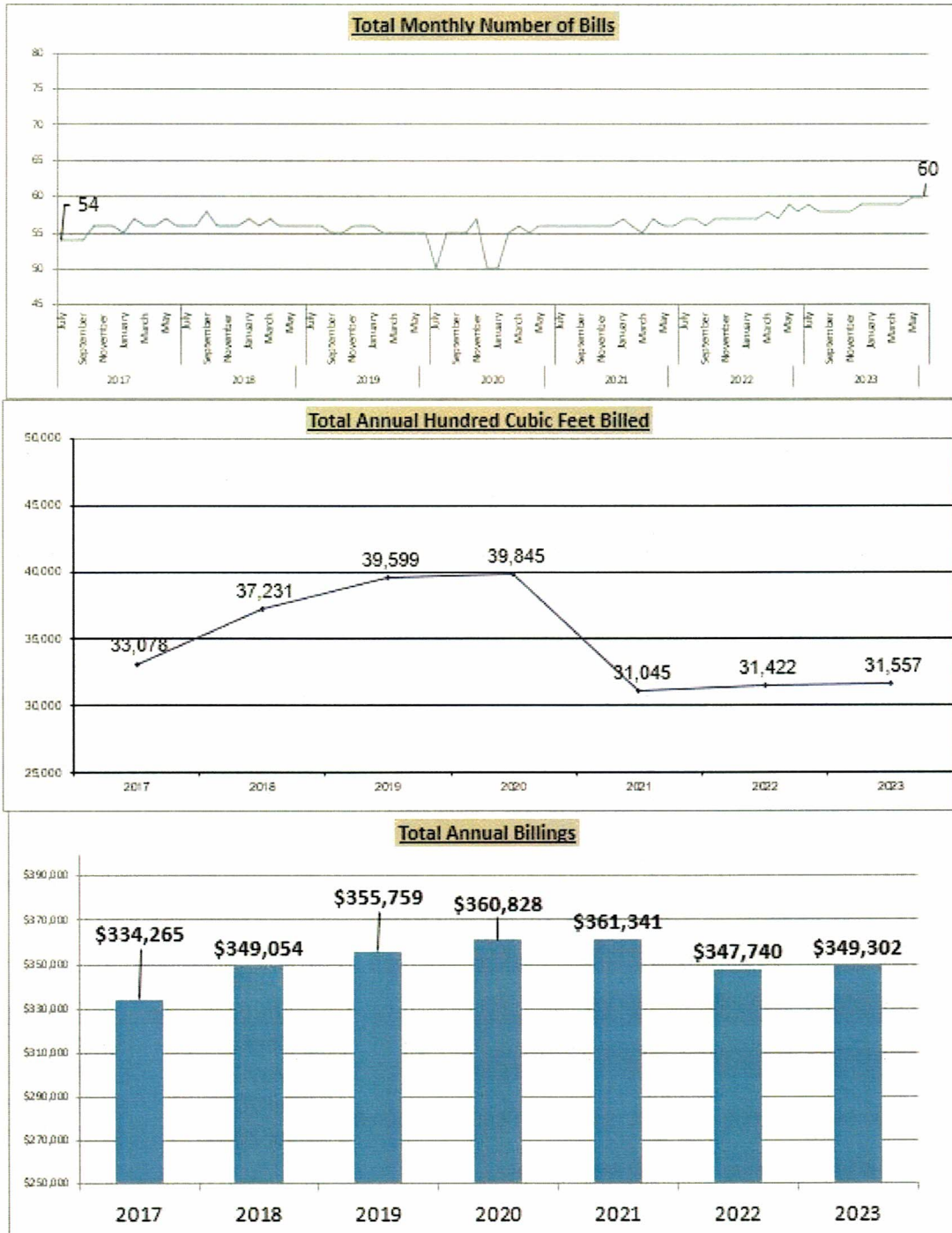
Rates History:

Effective Date	Base/Per HCF
April 2009	\$48.84/\$3.24
May 2020	\$48.84/\$7.00
Jul 2022	\$48.84/7.75
Jul 2023	\$48.84/9.77

Sewer Billing Statistics

PWD provides sewer billing services for the municipality by contract. Sewer is billed based on water consumption and is included on Portland Water District's water bill. The municipality determines the sewer rate. Dollars collected are forwarded to the municipality weekly.

By Municipal Fiscal Year: Jul 1 to Jun 30



2024 Operating Expense Highlights

Salaries/Wages – Salaries and wages have increased by 22.2%, or \$8,766, to \$48,279. Regular wages increased an average of 5.0%, hours charged were up 18.3% (221 hours).

Employee Benefits – The benefit rate (including FICA) increased from 48.72% in 2023 to 49.39%, an increase of 0.67%. The amount of Employee Benefits expense increased 25.0% (\$4,435).

Biosolids Disposal – Following several years of dramatically increasing biosolids costs, related to legislative action limiting the options available in Maine, costs have stabilized with a new biosolids management contract. The projected volume wet tons of biosolids processed at the Westbrook Regional Wastewater Treatment Facility (WRWWTF) is expected to decrease 5.5% and the budgeted per unit cost of disposal will decrease 2.0%. Overall, the budget in Windham is anticipated to decrease \$757 or 6.4%.

Contracted Services – Overall this category was up \$2,389 or 15.7%. This increase is mostly driven by higher maintenance needs at the WRWWTF (\$1.1k) and grease disposal at the wastewater pump stations (\$1.0k).

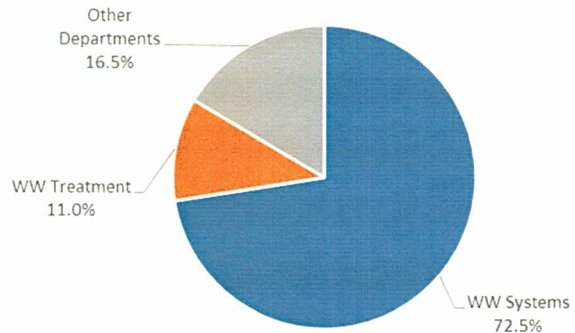
Purchased Power – Overall this category is up \$10,488 (81.0%). This was mostly driven by large increases in energy costs which increased \$5.4k or 92.1%. Transmission and Delivery was up \$1.6k (9.1%). In addition, this year's budget includes \$3.4k in expense related to renewable energy. This is offset by \$6.3k in renewal energy credits for a net gain in this fund of \$2.9k. In prior years the net gain was listed in the revenue section, last year the net gain was \$1.9k.

Support Services – These costs are related to general work done that cannot be directly charged to a fund as noted above (such as customer billing or information technology) or work done on behalf of several municipalities at the same time (engineering or laboratory services) that is allocated based on the value to each fund. Overall, Support Services increased \$19.6k or 19.3%. Much of the increase is increased support for large capital projects including the area.

Debt Service - The annual principal and interest payments on bonds issued to finance capital projects. This budget rose \$267,461 (111.5%) as spending on the North Windham project ramps up.

Renewal & Replacement - Dollars put aside to fund capital projects. A contribution of \$43,714 will be made in 2024. This is a slight increase from the previous year.

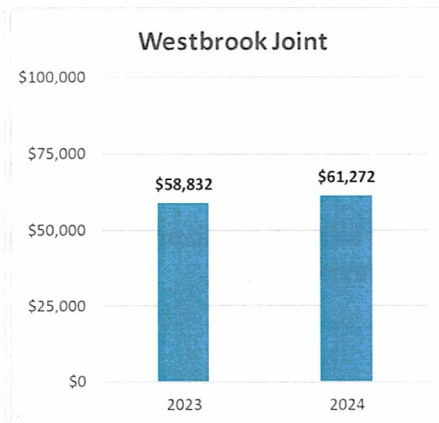
2024 Labor Hours Distribution



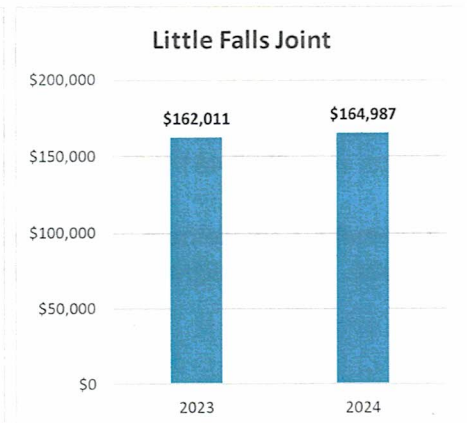
	2022 Actual	2023 Jan-Jun	2023 Budget	2024 Budget	Budget Diff \$	Budget Diff %
Assessment Income	\$518,412	\$257,904	\$515,808	\$808,488	\$292,680	56.7%
Interest Income	6,893	1,694	1,090	15,776	14,686	1347.3%
Other Income	1,587	1,587	1,912	6,336	4,424	231.4%
Total Revenue	526,892	261,185	518,810	830,600	311,790	60.1%
Salaries & Wages	33,599	13,571	39,513	48,279	8,766	22.2%
Employee Benefits	13,712	5,868	17,718	22,153	4,435	25.0%
Biosolids Disposal	13,474	5,769	11,763	11,006	(757)	-6.4%
Chemicals	12,534	7,288	12,570	13,902	1,332	10.6%
Contracted Services	7,716	6,550	15,262	17,651	2,389	15.7%
Heat/Fuel Oil	3,842	1,491	4,611	3,374	(1,237)	-26.8%
Insurance	1,441	636	1,393	1,541	148	10.6%
Materials & Supplies	8,760	3,889	8,736	8,864	128	1.5%
Other Expense	84	23	92	110	18	19.6%
Purchased Power	17,615	8,180	12,945	23,433	10,488	81.0%
Regulatory/Taxes	200	25	129	131	2	1.6%
Tele/Other Utilities	972	296	530	538	8	1.5%
Transportation	6,164	3,718	9,831	7,347	(2,484)	-25.3%
SS - Administration	43,708	24,317	51,033	59,192	8,159	16.0%
SS - Engineering Services	15,123	7,346	21,721	32,797	11,076	51.0%
SS - Environmental Services	4,783	1,780	3,948	3,670	(278)	-7.0%
SS - Wastewater Services	17,311	12,746	24,692	25,276	584	2.4%
SS - Water Services	485	307	296	379	83	28.0%
Operating Expense	201,523	103,800	236,783	279,643	42,860	18.1%
Debt Service & Lease Expense	202,656	100,072	239,778	507,239	267,461	111.5%
Renewal & Replacement - Direct	18,500	27,607	36,250	36,250	-	0.0%
Renewal & Replace - Indirect	5,443	3,002	5,999	7,464	1,465	24.4%
Total Expense	428,122	234,481	518,810	830,596	311,786	60.1%
Current Year Surplus (Deficit)	98,770	26,704	-	4		
Prior Year Surplus	67,194	165,964	162,223	196,743		
Accumulated Surplus	165,964	192,668	162,223	196,747		



- Overall costs up \$306k (102.8%)
- Debt Service was up \$271k



- Overall Westbrook JT up 14.9%
- Windham's share up 4.1% (\$2.4k)
- Windham's share of Debt Service was down \$1.3K



- Overall Little Falls Joint down 1.7%
- Windham's share up 1.8% (\$3.0k)
- Windham's flow percentage was up 7.0% (60% to 67%)

Projections for Rate-Making Purposes

Multi-year projections are made for each of the wastewater funds' assessment. The projections provide guidance to the wastewater municipalities to assist them in determining their wastewater sewer rates. A summary of the projection is provided on next page.

Major Assumptions:

The assumptions incorporated in the projections are as follows:

- Salary increases of 5.0% in 2024 and 3.5% in other years. No change in number of employees.
- Benefit increases of 6% each year.
- Other expenses increase between 3% and 5% each year.
- New debt service and renewal/replacement fund expenditures consistent with the 2024 5-year capital plan, which includes close to \$6.7 million and \$38.5 million of capital projects in the South and North Windham systems, respectively. New debt typically assumes a 20-year life between 1% and 4.5% interest depending on funding source and year of financing. For the North Windham system, the bond term will be 30 years.

Summary of Projection Impact:

Assessment is projected to increase to \$2,861,490 in 2028. The significant increase reflects the costs related to the new North Windham treatment plant and related infrastructure.

Ratios Only for the South Windham Fund:

Reserve Fund Balances



Percent of Budget Dedicated to Debt Service – Target: Not to Exceed 35%

2022	2023	2024	2025	2026	2027	2028
42%	41%	37%	36%	34%	34%	33%

Debt Service Ratio – Target: Greater or Equal to 125%

2022	2023	2024	2025	2026	2027	2028
112%	122%	123%	122%	122%	122%	122%

Projections for Rate-Making Purposes (continued)

Operating Fund: Windham North and South Systems

	2022 Actual	2023 Budget	2024 Budget	2025 Forecast	2026 Forecast	2027 Forecast	2028 Forecast
Revenues:							
Assessment Income	518,412	515,808	808,488	999,673	1,835,795	2,815,060	2,861,490
Interest Income	6,893	1,090	15,776	15,776	15,776	15,776	15,776
Other Income	1,587	1,912	6,336	6,336	6,336	6,336	6,336
Total Revenues	526,892	518,810	830,600	1,021,785	1,857,907	2,837,172	2,883,602
Operating Expenses:							
Salaries & Wages	33,599	39,513	48,279	50,693	52,467	54,303	56,204
Employee Benefits	13,712	17,718	22,153	23,482	24,891	26,384	27,967
Biosolids Disposal	13,474	11,763	11,006	11,556	12,134	12,741	13,378
Chemicals	12,534	12,570	13,902	14,458	14,892	15,339	15,799
Contracted Services	7,716	15,262	17,651	18,357	18,908	19,475	20,059
Deferred Cost W/O	0	0	0	0	0	0	0
Facilities	0	0	0	0	0	0	0
Heat/Fuel Oil	3,842	4,611	3,374	3,509	3,614	3,722	3,834
Insurance	1,441	1,393	1,541	1,603	1,651	1,701	1,752
Materials & Supplies	8,760	8,736	8,864	9,219	9,496	9,781	10,074
Other Expense	84	92	110	114	675,123	900,121	936,125
Purchased Power	17,615	12,945	23,433	24,605	25,589	26,357	27,148
Regulatory/Taxes	200	129	131	136	140	144	148
Tele/Other Utilities	972	530	538	560	577	594	612
Transportation	6,164	9,831	7,347	7,641	7,870	8,106	8,349
SS - Administration	43,708	51,033	59,192	62,152	64,638	67,224	69,913
SS - Engineering Services	15,123	21,721	32,797	34,420	35,788	37,211	38,690
SS - Environmental Services	4,783	3,948	3,670	3,854	4,008	4,168	4,335
SS - Wastewater Services	17,311	24,692	25,276	26,540	27,602	28,706	29,854
SS - Water Services	485	296	379	398	414	431	448
	201,523	236,783	279,643	293,297	979,802	1,216,508	1,264,689
Debt Service	202,656	239,778	507,239	688,543	838,160	1,580,719	1,578,968
Renewal & Replacement - Direct	18,500	36,250	36,250	35,849	35,849	35,849	35,849
Renewal & Replace - Indirect	5,443	5,999	7,464	4,096	4,096	4,096	4,096
Capital Finance Expense	226,599	282,027	550,953	728,488	878,105	1,620,664	1,618,913
Total Operating Expenses	428,122	518,810	830,596	1,021,785	1,857,907	2,837,172	2,883,602
Current Year Surplus(Deficit)	98,770	0	4	0	0	0	0
Prior Year Surplus	67,194	49,808	196,743	196,747	196,747	196,747	196,747
Accumulated Surplus	165,964	49,808	196,747	196,747	196,747	196,747	196,747
Target Balance(25% of budget)		129,703	207,649	255,446	464,477	709,293	720,901
Above/(Below)		-79,895	-10,902	-58,699	-267,730	-512,546	-524,154

Capital Expenditures: (See details in the Capital Expenditure section) Target Balance: \$193,000

South Windham System:

	2024 Budget	2025 Forecast	2026 Forecast	2027 Forecast	2028 Forecast
R&R Balance BOY	\$ 405,193	\$ 390,243	\$ 391,792	\$ 402,441	\$ 351,990
Contribution	\$ 36,250	\$ 35,849	\$ 35,849	\$ 35,849	\$ 35,849
Withdrawals	\$ (51,200)	\$ (34,300)	\$ (25,200)	\$ (86,300)	\$ (86,300)
R&R Balance EOY	\$ 390,243	\$ 391,792	\$ 402,441	\$ 351,990	\$ 301,539

Projections for Rate-Making Purposes (continued)

Operating Fund: South Windham Only

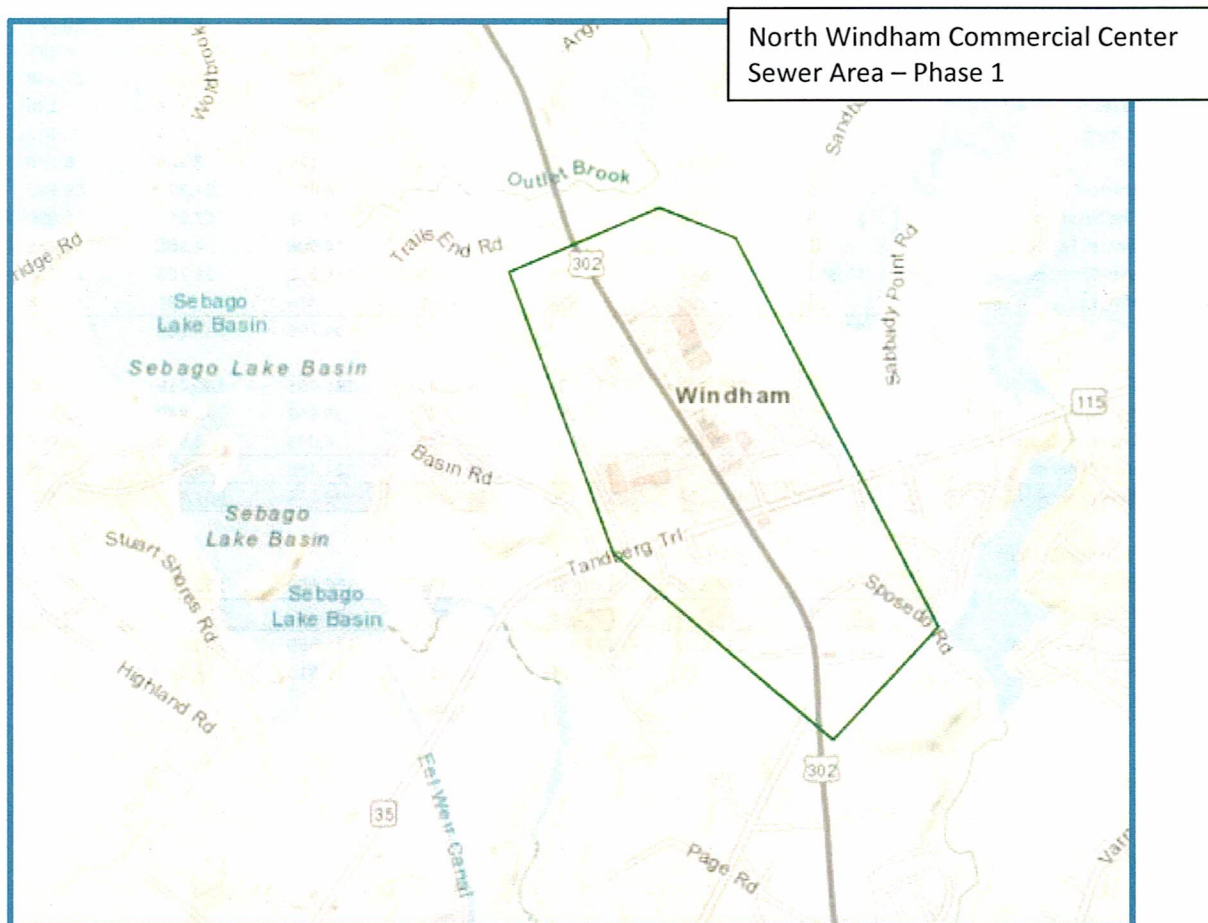
	2022 Actual	2023 Budget	2024 Budget	2025 Forecast	2026 Forecast	2027 Forecast	2028 Forecast
Revenues:							
Assessment Income	464,968	467,196	488,484	495,673	504,122	515,060	525,490
Interest Income	6,893	1,090	15,776	15,776	15,776	15,776	15,776
Other Income	1,587	1,912	6,336	6,336	6,336	6,336	6,336
Total Revenues	473,448	470,198	510,596	517,785	526,234	537,172	547,602
Operating Expenses:							
Salaries & Wages	33,599	39,513	48,279	50,693	52,467	54,303	56,204
Employee Benefits	13,712	17,718	22,153	23,482	24,891	26,384	27,967
Biosolids Disposal	13,474	11,763	11,006	11,556	12,134	12,741	13,378
Chemicals	12,534	12,570	13,902	14,458	14,892	15,339	15,799
Contracted Services	7,716	15,262	17,651	18,357	18,908	19,475	20,059
Heat/Fuel Oil	3,842	4,611	3,374	3,509	3,614	3,722	3,834
Insurance	1,441	1,393	1,541	1,603	1,651	1,701	1,752
Materials & Supplies	8,760	8,736	8,864	9,219	9,496	9,781	10,074
Other Expense	-655	92	110	114	117	121	125
Purchased Power	17,615	12,945	23,433	24,605	25,589	26,357	27,148
Regulatory/Taxes	200	129	131	136	140	144	148
Tele/Other Utilities	972	530	538	560	577	594	612
Transportation	6,164	9,831	7,347	7,641	7,870	8,106	8,349
SS - Administration	43,708	51,033	59,192	62,152	64,638	67,224	69,913
SS - Engineering Services	15,123	21,721	32,797	34,420	35,788	37,211	38,690
SS - Environmental Services	4,783	3,948	3,670	3,854	4,008	4,168	4,335
SS - Wastewater Services	17,311	24,692	25,276	26,540	27,602	28,706	29,854
SS - Water Services	485	296	379	398	414	431	448
	200,784	236,783	279,643	293,297	304,796	316,508	328,689
Debt Service	193,026	191,166	187,239	184,543	181,493	180,719	178,968
Renewal & Replacement - Direct	18,500	36,250	36,250	35,849	35,849	35,849	35,849
Renewal & Replace - Indirect	5,443	5,999	7,464	4,096	4,096	4,096	4,096
Capital Finance Expense	216,969	233,415	230,953	224,488	221,438	220,664	218,913
Total Operating Expenses	417,753	470,198	510,596	517,785	526,234	537,172	547,602
Current Year Surplus(Deficit)	55,695	0	0	0	0	0	0
Prior Year Surplus	64,499	114,309	150,869	150,869	150,869	150,869	150,869
Accumulated Surplus	120,194	114,309	150,869	150,869	150,869	150,869	150,869
Target Balance(25% of budget)		117,550	127,649	129,446	131,559	134,293	136,901
Above/(Below)		-3,241	23,220	21,423	19,310	16,576	13,968

Town of Windham –New Treatment System

In recent years, the Town of Windham has redoubled its efforts to address wastewater treatment needs in the northern area of the Town. These efforts led to the development of a Comprehensive Wastewater Management Plan (CWWMP) published in May 2018. On May 26, 2020, the Town and PWD signed a Memorandum of Agreement to partner on the procurement of engineering services and construction of wastewater treatment facilities in North Windham to serve the “Phase 1 Area” which can be generally described as the commercial center along Route 302 north of River Rd and south of Chaffin Pond.

Per the Memorandum of Agreement, the Town has determined that a wastewater treatment system is needed in the North Windham Area to mitigate groundwater pollution and would allow for more sustainable growth opportunities (North Windham System).

Engineering Services has begun construction with an anticipated plant start date by early 2026.



Projections for Rate-Making Purposes (continued)

Operating Fund: North Windham Only

The Town identified the North Windham area as an area needing public sewer. The public sewer project is estimated to cost almost \$39 million with source of funding as listed below:

Source of Funds	
County ARPA	\$ 1,530,000
Federal Grant	\$ 2,000,000
Town ARPA	\$ 1,700,000
Bond - 30 Year at 2%	\$ 30,000,000
Bond Principal Forgiveness	\$ 3,250,000
Total	<u>\$ 38,480,000</u>

The State Revolving Loan fund has committed to providing more than \$2.2M of principal forgiveness on the 30-year bonds. The current interest rate on the bond is 2%. Costs during construction will be financed by a bond anticipation note (BAN) with an interest rate close to 2%. The BAN will be converted to a 30-year bond in 2026.

Assuming the funding sources above, the estimated annual North Windham fund costs are listed below.

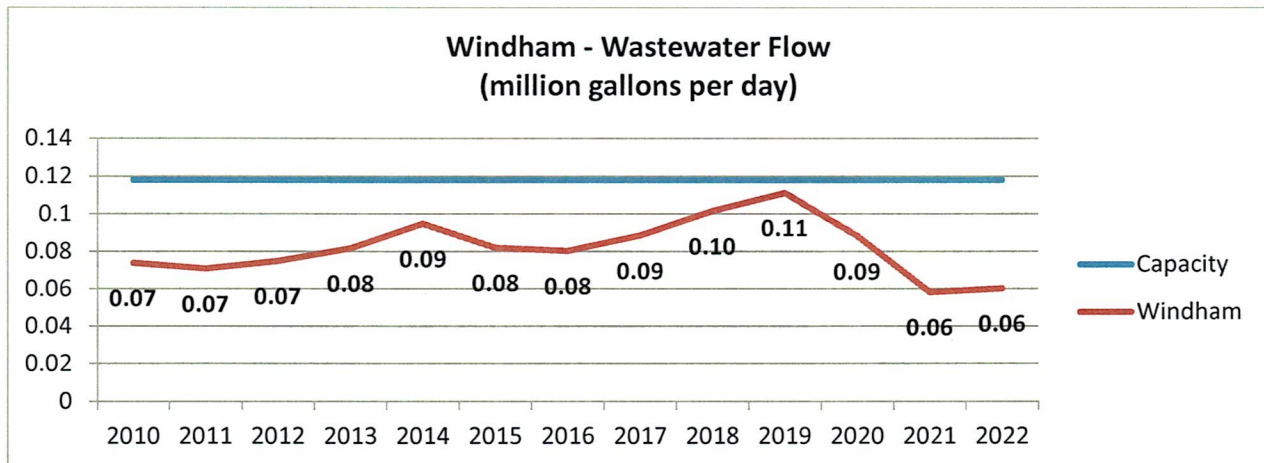
	<u>2024 Budget</u>	<u>2025 Forecast</u>	<u>2026 Forecast</u>	<u>2027 Forecast</u>	<u>2028 Forecast</u>
Revenues:					
Assessment Income	320,004	504,000	1,331,673	2,300,000	2,336,000
Interest Income	0	0	0	0	0
Total Revenues	320,004	504,000	1,331,673	2,300,000	2,336,000
Operating Expenses:					
Other Expense	0	0	675,006	900,000	936,000
Debt Service	320,000	504,000	656,667	1,400,000	1,400,000
Renewal & Replacement - Direct	0	0	0	0	0
Renewal & Replace - Indirect	0	0	0	0	0
Capital Finance Expense	320,000	504,000	656,667	1,400,000	1,400,000
Total Operating Expenses	320,000	504,000	1,331,673	2,300,000	2,336,000
Current Year Surplus(Deficit)	4	0	0	0	0
Prior Year Surplus	45,874	45,878	45,878	45,878	45,878
Accumulated Surplus	45,878	45,878	45,878	45,878	45,878

Operation Summary Windham

Wastewater Treatment

Wastewater generated within the Town of Windham, including the Maine Correctional Center and the Little Falls area of Gorham, is conveyed to the Westbrook/Gorham/Windham Regional WWTF. The Town of Windham has reserved 2.6% of a design capacity of 4.54 million gallons a day, or 118,040 gallons. The table below shows the volume of flows to the Westbrook/Gorham/Windham Regional Wastewater Treatment Facility.

Area	2022 Windham Flow	Westbrook WWTF Flow	% Windham Flow
Windham	0.060 mgd	3.07 mgd	2.0%
WGWWTF Capacity	Windham Capacity (2.6%)	% Capacity Used	Capacity Remaining
4,540,000 gal/day	0.118 mgd	0.51 %	0.058 mgd



Wastewater Conveyance – collectors, interceptors and pumping stations

Parameter	2023 Actual to Sept	2024 Projected
Preventive Work Orders	20	25
Corrective Work Orders	3	5
Wet wells cleaned	9	15
Debris removed (tons)	7.14	10
Dry Weather Overflows	0	0

Operation Summary (continued)

2023 Other Highlights

- Following the selection of a project delivery team that consisted of an engineering consultant and construction manager, detailed design has progressed and the initial construction of inlet sewers and the drip dispersal effluent system have begun. Major process equipment associated with the membrane treatment system have been purchased as well. Design continues on the remainder of the collection system and the treatment plant and will progress in the near future.
- As previously noted, the sewer work completed at the Correction Center has dramatically reduced wet weather infiltration, as can be seen by the decrease in annual flow from the Windham system.
- With our asset management system, we continue to proactively manage maintenance. Our Maintenance and Operations Team has been systematically reviewing our systems and treatment assets to create a prioritized listing of equipment to refine our preventive maintenance program. This effort will continue through 2024.
- Wet well and siphon cleaning were performed on a regular schedule.
- Following a failed legislative effort to reclassify the water quality designation of the Presumpscot River in 2022, a moratorium on increases or additional licensed discharges to the river was passed in 2023. This essentially caps the permitted capacity of the treatment plant at existing levels.
- Construction of the upgraded aeration system and secondary clarifiers continued through the year and expected to be completed by year's end.
- Legislative action that prohibits land application of biosolids due to PFAS concerns has created management challenges throughout Maine. A biosolids management plan began in 2022 and identified near, mid, and longer-range options for biosolids management that included possible regional efforts to economically manage biosolids in the future. A more detailed effort has continued in 2023. This includes a detailed review of nearly 30 technical responses to a Request for Information. The contract to manage current biosolids will provide some potential certainty in disposal and cost through 2027.

2024 Work Plan

- Construction on the collection system and treatment plant will continue through the year.
- Asset Management Software will drive the preventive maintenance program, generating both monthly and annual preventive maintenance work orders. Efforts to refine the existing maintenance approach will continue.
- A modernization of the treatment plant's locker rooms will be evaluated to better meet the needs of our changing workforce. Initial designs show a modernized layout that provides improved facilities that afford more privacy to employees.
- Wet wells are scheduled for cleaning on a quarterly basis unless experience dictates otherwise. Oils and grease remain challenges throughout PWD's service area.
- The Biosolids Management Plan findings will be shared with Maine DEP, Maine Legislative Committees, other utilities, and additional stakeholders as a solution to the current biosolids management challenges progress.
- The effluent permit renewal from Maine DEP for the regional treatment plant is anticipated in 2024.

Capital Summary

A five-year capital plan is updated each year. The projects are prioritized based on operational needs and financing availability. The table below indicates the projects scheduled for the next fiscal year and the funding source of those projects. Detailed descriptions of the projects can be found in the Capital Finance and Capital Expenditures sections.

	Renewal and Replacement	Bond SRF	Grand Total	*Prorata share of Joint Project:	Total Cost
Projects:					
180/3138/Windham- Little Falls WW System - R&R	\$20,000		\$20,000		
182/3241/North Windham WWTF		\$10,000,000	\$10,000,000		
416/3132/Westbrook Gorham Windham WWTF R&R	\$1,300		\$1,300	2.6%	\$50,000
416/3190/Access Road and Parking Lot Resurfacing	\$10,400		\$10,400	2.6%	\$400,000
Grand Total	\$31,700	\$10,000,000	\$10,031,700		
Renewal and Replacement Fund:					
Reserve Balance, Beginning of Year	\$405,193				
Annual Contribution	\$36,250				
Projects	-\$31,700				
Reserve Balance, End of Year	\$409,743				

Gorham/Westbrook/Windham Wastewater

Westbrook Regional Treatment Facility

The Westbrook Regional WWTF was brought online in the mid '70s. Over the years PWD has completed various improvements including:

- Plant water system (2006)
- Clarifier scum removal (2006)
- Scum handling, and sludge conveyances control (2006)
- Plant electrical system – Standby Generator (2008)
- Polymer system (2010), Polymer system improvements (2019)
- RAS pumps (2011)
- Plant Control System (2013)
- RAS distribution and flow split to the secondary clarifiers (2014)
- Sludge Dewatering (2018)
- Aeration and Secondary Clarifiers (2023)
- Additional Screening at influent Pump stations (2023)
- New power distribution system and switchgear

Proposed major modifications for a headworks upgrade were set aside in favor of installing screens at the two major pump stations feeding the treatment plant. Start-up of these systems at the Cottage Place and East Bridge St. Pump Stations in 2008 successfully eliminated pump plugging and has reduced the quantity of rags at the treatment plant. Additional improvements to reduce the spacing of the screens at the pump stations were installed in 2023 to further remove rags and debris from the plant influent.

In 2013, design and replacement of the control system began. This was completed in 2014 along with chemical feed pumps, residual samplers, and enhanced automation of the disinfection system.

The aeration system was evaluated in 2015 to develop a roadmap for the eventual upgrade of the aeration system as it nears the end of its service life. The 2019 CIP included design phase services to upgrade the aeration system and secondary clarification process. These upgrades will facilitate process control to maintain dissolved oxygen to meet today's loadings, match current peak demand, and provide more energy efficient oxygen delivery. Similar to the East End plan in Portland, a selector was recommended to enhance process control and improve settleability.

The secondary clarification process at Westbrook has not been upgraded or modified since its original construction and the sludge withdrawal mechanisms are nearing the end of their useful life based on an assessment of the clarifiers completed in 2016. Construction of the aeration and secondary clarification upgrade was completed in the fall of 2023. This upgrade included a new power distribution system and electrical switchgear.

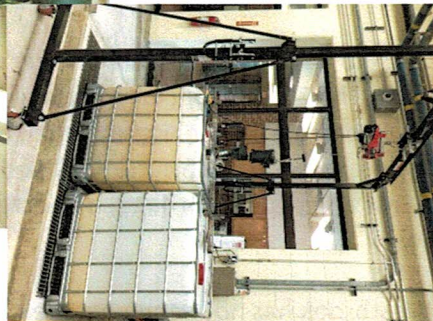
Gorham/Westbrook/Windham Wastewater (continued)

In 2015, PWD completed an evaluation of sludge dewatering technologies for the Westbrook Regional WWTF, including rehabilitation of the existing belt filter press. Alternative technologies were piloted to quantify the improvement in dewatering performance as compared to the existing equipment. It was determined that alternative technologies would increase the dewatered sludge solids content from an average of approximately 16% to a minimum of 20%, which significantly reduces the volume of sludge to be disposed. As a result, in 2016 the proposed belt filter press rehabilitation project was replaced with a proposed upgrade to an alternative technology (CIP #167 project 2534). In 2016, equipment was competitively procured and upgrade to a screw press began in January of 2017 and was completed in the spring of 2018.

In 2020 PWD competitively pre-procured a 3-way valve and pneumatic actuator to create a 4th discharge zone to facilitate more complete filling of the sludge storage container with the drier cake produced by the new screw press system. The new valve was installed along with a new control station and associated electrical during the summer of 2021.



2019 CIP 416 project 3001 - Cake Unloading Valve during installation



2019 CIP 416 project 3026 - Polymer System Improvements

Gorham/Westbrook/Windham Wastewater (continued)

Westbrook – Sewer System

In late 2007, PWD hired Woodard & Curran, Brown & Caldwell and Jordan Environmental to update the City of Westbrook's CSO Master Plan. This plan was completed and submitted to Maine DEP in 2008. Some of the work included in the plan involved the city, and some involved PWD. Because the City operates the collection system, the bulk of the first five years would focus on the removal of infiltration and inflow (I/I) from the City collection system. Later portions of the plan would include storage and other work on PWD owned assets. Since the plan was updated, all flow from all the CSO outfalls are now continuously monitored.

The plan was updated in 2014 and submitted to the DEP per the State's requirements. The plan included a summary of the work completed in the first 5 years and a revised set of projects and schedule. The projects that involve PWD facilities are being completed in accordance with the Master Plan and have included several projects to increase the capacity of the interceptor system. The Master Plan included upgrades and capacity increase at the Dana Court Pump Station (CIP #29 project 2527). This project was completed in 2019. The plan also included the addition of floatables containment at the CSO diversion structure prior to the Cottage Place pump station (CIP #29 project 2524). This project was completed in 2020. The most recent 5 year portion of the mitigation, or Long Term Control Plan, has been in large part completed. The plan is currently undergoing another review and will be updated with the next series of projects and goals to be completed in the next 5 year period.

Gorham/Windham – Pump Stations and Collector Systems

In May of 2008, flows from the Town of Windham, the Maine Correctional Center and the Little Falls section of Gorham were re-directed to the Westbrook/Gorham/Windham WWTF for treatment. This action led to the closure of two outfalls into the Presumpscot River. This project also led to an upgrade of the Tow Path pump station and the decommissioning of the treatment plant in Little Falls in 2010. Due to the relatively young age of most of Gorham's other pump stations, preventive maintenance, condition assessment through CCTV inspection of buried infrastructure, and minor repairs have been the focus in recent years.

To increase reliability and improve service during power outages, standby generators have been installed at most of the pump stations. In 2014, an assessment of all of the pump stations in the system was completed, and stations with identified needs were then flagged for more detailed investigation. As a result of those studies, upgrades at the Androscoggin PS (CIP #180 project 2317) and Canterbury Pines PS (CIP #60 project 1117) were completed by the end of 2017.

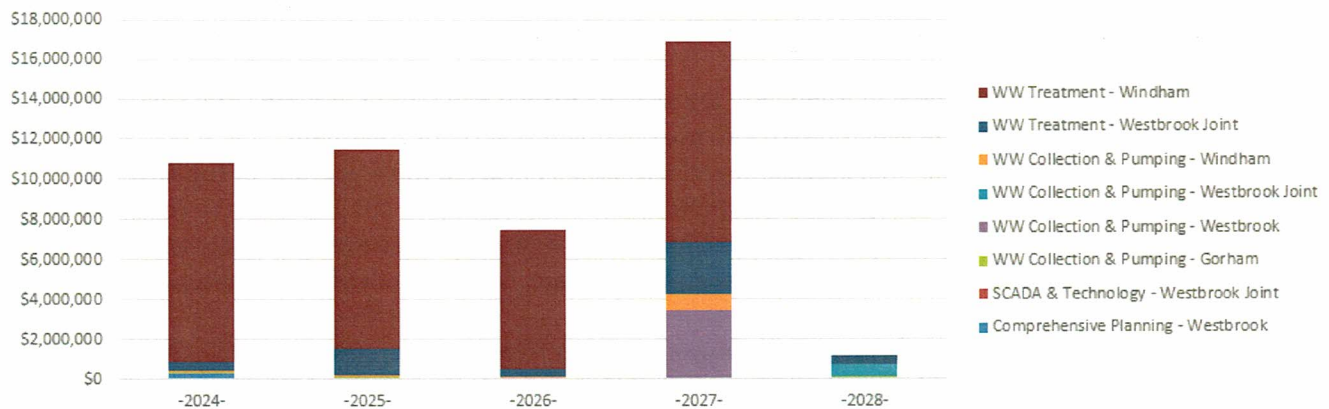
To ensure that accurate wastewater flow is measured and used for allocating operating costs to the Town of Gorham, a flow meter was installed to measure the flow from the Town of Gorham to the Westbrook/Gorham/Windham WWTF. This meter was installed and is maintained by a third-party vendor as part of PWD's extensive flow monitoring program.

Gorham/Westbrook/Windham Wastewater (continued)

Gorham, Westbrook and Windham are served by a centralized wastewater treatment plant in Westbrook. Capital costs are allocated by each municipality's relative design capacity of the specific infrastructure.

Program Summary

	-2024-	-2025-	-2026-	-2027-	-2028-
Comprehensive Planning	\$300,000				
Westbrook	\$300,000				
SCADA & Technology					\$50,000
Westbrook Joint					\$50,000
WW Collection & Pumping	\$95,000	\$170,000	\$95,000	\$4,310,000	\$695,000
Gorham	\$35,000	\$110,000	\$35,000	\$35,000	\$35,000
Westbrook	\$40,000	\$40,000	\$40,000	\$3,440,000	\$40,000
Westbrook Joint					\$600,000
Windham	\$20,000	\$20,000	\$20,000	\$835,000	\$20,000
WW Treatment	\$10,450,000	\$11,335,000	\$7,395,000	\$12,585,000	\$395,000
Westbrook Joint	\$450,000	\$1,335,000	\$395,000	\$2,585,000	\$395,000
Windham	\$10,000,000	\$10,000,000	\$7,000,000	\$10,000,000	
Grand Total	\$10,845,000	\$11,505,000	\$7,490,000	\$16,895,000	\$1,140,000



	-2024-	-2025-	-2026-	-2027-	-2028-
Bond		\$750,000	\$200,000	\$5,950,000	\$600,000
Grant				\$6,450,000	
Renewal and Replacement	\$845,000	\$755,000	\$290,000	\$945,000	\$540,000
Bond SRF	\$10,000,000	\$10,000,000	\$7,000,000	\$3,550,000	
Grand Total	\$10,845,000	\$11,505,000	\$7,490,000	\$16,895,000	\$1,140,000

Gorham/Westbrook/Windham Wastewater (continued)

Projects by Program

	-2024-	-2025-	-2026-	-2027-	-2028-
Comprehensive Planning	\$300,000				
3/3301/WWGWWTF Capacity Study	\$300,000				
SCADA & Technology					\$50,000
177/3127/Westbrook SCADA Server Replacement Program					\$50,000
WW Collection & Pumping	\$95,000	\$170,000	\$95,000	\$4,310,000	\$695,000
180/3138/Windham- Little Falls WW System - R&R	\$20,000	\$20,000	\$20,000	\$20,000	\$20,000
180/3139/Windham - Depot St/Keddy Mill Forcemain				\$750,000	
180/3183/Route 202 Telemetry Upgrade				\$65,000	
29/3231/PEND - CSO Storage Facility				\$3,200,000	
411/3134/Westbrook WW Systems R&R	\$40,000	\$40,000	\$40,000	\$40,000	\$40,000
411/3302/Cottage Place PS- Generator/Transfer Repl.					\$600,000
411/3306/East Bridge St PS - Generator/Transfer Replac.					
60/3137/Gorham WW Pump Station - R&R	\$35,000	\$35,000	\$35,000	\$35,000	\$35,000
60/3180/Briarwood PS Telemetry Upgrade		\$75,000			
60/3275/Dana Ct. Forcemain Replacement				\$200,000	
WW Treatment	\$10,450,000	\$11,335,000	\$7,395,000	\$12,585,000	\$395,000
182/3241/North Windham WWTF	\$10,000,000	\$10,000,000	\$7,000,000	\$10,000,000	
416/3132/Westbrook Gorham Windham WWTF R&R	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000
416/3159/Plant Water System Rehab/Controls			\$125,000		
416/3166/Process Area Ventilation Upgrades		\$750,000			
416/3190/Access Road and Parking Lot Resurfacing	\$400,000				
416/3191/TWAS Mixing System Replacement		\$150,000			
416/3198/WAS and GBT System Upgrade/Rehabilitation		\$350,000			
416/3199/RAS Pumping Upgrade					\$300,000
416/3200/Hypochlorite Storage Tank Replacement					
416/3232/Septage Screening Facilities			\$200,000	\$2,000,000	
416/3256/Dewatered Sludge Conveyance Upgrade				\$500,000	
416/3270/Process Valve/Actuator Replacement			\$20,000		\$20,000
416/3271/Structural/Architectural Assessment/Rehab		\$35,000		\$35,000	
416/3273/Outfall Condition Assessment					\$25,000
Grand Total	\$10,845,000	\$11,505,000	\$7,490,000	\$16,895,000	\$1,140,000

Subprogram # 180**Windham - Little Falls WW System**

Division: Wastewater - Windham Little Falls
Funding: Bonds, R&R – Wastewater – Div. 55

Manager: Poulin, Charlene
Priority: Routine replacement

Description:

This program provides for a planned approach to the replacement of obsolete equipment for the Windham-Little Falls wastewater pump stations. Few improvements had taken place during the first 35 years of operation. The scope of this program is based on the amount of required maintenance and current performance of the existing infrastructure. The scope includes complete replacement of drives, motors, pumps, controls and other major equipment to ensure operational reliability of the pump stations.

Justification / Impact:

When pump stations have reached the end of their useful design life (typically 20-years) obsolete equipment should be replaced. These improvements will ensure the pump stations continue to deliver adequate flows to the WWTF with increased reliability. Additionally, these needed improvements will allow for a Preventative Maintenance plan that will keep the pump stations operating at the design level well into the life of the upgrade.

History:

The original Windham-Little Falls wastewater system was built in 1987. The original system included two pump stations. These two pump stations were to be replaced with a single new pump station as part of the 2008 redevelopment of the Keddy Mill site. This project was never completed and the existing pump stations are now more than 35-years old. In 2019 CIP Depot street Pump Station Phase 1 design and construction was approved but due to delays the project was completed in October of 2021. Phase 2 of the Depot Street Pump Station project will coincide with the Keddy Mill clean-up and redevelopment.

Origin of the Subprogram:**Budget Summary:**

	-2024-	-2025-	-2026-	-2027-	-2028-
Bond				\$750,000	
WW Collection & Pumping				\$750,000	
180/3139/Windham - Depot St/Keddy Mill Forcemain				\$750,000	
Renewal and Replacement	\$20,000	\$20,000	\$20,000	\$85,000	\$20,000
WW Collection & Pumping	\$20,000	\$20,000	\$20,000	\$85,000	\$20,000
180/3138/Windham- Little Falls WW System - R&R	\$20,000	\$20,000	\$20,000	\$20,000	\$20,000
180/3183/Route 202 Telemetry Upgrade				\$65,000	
Grand Total	\$20,000	\$20,000	\$20,000	\$835,000	\$20,000

Previous Years on CIP:

2000 to present

Procurement Issues:

Engineering and contracting will be via standard competitive retention procedures.

Subprogram # 180**Windham - Little Falls WW System**

The Depot Street Pump Station Project – Phase 1 (2019 – project # 3139)– Replacing siphon with new Pump Station in conjunction with PWD replacing water mains on Depot Street and installing a 407- zone transmission main and the town reconstructing portion of Depot Street. This was completed in 2021. Phase 2 of the Depot Street Pump Station project will coincide with the Keddy Mill clean-up and redevelopment.



2019 CIP 180/3139, Phase 1 - new Depot Street Pump Station completed Fall of 2021

Condition Assessment – Windham Pump Stations**2020 Windham Pump Station Report**

Windham			
ID	Name	2020 rating	2014 rating
WIP43	Androscoggin	4.26	2.93
WIP52	RT 202 PS	2.88	2.87
	Depot Street - new PS	5.0	
Windham Average		4.04	2.90
PWD -All Average (74 Pump Stations)		3.72	3.47

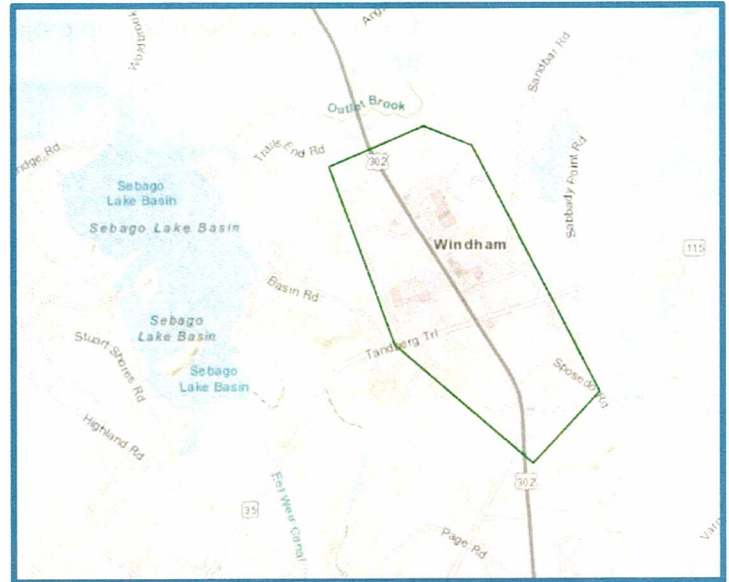
Subprogram # 182 North Windham - Water Resources Reclaimed Water System

Division: Wastewater – North Windham
Funding: Bonds, R&R – Wastewater – Div. 67

Manager: Pellerin, Greg
Priority: Customer Driven

Description:

In recent years, the Town of Windham ("Town") has redoubled its efforts to address wastewater treatment needs in the northern area. These efforts led to the development of a Comprehensive Wastewater Management Plan (CWWMP) published in May 2018. On May 26, 2020, the Town and PWD signed a Memorandum of Agreement to partner on the procurement of engineering services and construction of wastewater treatment facilities in North Windham to serve the "Phase 1 Area" which can be generally described as the commercial center along Route 302 north of River Rd and south of Chaffin Pond.



Justification / Impact:

Per the Memorandum of Agreement, the Town has determined that a wastewater treatment system is needed in the North Windham Area to mitigate groundwater pollution and would allow for more sustainable growth opportunities (North Windham System).

History:

PWD completed a Preliminary Design Report in January 2022 which estimated the Project at \$40M. PWD received a conditional permit from the DEP that would allow for discharge of highly treated effluent to the ground. In April of 2022 PWD received a SRF loan award from the DEP Clean Water State Revolving Loan fund for \$38.6M loan with a \$2.25M principal forgiveness award. In June of 2022 the town voted overwhelmingly in favor of the North Windham Sewer Project. PWD and the Town are proceeding in 2023 to construction utilizing a Design Build process.

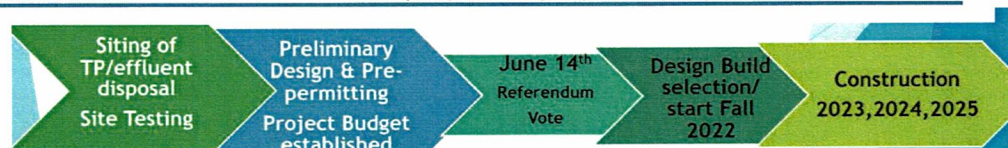
North Windham Commercial Center
Sewer Area – Phase 1

Origin of the Subprogram:

This Subprogram was created to address the goals established in the Memorandum of Agreement.

Budget Summary:

	-2024-	-2025-	-2026-	-2027-	-2028-
Grant				\$6,450,000	
WW Treatment				\$6,450,000	
182/3241/North Windham WWTF				\$6,450,000	
Bond SRF	\$10,000,000	\$10,000,000	\$7,000,000	\$3,550,000	
WW Treatment	\$10,000,000	\$10,000,000	\$7,000,000	\$3,550,000	
182/3241/North Windham WWTF	\$10,000,000	\$10,000,000	\$7,000,000	\$3,550,000	
Grand Total	\$10,000,000	\$10,000,000	\$7,000,000	\$10,000,000	



Subprogram # 177 SCADA/Process Control - Wastewater

Division: Wastewater – Westbrook, Div 64
Funding: R & R - Wastewater facility

Manager: Pellerin, Greg
Priority: Upgrade obsolete

Description:

The program supports all 80 wastewater sites across PWD in upgrading and replacing the existing Supervisory Control and Data Acquisition (SCADA) equipment. The work needed is replacement of hardware and software to be compatible to PWD SCADA standards and provide for increased automation of wastewater systems and treatment. Programmable Logic Controllers (PLC) have been replaced across PWD to meet the new standards and remove outdated, non-maintainable equipment.

Justification / Impact:

The benefit of this program is to increase the automation and reduce the staff hours needed to perform routine activities for the systems and treatment plants across PWD.

History:

PWD started changing out the system in 2003 by replacing the existing 20 year-old system across the six wastewater communities and installing new SCADA equipment where it did not exist. All systems have been retrofitted or replaced but more automation of these systems will continue.

Budget Summary:

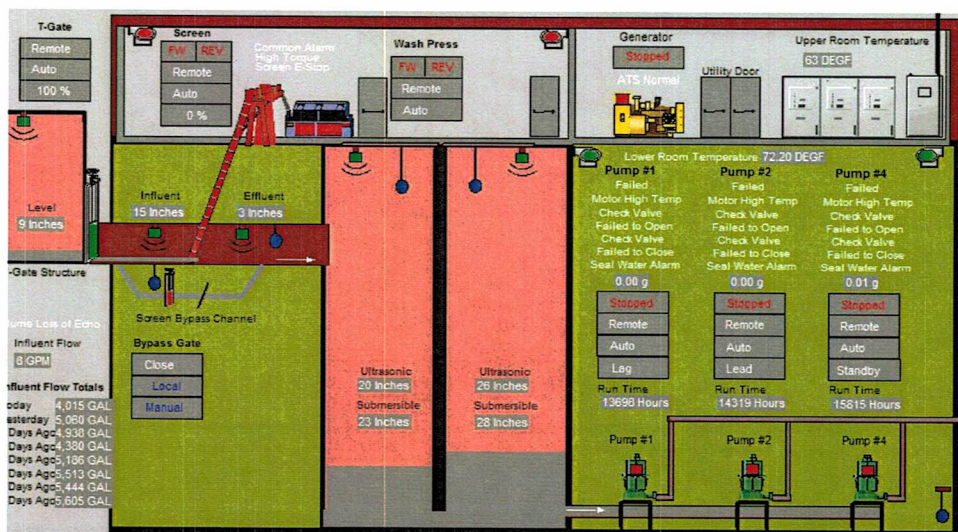
	-2024-	-2025-	-2026-	-2027-	-2028-
<input type="checkbox"/> Renewal and Replacement					\$50,000
<input type="checkbox"/> SCADA & Technology					\$50,000
177/3127/Westbrook SCADA Server Replacement Program					\$50,000
Grand Total					\$50,000

Previous Years on CIP:

2003 to present

Related Projects:

Subprogram #110 Water, #177 Sewer Portland,



Subprogram # 411**Westbrook WW Systems R&R**

Division: Wastewater - Westbrook
Charlene

Manager: Poulin,

Funding: R&R - Wastewater – Div. 62
replacement

Priority: Routine

Description:

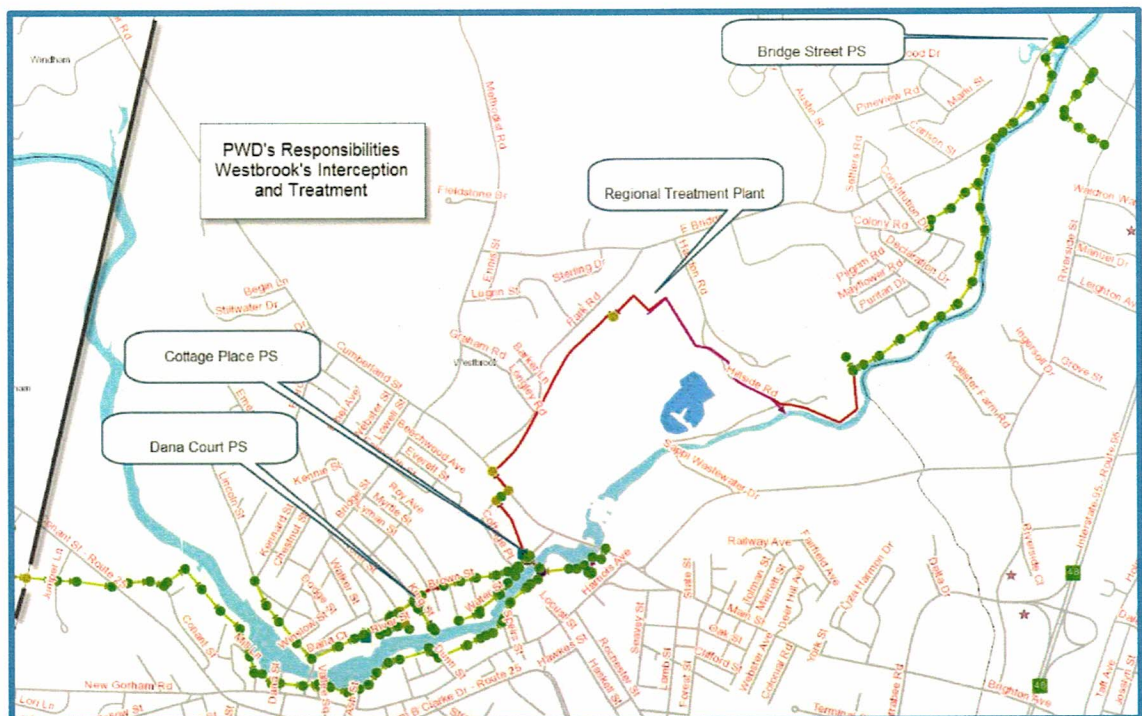
This project provides for the timely renewal of equipment associated with pump stations and the purchase of monitoring equipment for the interceptor system. Major pump stations have been recently upgraded but funds need to be available for replacement parts when necessary.

Justification / Impact:

An on-going study to upgrade the Westbrook CSO Master Plan will be complemented with the addition of a portable flow monitoring device.

Budget Summary:

	-2024-	-2025-	-2026-	-2027-	-2028-
<input type="checkbox"/> Bond					\$600,000
<input type="checkbox"/> WW Collection & Pumping					\$600,000
411/3302/Cottage Place PS- Generator/Transfer Repl.					\$600,000
<input type="checkbox"/> Renewal and Replacement	\$40,000	\$40,000	\$40,000	\$40,000	\$40,000
<input type="checkbox"/> WW Collection & Pumping	\$40,000	\$40,000	\$40,000	\$40,000	\$40,000
411/3134/Westbrook WW Systems R&R	\$40,000	\$40,000	\$40,000	\$40,000	\$40,000
411/3306/East Bridge St PS - Generator/Transfer Replac.					
Grand Total	\$40,000	\$40,000	\$40,000	\$40,000	\$640,000



Condition Assessment – Gorham Pump Stations

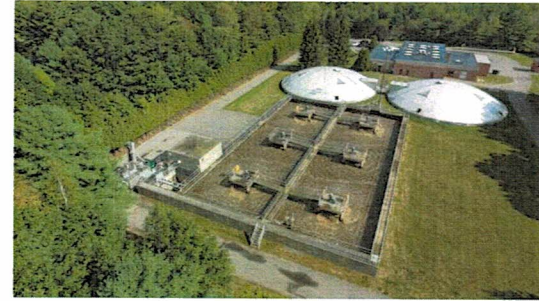
Subprogram # 416 Westbrook Gorham Windham Regional WWTF

Division: Wastewater - Joint Westbrook
Funding: Bonds, R&R – Wastewater- Div. 64
 obsolete facility

Manager: Firmin, Scott
Priority: Upgrade

Description:

Provide for plant upgrades required to continue to meet regulatory and operational requirements and for the timely routine replacement of equipment nearing the end of its service life. The main focus of the proposed projects is to improve plant performance and efficiency.



Justification / Impact:

Physical assets require scheduled maintenance and eventual replacement. Planned upgrades also include instrumentation and control in accordance with current industry practice and provide enhanced automation, monitoring and control of the treatment processes. Regulatory requirements are continuously revised and updated by the EPA and administered by the Maine Department of Environmental Protection. This account provides for the equipment replacement and system upgrades necessary to continue to meet regulatory and operational requirements.

History:

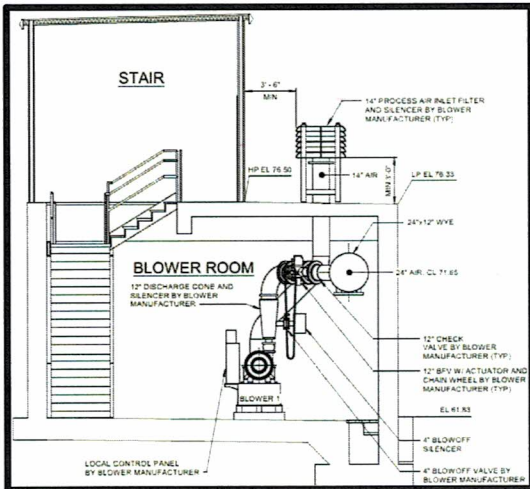
To meet the goals of this subprogram PWD is continuously engaged in the Capital Improvement Program Process described in the Introduction of the Capital Expenditures section. Recent planning and design efforts include the Aeration System Alternatives Analysis (2015), the Secondary Clarifier Condition Assessment (2016), and the Aeration and Secondary Clarification Upgrade Design (2019). These projects are currently under construction with an expected startup date of Fall of 2023.

Budget Summary:

	-2024-	-2025-	-2026-	-2027-	-2028-
Bond		\$750,000	\$200,000	\$2,000,000	
WW Treatment		\$750,000	\$200,000	\$2,000,000	
416/3166/Process Area Ventilation Upgrades		\$750,000			
416/3232/Septage Screening Facilities			\$200,000	\$2,000,000	
Renewal and Replacement	\$450,000	\$585,000	\$195,000	\$585,000	\$395,000
WW Treatment	\$450,000	\$585,000	\$195,000	\$585,000	\$395,000
416/3132/Westbrook Gorham Windham WWTF R&R	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000
416/3159/Plant Water System Rehab/Controls			\$125,000		
416/3190/Access Road and Parking Lot Resurfacing	\$400,000				
416/3191/TWAS Mixing System Replacement		\$150,000			
416/3198/WAS and GBT System Upgrade/Rehabilitation		\$350,000			
416/3199/RAS Pumping Upgrade					\$300,000
416/3200/Hypochlorite Storage Tank Replacement					
416/3256/Dewatered Sludge Conveyance Upgrade				\$500,000	
416/3270/Process Valve/Actuator Replacement			\$20,000		\$20,000
416/3271/Structural/Architectural Assessment/Rehab		\$35,000		\$35,000	
416/3273/Outfall Condition Assessment					\$25,000
Grand Total	\$450,000	\$1,335,000	\$395,000	\$2,585,000	\$395,000

Subprogram # 416 Westbrook Gorham Windham Regional WWTF

CIP 2020, Subprogram #416, Project # 3023: \$11,250,000 - Westbrook aeration and secondary clarifier upgrade. Construction Started in 2021 and was completed in the fall of 2023. To the left is a diagram of the below grade aeration blower building. Right is foundation being constructed and below is the completed blower building.



Subprogram # 421 Wastewater Asset Condition Evaluations

Division: Wastewater – Westbrook Gorham Windham
Greg

Manager: Pellerin,

Funding: R & R – Wastewater – Div. 64
Planning

Priority:

Description:

This subprogram will provide needed engineering evaluation and programming of similar asset classes across all wastewater treatment plants and critical influent pump stations and force mains. Many of the processes have been upgraded over the years but systems such as electrical and HVAC were not prioritized to be replaced but are critical to the overall operations. Performing engineering evaluations on these critical systems would be the first step in developing a long term plan to replace or upgrade these systems to meet current codes.

Justification / Impact:

Engineering evaluation to develop prioritized schedule and budget to upgrade electrical distribution and heating and ventilation systems across the major wastewater treatment plants. This was completed in 2017 and has led to multi-year CIP improvements as outlined in the evaluations. Many of these systems are original to the plants and pump stations (35- 40 years old). The goal is to upgrade these systems to meeting code and allow for additional capacity to meet the future needs.

Budget Summary:

	-2024-	-2025-	-2026-	-2027-	-2028-
<input type="checkbox"/> Renewal and Replacement	\$300,000				
<input type="checkbox"/> Comprehensive Planning	\$300,000				
3/3301/WWGWWTF Capacity Study	\$300,000				
Grand Total	\$300,000				

Previous Years on CIP:

none

Related Projects:

Subprogram # 3, Comprehensive Infrastructure Asset Management Plan

Procurement Issues:

RFP for engineering procurement

- PWD has been discussing the treatment plant capacity allocated to the three communities that contribute to PWD's treatment plants; Westbrook, Gorham, and Windham. With continued and planned growth, PWD expect that some communities will reach their allocations in the future. A study is planned to more clearly understanding the amount and timing for capacity increases, the work that will be required to accommodate additional loadings at the treatment plant, and how those costs will be allocated. While growth pressures are emerging, the existing treatment plant, and the plan to understand development needs, should allow for the needs of all communities to be served.