WORKSHOP MEETING
BOARD OF TRUSTEES

225 Douglass Street, Portland, Maine
Jeff P. Nixon Training Center
6:30 p.m. on Monday, April 8, 2024
Remote Meeting Participation Available to the Public via Zoom at:
https://us06web.zoom.us/j/89285397195?pwd=xTimIkhqIZPPZf5jj7XdtDEHYC3Czi.1

There will be a Workshop Meeting of the Board of Trustees of the Portland Water District on Monday, April 8, 2024. The meeting will begin at 6:30 p.m. in the Nixon Training Center at the general offices of the District located at 225 Douglass Street, Portland, Maine.

The Workshop will be preceded by meetings of the following Board Committees:

Committee	Room / Location	Time
Scholarship	Monie Room/Zoom	5:00 p.m.
Administration & Finance	Monie Room/Zoom	5:30 p.m.
Operations	EOC 2nd Floor/Zoom	5:30 p.m.
Planning	Nixon Training Center/In-Person Only	5:30 p.m.

AGENDA – WORKSHOP

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

2. North Windham Wastewater System Project Update
   Greg Pellerin, Senior Project Engineer, will provide a summary of the project progress to date and next steps, along with a request to fund the next phase of the project.

3. Other Business

4. Adjourn

MEMORANDUM
PORTLAND WATER DISTRICT

TO: Administration and Finance Committee/Board of Trustees

FROM: David Kane, Executive Director of Administration
Mary Demers, Director of Employee Services

DATE: April 3, 2024

RE: Administration and Finance Committee Meeting – April 8, 2024

A meeting of the Administration and Finance Committee of the Portland Water District Board of Trustees will be held on Monday, April 8, 2024, at 5:30 p.m., in the Monie Conference Room of the District, 225 Douglass Street, Portland, Maine.

AGENDA

1. Election of Chair
   The Committee will elect a chair for 2024-2025.

2. 2023 Transfer of Surplus Funds
   Staff will present a motion authorizing the transfer of the Windham Wastewater Fund surplus to be transferred to the Windham Renewal and Replacement Fund. (See attached memo)

3. Water Bond Motion Amendment
   Staff will present a motion amending a previously approved bond motion to reflect the revised project budget. (See attached memo)

4. System Infrastructure Assessment
   In 2014, the Board approved the creation of a capital reserve fund that funded the projects identified in the System Infrastructure Assessment. The projects were certain high-priority water main replacements. Staff will provide a status report.

5. Other Business

Portland Water District
From Sebago Lake to Casco Bay

ADMINISTRATION AND FINANCE COMMITTEE / AGENDA ITEM SUMMARY

Agenda Item:	2
Date of Meeting:	April 8, 2024
Subject:	Wastewater Transfer of Surplus Funds
Presented By:	David Kane, Executive Director of Administration

RECOMMENDATION

The following proposed language is presented for Board of Trustee approval:

> ORDERED, that a portion of the 2023 annual operating fund change in the Windham Fund in excess of the Operating Contingency Fund target balance is hereby transferred to its Capital Renewal and Replacement Fund.

BACKGROUND ANALYSIS

The net results for each of the wastewater funds are listed below. Cape Elizabeth, Gorham, Portland, and Windham funds results were positive. Cumberland and Westbrook were negative primarily due to higher collection system and treatment plant costs, respectively. Both funds had adequate reserve balances to cover the shortfall.

As shown in the table below, all funds except Windham are below the Board established operating target balance of 25% of budget. Since Windham's has an amount in excess of the target, it is recommended to transfer the excess to the Windham's Renewal and Replacement Fund.

Operating Funds:

	1/1/2022 Balance	2023 Net Change (Unaudited)	12/31/2023 Balance	Target (25% of Budget)	Over/(Under) Budget
Cape Elizabeth	$286,837	$95,958	$382,795	$618,257	($235,462)
Cumberland	$60,778	($33,638)	$27,140	$329,147	($302,007)
Gorham	$94,176	$18,789	$112,965	$433,831	($320,866)
Portland	$3,452,153	$723,357	$4,175,510	$4,376,958	($201,448)
Westbrook	$313,278	($94,675)	$218,603	$1,059,048	($840,445)
Windham (South)	$120,194	$48,008	$168,202	$127,649	$40,553

Renewal and Replacement Funds:

	Balance (Budget)	(5% of Asset)	Budget
Cape Elizabeth	$741,324	$957,546	($216,222)
Cumberland	$187,441	$474,002	($286,561)
Gorham	$888,995	$943,494	($54,499)
Portland	$6,038,081	$6,306,419	($268,338)
Westbrook	$3,745,300	$1,168,731	$2,576,569
Windham (South)	$405,193	$196,066	$209,127

LEGAL REVIEW
Corporate Counsel reviewed the proposed motion and approved it as to form.

CONCLUSION
Staff recommends the Committee approve the motion.

ATTACHMENT
None

Portland Water District
From Sebago Lake to Casco Bay

ADMINISTRATION AND FINANCE COMMITTEE/ AGENDA ITEM SUMMARY

Agenda Item:	3
Date of Meeting:	April 8, 2024
Subject:	Water Bond Amendment
Presented By:	David Kane, Director of Administration

RECOMMENDATION

The following proposed language is presented for Board of Trustee approval:

> RESOLVED, Resolution 24-002, related to the installation and renewal of water mains, replacement of the Sebago Lake Water Treatment Facility's Roof, upgrade of the Windham Water Pump Station, and obtaining Service Lines' GPS data points and related infrastructure projects, is hereby amended to increase the authorized bond amount from $15,710,000 to $16,010,000. The full form of the Resolution attached hereto is hereby approved and shall be attached to and incorporated as part of the minutes of this meeting.

BACKGROUND ANALYSIS

At the January 22, 2024 Board meeting, a motion was approved authorizing issuing bonds for up to $15,710,000. Bids for the Sebago Lake Treatment Plant Roof were obtained and the cost is expected to be up to $300,000 higher.

Project	CIP Reference	Total	Revised Total
Water Mains	43/121	$ 6,000,000	$ 6,000,000
Sebago Lake Treatment Plant Roof	122/3287	$ 660,000	$ 960,000
Windham Water Pump Station	122/3211	$ 850,000	$ 850,000
Lead Rule Compliance:			
Galvernized Water Lines	43/3296	$ 7,200,000	$ 7,200,000
GPS of Service Lines	61/3282	$ 1,000,000	$ 1,000,000
Bond Authorization		$ 15,710,000	$ 16,010,000

FISCAL REVIEW / FUNDING

The project was planned to be bond financed in the 2024 Budget. The additional $300,000 increases the future debt service by approximately $27,000.

LEGAL REVIEW

Corporate Counsel has reviewed the proposed Resolution as to form.

CONCLUSION(S)

Staff recommends the motion be approved.

ATTACHMENT(S)

A. Full Form of Motion

Attachment A

PORTLAND WATER DISTRICT
BOARD OF TRUSTEES
AMENDMENT TO RESOLUTION 24-002
(Water Fund)

WHEREAS, pursuant to Resolution 24-002 adopted on January 22, 2024 (the "Prior Resolution"), the Board of Trustees of the Portland Water District authorized, among other things, the District's Water bonds in an amount of up to $15,710,000 to finance installation and renewal of water mains, replacement of the Sebago Lake Water Treatment Facility's Roof, upgrade of the Windham Water Pump Station, and obtaining Service Lines' GPS data points and related infrastructure projects (the "Original Project"); and

WHEREAS, project costs are now expected to be up to $16,010,000; and

WHEREAS, the District now desires to amend the Prior Resolution to reflect the higher cost estimate;

NOW THEREFORE, BE IT HEREBY RESOLVED by the Board of Trustees of the Portland Water District Assembled, following a public hearing duly called, noticed and held under District Policy No. 6.50-15:

1. That the amount of District bonds authorized to be issued by the Prior Resolution be and hereby is amended to replace the amount of $15,710,000 with the amount of $16,010,000, and

2. That in all other respects, the Prior Resolution is hereby ratified and confirmed as if more specifically set forth herein.

Dated: April 22, 2024

MEMORANDUM
PORTLAND WATER DISTRICT

TO: Operations Committee/Board of Trustees

FROM: Scott Firmin, Director of Operations - Wastewater
James Wallace, Director of Operations - Water

DATE: April 3, 2024

RE: Operations Committee Meeting – April 8, 2024

A meeting of the Operations Committee of the Portland Water District Board of Trustees will be held on Monday, April 8, 2024, at 5:30 p.m., in the Emergency Operations Center (EOC) Room of the District, 225 Douglass Street, Portland, Maine.

AGENDA

1. Election of Chair
   The Committee will elect a chair for 2024-2025.

2. East End Primary Sedimentation Basin Sludge Removal System Improvements
   Staff will provide a recommendation to amend a CIP Project for the purchase and installation of the second sludge removal system.

3. North Windham Wastewater Treatment Facility Project GMP2 and GMP3
   Staff will provide a recommendation to approve design-build construction contracts GMP2 and GMP3 for the construction of the new WWTF and piece of the collection system in North Windham. (See attached memo)

4. Sebago Lake Water Treatment Facility Roof Replacement Project Phase I
   Staff will recommend amending the CIP budget for the project. (See attached memo)

5. General Engineering Services Update
   Staff will provide a brief update on the status of the General Engineering Services procurement initiative.

6. Other Business

Portland Water District
From Sebago Lake to Casco Bay

OPERATIONS COMMITTEE / AGENDA ITEM SUMMARY

Agenda Item:	3
Date of Meeting:	April 8, 2024
Subject:	North Windham Sewer Project – Project Budget Increase
Presented By:	Greg Pellerin, Senior Project Engineer

RECOMMENDATION

The following proposed language is presented for Board of Trustee 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; and
>
> 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; and
>
> 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.

BACKGROUND ANALYSIS

PWD and the Town of Windham are engaged in a collaborative effort to provide a new sewer collection system, WWTF, and effluent disposal system in the commercial area of North Windham along Rt. 302. The recent phase of the Design-Build project began in November of 2022, and significant progress has been achieved in the last 18 months. The project is nearing the final stages of design, and significant construction has already been achieved with the first construction contract: GMP 1 (Guaranteed Maximum Price), approved in May of 2023.

The project team staff is recommending a budget increase, and approval of several design and GMP amendments in order to proceed with the next phase of work. This phase will include the construction of the WWTF, and an additional collection system installation, as described below:

Engineering:

- Brown & Caldwell has proposed a contract amendment in the amount of $1,500,000 for Design-Build construction phase engineering services throughout GMP 2 and GMP 3, including final design, resident engineering, and inspection.

CMAR Construction Contracts: MWH Constructors has proposed two CMAR contract amendments for the construction phase of the next two GMPs:

- GMP 2 in the amount of $21,000,000 will include construction of the North Windham WWTF.
- GMP 3 in the amount of $3,000,000 will include construction of approximately 600 LF of gravity sewer on Abby Rd, 1,100 LF of cross-country gravity sewer, 1,000 LF of cross-country sewer forcemain, and a sewer pumping station ("Manchester PS") at the corner of Manchester Dr and Tandberg Trl.

To accommodate the contract amendments with MWH Constructors and Brown & Caldwell, PWD staff recommends increasing the Project budget to a total of $39,600,000 of the current total available budget (see Fiscal section below). Additional budget increases will be necessary in future phases of the project.

Project #: 2022-Subprogram 182/Project 3324

FISCAL REVIEW/FUNDING

PWD and the Town of Windham secured funding approval for a $38.9M loan with an estimated 1.5% interest rate and $3.25M in principal forgiveness from the Department of Environmental Protection (DEP) Clean Water State Revolving Loan Fund in April of 2022. Windham approved, by referendum vote in June of 2022, the North Windham Sewer project with up to $38.9M of SRF financing. Additionally, the project has been awarded a total of $6.5M in grants and additional funding for the project, increasing the total available budget to $45.4M.

The Town is expected to bond the available SRF loan capacity, and the remainder will be funded using the grants and SRF loan principal forgiveness. Future operating costs for the wastewater system will be funded through user fees and the debt service will be funded through the Town's tax incremental financing created for the commercial zone of North Windham. Phase 1 of this project is expected to be on-line by January 1, 2026. Future phases will be constructed as funding becomes available.

LEGAL REVIEW

Corporate Counsel has reviewed the proposed order as to form.

CONCLUSION(S)

Staff recommends increasing the project budget in the amount of $25,500,000 and increase the Project budget to $39,600,000.

ATTACHMENT(S)

Supporting Information

SUPPORTING INFORMATION

Since 2020, The Town of Windham and PWD have been engaged in a collaborative effort to provide a new sewer collection system, WWTF, and effluent disposal system in the commercial area of North Windham along Rt. 302. This system is intended to meet the needs of existing and future commercial development in the area. PWD and the Town selected Brown and Caldwell (Engineering) and MWH Constructors (CMAR Contractor) in the fall of 2022 to join the project team and deliver technical services required for the project. The first construction contract or GMP 1 was approved by the Board in May of 2023, and is in active construction. GMP 1 includes a sewer interceptor line, utility work on the new WWTF access Rd., and the installation of the plant's subsurface effluent disposal system.

During the last year, the team has worked extensively on design and the GMP construction contracts for the new WWTF, and the next phase of the collection system installation. The initial proposal for the WWTF construction (GMP 2), in November of 2023, was significantly over budget. In response, the project team conducted a comprehensive value engineering process to re-align the project with the program budget goals. This process included making adjustments to the facility in all disciplines, reducing costs while still achieving PWD's operational and compliance requirements.

The value engineering process was successful in reducing the proposed WWTF budget by about $3M. PWD and the Town have agreed that this budget is appropriate and are preparing to advance the necessary contracts to proceed with the next phase of design and construction. Future expected construction will include additional collection system construction during the coming years. The current forecasted total project budget is provided below:

Total Project Budget Forecast:

Project Phase	Firm	Price	
Preliminary Design	Tighe & Bond	$ 1,127,000.00	Previously Approved
CMAR Design Services	MWH	$ 600,000.00	
Misc. Eng. Support	Multiple	$ 50,000.00	
30-60% Full Project	Brown and Caldwell	$ 1,800,000.00	
Final Design Full Project	Brown and Caldwell	$ 1,389,000.00	
30-60%	Stantec	$ 50,000.00	
Total Project Expense	PWD	$ 300,000.00	
GMP 1	MWH	$ 8,650,000.00	
GMP 2	**MWH**	**$ 21,000,000.00**	**Current**
GMP 3	**MWH**	**$ 3,000,000.00**	
Construction Phase Engineering (GMP 2-3)	**Brown and Caldwell**	**$ 1,500,000.00**	
Construction Phase Engineering (GMP 4-5)	TBD Est:	$ 334,000.00	Expected Future
Remaining Collection System	TBD Est:	$ 8,000,000.00	
	Current Total Budget	**$ 47,800,000.00**	

Engineering costs are currently estimated to run about 15% of the future total project budget, which is within the industry standard range.

OPERATIONS COMMITTEE / AGENDA ITEM SUMMARY

Agenda Item:	4
Date of Meeting:	April 8, 2024
Subject:	Sebago Lake Water Treatment Facility Roof Replacement Phase 1
Presented By:	Joshua Hudak, CFM Facilities Manager

RECOMMENDATION

The following proposed language is presented for Board of Trustee approval:

> ORDERED, the General Manager is authorized to execute a construction contract with Garland DBS in the amount of $862,290 for the Sebago Lake Water Treatment Facility (SLWTF) Roof Replacement Phase 1 2024 CIP 122-3287; and
>
> BE IT FURTHER ORDERED, that the project budget is amended by increasing it by $300,000 and that the total budget for the project SLWTF Roof Replacement Phase 1 2024 CIP 122-3287 is hereby authorized not to exceed $960,000; 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.

BACKGROUND ANALYSIS

The SLWTF Roof Replacement Phase 1 was programmed and approved in the 2024 CIP for $660,000 to replace the failing metal roof at the SLWTF. PWD used its roofing specialist Garland DBS to scope out what needed to be replaced and the costs associated with this. The cost of simply replacing the metal roof which was not installed correctly and has many fail points, was close to the budget cost, however the need to remove the leaking skylight added to this cost. By removing the skylight, it was determined that a steel contractor and structural engineer would be needed to add support to the roof. The skylight also is connected to the storefront entryway of the facility which means that also needs to be replaced. The water intrusion has been extensive so we will need to replaced damaged areas within the office as well.

FISCAL REVIEW/FUNDING

The project was planned to be bond financed in the 2024 Budget. The additional $300,000 increases the future debt service by approximately $27,000.

LEGAL REVIEW

Corporate Counsel has reviewed the proposed order as to form.

CONCLUSION(S)

Staff recommends amending the original 2024 CIP 122-3287 SLWTF Roof Replacement budget from $660,000 to $960,000 to include the replacement of the failing roof, and skylight and repair the water damage caused by these failures.

ATTACHMENT(S)

Supporting Information
Roof Inspection Report

SUPPORTING INFORMATION

Item	Cost
Metal Roof Replacement	**$ 681,335.00**
Skylight Replacement	**$ 137,854.00**
Storefront Entrance	**$ 43,101.00**
Office Repairs from Water	**$ 60,000.00**
Contingency	**$ 37,710.00**
Total:	**$ 960,000.00**

Garland/DBS Price Based Upon Local Market Competition:

1 Triumph Roofing Inc	**$**	**598,589**
2 St. Hilaire Contractors Inc.	$	689,101
3 Hahnel Bros Co	$	705,375
4 Tech Roofing	$	818,563

Add-Alternate Wall Panel:

1 Triumph Roofing Inc	**$**	**82,746**

Construction Details

Client: Portland Water District

Facility: Standish Water Treatment

Roof Section: Metal Roof

Information

Year Installed	1994	**Square Footage**	13,584
Slope Dimension	4	**Eave Height**	14'
Roof Access	Ladder Needed	**System Type**	Metal

Assembly

Roof #	Layer Type	Description	Attachment	R-Value	Thickness
1	Deck	Metal Deck		-	1.5"
1	Insulation	Polyisocyanurate	Mechanically attached	-	-
1	Cover Board	Wood Fiber	Adhesive	-	Composite Ins Board
1	Base Sheet	Organic Asphalt Saturated Base Sheet	Mechanically attached	-	-
1	Metal Standing Seam	Prefinished Galvanized	Mechanically attached	-	-

Photo Report

Client: Portland Water District
Facility: Standish Water Treatment
Roof Section: Metal Roof

Report Date: 12/02/2022
Title: Inspection Report

INSPECTION OVERVIEW

This roof is in failed condition for multiple reasons and I recommend planning/ budgeting for replacement. Two replacement options are available for this sloped roof sections: new metal roof or replace with shingles. Primary issues and recommendations are listed below.

METAL PANEL

- Issue: metal panel is tearing mid span due to assembly; panel is architectural and non structural, so it is weak and failing in many areas; panel seams are failing and are weak; panel is rusting at eaves; panel is poorly detailed at eaves/ gutters; panel should have been installed in one continuous piece instead of 2 per ridge to eave run.
- Solution:
  - Metal Option (~40 yr lifespan): replace with a true T Seam (Rmer Span) style roof over a fully adhered high temp underlayment. One continuous panel required from eave to ridge.
  - Shingle Option (~20 yr lifespan): install high temp underlayment and architectural shingles.

SKYLIGHT

- Issue: poorly designed; on plane with metal roof; in line with gutter/ internal drain uproof of skylight; connected poorly to metal roof; causing damage to the walls/ windows/ roof below due to snow/ice movement and no ability to control snow runoff.
- Solution:
  - Remove: remove skylight completely and enclose with roofing in-kind
  - Upgrade: install new skylight system (i.e. Kalwall or storefront) set on a curb to raise it above the adjacent roof system; decommission internal drain/ gutter uproof of skylight and install cricket uproof of skylight to control water; install new roof system.

INTERNAL GUTTER/ DRAIN AT EAVES

- Issue: poorly designed (square to round connection); collects organic matter/ debris; very small and offers no slope; backs up snow and ice; doesn't promote proper snow/ water shedding; lined with EPDM over metal which will fail.
- Solution: decommission design and extend new roofing over eaves; install eave mounted gutter with downspouts and splash blocks.

SNOW MOVEMENT/ SNOW FENCE

- Issue: snow tab design is tearing metal panel apart due to lightweight system; tabs only have 1 set screw so they move; denting/ tearing metal panel creating open holes
- Solution:
  - Metal Roof: install S5! style snow fence system with ice flags; install multiple rows
  - Shingle Roof: snow retention system not required.

FLASHINGS/ DETAILS

- Issues: Coming apart at roof to wall head detail; minimal detailing at head/ pan end detail = access to indoors for

water; curb and penetration details are non metal roof approved or NRCA compliant; no curbs to move snow/water properly.
- Solutions: all details to be updated to manufacturer guaranteed; all details to be listed within bidding project; provide inspections during installation to verify compliance to specification.

Photo 1

Metal roof overview.

Photo 2

Glass "skylight" - storefront style.
This skylight is at/slightly below the metal roof line. Recommend either removing the skylight and roof over OR installing a different style skylight that is raised up ~8"-12" from the metal roof and sits on a curb. Instead of a drain/gutter unroof of the skylight (existing detail), install a saddle/cricket valley detail to pushes water/snow to either side of the new "skylight" assembly (engineering required).

Photo 3

Overview of metal roof to skylight connection.

Photo 4

Metal wall panel at the eave edge of the main roof connecting to the gable entry roof. This metal wall panel is directly down roof of the skylight. Snow/ice slides off the skylight and onto this lower roof, which has over time damaged the lower entry roof and the metal wall panels.

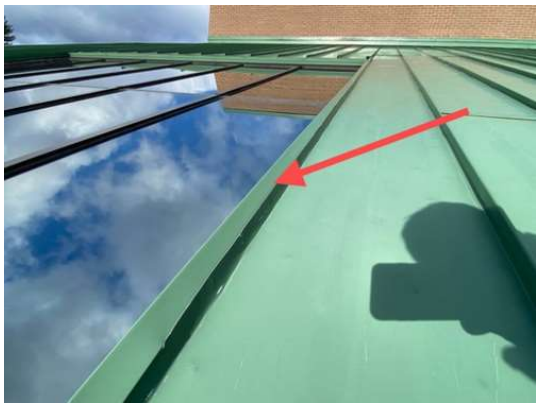


Photo 5

Difficult to show, but this entire metal seam connecting the skylight trim to the metal roof is completely unzipped itself and has created an open condition within the assembly allowing water into the building.

Photo 6

Another view of the same seam that has unzipped itself from the roof-to-skylight connection. This photo shows the transition of the metal panels uproof of the skylight. They are connected by an internal gutter lined with EPDM. These internal gutter are poorly designed and should be decommissioned (see additional photos and comments for further explanation).

Photo 7

Overview of gutter/ internal drain connecting the upper metal roof panel to the skylight assembly.

Photo 8

Another view of the opposite side of the metal roof to skylight assembly = open condition allowing water into your building. Decommission this detail at roof replacement.

Photo 9

Internal drain within the skylight to metal panel transition.

Photo 10

Internal drain assembly at eave. This gutter is positioned directly over the building envelope and funnels water to internal drains. It has failed in most locations due to the design/ function of the system.

Photo 11

Gutter and internal drain overview.

Photo 12

Looking down the the internal drain. Per architectural drawings, this drain makes a transition from square to round pipe, another potential weak point within a system that is within the building envelope.

Photo 13

Roof panel inspection: tear in the metal panel over a seam clip where the fastener has backed out and the shearing effect of snow and ice has torn the metal = **OPEN CONDITION FOR WATER TO ENTER THE BUILDING**

Photo 14

Damaged panels at the eave edge leading to rust of the steel panels and holes into the system (red outline).
Rusting fasteners throughout the assembly, these will continue to fail.

Photo 15

Connection of metal trim to the skylight - this entire connection detail should be improved/ updated.

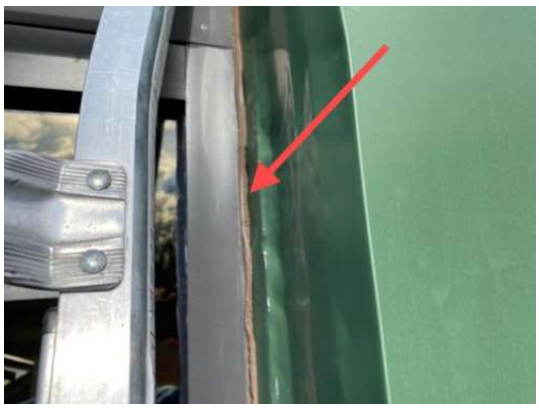


Photo 16

Caulking/ sealant connecting the vertical window just below the skylight to the metal panel. This area sees snow and ice buildup (as evident from the condition of green metal panel) and the sealant has failed/ needs to be replaced to keep water out of the assembly.

Photo 17

Overview of gutter assembly at eaves. Rusting metal panel at the eaves, gutters filled with leaves slowing flow of water. rusting fasteners, etc.

Photo 18

Tear in metal panel and scratching of metal panel most likely from trapped debris under sliding snow/ice.

Photo 19

Seam caps pulling away from the standing seam roof. This is an **OPEN CONDITION FOR WATER TO ENTER THE BUILDING**

Photo 20

Flashing connection from the masonry wall to the metal roof assembly at the head (top) of the roof panel. Masonry pins pulling out.
Update condition as metal moves constantly and it will overtime pull out concrete pins. This condition was found in multiple locations throughout the assembly.

Photo 21

Failed head/ wall flashing for the masonry to metal roof transition. In areas where the masonry pins have failed, this section of counter flashing was blowing in the wind (see next photo), which give direct access for water to enter the building.

Photo 22

Flashing detail failure.

Photo 23

A DIY solution to stop leaks at the internal gutter detail. This light gauge flashing was tucked under the metal panel and fastened into the assembly a few month ago. Many screws have backed off and the metal flashing, although temporarily stopping many of the leaks, is not a long term solution as wind will shear the metal off creating an airborne hazard (see additional photos).

Photo 24

Screws that have sheered away due to wind moving the assembly. Now there are open conditions into the roof assembly.

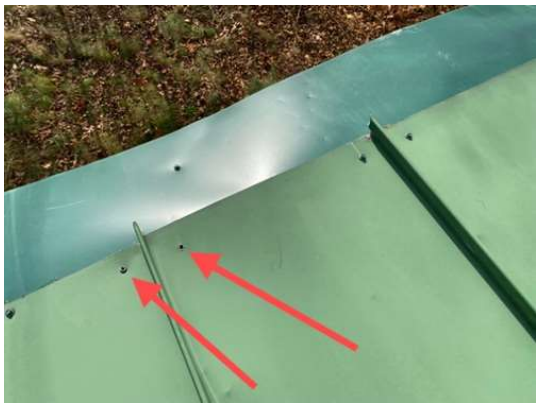


Photo 25

Open holes in the metal panel from the fasteners failing.

Photo 26

Wind catching the end of the flashing/ DIY solution. This was already starting to tear, so I removed this section while onsite during the inspection.

Photo 27

Failed DIY flashing detail at the roof eave to gutter detail. I removed this piece during the site visit so it wouldn't become airborne on a windy day.

Photo 28

Improperly installed curb. The roofing panels should have been unseamed and removed to allow for a proper curb and pan assembly ideally installed with a cricket and valley. This curb flange was installed directly to the panels with sealants that will always fail over time as the curb limits the movement of the metal panel.

Photo 29

Silicon sealant installed at a failed seam where damage occurred along the way. This is not an acceptable repair.

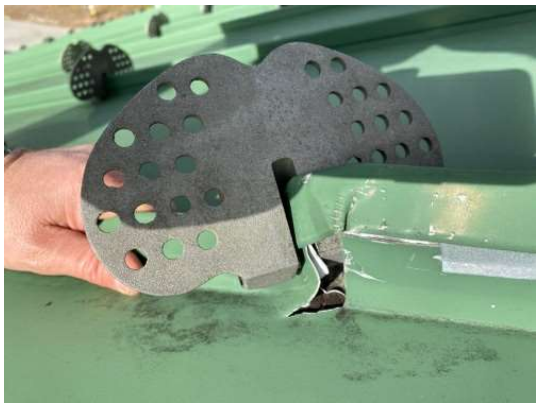


Photo 30

These rib mounted snow tabs are not an acceptable solution for snow management on an architectural metal panel roof. There are MANY snow tabs that have similarly torn the metal panel and created an open condition in the roof.

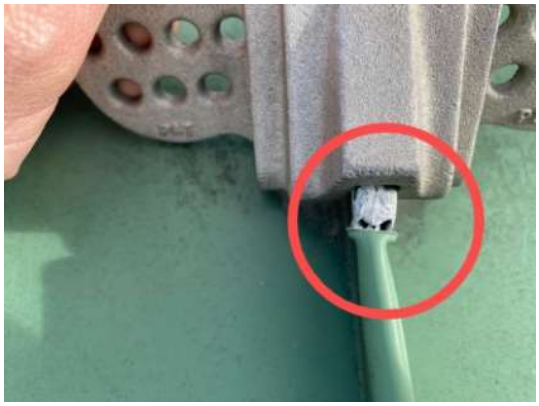


Photo 31

Movement in the snow tab has damaged the panel rib leaving an open condition for water to enter the building. This condition was found in MANY locations around the roof area.

Photo 32

Additional open conditions at the snow tabs.

Photo 33

Only 1 fastener/ set screw was used to lock in the panel, this is what has allowed the snow tab to tear/ dent the metal panel rib.

Photo 34

Additional open conditions at the snow tabs.

Photo 35

Additional open conditions at the snow tabs.

Photo 36

These pipe boots do not withstand the movement of snow. Note the corners of the metal around the boot are folding up. Stainless steel fasteners should be used as well.

Photo 37

Failure at another pipe boot. No clamp ring used around the rubber to pipe connection.

MEMORANDUM
PORTLAND WATER DISTRICT

TO: Planning Committee/Board of Trustees

FROM: Christopher Crovo, P.E., Executive Director of Asset Management and Planning

DATE: April 3, 2024

RE: Planning Committee Meeting – April 8, 2024

A meeting of the Planning Committee of the Portland Water District Board of Trustees will be held on Monday, April 8, 2024, at 5:30 p.m., in the Nixon Room of the District, 225 Douglass Street, Portland, Maine.

AGENDA

1. Election of Chair
   The Committee will elect a chair for 2024-2025.

2. 2023 Standish Beach Report
   The Standish Director of Parks and Recreation, Matt Duplisea, and Staff will review the 2023 report.

3. Route 35 and 114 Intersection Stormwater Project
   Staff will present a request for up to $21,500 for stormwater engineering for Northeast Rd. Ext. ditch and drainage way. (See attached memo)

4. Forest Management: Current Issues and Plans for the Coming Season
   Staff will provide a status report.

5. Other Business

2023 Rich Memorial Beach Annual Report

Introduction/Background

Standish's Rich Memorial Beach is located outside the two-mile "no bodily contact zone" on the west shore of Sebago Lake off Harmon's Beach Road. In early 2016, the Town of Standish (Town) and the Portland Water District (PWD) agreed to a long-term lease of the beach to enhance recreational waterfront on Sebago Lake for Standish residents. This annual report is a joint effort between PWD and Town staff with the shared goal of successful management of water quality and enjoyment of the beach. For more information about the beach and its operation, please see the current John Rich Memorial Beach Management Plan.

2017-2023 Attendance

Year	Annual Passes Sold	Daily Passes Sold	Rec Camp Days (40-110 campers)	Boating Club Stickers Sold
2017	569	NA	9	297
2018	545	N/A	6	342 (89 residents)
2019	518	20	7	351 (95 residents)
2020	555	36	10 (20 kids)	310 (81 residents)
2021	649	49	6	313 (76 residents)
2022	689	58	6	355 (?? residents)
2023	633	64	5	289 (63 residents)

Year	May/June Attendance Totals	July Attendance Totals	August Attendance Totals	September Attendance Totals
2019	939	3871	2052	158
2020	349	3957	2596	392
2021	2711	1964	2505	304
2022	1876	4328	1954	231
2023	968	3588	1957	608

- Beginning in 2017, households were required to purchase a per vehicle pass. Beginning in 2018, it changed to a household membership system that included up to two passes per household.
- Logs for attendance tracking were maintained by gate attendants daily. There was a total count divided into both shifts. For example, there was a total count for those who entered between 9:30am-2:30pm and a total count for those who entered between 2:30pm-7:30pm. Those totals were added together to give a daily count.
- The beach closed completely due to weather on 4 days throughout the summer and closed early or had a delayed opening on approximately 18 days. Two of the partially closed days were for unsafe water quality.
- The busiest weekend day recorded in the log was Sunday, July 23, 2023, with 248 people (103 cars). The busiest weekday recorded was 308 people (100 cars) on Thursday, July 6, 2023.
- Weekend visitors consistently exceed weekday visitors throughout the summer.
- Monthly attendance totals include morning and afternoon totals added together. Overall, 1,268 less people visited in 2023 than in 2022, and 190 more people visited in 2021 than in 2020. There is a trend of decreased visits, decreased memberships, and decreased boats visiting the facility. The above average rainfall during the summer months contributed to the decrease in attendance for 2023.
- Starting the 2024 season Town of Standish full and part-time employees will be afforded the opportunity for one free pass to utilize Rich Memorial Beach.

2023 Operations

Schedule: Preseason, High Season, and Ice Fishing Access

May 27 - June 13th	Weekends Only	9:30 am – 7:30 pm
June 14th - Labor Day	Open Daily	9:30 am – 7:30 pm
September	Weekends Only	10:00 am – 4:00 pm
Ice Fishing Access	Ice-in to Ice-out	24 hours

- Due to mild temps and lack of ice, there was not much ice fishing activity this year.

Staffing

Beach Attendants

- Two attendants stationed at the gatehouse monitor vehicles, check memberships, and speak with attendees. Every 30-60 minutes (depending on the volume of people), one attendant performs a beach patrol. One attendant is always located at the gatehouse.
- Patrols entail routine inspections of the beach, bathroom facilities, and parking area.
- Inspections entail interaction with the public, communication of the rules, trash pick-up, bathroom maintenance, boardwalk sweeping, and handling other issues that arise.
- At least two attendants are on duty at any given time with radio communication for safety.
- The gatehouse is equipped with a battery-operated AED and all staff are trained in CPR/First Aid
- The Sebago Boating Club provides an attendant daily during the busy season.
- There are no lifeguards on duty. The beach is posted as “Swim at Your Own Risk.”

Beach Samplers

- Duties are to perform beach water sampling and transport samples to the lab for analysis.

Facility Maintenance and Waste Management

Roadway, Parking Lot, and Boardwalk

- The parking lot is inspected daily and kept clear of debris and trash.
- The roadway is monitored weekly and shoulders/washouts from storm water are regularly maintained by DPW.
- The boardwalk and picnic tables are monitored for safety (inspected for nails sticking out, loose boards, etc.) and repaired as needed by DPW and Parks & Recreation staff.
- The gatehouse, vault privies, and toilet arrays all received a fresh coat of stain in 2022. The boardwalk will be stained again in 2024.
- Solar power panels and voltage were increased in 2022.

Carry-in, Carry-out Policy.

- Except for small trash receptacles in each porta-toilet and vault privy (as required by the porta-toilet company), there are no waste receptacles. This trash from the bathrooms is emptied daily or as needed into an on-site dumpster that is padlocked and accessible only to Town staff.
- The dumpster, located near the gatehouse, is emptied on a regular disposal schedule, or as needed throughout the season.

Bathroom Facilities

- There are two porta-toilets that are pumped/serviced weekly and two permanent handicap accessible vault privies that are cleaned daily.
- In 2020, an Eagle Scout modified the "toilet array" and converted it to a changing station by adding doors, hooks, and interior benches.

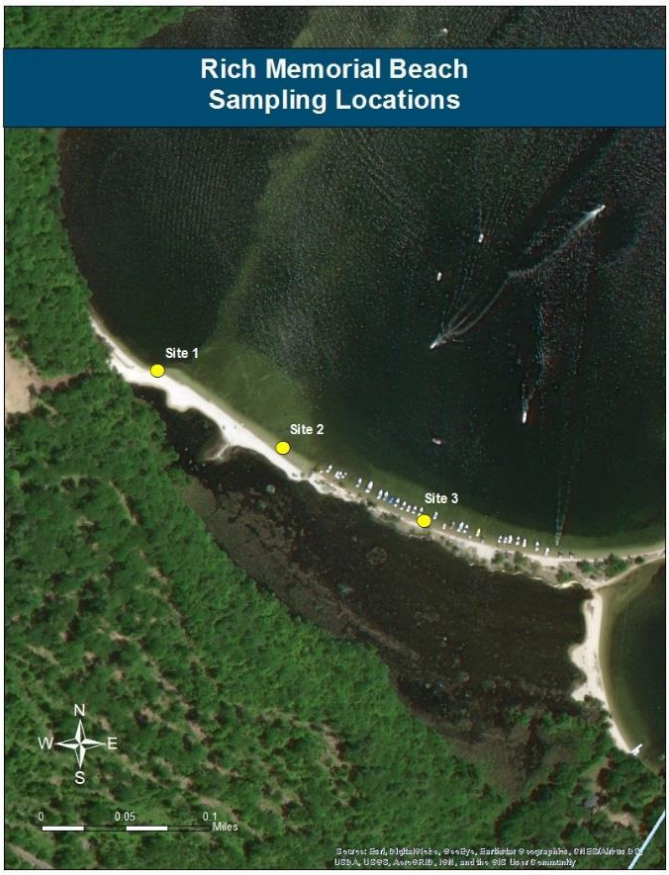
Wildlife and Animal Management

Wildlife

- Attendants remove 5-gallon bucket loads of goose/duck feces daily and transfer to the woods.
- Attendants did their best to educate the public and dissuade waterfowl from hanging around.
- There are several large snapping turtles on the beach, boardwalk and in the parking lot each year throughout the summer.
- Wildlife seen geese, ducks, turtles, bobcat, bald eagles, herons, egrets, snakes, turkeys, rabbits, loons.
- Evidence of dogs being on the beach during off hours.
- Geese and ducks continue to be the greatest challenge to water quality.

Beach Bacteria Testing

The John Rich Memorial Beach is tested for *E. coli* bacteria on weekends, and Tuesdays (from Memorial Day to Labor Day) at three locations shown on the map below. If beach water samples reveal *E. coli* bacteria levels exceeding 235 cfu/100mL, the Town closes the beach and re-samples. The beach remains closed until *E. coli* levels fall below 235 cfu/100mL.



Weekends and Holidays

- One or two Town staff are dedicated to sampling and sample transport.
- If beach water *E. coli* results exceed the EPA guidelines for Swimming Beaches, Town staff close the beach (see the Town Beach Closure Protocol for more information).

Lake-wide Beach Monitoring (Tuesdays from Memorial Day weekend to Labor Day)

PWD monitors *E. coli* bacteria levels at 17 swimming beaches around Sebago Lake, including the John Rich Memorial Beach, every Tuesday from Memorial Day weekend to Labor Day.

2023 Beach Water Monitoring Results

- No *E. coli* test results exceeded the safe swimming beach guidelines in 2023.
- Analysis of the data from 2008 to 2023 indicates 95% of *E. coli* samples at Rich Memorial Beach were within 0 and 36 cfu/100mL. The average *E. coli* level is 14 cfu/100mL.

Rich Memorial Beach *E. Coli* Results

	Site 1	Site 2	Site 3
Date	cfu/100mL	cfu/100mL	cfu/100mL
5/27/2023	3	0	0
5/28/2023	0	0	0
5/29/2023	0	4	0
5/30/2023	4	1	0
6/3/2023	6	9	4
6/4/2023	4	5	0
6/6/2023	1	0	0
6/10/2023	0	0	3
6/11/2023	0	0	0
6/13/2023	12	1	0
6/17/2023	16	4	8
6/18/2023	6	56	23
6/20/2023	6	48	4
6/24/2023	3	0	2
6/25/2023	1	3	1
6/27/2023	3	1	0
7/1/2023	2	4	4
7/2/2023	12	2	21
7/5/2023	9	3	1
7/8/2023	7	4	4
7/9/2023	3	166	6
7/11/2023	3	13	14
7/15/2023	12	9	5
7/16/2023	5	5	5
7/18/2023	1	4	0
7/22/2023	18	29	15
7/23/2023	10	23	11
7/25/2023	6	21	2
7/29/2023	8	0	1
7/30/2023	37	33	9
8/1/2023	3	3	1
8/5/2023	2	9	10
8/6/2023	7	7	8
8/8/2023	5	2	1
8/12/2023	3	2	4
8/13/2023	16	3	6
8/15/2023	3	4	14
8/19/2023	6	6	1
8/20/2023	8	6	12
8/22/2023	3	9	3
8/26/2023	6	2	5
8/27/2023	0	2	2
8/29/2023	6	1	3
9/2/2023	2	1	0
9/3/2023	5	10	5

Violations, Citations, Incidents

- Minor incidents reported and handled by staff.
- Staff, bystanders, and public safety from Standish and surrounding communities responded to a guest who experienced a medical emergency while in the water. Life-saving measures were performed, unsuccessfully.
- Standish experienced two storms/microbursts that resulted in significant tree damage. DPW and Parks and Recreation crews spent several days cleaning up branches, trees, and debris from the roadway and parking lot. PWD was notified.

Lessons Learned/Ideas Moving Forward

1. The log sheet works well for tracking incidents and communication between shifts.
2. The Emergency Action Plan has been developed and located at the gatehouse for staff to review.
3. Take additional steps to ensure that communication of lab results get to beach managers in a timely fashion.
4. The Beach Management Plan was reviewed and updated in 2021 by Town and PWD staff, attorneys, PWD Board of Trustees, and SBC. Signage, printed materials, Town website, and sub-lease agreement all reflect these revisions.
5. The public continues to ask for more shade elements to be added to the facility. While permanent picnic shelters are not approved by the PWD, the Town will work toward adding umbrellas to picnic tables in the summer of 2024.

Community Recreation Opportunities

1. The Parks & Recreation Department will continue to offer lessons, paddling camps, and excursions for youth and adults at Rich Memorial Beach. We will continue to work toward more programming opportunities and consider ideas for special events at the beach to expose the facility to Standish residents and promote community.
2. The Parks & Recreation Department purchased paddle boards that are available to the public and new storage lockers have been added adjacent to the porta-toilets.

Ice Fishing Access Winter 2017-2023

The gate to the beach is opened once the ice in front of the beach has set up. When ice conditions are conducive, the parking lot and snowmobile access road to the beach are used frequently and the parking lot is usually full during annual the ice fishing derby in February.

Parking Lot

The parking lot is maintained throughout the winter, but the gate to the facility is only opened during the period when there is ice in front of the beach. The gate is closed once the ice recedes and the facility is closed until the beach opens in the spring.

Ice Fishing Access Road

Signs installed on the access road marking the trail to the lake.

PLANNING COMMITTEE / AGENDA ITEM SUMMARY

Agenda Item:	3
Date of Meeting:	April 8, 2024
Subject:	Standish Route 114/35 Intersection Stormwater Treatment Design Contract
Presented By:	Chad Thompson, Source Protection Coordinator

RECOMMENDATION

The following proposed language is presented for Board of Trustee approval:

> ORDERED, the General Manager is hereby authorized to execute a contract with Gorrill Palmer for professional services in the amount of up to $21,500 for engineering to modify the existing ditch adjacent to Northeast Road Extension and modify the drainageway on District-owned land.

BACKGROUND ANALYSIS

In December, 2023, the District partnered with the Town of Standish on a project to make improvements to the intersection of Route 35 and Route 114. While the town's goals are to improve traffic flow, the District's objective is to enhance the protection of water quality in the Lower Bay of Sebago Lake by redirecting the majority of the stormwater from Standish Brook to an existing ditch and natural drainageway on District-owned land adjacent to Northeast Road Extension.

As a result of the ongoing stormwater redirection project, stormwater flow to the existing infiltration ditch alongside Northeast Road Extension is projected to increase tenfold. As a result, the existing ditch needs to be modified to handle the increased flow, and a section of the subsequent drainageway on PWD land needs to be modified to avoid potential impact to the historic railroad turnstile. The Department of Environmental Protection has been consulted on this project and has determined that no permits are needed for this work.

Once competed, this project will remove and treat the majority of intersection stormwater currently flowing to Standish Brook. This will provide a significant reduction in the amount of polluted stormwater that is currently flowing from the intersection to the Lower Bay of Sebago Lake. Treatment by District-owned forest, and three natural wetland areas along the drainageway will significantly mitigate stormwater pollution currently flowing to the Lower Bay of Sebago Lake.

FISCAL REVIEW / FUNDING

The project cost of up to $21,500 will be withdrawn from the Trustee Watershed Protection Fund. The fund currently has an available balance of $224,524.

LEGAL REVIEW

Corporate Counsel has reviewed the proposed order as to form.

CONCLUSION(S)

Staff recommends contracting with Gorrill Palmer to engineer modifications to the existing infiltration ditch adjacent to Northeast Road Extension and the subsequent drainageway on District-owned land.

ATTACHMENT(S)

Proposed contract with Gorrill Palmer

GORRILL PALMER

300 Southborough Drive, Suite 200
South Portland, Maine 04106
207.772.2515

February 26, 2024

Mr. Chad Thompson
Portland Water District
225 Douglass Street
Portland, ME 04104

Subject: Proposal for Route 114 & 35 Portland Water District Stormwater Construction Documents & Construction Phase Services

Dear Chad,

Gorrill Palmer (GP) is pleased to submit this proposal for the Route 114 & 35 Portland Water District stormwater design. This proposal covers additional design work to re-route existing drainage from the existing outfall to the drainage system along the Northeast Road Extension. This rerouting will require design to increase the capacity of the existing storm drain piping, existing ditch, and the stormwater treatment system. Our prior work has identified that the outfall piping and existing ditch system needs to be expanded to accommodate the flows from the Route 114/35 intersection that are currently being conveyed and discharged to Standish Brook. The benefit of this rerouting will be enhanced stormwater treatment and removing a significant amount of road drainage from Standish Brook, which discharges directly to Sebago Lake. The drainage system along Northeast Road Extension appears to be internally drained and does not have an outlet to Sebago Lake.

Scope of Services
We propose the following scope:

1. Modify the previously developed hydrologic model to size the expanded storm drain pipes, existing drainage ditch, and do design a new stormwater treatment best management practice (BMP). We will use the model to evaluate the capacity of the entire drainage outfall system and determine the peak capacity of the internally drained ditch and pond system.
2. Design the rerouted and upgraded storm drain collection system. This will include storm drain piping from the Rte 114/35 intersection to the outfall near Northeast Road Extension, resizing the drainage ditch that parallels Northeast Road Extension and into the adjacent woods; a new stormwater treatment BMP near the existing snowmobile trail (likely a underdrain filter/infiltration BMP), design/resize existing ditching the BMP area to the existing ditch/swale along the southerly side of the old rail bed along the southerly send of Sebago Lake.
3. Prepare design plans and specifications that will modify the current stormwater design that was included in the Town of Standish bid plans for the intersection improvements. Design plans in areas beyond the limit of survey for the Standish Intersection project will be based on aerial photographs and LiDAR contours from the Maine GIS website.
4. Prepare an opinion of probable construction cost for the stormwater system upgrades.
5. Coordinate with the Town's Contractor for the intersection project to obtain updated pricing for the proposed stormwater improvements.
6. State permitting requirements are currently unclear. We have not included time and scope for Maine DEP permitting at this time. Based on our site observations we do not believe that the existing drainage ditch system would be considered a stream. If this determination changes and DEP requires permitting, we will submit a supplemental scope and fee for the permitting work.

Schedule
We anticipate that design work for this additional work will take about 2 to 4 weeks to complete. We are anticipating that construction will occur in 2024 construction season.

Please note there are many factors outside Gorrill Palmer's control which may affect our ability to complete the services provided in this scope. Gorrill Palmer will perform these services with reasonable diligence and expediency consistent with sound professional practices.

Fee
We propose to complete this scope of services for a **lump sum fee of $21,500**. Including reimbursable expenses for mileage, printing, etc. We have not included permit applications fees, if any, or any abutter notification or public notification fees.

Closure
We look forward to working with the Portland Water District on this project. If you would like to proceed, please sign, and return one copy of this contract modification for our records. We assume we would be subject to the Portland Water District standard contract language. Please contact us with any questions.

Sincerely,

Gorrill Palmer

William C. Haskell, PE
Principal

Portland Water District

_____
Authorized Signature Date

_____
Printed Name & Title

_____
PO # (if necessary)