

As voted by the Board of Trustees and in accordance with the notice of the meeting, the monthly Workshop Meeting of the Board of Trustees of the Portland Water District was held in the Nixon Training Center at the general offices of the District, 225 Douglass Street, Portland, Maine, and via Zoom, on Monday, April 8, 2024. In attendance from staff were S. Garrison, C. Crovo, D. Kane, S. Firmin, J. Wallace, C. Cogan, G. Pellerin, A. Weaver, and D. Katsiaficas.

All Trustees were present except Trustee Siviski. President Lunt opened the workshop meeting at 6:30 p.m.

## **1. Water and Wastewater Operations Update**

James Wallace, Director of Operations - Water, and Scott Firmin, Director of Operations - Wastewater provided updates on the current operational situations in water and wastewater, respectively.

Jim Wallace started the presentation by giving an overview of water operations since the pandemic. He provided details to the Board about the number of employees in his department, their length of tenure, and in general, the amount of experience of his staff. He noted that license requirements are a big issue.

For the most part, the people hired in water operations have no water experience. Currently, they need to have both a Treatment 4 and a Distribution 4 license.

Scott Firmin then took over and provided an overview of wastewater operations.

The following areas and topics were covered:

- A changing workforce due to retirements, movement within PWD, and employees leaving for jobs outside of PWD.
- Focus on training, broaden knowledge and exposure.
- Wastewater has an apprentice program that is working well.

Mr. Firmin noted that newer employees have a different view of technology. His department is also dealing with more stringent regulations in the areas of wet weather and CSOs, disinfection, water quality, and PFAS.

Mr. Firmin went on to cover:

- Aging infrastructure
- Expanding maintenance training to wastewater operators.
- He noted that there is more public awareness of what PWD does, and the public is very interested in what PWD is doing. In addition, there is an Increase public visibility, communication, and interface with environmental partners.

## **2. North Windham Wastewater System Project Update**

Greg Pellerin, Senior Project Engineer, and Andrew Weaver, Associate Engineer, provided an update on the North Windham wastewater project. The update included what has been accomplished to date, the future components of the project, the current proposed budget, and the project timeline.

The PowerPoint presentation is attached as part of the minutes.

**3. Other Business**


President Lunt announced the Scholarship Committee met earlier this evening and Abigail Ouellette of Gorham was chosen for this year's award. Carrie Cote will be reaching out to her this week to ask her to come to the April business meeting for the presentation of the scholarship.

**4. Adjourn**

The meeting was adjourned at 8:25 p.m.



Submitted by,

Carrie E. Cote  
Assistant Clerk


# North Windham Wastewater Project Update & WWTF Construction Approvals

Presented by:  
Greg Pellerin & Andrew Weaver  
4.8.2024





## High Level Project Overview


Sewer Collection System



Advanced MBR WWTF




Perc-Rite Subsurface Disp.





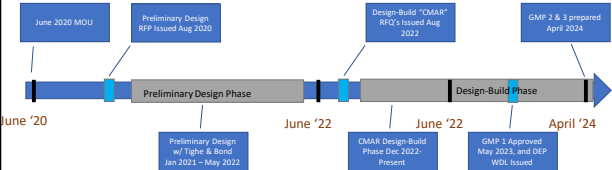
## Agenda

- Project Schedule Review
- Review 2023 Construction Review
- Collection System Design Progress
- WWTF Design Progress
- Updated Schedule/Budget
- Recommended Board Order

## Project Schedule/Status Review

- June 2020 MOU – Set up partnership with PWD and Town and infrastructure area goals.
- Preliminary Design Phase, outcomes
  - DEP Waste Discharge License Application
  - Preliminary Design Report & Cost Estimate
  - SRF Funding Approval
- June 2022 MOA – RSU, PWD, and TOW agreement to use Manchester School Fields for Effluent Disposal, and connect RSU schools to sewer system.
- CMAR Design Build Phase 2022 - Present



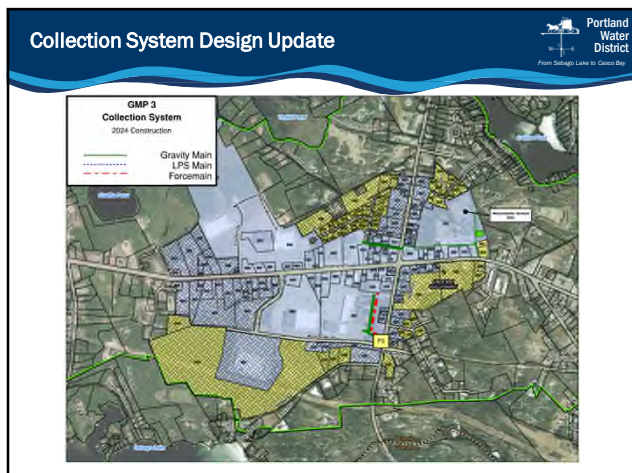
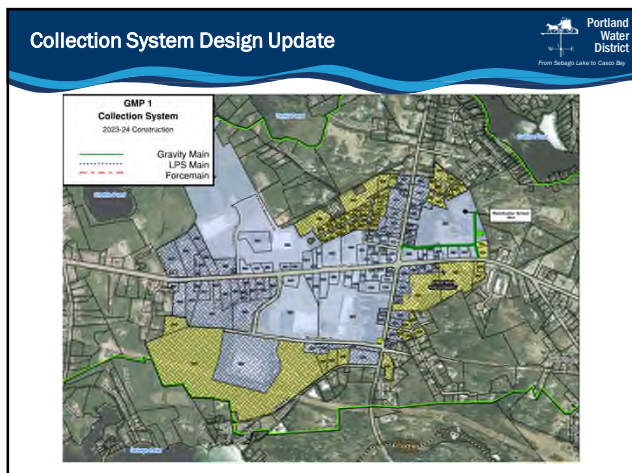


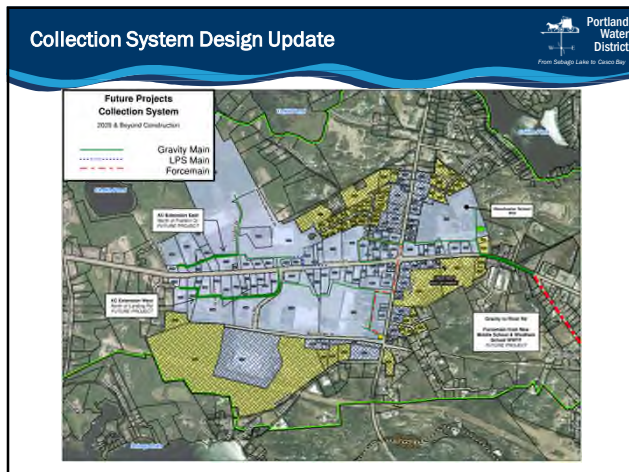
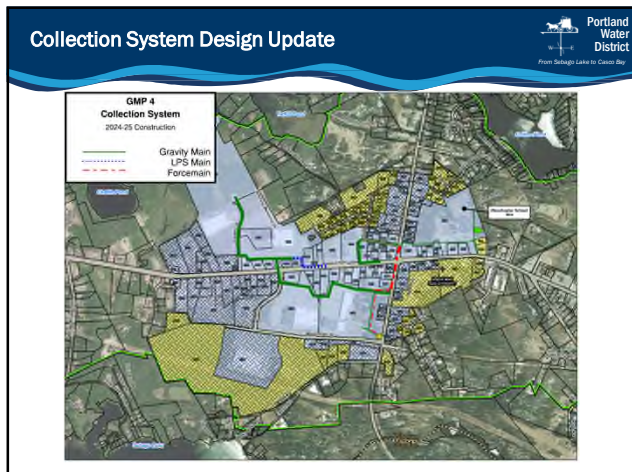


### GMP #1 Update

- 2023 GMP 1 WW Construction**
  - Clearing & earthwork
  - Effluent disposal fields & site piping
  - Gravity sewer (1,800 LF)
  - Sposedo Rd water main
- Future GMP 1 WW Construction**
  - 2024: Gravity sewer (400 LF), Sposedo Rd utilities, and Manchester School site work in coordination w/ RSU project
  - 2025: Small effluent disposal zone & sewer services

Portland Water District  
From Sebago Lake to Cassin Bay





### Windham School Conveyance Project

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From Sebago Lake to Cassin Bay

- Town of Windham in partnership with PWD & RSU 14
- **Project Goals**
  - Decommission Windham School WWTF & remove outfall to Pleasant River (Class B)
  - Connect Windham School campus & New Middle School to North Windham WWTF
- **Existing WWTF**
  - Operated by school district since 1967
  - Secondary treatment for up to 25,000 gpd
  - Only permitted point source discharge to Pleasant River

### Windham School Conveyance Project

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- **Base Project Scope**
  - Two pump stations
    - Otter Brook PS
    - Windham School PS
  - 22,000 LF forcemain
    - River Rd
    - Windham Center Rd
  - 1,050 LF gravity sewer
    - Roosevelt Trl
- **Draft Schedule**
  - 2024: Design
  - 2025: Phase 1 & 2
  - 2025-6: Phase 3
- **CWSRF Funding**
  - Town has applied for \$13M CWSRF funding

### Windham School Conveyance Project

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From Sebago Lake to Cassin Bay

- Potential Scope Additions**
  - Sidewalk connection to New Middle School
  - Targeted water main renewal on Windham Center Rd
  - Additional sewer main & services for Town & RSU
  - Pedestrian footbridge parallel to Anderson Bridge

The map shows the project area with labels for: NORTH WINDHAM WWTF, EXISTING M450, WATER MAIN RENEWAL #1 (LAWTON 1980 M450), WATER MAIN RENEWAL #2 (WINDHAM 1980 M450), WATER MAIN RENEWAL #3 (WINDHAM 1980 M450), SIDEWALK TO NEW MIDDLE SCHOOL, Anderson Bridge (Proposed Footbridge), GRAVITY SEWER (Town & RSU Collection), and LOW PRESSURE SEWER (Public Wastewater).

### GMP#2 WWTF Design

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- Advanced MBR and Biological Nutrient Removal WWTF.
- 100k gal EQ storage
- 160,000 gpd initial capacity
- Designed to be upgradable to 320,000 gpd
- Advanced automation and nutrient removal technology
- Updated design rec'd April 1.

A 3D architectural rendering of a modern, rectangular industrial building with a grey metal facade and a flat roof, representing the GMP#2 WWTF design.

### SCADA & Automation

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- Designed to be fully automated during normal and high flow conditions.
- PWD SCADA will allow fully remote and data collection, while maintaining cybersecurity.
- A State of the art facility designed to limit operational requirements maintenance, laboratory work, chemicals and sludge removal activities.
- PWD SCADA Standards

The image shows a SCADA control room monitor displaying a 'SCREENWASH PRESS OVERVIEW' with various process flow diagrams and data points. To the right is a server rack with numerous network cables plugged into the front panel.

### GMP#2 WWTF Design

Portland Water District  
From Sebago Lake to Cassin Bay

The diagram illustrates the wastewater treatment process flow: Influent Pumping and Screening → Plant Flow Equalization (100k gal) → Secondary Treatment: Aeration and Nutrient Removal Treatment → Sludge Wasting and Removal → Membrane Filtration System → Effluent Pumping and Disposal.

### GMP #2 Price and Value Engineering

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- Original PDR price estimate was \$20.9M
- 11/23 Price was evaluated at about \$24M, which was ~15% over available budget.
- V.E. adjustments:
  - Reduce Building Size by 25%
  - Eliminated basement level
  - Switch to flat roof
  - Simplified some process and electrical systems, without sacrificing functionality.

### Detailed Design Decisions

Portland Water District  
From Sebago Lake to Cassia Bay

### Detailed Design Decisions

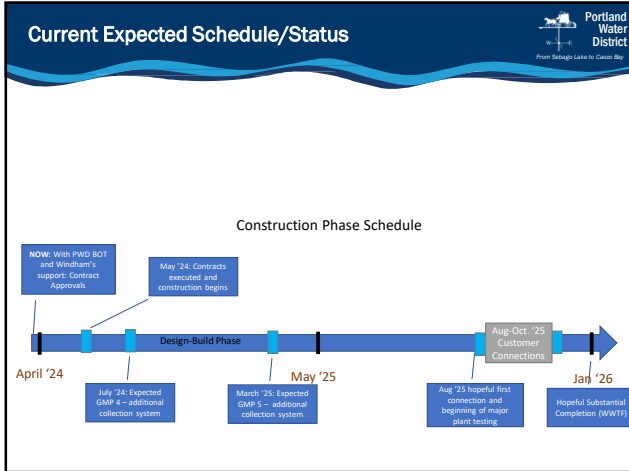
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### Project Budget/Funding Review

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Project Phase	Firm	Price	
Preliminary Design	Tighe & Bond	\$ 1,127,000	Previously Approved
CMAR Design Services	MWH	\$ 600,000	
Misc. Eng. Support	Multiple	\$ 50,000	
30-60% Full Project	Brown and Caldwell	\$ 1,800,000	
Final Design Full Project	Brown and Caldwell	\$ 1,389,000	
30-60%	Stantec	\$ 50,000	
Total Project Expense	PWD	\$ 300,000	Current
GMP 1	MWH	\$ 8,650,000	
<b>GMP 2</b>	<b>MWH</b>	<b>\$ 21,000,000</b>	
<b>GMP 3</b>	<b>MWH</b>	<b>\$ 3,000,000</b>	Expected Future
<b>Construction Phase Engineering (GMP 2-3)</b>	<b>Brown and Caldwell</b>	<b>\$ 1,500,000</b>	
Construction Phase Engineering (GMP 4-5)	TBD	Apprx: \$ 334,000	
Remaining Collection System	TBD	Apprx: \$ 8,000,000	Expected Future
		Expected Costs: \$ 47,800,000	





### Recommendation

From Sebago Lake to Cassin Bay

**RECOMMENDATION**  
The following proposed language is presented for Committee approval:

**ORDERED**, the General Manager is hereby authorized to execute a construction management services contract amendment "GMP 2" (Guaranteed Maximum Price) with MWH Constructors, Inc. for the North Windham WWTF construction in the amount of **\$21,000,000**; and

**BE IT FURTHER ORDERED**, a construction management services contract amendment "GMP 3" with MWH Constructors, Inc. is hereby authorized for collection system installation in the amount of **\$3,000,000**; and that the General Manager, and the Treasurer, each acting singly, are authorized to take such steps as may be necessary to accomplish the intent of the vote.

**BE IT FURTHER ORDERED**, a professional services contract amendment with Brown & Caldwell is hereby authorized for the Project in the amount of **\$1,500,000**; and that the General Manager, and the Treasurer, each acting singly, are authorized to take such steps as may be necessary to accomplish the intent of the vote.

**BE IT FURTHER ORDERED**, that the Project (CIP 2022-182/3324) budget is amended by increasing it to a total of **\$39,600,000**; and that the General Manager, and the Treasurer, each acting singly, are authorized to take such steps as may be necessary to accomplish the intent of the vote.

### Questions/Discussion

From Sebago Lake to Cassin Bay