
BSD
Brunswick Sewer District
2025
ANNUAL
REPORT

First meeting with the Brunswick Sewer District and the Board of Trustees.

Treatment Plant Dedication Shovel Dig- 1992

Pictures *of the* Past

Mercury Testing - February 16, 1997

Cub Scouts Treatment Plant Tour - 2004

BRUNSWICK SEWER DISTRICT

Mission:

To protect the health and environment of the communities we serve through wastewater collection and treatment in an environmentally responsible , efficient, and reliable manner.

Adopted June 19, 2014

Vision:

We aspire to provide exceptional service through qualified Board and Staff utilizing innovation and technology to be good environmental and fiscal stewards.

Adopted July 10, 2014

Brunswick Sewer District
10 Pine Tree Road
Brunswick, Maine 04011

The Brunswick Sewer District serves the communities of Brunswick and Topsham (by contract). We have a staff of 17 full time employees and up to 21 seasonally. The district is licensed to treat 3.85 MGD of sewage and we average 2.2 MGD. The District is directly responsible for more than 1800 maintenance manholes, 100 miles of underground pipe, and more than 40 pump stations. To learn more, follow us on social media, check us out at ***brunswicksewer.org***, or email us at ***info@brunswicksewer.org***.

2025 Annual Report
For year ending December 31, 2025

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INTRODUCTION GENERAL MANAGER

There is a saying that "the only constant in life is change," and 2025 certainly proved that true for the Brunswick Sewer District. It was a year defined by significant transitions—both in our infrastructure and within our District family.

While we said goodbye to long-time colleagues and welcomed new faces, our commitment to our mission remained steadfast. I am incredibly proud of how our existing staff stepped up during these transitions, and I am equally thankful for the new hires we welcomed in 2025. They have hit the ground running, bringing new energy and skills that have already proven to be a great addition to our team.

Despite these changes, one thing has remained consistent: the high quality of our operations. The treatment plant performed exceptionally well this year, achieving removal rates of over 92% for both Biochemical Oxygen Demand (BOD) and Total Suspended Solids (TSS)—results that far exceed our permit requirements. This operational excellence is a direct testament to the expertise and dedication of our team.

We also saw our Administrative Team work tirelessly to modernize our customer service experience. Through their hard work, we successfully rolled out enhanced account portals that allow ratepayers to easily view their history and pay bills online. This upgrade has streamlined our internal processes and, more importantly, provided our customers with the convenient, transparent access they deserve.

In 2025, the District absorbed a significant number of new customers and expanded our service area, all without increasing our staffing levels. This efficiency speaks volumes about the capability of our team across all divisions and our commitment to providing value to our ratepayers.

It was also a year of visible progress in our capital improvement program and internal goals. Some key highlights include:

- **Infrastructure Upgrades:** We successfully completed major sewer line reconstruction projects on Page Street, Longfellow Avenue, and Maine Street, replacing aging infrastructure that had served the community for decades.
- **Pump Station Improvements:** Significant headway was made on the Harpswell Street pump station upgrade, enhancing the reliability of our collection system.

- **Facility Enhancements:** We completed a full remodel of the Administration Garage, transforming it into usable workspace and storage.
- **Asset Maintenance:** Our team executed a comprehensive power-washing project for all above-ground concrete structures at the treatment plant, extending their lifespan and improving facility aesthetics.

Beyond our local operations, the District continues to be a leader in the wastewater field. Our staff remains heavily involved with volunteer organizations, contributing their time and expertise to advance our industry. On a personal note, I am honored to step into the role of President of the Maine Water Environment Association (MEWEA) for 2026, where I look forward to advocating for clean water initiatives across the state.

Looking ahead to 2026, we intend to keep this momentum going. We are planning another robust year of capital investments, including the reconstruction of sewer lines on Spring Street and Morse Court. These projects are vital to ensuring the long-term reliability of our system and protecting the environment we all cherish.

None of this would be possible without the continued guidance and support of our Board of Trustees. Their commitment to making prudent, long-term decisions allows us to invest in our infrastructure while maintaining fiscal stability. I also want to thank our dedicated employees who work tirelessly, often behind the scenes, to keep our community running smoothly.

Thank you for your continued support.

Rob Pontau, PE
General Manager

ADMINISTRATION MANAGEMENT

Management Staff

Robert Pontau Jr., PE
General Manager
rpontau@brunswicksewer.org

Jennifer Nicholson
Assistant General Manager
jnicholson@brunswicksewer.org

Lorraine Caron (Retired December 31, 2025)
Finance Manager

BOARD OF TRUSTEES

The affairs of the District shall be managed by a five (5) member Board of Trustees, who are charged with sound and prudent management of the financial resources of the District.

Charles R. Priest, Chair
Attorney
Appointed: February 2005
Term Expires: March 2026

John Foster, Vice Chair
Civil Engineer
Appointed: March 2019
Term Expires: March 2028

Douglas Rice, Treasurer
Civil Engineer
Appointed: September 2014
Term Expires: March 2027

John Fitzpatrick, Assistant Treasurer
Owner of New Meadows Marina
Appointed: March 2022
Term Expires: March 2028

Jacqueline R. Sartoris, Trustee Clerk
Cumberland County District Attorney
Appointed: January 2016
Term Expires: March 2026

ASSISTANT GENERAL MANAGER REPORT

The District achieved high operational efficiency in 2025, driven by key advancements across multiple divisions.

Staff made significant technical strides in asset management. Notably, the Collection Division utilized 360-degree camera technology to inspect and grade all brick maintenance holes, confirming that over 81% of the infrastructure is in good or excellent condition. The Pumping Division also began a major digital transition, installing cellular radios on certain residential water meters to automate data collection and substantially reduce manual labor hours for billing. Additionally, the Treatment Division completed necessary infrastructure replacement and cleanup.

Professional development and safety remained paramount. Management completed the Leadership Journey program, and the District was again recognized for its safety commitment by re-earning the SHAPE award for safety excellence.

Looking ahead, the District is actively managing critical infrastructure needs. Repairs are scheduled for early 2026, and the team is currently investigating more sustainable sludge disposal options. Due to the discontinuation of land application, all available alternatives are unfortunately costly. These proactive measures—combined with line replacements, pipe lining, pump station upgrades, and new digital programs ensure the District is well-positioned to support the expansion of services and the absorption of new customers reported this year.

Jennifer Nicholson
Assistant General Manager

RETIREMENT REPORT ADMINISTRATION

Honoring a Legacy of Stewardship

Lorraine Caron

On December 31st, the District marked the conclusion of a significant chapter with the retirement of Finance Manager Lorraine Caron. Serving for nearly 17 years, and over 15 years as our Finance Manager, Lorraine has been the steady hand guiding our financial operations, ensuring stability and transparency through shifting economic landscapes.

Lorraine's tenure was defined not just by the length of her service, but by the depth of her impact. She was instrumental in modernizing our financial systems and maintaining the highest standards of fiscal integrity. Among her many contributions, Lorraine was key to obtaining financing for our major treatment plant upgrade, instituting new financial systems with customer portals, and securing clean audits for her entire tenure.

While her expertise balanced our books, it was her presence that balanced our team. Whether navigating complex audit seasons with grace or bringing joy to office gatherings, Lorraine was a dedicated colleague and a true asset to the BSD family.

We extend our deepest gratitude to Lorraine for more than a decade and a half of distinguished service. As she moves from managing budgets to managing her free time, we wish her a retirement filled with relaxation, joy, and well-deserved adventures.

DIVISION REPORTS
ADMINISTRATION

Administrative Staff

Darcy Dutton
Accounts Specialist & Customer Service
ddutton@brunswicksewer.org

Lisa True
Office Manager/Staff Accountant
ltrue@brunswicksewer.org

Bonnie Shippen
Accounts Specialist
bshippen@brunswicksewer.org

Nellie Hollingshead
Accounts Specialist & Customer Service
nhollingshead@brunswicksewer.org

Hallie Lord
Summer Employee (Part-time)

Division Responsibilities

The Administrative Division provides the essential infrastructure for the District's operations, including billing, accounting, payroll, benefits, permitting, and general record-keeping. A primary focus of the Division remains maintaining strict compliance with safety and governmental regulations. Additionally, the Division manages District coordination between operations, outside agencies, and our ratepayers to ensure seamless service.

2025 Accomplishments

- **Software Proficiency & Training:** Building on our conversion to the Munis software platform, 2025 was a year of deep-dive training. Staff expanded their technical skill sets to better utilize the software's advanced modules, ensuring more accurate data management and streamlined financial reporting.
- **Enhanced Payment Accessibility:** We have successfully expanded the ways our ratepayers can interact with the District. New access points and streamlined workflows within our payment portals have made it easier than ever for customers to manage their accounts in live time and submit payments securely.
- **Leadership Transition:** In 2025, the division successfully managed a significant leadership transition following the retirement of our long-standing Finance Manager. This involved a comprehensive knowledge transfer and procedural updates to ensure continuity of service.

Staff Recognition & Announcement

Welcome to the Team. We are excited to introduce Nellie Hollingshead, the new face of the District. Nellie joins us as we transition our financial workflows and is ready to assist our ratepayers with the high level of service ratepayers have come to expect. Please join us in welcoming Nellie to the BSD family!

Future Goals (2026)

The Division is committed to further modernizing our customer experience in the coming year:

- **Autopay Migration:** We will be transitioning all our in-house autopay customers to our online portal. This move creates a one-stop shop, where ratepayers can manage all account information, view history, and control payments in one secure location.
- **Text-to-Pay Integration:** To provide maximum convenience, we are researching and implementing a text-to-Pay functionality, allowing customers to view and pay their bills directly via text.
- **Digital Archiving:** Ongoing efforts to digitize permanent District documents will continue, ensuring long-term data security and ease of access.

From left to right: Hallie Lord, Nellie Hollingshead, Lisa True, Lorraine Caron (holding Diesel), Bonnie Shippen and Darcy Dutton.

DIVISION REPORTS COLLECTIONS

Collection Division Staff

Ernest J. Bergeron II
Director of Collections Systems
ebergeron@brunswicksewer.org

Erik Walling
GIS Coordinator/Senior Operator
ewalling@brunswicksewer.org

Keith Good
Operations & Maintenance
kgood@brunswicksewer.org

Bryan Chonko
Operations & Maintenance
bchonko@brunswicksewer.org

Aaron Temple
Operations & Maintenance (Part-time)
atemple@brunswicksewer.org

Division Responsibilities

The Collection Division is responsible for operating and maintaining all District equipment and facilities – 73.5 miles of lines, 1687 maintenance holes – Brunswick. 20.1 miles of lines, 445 maintenance holes – Topsham. Used to collect and transport wastewater to the Water Pollution Control Facility at 8 Pine Tree Road. This responsibility extends by contract to facilities owned by the town of Brunswick at Mere Point, and Topsham Sewer District, and MRRA. The Division also provides monitoring and inspection of wastewater facilities construction for District and Developer projects.

Accomplishments

Town Street Paving Program - Staff reset to grade 16 sanitary maintenance hole frames and covers to bring them back flush with the new pavement.

Line Projects:

- **Admiral Fitch -** New main installation by Aceto Construction; 6 new smh's and 745' of 15" pvc mainline, 291' of 8" pvc - accepted.
- **Harry Rich** - New main installation by Aceto Construction; 1 new smh and 153' of 8" pvc mainline - accepted.

- **Katahdin Drive** - MRRA/Crooker installed 2266’ of main line, 11 smh’s, 1 pump station (private).
- **McKeen Woods** - Nelson installed 789’ of main line, 6 smh’s (private).

Collection System

Line Maintenance:

- **Flushed** – 36,000 (6.8 miles [7.07% of system]). Pm list completed and ½ of 2nd year of the 10-year list.
- **Video Inspection & Recording for Maintenance –** 5458’ (1.03 miles [1.07% of system]).
- **BSD spot liners** – No spot liners in 2025.

Line Replacement/Repairs:

- **Page Street main line replacement** – 6” vcp pipe replaced with 1078’ of 8” pvc pipe and new smh’s.
- **Longfellow Avenue main line replacement** – 6” vcp pipe replaced with 594’ of pvc pipe and new smh’s.
- **Maine Street main line replacement** – 12” vcp pipe replaced with 252’ of 12” pvc pipe with 1 new smh.

Page Street main line replacement
July 8, 2025

Longfellow Avenue main line replacement
September 22, 2025

Maine Street main line replacement
October 21, 2025

All new construction work by Crooker Construction – $881,115.09

- **Vortex was hired to install a full liner from Cabot Street to Mill Street** – 139' liner installed in the 8" acp line - $13,400.00.

Sewer Maintenance Hole Replacement/Repair:

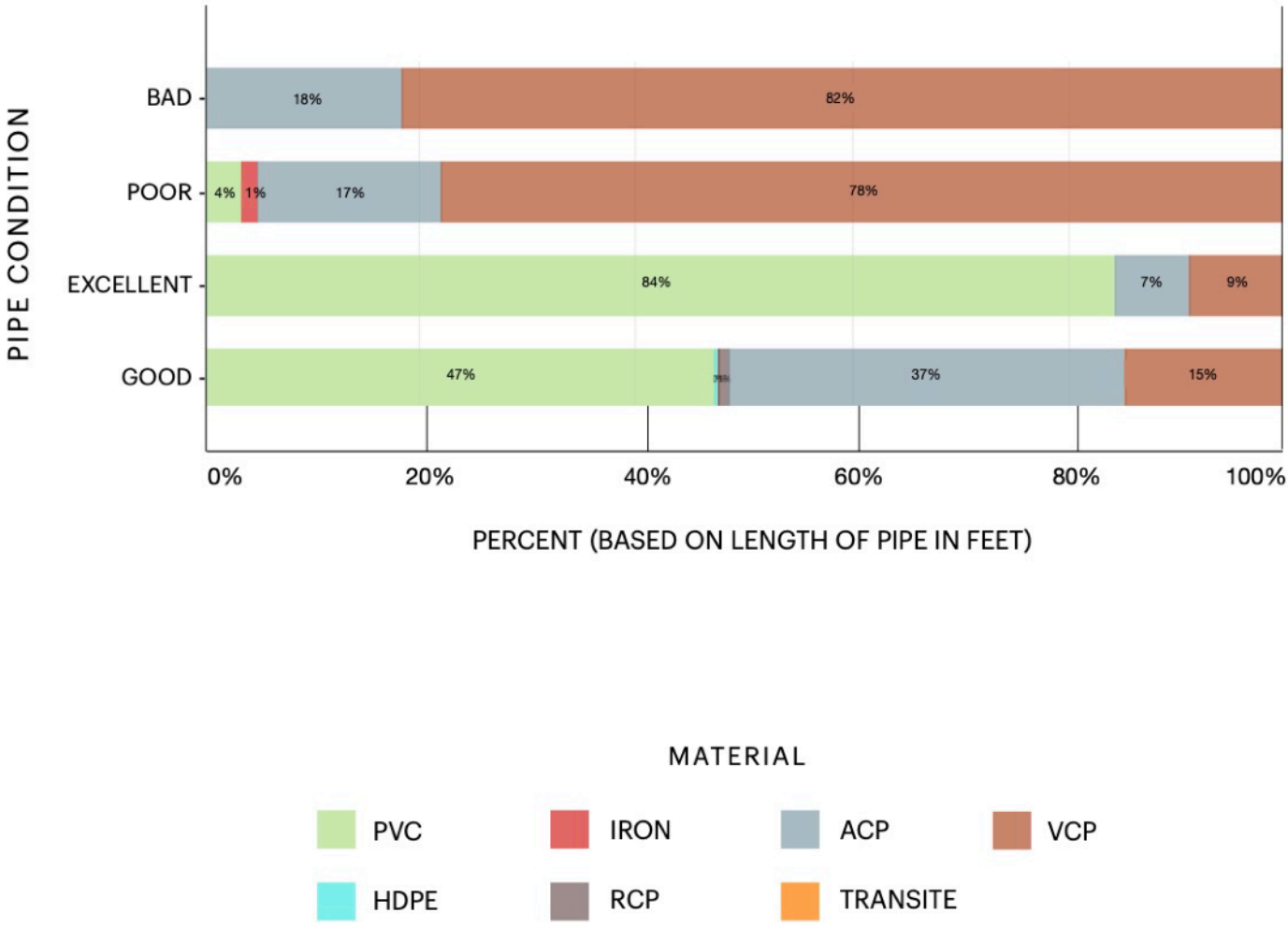
- No sewer maintenance hole (smh) repairs in 2025.

General

- Worked with the Pejepscot Historical Society to give tours/history information on BSD.
- Collections/pumping started the replacement of Harpswell Street pump station and the pipe/bypass upgrade at Mill Street station.
- Administration garage overhaul – remove everything, upgrade wiring, insulate, sheetrock walls/ceilings, paint, vinyl side entire building.
- Performed pm to all equipment/vehicles and minor repairs.
- Worked with the Town of Brunswick on the sidewalk replacement project.
- A total of 25 possible plug calls were received from January to December: only 3 were Brunswick Sewer District related.
- Erik Walling and Aaron Temple used a 360º camera to inspect/grade all brick/block maintenance holes in Brunswick.
- Assisted Brunswick & Topsham Water District (BTWD) with locating a leak in a new line installed on Station Avenue.
- Air lines/regulators/reels were run into the 6-bay garage for aid in truck repairs/ maintenance.
- Erik Walling – graduated from the Management Candidate School.
- Bryan Chonko joined the Ops Challenge team and passed his wastewater treatment license #2 from the State.
- Keith Good completed his Collection System Sacramento course.


Administration Garage Rehab Project

BSD Pipe Condition By Pipe Material



DIVISION REPORTS PUMPING

Pumping Division Staff

Michael Jouver
Director of Pumping Systems
mjouver@brunswicksewer.org

Collin Lamb
Operator
clamb@brunswicksewer.org

Konner Scarponi
Operator
kscarponi@brunswicksewer.org

Nathan Abbott
Summer Employee (Part-time)

Division Responsibilities

The Pumping Division is responsible for the operation and maintenance of twenty-six pump stations throughout the town of Brunswick of which we own. The Town of Topsham hired us to maintain their six stations to convey their waste to Brunswick. Along with fifteen more pump stations and eight leach fields at Mere Point Colony. These stations allow the district to provide and protect our little part of the world.

Pump Stations

I'm very happy to report that the Androscoggin Street Pump Station which the crew replaced last year has been running extremely well. The first month or so there were a few bugs to be worked out, but nothing major. The Harpswell Street Pump Station is now undergoing a very similar transformation to Androscoggin Street. This is more of a job, but nothing this crew can't handle. Station maintenance is a large part of our daily task including overall observation of the facilities, greasing pumps, adjusting impellers, cleaning check valves, exercising generators, cleaning wet wells, and the list goes on. There is ongoing training for equipment, safety, and keeping systems running smooth.

Duties

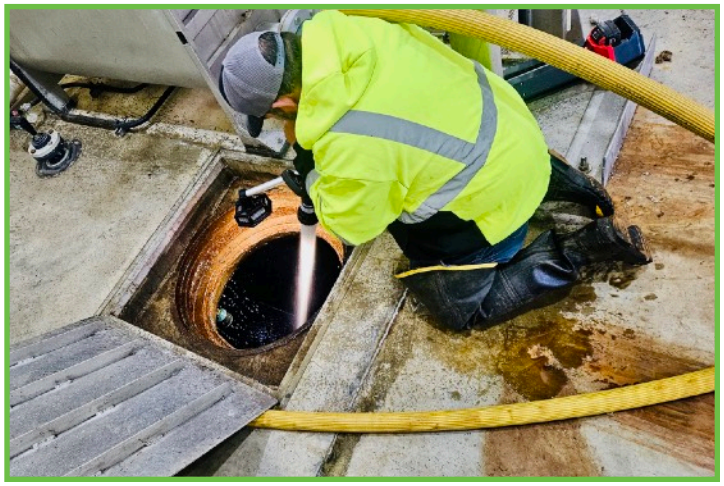
The Pumping Division is also responsible for the data collection of over 60 water meters of homes and businesses that have private wells with public sewer. Over the past year we have installed cellular radios to communicate directly back to the BSD office software. These radios insert the

water meters individual data for the usage at these properties. This is greatly eliminating many hours between employees manually taking readings at each location to the office staff reentering this information into the billing software. Now one person looks over the information rather than going house to house then manually transcribing the information from the meter reader software to the billing software. This will show us ahead of time if there is an issue with a meter or if we just need to recheck a meter's information at any time.

2025 Task

This year has been busy. Here are just a few of the things we have accomplished this year:

- The admin garage has been rewired and a Heat Pump installed.
- Harpswell Street Station - wet well received a 3' barrel and the new pump station set on top as well as a connection to the force main with a bypass.
- The engineering and information gathering from the Maine Street Pump Station upgrade is under way.
- Mill Street Pump Station - all the piping has been changed from 4" to 6" and a new bypass with pig launch installed to increase capacity.
- Capacity studies have been completed for each of the stations.
- We have also put in some different pumps and motor drives at Deerfield.
- Pump #1 at Bath Road #1 - we installed a new impeller.
- Pinewood Drive - we replace Pumps #2 & #3's VFD'S.
- River Road #2 - chased down a bad relay base that needed replacing.
- Arrowhead & Beech Drive Stations both got some new guide rails.
- We have spent some time with MRRA helping them with their sampling at pump stations around Brunswick Landing.



DIVISION REPORTS TREATMENT

Treatment Division Staff

Matthew Densmore
Director of Treatment
mdensmore@brunswicksewer.org

Jason Prout
Senior Lab Technician
jprout@brunswicksewer.org

Brandon Elwell
Senior Operator
belwell@brunswicksewer.org

Evan Meiler
Plant Operator (Joined June 4, 2025)
emeileri@brunswicksewer.org

Logan Anair
Operator (Part-time)
lanair@brunswicksewer.org

Division Responsibilities

The Treatment Operations Division is responsible for the 24/7 operation and maintenance of the Harry G. Shulman Water Pollution Control Facility. This 3.85 million gallon per day facility is the backbone of the district's environmental protection efforts. Our core responsibilities include:

- Management of the municipal wastewater bio-solid (sludge) disposal program.
- Oversight of the industrial pre-treatment and grease trap inspection programs.
- Rigorous sampling, testing, and record-keeping to ensure 100% compliance with all state and federal regulatory permits.

2025 Operations Highlights

Performance & Regulatory Compliance

The facility continues to meet strict discharge permit requirements, which mandate a minimum of 85% removal for both Biological Oxygen Demand (BOD) and Total Suspended Solids (TSS). While not required by permit, the staff also monitors Carbonaceous Biological Oxygen Demand (CBOD) to ensure peak process efficiency.

Personnel & Achievements

- **Professional Excellence:** Senior Lab Technician Jason Prout was honored with the David Anderson Award for Lab Excellence at the Fall MeWEA conference. Jason provided vital community support this year by assisting the Friends of Merrymeeting Bay with PFAS/PFOS sampling and the Brunswick Marine Resource Officer with E-coli testing in Maquoit Bay.

- **Staffing Updates:** We welcomed Evan Meiler to the team in June. Evan has proven to be a quick learner, managing dewatering operations and tank maintenance. He is currently working toward his CDL and his Grade I/II Wastewater Certificate.

Jason Prout honored with Award for Lab Excellence

Facility & Equipment Maintenance

- **Efficiency Upgrades:** Brandon Elwell and Logan Anair replaced the #2 Borger pump with a new Penn Valley pump. This upgrade has already resulted in higher reliability and lower maintenance costs.

- **Infrastructure Care:** The crew completed a comprehensive pressure-washing project of all above-ground concrete structures, significantly improving the facility's appearance and longevity.

- **Fats, Oils and Grease Program (FOG):** Brandon and Jason continued their outreach to local restaurant owners, conducting grease trap inspections to protect the district's infrastructure from blockages.

Operational Challenges

Trickling Filter Failure

On November 14, Trickling Filter #2 suffered a mechanical failure involving a broken weld on the internal drive shaft. Because the damage is located behind the distribution box, specialized repairs are required. We are currently working with PC Construction and the manufacturer (Kusters Water) to install new parts. Repairs are expected to be completed in the Spring of 2026. Until then, staff is utilizing hydraulic bypass methods to maintain rotation.

Sludge Disposal & Logistics

Disposal remains a significant challenge. We currently transport sludge to the Juniper Ridge Landfill in Old Town, but increased travel distances have led to higher fuel costs and more frequent truck repairs. We are actively investigating alternative disposal sites, and exploring new technologies to reduce the volume of material transported.

Statistical Trends

Septic Waste Acceptance

Septic intake saw a moderate increase this year, rising from 993,025 gallons in 2024 to 1,161,100 gallons in 2025.

Chemical Usage (Sodium Hydroxide/Caustic)

After two years of significant reductions, caustic usage saw a slight uptick in 2025. This is attributed to reduced overall flow, which requires more internal recirculation—a process that naturally consumes more alkalinity and lowers pH.

Year	Usage (Gallons)	Change (%)
2022	23,447	- -
2023	17,030	27% Decrease
2024	13,420	21% Decrease
2025	**15,014**	**10.6% Increase**

RATE HISTORY REPORT

Brunswick Sewer District
History of Sewer User Rate: Rate Schedule A - Metered Use

Year	User Rate (Per 10 HCF)	Change in Rate	Average Annual User Charge (Per 80 HCF)
1986	$10.40	9.9%	$83.20
1987	$15.00	44.2%	$120.00
1988	$20.00	33.3%	$160.00
1989	$25.00	25%	$200.00
1990	$30.00	20%	$240.00
1998*	$34.65	15.5%	$277.20
2004	$40.00	15.4%	$320.00
2008	$42.00	5%	$336.00
2010	$44.20	5.2%	$353.60
2013	$46.85	6%	$374.80
2015	$53.60	14.4%	$428.80
2016	$59.50	11%	$476.00
2017	$66.05	11%	$528.40
2018	$72.60	9.9%	$580.80
2019	$76.20	5%	$609.60
2020	$80.00	5%	$640.00
2022**	$84.80	6%	$678.40
2023	$88.20	4%	$705.60
2024***	$92.20	4.5%	$737.60
2025	$96.30	4.4%	$770.40
2026	$101.60	5.5%	$812.80

* Changed minimum billed use from 1000 cu. ft. per quarter.
** Changed minimum billed use from 800 cu. ft. per quarter. And instituted a $6 account charge.
*** Changed account charge to $10.

FINANCIAL REPORT

See the District's 2025 Audit for final numbers.

BRUNSWICK SEWER DISTRICT
FINANCIAL REPORT - 12/31/2025

OPERATING REVENUE	YTD BUDGET	YTD ACTUAL	VARIANCE OVER/(UNDER)
Residential	$3,051,627	$3,209,844	$158,217
Commercial	1,794,634	2,017,524	222,890
Drainage (Roof Drains & Catch Basins)	38,298	37,366	(932)
Topsham Sewer District	593,823	526,166	(67,657)
Septage	144,000	188,666	44,666
SUBTOTAL	$5,622,382	$5,979,566	$357,184
NON-OPERATING REVENUE			
Jobbing	82,000	67,333	(14,667)
Interest Earned	80,000	172,219	92,219
Late Charges	16,700	13,038	(3,662)
Gain/(Loss) on Sale/Disposal of Asset	0	0	0
Miscellaneous	5,500	30,436	24,936
SUBTOTAL	$184,200	$283,026	$98,826
TOTAL OPERATING & NON-OPERATING REVENUE	**$5,806,582**	**$6,262,592**	**$456,010**
OPERATIONS, MAINTENANCE & GENERAL EXPENSES			
Salaries, Wages & Benefits			
Collection Division	$984,667	$975,837	($8,830)
Treatment Plant Division	574,149	580,184	6,035
Administrative Division	1,018,843	1,009,676	80,833
SUBTOTAL	$2,577,659	$2,655,697	$78,038

OPERATIONS, MAINTENANCE & GENERAL EXPENSES (continued)

	YTD BUDGET	YTD ACTUAL	VARIANCE OVER/(UNDER)
Other Operating Expenses			
Collection Division	$253,603	$262,952	$9,349
Treatment Plant Division	697,446	652,251	(45,195)
Administration Division	465,668	468,924	3,256
SUBTOTAL	$1,416,717	$1,384,127	($32,590)
TOTAL OPERATING, MAINTENANCE & GENERAL EXPENSE	**$3,994,376**	**$4,039,824**	**$45,448**
NON-OPERATING EXPENSE			
Bond Interest & Principal	$1,432,541	$1,435,187	$2,646
Capital Expenditures	1,572,900	1,346,646	(226,254)
Miscellaneous - Bank Fees	50	230	180
TOTAL NON-OPERATING EXPENSE	**$3,005,491**	**$2,782,063**	**($223,428)**
		NET VARIANCE TOTAL OVER/(UNDER)	**$633,990**

ADDITIONAL INFORMATION			
Entrance Charge Program	$300,000	$602,811	$302,811
Donated Assets	371,000	371,000	0
Depreciation	2,925,000	2,893,246	(31,366)
RECIEVEABLES AT	**12/31/25**	**12/31/24**	
Aged, 3 months	$47,159	$70,245	
Liens	11,000	1,400	

CASH @ 12/31/25	$2,108,356
INVESTMENTS @ 12/31/25	$1,704,843
TOTAL	**$3,813,199**

LAB REPORT

Summary

During the year 2025 The Brunswick Sewer District Wastewater Treatment Plant has treated approximately 712 million gallons of influent wastewater. The treatment process operated efficiently and effectively to deliver a high-quality effluent to the Androscoggin River.

The Treatment Plant performed very well this year. The average influent Biochemical Oxygen Demand (BOD) was 240 mg/l. The final Effluent BOD averaged 18 mg/l; this is a removal rate of 93% of influent loadings. The average influent Total Suspended Solids (TSS) was 313 mg/l while the average final effluent TSS was 23 mg/l; this is a removal rate of 93% of influent loadings.

A. Influent Treatment

The Treatment Plant operated with a daily average influent flow of 1.95 MGD, which is well below our design capacity of 3.85 MGD. The maximum daily influent plant flow was 4.73 MGD on May 10, 2025, well below our peak design flow capacity of 14.1 MGD. We received 41.61 inches of precipitation. The Treatment Plant has both influent and effluent flow meters to assure proper flow measurement in and out of the plant. The flow meters are calibrated yearly by ICS.

Influent Parameters	2023	2024	2025
Average Influent Flow MGD	2.8	2.35	1.95
Average Influent BOD mg/l	175	199	240
Average Influent TSS mg/l	212	255	313

B. PrimaryTreatment

Our primary treatment consists of two primary clarifiers. The flow velocity is reduced to allow sludge to settle and scum to accumulate. The settled primary sludge is pumped to a sludge holding tank for removal. The scum is pumped off by RA Webber. The average primary BOD was 141 mg/l, which is a removal rate of 55%. The average primary TSS was 113 mg/l, which is 64% removal rate. That's a very good solids removal rate.

Primary Parameters	2023	2024	2025
Average Primary BOD, mg/l	114	125	141
Average Primary TSS, mg/l	85	89	113

C. Secondary (Effluent) Treatment

The secondary treatment consists of two trickling filters, and two secondary clarifiers. The trickling filters are filled with plastic media. As the wastewater falls down through the media, microbes that have grown and attached to the media consume organic matter. In the secondary clarifiers, humas and primary sludge settle to the bottom, and get pumped back to the primary clarifier. Scum that floats to the top gets skimmed off and pumped into a sludge holding tank for sludge processing.

Secondary Effluent Parameters	2023	2024	2025
Average Effluent BOD, mg/l	16	16	18
Average Effluent TSS, mg/l	18	18	21

D. Final Effluent Treatment and Quality

All effluent flows move through two contact tanks where disinfection takes place. Sodium Hypochlorite is added for disinfection. Sodium Hypochlorite which kills pathogens; is toxic to fish and aquatic life and must be removed. Sodium Bisulfite is added to remove unused chlorine. Our average chlorine residual for the previous season was 0.00 mg/l. Our permit requires us to be below 0.05 mg/l. Our Average e coli MPN (most probably number) was <24.4. Well below are permit max of 949 per day, and monthly
geometric mean of 126 MPN.

Final Effluent Quality	2023	2024	2025
Average Chlorine Residual	0.00 mg/l	0.00mg/l	0.00mg/l
Average E. Coli MPN	<19.8	<12.1	<24.4

E. PFAS Testing

Our PFAS numbers continue to trend down after the event at Brunswick Landing in 2024, except for an outlier on December 2025. The Department of Environmental Protection is satisfied with our results, and is not requesting further testing at this time. We also continue to help Friends of Merrymeeting Bay with their sampling at Brunswick Landing.

PFAS Total	1/5/23	2/2/23	3/9/23	4/5/23	6/5/23	7/7/23	8/26/24	8/26/24
Number	34.39	35.9	30.5	32.4	40.9	49.17	2795.5	2795.5

PFAS Total	9/3/24	9/25/24	10/3/24	10/10/24	12/26/24	1/2/25	3/12/25	3/20/25
Number	577.62	379	89.5	91.1	<64.4	<313	<59.8	54.4

GLOSSARY
COMMON ACRONYMS

Process Terminology

BOD	Biochemical Oxygen Demand
CBOD	Carbonaceous Biochemical Oxygen Demand
DO	Dissolved Oxygen
F/M Ratio	Food to Microorganism Ratio
ORP	Oxidation/ Reduction Potential
OUR	Oxygen Uptake Rate
O & G	Oil and Grease
RAS	Return Activated Sludge
RBC	Rotating Biological Contactor
SA	Sludge Age
SDI	Sludge Density Index
SOUR	Specific Oxygen Uptake Rate
SRT	Solids Retention Time
SVI	Sludge Volume Index
VFD	Variable Frequency Drive
WAS	Waste Activated Sludge

Miscellaneous

AC Pipe	Asbestos Clay Pipe
VC Pipe	Vitrified Clay Pipe
CFM	Cubic Feet Per Minute
CFR	Code of Federal Regulations
CFS	Cubic Feet Per Second
DMR	Discharge Monitoring Report
GPD	Gallons Per Day
GPM	Gallons Per Minute
MGD	Million Gallons Per Day
MG/L	Milligrams Per Liter
MOR	Monthly Operating Report
NPDES	National Pollutant Discharge Elimination System
PFAS	Per and Polyfluoroalkyl Substances
POTW	Publicly Owned Treatment Works
PPM	Parts Per Millions
PSI	Pounds Per Square Inch
WRF	Water Reclamation Facility
WTP	Water Treatment Plant
WTF	Water Treatment Facility
WTP	Water Treatment Plant

WASTEWATER TREATMENT TERMS

AERATION: The process of adding air to water. In wastewater treatment, air is added to refreshen wastewater and to keep solids in suspension. With mixtures of wastewater and activated sludge, adding air provides mixing and oxygen for the microorganisms treating the wastewater.

AEROBES: Bacteria that must have molecular (dissolved) oxygen (DO) to survive.

AEROBIC BACTERIA: Bacteria which will live and reproduce only in an environment containing oxygen which is available for their respiration (breathing), namely atmospheric oxygen or oxygen dissolved in water. Oxygen combined chemically, such as water molecules (H_2O), cannot be used for respiration by aerobic bacteria.

ALGAE: Microscopic plants which contain chlorophyll and live floating or are suspended in water. They also may be attached to structures, rocks, or other similar substances. Algae produce oxygen during sunlight hours and use oxygen during night hours. Their biological activities appreciably affect the pH and dissolve oxygen of the water.

ANAEROBIC: A condition in which atmospheric or dissolved molecular oxygen is *NOT* present in the aquatic (water) environment.

ANAEROBIC BACTERIA: Bacteria that live and reproduce in an environment containing no "free" or dissolved oxygen. Anaerobic bacteria obtain their oxygen supply by breaking down chemical compounds which contain oxygen, such as sulfate (SO^{2-}).

ANAEROBIC DIGESTION: Wastewater solids and water (about 5% solids, 95% water) are placed in a large tank where bacteria decompose the solids in the absence of dissolved oxygen.

ANOXIC: Oxygen deficient or lacking sufficient oxygen.

BOD: Biochemical **O**xygen **D**emand. The rate at which organisms use the oxygen in water or wastewater while stabilizing decomposable organic matter under aerobic conditions. In decomposition, organic matter serves as food for the bacteria and energy results from its oxidation. BOD measurements are used as a measure of the organic strength of wastes in water.

BAFFLE: A flat board or plate, deflector, guide, or similar device constructed or placed in flowing water, wastewater, or slurry systems to cause more uniform flow velocities, to absorb energy, and to divert, guide, or agitate liquids (water, chemical solutions, slurry).

BIOMASS: A mass or clump of organic material consisting of living organisms feeding on the wastes in wastewater, dead organisms, and other debris.

BIOSOLIDS: A primarily organic solid product, produced by wastewater treatment processes, that can be beneficially recycled. The word biosolids is replacing the word sludge.

BULKING: Clouds of billowing sludge that occur throughout secondary clarifiers and sludge thickeners when the sludge does not settle properly.

CATCH BASIN: An entry point to a storm sewer drainage system that typically includes a grate where stormwater enters the catch basin and a sump to capture sediment, debris, and associated pollutants.

CAVITATION: The formation and collapse of a gas pocket or bubble on the blade of an impeller or the gate of a valve. The collapse of this gas pocket or bubble drives water into the impeller or gate with a terrific force that can cause pitting on the impeller or gate surface. Cavitation is accompanied by loud noises that sound like someone is pounding on the impeller or gate with a hammer.

CHLORINATION: The application of chlorine to water or wastewater, generally for the purpose of disinfection, but frequently for accomplishing other biological or chemical results.

CLARIFIER: Settling Tank, Sedimentation Basin. A tank or basin in which wastewater is held for a period of time during which the heavier solids settle to the bottom and the lighter material will float to the water surface.

COAGULANTS: Chemicals that cause very fine particles to clump (floc) together into larger particles. This makes it easier to separate the solids from the water by settling, skimming, draining, or filtering.

COLIFORM: A type of bacteria. The presence of coliform-group bacteria is an indication of possible pathogenic bacterial contamination. They can be found in the intestinal tracts of warm-blooded animals, and in plants, soil, air, and the aquatic environment. Fecal coliforms are those coliforms found in the feces of various warm-blooded animals; whereas the term "coliform" also includes various other environmental sources.

COMPOSITE: A composite sample is a collection of individual samples obtained at regular intervals, usually every one or two hours during a 24-hour time span.

CONFINED SPACE: A space that is large enough and so configured that an employee can bodily enter and perform assigned work; and has limited or restricted means for entry or exit; and is not designed for continuous employee occupancy.

CROSS-CONNECTION: A connection between a drinking (potable) water system and an unapproved water supply. For example, if you have a pump moving non-potable water and hook into the drinking water system to supply water for the pump seal, a cross connection or mixing between the two water systems can occur. This mixing may lead to contamination of the drinking water.

DECHLORINATION: The removal of chlorine from the effluent of a treatment plant.

DETENTION TIME: The time required to fill a tank at a given flow or the theoretical time required for a given flow of wastewater to pass through a tank.

DIGESTER: A tank in which sludge is placed to allow decomposition by microorganisms. Digestion may occur under anaerobic (more common) or aerobic conditions.

DISINFECTION: The process designed to kill or inactivate most microorganisms in wastewater, including essentially all pathogenic (disease-casing) bacteria. There are several ways to disinfect, with chlorination being the most frequently used in water and wastewater treatment plants.

DISSOLVED OXYGEN (DO): Molecular (atmospheric) oxygen dissolved in water or wastewater.

EFFLUENT: Wastewater or other liquid - raw (untreated), partially or completely treated - flowing *FROM* a reservoir, basin, treatment process or treatment plant.

FORCE MAIN: A pipe that carries wastewater under pressure from the discharge side of a pump to a point of gravity flow downstream.

GRAB SAMPLE: A single sample of water collected at a particular time and place which represents the composition of the water only at that time and place.

GRIT REMOVAL: Grit removal is accomplished by providing an enlarged channel or chamber which causes the flow velocity to be reduced and allows the heavier grit to settle to the bottom of the channel where it can be removed.

HEADWORKS: The facilities where wastewater enters a wastewater treatment plant. The headworks may consist of bar screens, comminutors, a wet well and pumps.

INFLOW: Water discharged into a sewer system and service connections from sources other than regular connections. This includes flow from yard drains, foundation drains and around manhole covers. Inflow differs from infiltration in that it is a direct discharge into the sewer rather than a leak in the sewer itself.

INFLUENT: Wastewater or other liquid - raw (untreated) or partially treated - flowing *INTO* a reservoir, basin, treatment process or treatment plant.

MICROORGANISMS: Very small organisms that can be seen only through a microscope. Some microorganisms use the wastes in wastewater for food and thus remove or alter much of the undesired matter.

NPDES PERMIT: National **P**ollutant **D**ischarge **E**limination **S**ystem permit is the regulatory agency document issued by either a federal or state agency which is designed to control all discharges of pollutants from all point sources and storm water runoff into U.S. waterways.

NITRIFYING BACTERIA: Bacteria that change the ammonia and organic nitrogen in wastewater into oxidized nitrogen (usually nitrate).

OXIDATION: Oxidation is the addition of oxygen, removal of hydrogen, or the removal of electrons from an element or compound. In wastewater treatment, organic matter is oxidized to more stable substances.

PFAS: a group of chemicals used to make fluoropolymer coatings and products that resist heat, oil, stains, grease, and water.

POLYMER: Polymers are used with other chemical coagulants to aid in binding small, suspended particles to larger chemical flocs for their removal from water.

PONDING: A condition occurring on trickling filters when the hollow spaces (voids) become plugged to the extent that water passage through the filter is inadequate. Ponding may be the result of excessive slime growths, trash, or media breakdown.

PRIMARY TREATMENT: A wastewater treatment process that takes the place in a rectangular or circular tank and allows those substances in wastewater that readily settle or float to be separated from the water being treated.

RAW WASTEWATER: Plant influent or wastewater *BEFORE* any treatment.

RECEIVING WATER: A stream, river, lake, ocean or other surface or groundwater into which treated or untreated wastewater is discharged.

RECIRCULATION: The return of part of the effluent from a treatment process to the incoming flow.

RETENTION TIME: The time water, sludge or solids are retained or held in a clarifier or sedimentation tank.

ROOF DRAINS: A drain installed to receive water collecting on the surface of a roof and to discharge it into a leader, downspout, or conductor."

SCREEN: A device used to retain or remove suspended or floating objects in wastewater. The screen has openings that are generally uniform in size. It retains or removes objects larger than the openings. A screen may consist of bars, rods, wires, gratings, wire mesh, or perforated plates.

SCUM: Scum is composed of materials that float on water such as grease, oil, and fats.

SEPTIC: A condition produced by anaerobic bacteria. If severe, the wastewater produces hydrogen sulfide, turns black, gives off foul odors, contains little or no dissolved oxygen, and creates a high oxygen demand.

SEWAGE: The used waster and waster-carried solids from homes that flow in sewers to a wastewater treatment plant. The preferred term is WASTEWATER.

SHORT-CIRCUITING: A condition that occurs in tanks or basins when some of the water travels faster than the rest of the flowing water. This is usually undesirable since it may result in shorter contact, reaction, or settling times in comparison with the theoretical (calculated) or presumed detention times.

SLUDGE: The settleable solids separated from liquids during processing or the deposits of foreign material on the bottoms of streams or other bodies of water.

SLUDGE DIGESTION: The process of changing organic matter in sludge into a gas or liquid or a more stable solid form. These changes take place as microorganisms feed on sludge in anaerobic (more common) or aerobic digesters.

SPOT LINER/REPAIR: A trench-less (no-dig) method to repair defects, holes, or inconsistencies in pipes that includes placing a fiberglass or other material inside of the pipe.

STORM SEWER: A separate pipe, conduit or open channel (sewer) that carries runoff from storms, surface drainage, and street wash, but does not include domestic and industrial wastes.

SUSPENDED SOLIDS: Solids that either float on the surface or are suspended in water, wastewater, or other liquids, and which are largely removable by laboratory filtering.

TOXICITY: The relative degree of being poisonous or toxic. A condition which may exist in wastes and will inhibit or destroy the growth or function of certain organisms.

TOTAL SUSPENDED SOLIDS (TSS): Small organic and inorganic particles including fats, oil and grease (FOG) which are measured during the TSS analysis. It is critical that a majority of these solids are removed during primary treatment to ensure biological treatment will perform efficiently.

WASTEWATER: The used water and solids from a community that flow to a treatment plant. Storm water, surface water, and groundwater infiltration also may be included in the wastewater that enters a wastewater treatment plant. The term "sewage" usually refers to household wastes.

WEIR: A wall or plate placed in an open channel and used to measure the flow of water or used to control flow (from settling tanks and clarifiers) to assure a uniform flow rate and avoid short-circuiting.

WET WELL: A compartment or tank in which wastewater is collected. The suction pipe of a pump may be connected to the wet well or a submersible pump may be located in the wet well.

ZOOGLEAL MASS: Jelly like masses of bacteria found in both the trickling filter process. See also Biomass.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