



Rockland Sewer Commissioners 2024 Update

Town of Rockland Wastewater System September 2024 Update Report

Rockland Sewer Commission:

Chuck Heshion – Chairman

Daniel DuRoss, Commissioner

Sherri Vallie, Commissioner

SEPTEMBER 18, 2024



- ❑ Population: Approx. 17,800
- ❑ Number of Household: Approx. 6,820
- ❑ Rockland Sewer Department

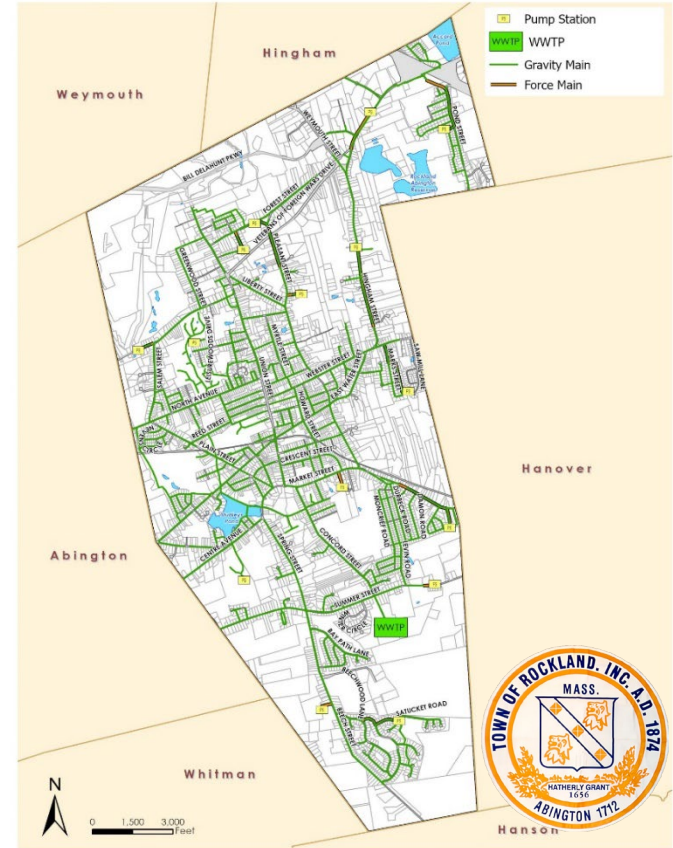
Managed by the elected Board of Sewer Commissioners:

- Operations Contract is with Veolia
 - 3 Year Contract to 2027
- ❑ Sewer Enterprise Revenue
 - Reliant solely on user fees and other charges
 - Funds are utilized to maintain and operate the Town's wastewater infrastructure



Existing Wastewater Infrastructure

- ❑ Approximately 57 miles of gravity sewer
- ❑ Approximately 4 miles of force main
- ❑ 13 pump stations
- ❑ Service approximately 18,000 customers from Rockland and a small portion of Abington approx. 110,000 Gallons per Day (GPD)
- ❑ Operate a Wastewater Treatment Facility (WWTF) in compliance with EPA NPDES Permit which has a Maximum flow limit of 2.5 Million Gallons Per Day (MGD)
- ❑ Treated Sewer water is discharged to French Stream (listed as a EPA Impaired Waterway)
- ❑ 2022 New strict seasonal Total Phosphorous Limit of 0.1 mg/L
- ❑ 2025 – 2026 A new Total Nitrogen limit will be included into our NPDES Permit



Wastewater Flow and Inflow & Infiltration (I/I)

- ❑ Dry weather Flow as low as 1.5 MGD but 1.8 MGD is the average daily flow from June to September
- ❑ Wet Weather we routinely experience flows of 3 to 4 MGD
- ❑ Wet Weather Peak Flows 6 - 10 MGD historically during Oct - March
- ❑ Suggests Peak I/I is between 1.5 and 4.5+ MGD in average rainy or snowy weather
- ❑ Infiltration removal success rate historically is 15% - 50%
- ❑ Inflow removal success is usually between 70% - 85%
- ❑ Most of the inflow will be on private property



❑ Permitted Flow = 2.5 MGD

- Flow limit **cannot** be exceeded
- EPA has told us absolutely no increase in our discharge limit
- Per 2022 EPA Administrative Order no additional flows should be allowed until capacity is restored through the removal of Inflow and Infiltration (I/I)
- 2021 new EPA NPDES General Permit now mandates as of March 2024 we need a plan to reduce our flow if we are within 80% of our maximum permitted capacity (2.0 MGD) and how will we maintain compliance
- I/I makes up over 40% of the permitted flow volume
- Upgrade of the existing Wastewater Treat Facility (WWTF) **will not create or restore capacity** in the sanitary sewer system
- The proposed WWTF upgrades are **necessary** to maintain the operation of the facility with **our current users**



Inflow and Infiltration (I/I)

GOALS OF REMOVING I/I

- Protect the local environment, rivers, and streams from pollution due to Sewer System overflows;
- Protect your property and that of your neighbors from sewer backups/overflows; and
- Reduce the volume of flow conveyed to the Town's WWTF and lower treatment costs.

HOW IS ROCKLAND ADDRESSING I/I ISSUES?

The Town of Rockland is currently under an EPA's Administrative Order to comply with the Town's National Pollutant Discharge Elimination System (NPDES) Permit discharge limit. While the allowable rolling annual average limit is 2.5 MGD (million gallon per day) and the Town's average base wastewater flow is only 1.4 MGD, the Town has routinely received 3 to 4 MGD of flow during wet weather events, occasionally received over 6 MGD. This suggests that I/I could be as much as three times the Town's wastewater flow.

In 2021, the Town completed a pipe lining/rehabilitation work for approximately 11,000 linear feet of sewer mainline to decrease infiltration in the public Sewer System. Despite removing nearly 113,000 GPD of infiltration, there continues to be a substantial amount of I/I in the Town's sewer system. A large percentage of the I/I is a result of inflow sources from private homes.

Town of Rockland MASSACHUSETTS

Sewer Department
587R Summer Street
Rockland, MA 02370
781.878.1964
rockland-ma.gov



This Summer, the Town plans to begin performing smoke testing to identify sources of inflow, such as roof leaders, pipe leaks, missing cleanout caps, or other private inflow connections, from the Sewer System. Smoke testing consists of introducing white, non toxic and non-staining, smoke to the sanitary sewer system via a smoke-generating machine. During this procedure, white smoke will be venting from holes in manhole covers located in the street and from plumbing vent pipes located on or near your roof surface. If a defect or connection to the Sewer system is located and identified, we will provide you with recommendations explaining how to correct the problem.

IS YOUR HOME A SOURCE OF INFLOW?

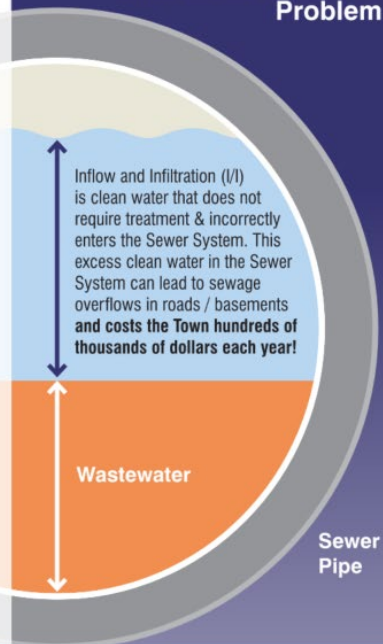
Look for:

- Downspouts discharging to the sewer
- Sump pump discharging to the sanitary sewer
- Window wells draining into sump pump discharging to sanitary sewer
- Driveway, yard and foundation drains discharging to the sewer
- Broken or missing cleanout caps

Town of Rockland MASSACHUSETTS



Understanding Rockland's Infiltration and Inflow Problem



Inflow and Infiltration (I/I)

WHAT IS INFLOW / INFILTRATION (I/I)?

Inflow: Rainwater that directly enters the Sewer System, typically through a mistake in the piping (e.g., roof downspouts / sump pumps connected to the sewer) (red circles in diagram to right).

Infiltration: Groundwater that seeps into the Sewer System through cracks or leaks typically due to aging or damage (blue circles in diagram to right).

WHY IS I/I AN ISSUE?

During rainstorms, I/I enters the Sewer System. I/I consists of clean rainwater and groundwater, thus does not require treatment. However, by entering the Sewer System, the I/I mixes with wastewater and is pumped to the Town's wastewater treatment facility (WWTF) for unnecessary and costly treatment. The Town spends hundreds of thousands of dollars on the unnecessary treatment of clean water from I/I sources.

In extreme rainfall events, excessive I/I could fill up the limited space in sewers, causing surcharging (or back-ups) with the potential to flood basements or roads with raw sewage.

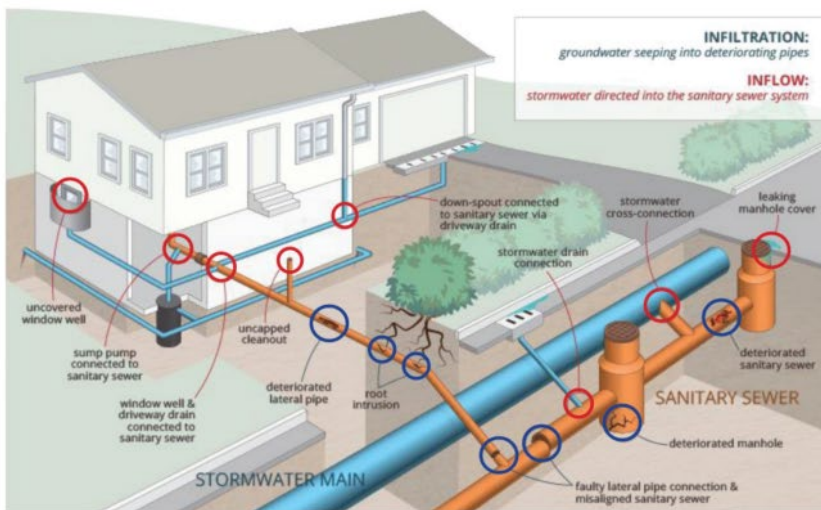
Example: A home with a roof downspout illicitly connected to the Sewer System collects all the rainwater that falls onto the roof and discharges it directly to the sewer. This rainwater is pumped to the WWTF and treated at the same cost as wastewater.

ROCKLAND'S WATER COLLECTION SYSTEMS

The Town of Rockland has two separate collection systems to convey water away from your property:

The Stormwater / Drainage System (blue pipes in diagram below) collects rainwater and diverts it to local receiving waters. The rainwater does not create health risks, thus does not require treatment prior to discharge.

The Sanitary Sewer / Wastewater System (brown pipes in diagram below) collects and carries wastewater from homes/buildings to the WWTF for costly treatment and discharge. Wastewater includes flow from sinks, toilets, tubs, showers, washing machines, etc. When homes have illicit inflow connections, clean water enters the sewers, mixes with the wastewater, and is treated at the WWTF at the same cost as wastewater.



Current Sewer Commission's Actions to date addressing I/I issues: Infiltration (Public) –

- ❑ 2022: Completed pipe lining/rehabilitation work – 2021 SSES est. 220,000 GPD could be removed, we removed 113,000 GPD of infiltration (removal verified by camera inspection and visually in May 2023) Verification of I&I removal is EPA requirement
- ❑ 2022: Completed an I/I Control Plan – Usually a five year plan, We Proposed a 15-year Plan to address I/I issues
- ❑ Spring 2023: Completed Year 1 of the I/I Program – Townwide Flow & Rainfall Monitoring and Groundwater Level Analysis (Metering Study)
- ❑ Fall 2023: Completed Year 2 of the I/I Program – camera Inspected approx. 37,000 linear feet (lf) of sewer pipes and 172 manholes in areas 6 & 11. 260,000 GPD identified in year 1 metering, only found 28,000 GPD cost effective to remove
- ❑ Spring 2024: Completed Year 3 of the I/I Program - Inspected approx. 40,000 linear feet of sewer pipes and 216 manholes in areas 9 & 13
- ❑ 2023 & 2024 I/I combined Investigation of the 495,000 GPD identified in areas 6, 9, 11, & 13, only 73,000 GPD would be cost effective to remove or 15% of the identified infiltration (Typical)





- ❑ Reduce Risk of Sanitary Sewer Overflows (SSOs) and Backups
- ❑ 3 Shell Fish Bed Closures
- ❑ Maintain the Systems Capacity



Town Actions – I/I Issues

Annual Infiltration/Inflow Program Town Rockland, Massachusetts

Note: Sewer length and number of manholes are estimated based on a 15-year program. Actual sewer length to be inspected per year will be adjusted after the conclusion of Year 1/Metering program.

Fiscal Year	Calendar Year/Month	Project Name	Scope	Subarea(s)	Sewer Length (lf)	Manholes	Estimated Cost ⁽²⁾
FY2023	Spring 2023	Year 1 Program	Town-wide Metering Program and GIS-based Depth-to-Groundwater Analysis	-	-	-	\$ 150,000
Phase 1							
FY2024	Spring 2024	Year 2 Infiltration	Manhole inspections and television inspection	-	34,000	170	\$ 150,000
FY2025	Spring 2025	Year 3 Infiltration	Manhole inspections and television inspection	-	34,000	170	\$ 155,000
FY2026	Spring 2026	Year 4 Infiltration	Manhole inspections and television inspection	-	34,000	170	\$ 160,000
FY2027	Summer 2026 - Spring 2027	Year 2 to 4 Inflow	Smoke Testing, Dye Testing/Flooding with TV, and Building Inspection	-	102,000	-	\$ 200,000
FY2028	Design - Summer 2027 Bid - Fall/Winter 2027 Construction - Spring 2028	Year 2 to 4 Rehabilitation	Sewer System Rehabilitation - Cost Effective and Structural Defective Rehabilitation	-	TBD	TBD	\$ 1,500,000 ⁽¹⁾
Phase 2							
FY2029	Spring 2029	Year 5 Infiltration	Manhole inspections and television inspection	-	34,000	170	\$ 170,000
FY2030	Spring 2030	Year 6 Infiltration	Manhole inspections and television inspection	-	34,000	170	\$ 175,000
FY2031	Spring 2031	Year 7 Infiltration	Manhole inspections and television inspection	-	34,000	170	\$ 180,000
FY2032	Summer 2031 - Spring 2032	Year 5 to 7 Inflow	Smoke Testing, Dye Testing/Flooding with TV, and Building Inspection	-	102,000	-	\$ 220,000
FY2033	Design - Summer 2032 Bid - Fall/Winter 2032 Construction - Spring 2033	Year 5 to 7 Rehabilitation	Sewer System Rehabilitation - Cost Effective and Structural Defective Rehabilitation	-	TBD	TBD	\$ 1,500,000 ⁽¹⁾
Phase 3							
FY2034	Spring 2034	Year 8 Infiltration	Manhole inspections and television inspection	-	34,000	170	\$ 191,000
FY2035	Spring 2035	Year 9 Infiltration	Manhole inspections and television inspection	-	34,000	170	\$ 197,000
FY2036	Spring 2036	Year 10 Infiltration	Manhole inspections and television inspection	-	34,000	170	\$ 203,000
FY2037	Summer 2036 - Spring 2037	Year 8 to 10 Inflow	Smoke Testing, Dye Testing/Flooding with TV, and Building Inspection	-	102,000	-	\$ 240,000
FY2038	Design - Summer 2037 Bid - Fall/Winter 2037 Construction - Spring 2038	Year 8 to 10 Rehabilitation	Sewer System Rehabilitation - Cost Effective and Structural Defective Rehabilitation	-	TBD	TBD	\$ 1,500,000 ⁽¹⁾

⁽¹⁾ Estimated cost includes construction and engineering

⁽²⁾ Estimated unit cost is based on a 3-4% increase from previous year

	Infiltration
	Inflow
	Rehab/Construction

Sewer Commission's Actions – I/I Issues



Infiltration @ Joint: Approx. 7200 GPD



Infiltration @ Joint: Approx. 7200 GPD



Infiltration @ Joint: Approx. 5760 GPD



Infiltration @ Joint: Approx. 1440 GPD



Infiltration @ Joint: Approx. 28,800 GPD



Infiltration/Inflow @ Manhole Cover

Inflow (Public and Private) – Stormwater entering the sanitary sewer system:

- ❑ A large portion of the I/I entering the sanitary sewer system is in the form of inflow
 - Can be from public sources, such as catch basins and deteriorated pipes and manholes
 - Can also be from private sources that mistakenly connected to the sanitary sewer through drain system
 - Example of these sources can be downspouts, sump pumps, and roof leaders
- ❑ During a typical rainstorm, the Town could receive 1 to 2 million gallons of inflow in a day, which is equal or more than the Town's base sanitary flow

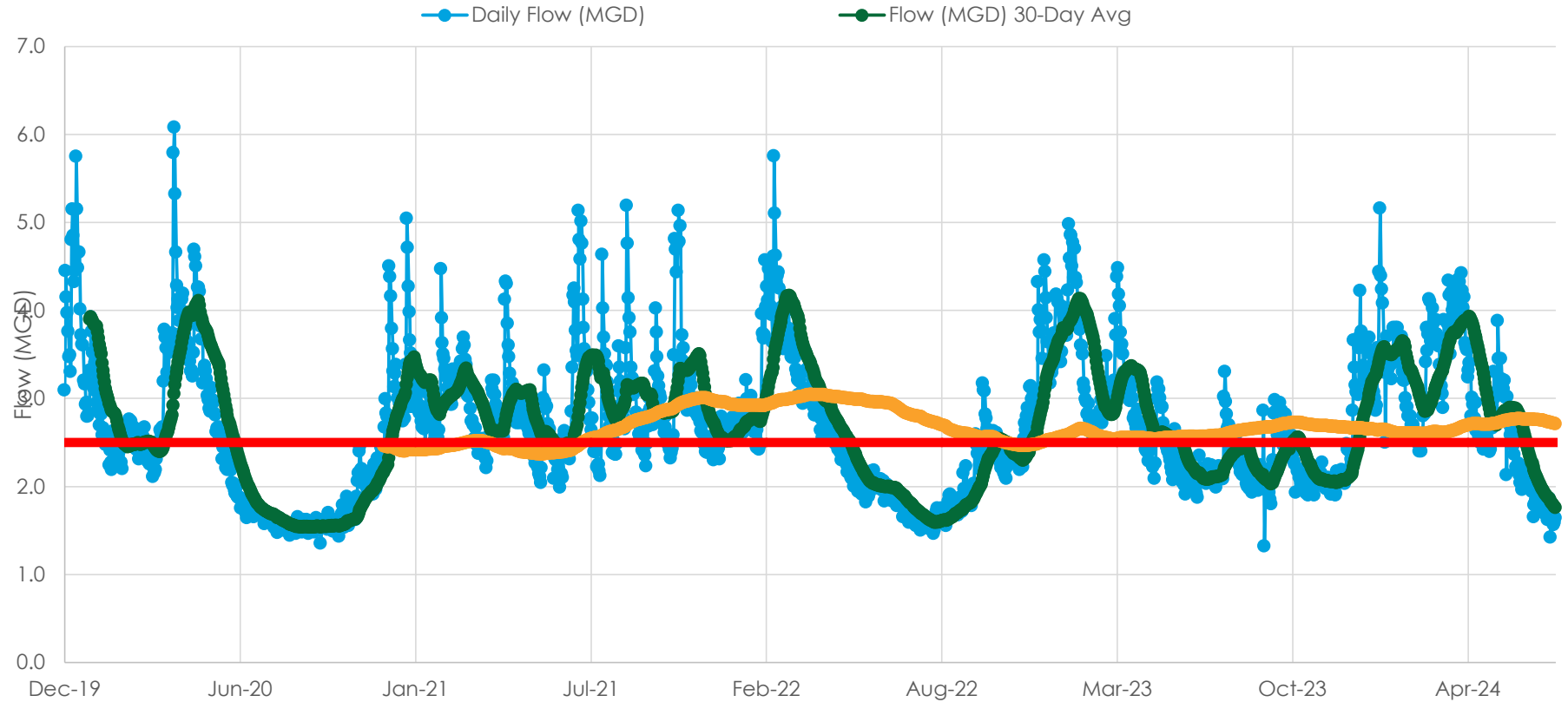


- 2020 Wright-Pierce completed a Comprehensive Facility Assessment of every piece of equipment, structure, pump, electrical, mechanical and HVAC within the System with the exception of the 13 Pump Stations
 - Concluded that facility was past due for and in dire need of Upgrade
 - 2019 Draft Predicted a “potential” catastrophic failure in secondary treatment system
- 2022 Comprehensive Wastewater Management Plan (CWMP) originally promised in 2006 Administrative Order as part of the Corrective action response. Never started.
 - Wright-Pierce Engineering reviewed the Towns Master Plan, met with every department in Town to identify their needs over the next 30 years, projected population, commercial, industrial & residential growth
 - What is required of the Sewer Plant/infrastructure to support those plans & developed an Engineering strategy to meet those needs with estimated costs
 - Broke the costs out over those 30 years for planning purposes
 - Rockland never had a long term sewer facility/infrastructure plan to support the Towns needs

Other Commission Accomplishments

- 2022 – 2023 Weston & Sampson Completed a Rate Study
 - What should the Residents user rates be to pay for what has been identified in the CWMP
 - Finally gave the Residents a ten-year (10) long-term household financial planning tool
- 2022 Weston & Sampson Completed a Town Wide Metering Study
 - Installed 15 Meters, Rain Gauges, ground water levels & divided the Town into 15 sewer zones for detailed focus with GIS Mapping
- 2023 - 2024 Wright-Pierce Began Facility Upgrade / Design Plans 20% completed
- 2023 - 2024 Wright-Pierce & Weston and Sampson Began Investigation for Financial Options
- 2024 Received State and Federal Legislators support for Potential Federal Earmark Funds/loans

2020 – 2024 WWTP Flows



Rocklands Compliance History

- 1994 MADEP Issued a Notice of Non-Compliance for repeated EPA Permit violations for flow exceedances
- 1998 MADEP Issued a Notice of Non-Compliance for continued EPA Permit violations for flow exceedances
- **2006 EPA Issued an Administrative Order for continuous Permit flow violations**
- 2006 Town/Sewer approved a Moratorium, stating that the Sewer Commission and the Town;
 - ***“Prohibits the connection of any project larger than a two family residential dwelling”***
- February of 2007 In response to the 2006 Administrative Order, Paid \$75K to Metcalf & Eddy to prepare and submit the **Towns** approved Corrective Actions to the EPA, which included commitments to assure;
 - **Full compliance to the 2006 Moratorium**
 - **Summary Excerpt from the 2007 approved C/A response;**

“The Town of Rockland is committed to implementing the Town-wide, comprehensive, long range plan referenced herein for the investigation, identification and removal of additional I/I sources over the next five years. The ultimate goal of this work is to reduce the flow enough to achieve compliance with the flow, BOD, and TSS limits, contained in the NPDES Permit.” M&E on behalf of Rockland 2-2007
- **2022 Issued a Second EPA Administrative Order with Conditions for repeated Permit flow violations**

Current Sewer Moratorium

- Allows Connections Under 440 GPD
- No Other New Connections Allowed temporarily, WHY??
- On March 15, 2023, the Rockland Sewer Department published a notice for a Sanitary Sewer Overflow (SSO). This was the third such event since November 2019, 8th such event 2009 -2019 (ea. Event usually lasts 3+ days)
- January 2023 & March 2023 2 more
- January 2024 – March 2024 Rockland had Four separate SSO's (last event (March lasted 6+ days)
- SSO's in 2024 alone we discharged 16.6 Million Gallons of partially treated sewage into French Stream
- From the period of January 1, 2020, to May 28, 2023 (41 months) the Rockland Wastewater Treatment Facility violated their daily twelve-month-rolling average permitted flow of 2.50 million-gallons-per-day (MGD) thirty-three (33) out of forty-one (41) months or eighty one percent (81%) of the time
- Current Twelve-Month-Rolling average permitted flow is 2.6 MGD*** today
- Since 2021 it has dropped from 3.2 MGD, this is with heavier than normal rains

MORATORIUM CONDITIONS

- Before a new permit to connect to the Rockland Sewer System is issued, and to satisfy previously approved projects (July 1, 2021), the Rockland Wastewater Treatment Facility must be at or below its maximum allowable NPDES Permit discharge limit of 2.50 MGD.
- ALL PROJECTS RESIDENTIAL, COMMERCIAL, INDUSTRIAL AND MUNICIPAL ARE SUBJECT TO THE TERMS AND CONDITIONS OF THIS SEWER MORATORIUM.
- ALL APPLICATIONS FOR CONNECTION TO THE ROCKLAND SEWER SYSTEM, MUST MEET THE FOLLOWING CONDITIONS;
- **CONDITION 1: NO** new connection or expansion of service permits will be issued if at any time within three (3) months prior to that date of application our twelve-month rolling (12) daily average Flow exceeds 2.40 Million Gallons per Day.

- **Condition 2: NO** new connection permits or expansion of service permits will be issued until the Sewer Department satisfies all previously approved inflow & infiltration (I&I) removal requirements as per the EPA Administrative Order. Removal requirements are based on the required flow plus the 11:1 Ratio for removal (for every 1 gallon added, we need to remove 11 gallons)
- *Example: If the Sewer Commission has approved a previous project that required 3,300 GPD of flow (30 bedrooms), The Sewer Department must have removed 36,300 GPD of Inflow & Infiltration (I&I) before another permit to connect is issued.*
- **Condition 3: NO** new connection or expansion of service permits will be approved until there is a sufficient balance actually existing in the I&I Remediation Account to meet the next projects full need with the 11:1 flow removal ratio applied
- *Example: If a project comes before the Board that requires 3,300 GPD of wastewater flow, there must be a balance of 36,300 GPD available in the I&I Remediation Account (I&I RA). There must be adequate capacity to meet the complete amount of the flow required for the next project **BEFORE** the new project begins.*

- **Condition 4: If** The Rockland Treatment System is below its total capacity limit of 2.50 MGD, the Rockland Sewer Department will make 36,000 gallons of capacity available per year until it meets the requirement of 80% total facility capacity per the EPA NPDES General Permit Limit.
- **Note:** 2022 NPDES Permit wants everyone not to exceed 80% of their total permit capacity (2.0 MGD in our case) or explain what you are doing to maintain permit compliance with milestones to attempt meeting that goal in the upcoming year must be updated yearly
- **CONDITION 5: Any** project/application requiring flows less than 440 GPD by Title V standards, will be granted approval only by a majority vote of the Rockland Board of Sewer Commissioners.
- **CONDITION 6: NO** new connection or expansion of service permits will be issued to any project based on the assumption that the required 11:1 flow removal ratio will be met at a later date or after the connection is made.
- **CAPACITY MUST BE AVAILABLE** when the application is filed or the Project goes on the Waiting List

Current Sewer Moratorium

- Much broader and less restrictive than the Town Approved 2006 version
 - 2006 Prohibited anything Larger than 2 Family connection
 - 2024 Allows up to 30 Bedrooms Maximum until flows are reduced
- Sewer Commission and the Town made no attempt to enforce the 2006 Moratorium
 - Never met the promises made in the Corrective Actions to the 2006 EPA Administrative Order
 - Continued to add new connections despite the 2006 Moratorium depended on developers fees/promises to make capacity
 - Never went up in development fees since 2004
 - Flows naturally continued to increase further out of control
 - Rockland continues to be in violation of the EPA Order and NPDES Permit today
 - In the last five years we have been in violation 80% of the time
- Since the 2021 Moratorium we have accomplished
 - Complying with the 2022 EPA's conditions contained in the Administrative Order
 - Reduced the twelve-month average from 3.2 MGD to 2.60 MGD*** today
 - **Added 23 new connections, Have yet to deny one application**

○	Project	Flow (GPD)	11:1 Removal (GPD)	Status
○	365Concord St	6,600	72,600	Approved flows not started
○	Dyer St	4,730	52,030	Approved flows not started
○	320 Concord St	1,320	14,520	Approved flows not started
○	Manzella Ct	660	7,260	Approved flows not started
○	Holy Family Apts.	2,970	32,670	Approved flows not started
○	13 Projects Approved	1,520	16,940	Some have connected
○	With Moratorium			
○	5 Projects that have	1,430	15,730	Most Meet the Moratorium Conditions
○	Applied to other boards			
○	TOTALS 23 Projects Approved, 19,230 GPD of flow, 211,530 GPD with the 11:1 flow removal requirement			
○	Only owe the EPA 61,000 GPD as of 9-18-2024			

2022 EPA Administrative Order

- Reduce flows to WWTF
 - I/I reduction
 - Peak flow reduction
 - Demonstrate continuous flow reduction
 - Demonstrate a consistent history of flow compliance to our permit
 - 5/5/22 EPA stated at an in-person meeting “Rockland has a capacity problem, not just an I/I problem”
 - **EPA said in July 2022 “Rockland will be fined at some point”** Sewer Commission has been proactive
- Total Phosphorous Compliance
- Future Total Nitrogen Compliance
- Evaluate “Flow Shedding” options
 - Groundwater discharge or MWRA
- Alternative Surface Water Discharge
- **General Provision #34 warning !!!!**

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY REGION 1

IN THE MATTER OF	)	DOCKET NO. CWA-AO-R01-FY22-05
	)	
Town of Rockland, Massachusetts	)	FINDINGS OF VIOLATION
NPDES Permit No. MA0101923	)	
	)	AND
Proceedings Under Sections 308(a) and	)	
309(a)(3) of the Clean Water Act,	)	ORDER FOR COMPLIANCE
33 U.S.C. §§ 1318(a) and 1319(a)(3)	)	
	)	

STATUTORY AUTHORITY

The following FINDINGS are made, and ORDER issued pursuant to Section 308(a) and Section 309(a)(3) of the Clean Water Act, (the “Act”), 33 U.S.C. §§ 1318, 1319(a)(3). Section 309(a)(3) of the Act grants the Administrator of the U.S. Environmental Protection Agency (“EPA”) the authority to issue orders requiring persons to comply with Sections 301, 302, 306, 307, 308, 318 and 405 of the Act and any permit condition or limitation implementing any of such sections in a National Pollutant Discharge Elimination System (“NPDES”) permit, issued under Section 402 of the Act, 33 U.S.C. § 1342. Section 308(a) of the Act, 33 U.S.C. § 1318(a), authorizes EPA to require the submission of any information required to carry out the objectives of the Act. These authorities have been delegated to the EPA Region 1 Administrator, and, in turn, to the EPA, Region 1 Director of the Enforcement and Compliance Assurance Division (the “Director”).

South Weymouth Naval Air Station Redevelopment Project

Abington, Rockland, Weymouth, Massachusetts

REPORT

June 14, 2024

Submitted to:

Energy and Environmental Affairs MEPA
Office
100 Cambridge St., Suite 900
Boston, MA 02114

Submitted by:

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Storrs PC
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Environmental Vanasse &
Associates, Inc.



Brookfield
Properties

NEW ENGLAND
DEVELOPMENT

5.2.2.3 Rockland Solution

The Rockland sewer system origins date back to its shoe manufacturing days with the Union Street commercial core, including factories, connected into a combined sewer system with no treatment works. While much separation work has been accomplished on the old combined system, it still experiences significant I&I flows from illicit connections and high groundwater conditions. Rockland's sewer system is connected to a conventional secondary treatment Wastewater Treatment Plant (WWTP) discharging into a canal connected to French's Stream.

The WWTP capacity is 2.50 mgd. The 2022 average flow was 2.67 mgd, with max. and min. daily flows of 5.75 mgd and 1.82 mgd, respectively. Such range illustrates the /significant I&I problem in the system. From our continuing discussions with the Town and reviewing the recently published system analysis by the Town's consultants, it is estimated the system infiltration is 1.22 mgd (almost 45% of the average flow) and the 5-yr/24-hr storm I&I is 3.57 mgd. However, in recent winter Nor'easters, the system has had peak flows at the WWTP estimated at 7 to 10 mgd. It appears from the recent study that while inflow is a much larger problem than infiltration, the Town, acting through its Sewer Commission, has focused its efforts on mitigating infiltration, which has had modest results. It has been preliminarily estimated that there are potential improvements that could be implemented into the Town's sewer system to mitigate the substantial inflow issue, though these have not been comprehensively studied or addressed.

Currently, there is a moratorium in place on new sewer connections over 440 gpd. The moratorium is part of the Town's action plan to respond to MassDEP/EPA orders to reduce extraneous flows and upgrade the WWTP. **Given the significant I&I problem in the Rockland system and the length of time required to address the issue, the Proponent has adjusted the wastewater approach in Rockland and is planning approximately 85,000 gpd of septic systems on the east side of the Base.** These would be individual septic systems constructed on separate lots as development opportunities in the Rockland portion of the Base.

arise. The redevelopment program in Rockland remains the same. Alternative means for handling sewer flows beyond that which can be handed in on-Site septic systems will continue to be explored.

These on-Site systems will be developed in parallel with cooperative efforts implementing the I&I reductions in the Rockland sewer system. In addition to the above-described I&I measures, the Proponent is also exploring opportunities to make connection to other discharge points (e.g., Abington) that have excess capacity to serve flows from the Base in Rockland. At present, Abington utilizes approximately 1.1 mgd of the 1.5 mgd available under its intermunicipal sewer agreement with Brockton. While the majority of Abington's wastewater flows go to the Brockton system pursuant to that agreement, **approximately 75,000 gpd discharges to the Rockland system under a separate, existing 110,000 gpd intermunicipal agreement between Abington and Rockland. As such, there is potential for approximately 75,000 gpd of sewer flow from the Rockland portion of the Base to be accepted into the Abington system as an offset pursuant to the existing Abington/Rockland agreement.**

Rockland Sewer Upgrade

ROCKLAND WASTEWATER TREATMENT FACILITY

- **FACILITY ONLY !**
- Does not include the 13 Town-Wide Pump Stations
- Does not include the Town-Wide Sewer Infrastructure
- Does not include any additional Treatment options (GW Disposal or 2nd facility)
- Will not give us any additional Sewer treatment or flow capacity
- The future will have a significant financial impact on the residents
- GW Disposal System, additional Plant or MWRA Connection **A MUST!**
- **START NOW !!** 8 to 10 years once you start

WWTP Upgrade Drivers



WWTP Concerns/Drivers



WWTP Concerns/Drivers



WWTP Concerns/Drivers

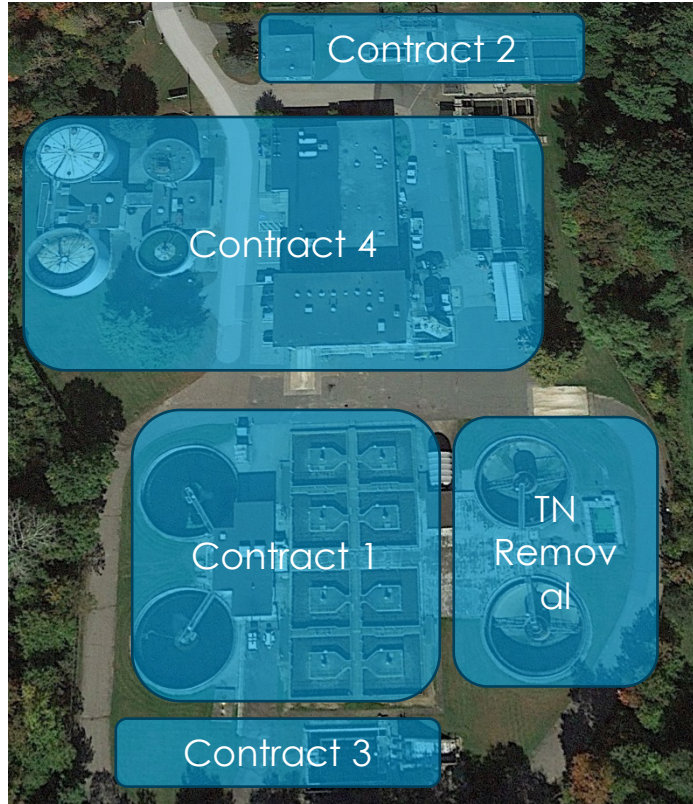


WWTP – Original Plan Scope of Improvements



- New screening and grit facility
- Influent pump station modifications
- Primary clarifier modifications
- Secondary system modifications
- Secondary clarifier modifications
- Electrical system upgrades
- Tertiary system and building
- Chemical building
- Chlorine contact tanks and effluent pump station
- Sludge storage tanks
- Administration building
- Garage and electrical building
- General

WWTP – Scope of Improvements – Revised Plan



- **Contract 1 (new) – Secondary Treatment**
 - Secondary system modifications
 - Doesn't Include TN removal at this time
 - Secondary clarifier modifications
- **Contract 2 – Hydraulic Capacity Increase**
 - New screening and grit facility
 - Influent pump station modifications
 - Primary clarifier modifications
- **Contract 3 – Tertiary Phosphorus Removal and UV Disinfection**
 - Tertiary system and building
 - Chemical building
 - Chlorine contact tanks and effluent pump station / UV
- **Contract 4 – Sludge Handling Facilities**
 - Sludge storage tanks
 - Dewatering Upgrade
 - Administration building Improvements
 - General
- **TN Removal to be addressed during contract that is being designed when permit limit is received**

WWTP Revised Plan Timeline and Estimated Costs

Contract Number	Cost	Timing
Contract 1 – Secondary Improvements	\$35 million	Design Began in July 2024 Expected Construction Completion Mid 2028
Contract 2 – Hydraulic Improvements	\$15 million	Design Begins July 2027 Construction Complete End of 2031
Contract 3 – Tertiary Phosphorus Removal and UV Disinfection	\$15 million	Design begins July 2030 Construction Complete Mid 2034
Contract 4 – Solids Handling	\$20 million	Design begins July 2033 Construction Complete Mid 2037
Remaining TN Removal Work ****	\$10 million	When Permit is Received, Fold into Contract currently in design
Total *** Based on 2023 CCI Pricing	\$95 million	Every year the project is not completed add 2.5 - 3.0% to the remaining costs just to keep up with price/labor/material/manufacturing increases for accurate budget planning.

Facility Upgrade Funding/Financing

Developed a Funding/Financing Plan to Support

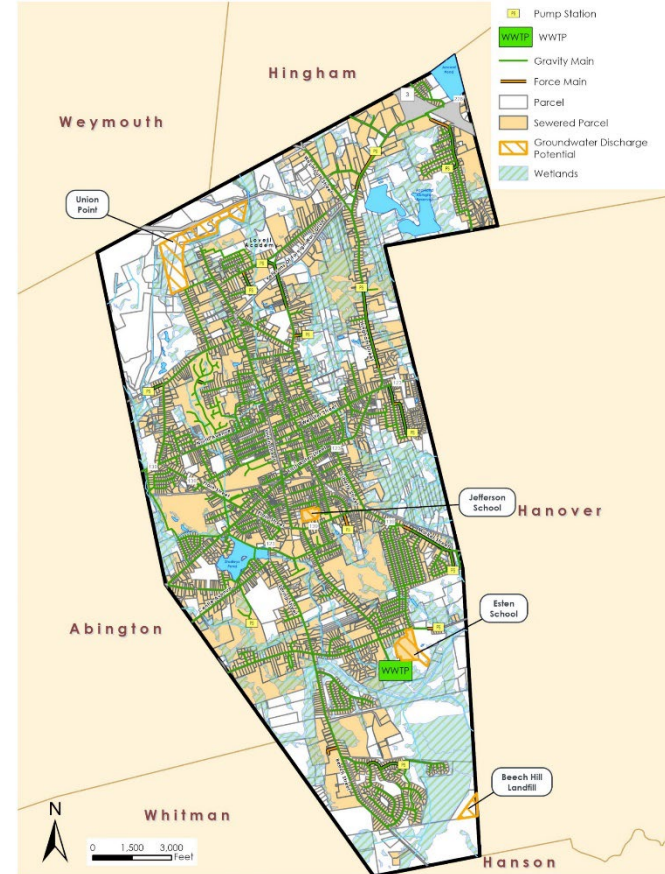
- WWTP Upgrade
- Collection system SSES and rehabilitation work

Potential Grant/Loan Funding Opportunities

- 0% SRF Loan for the WWTP Nutrient Upgrades Not eligible for Stage 1 upgrade.
- ~2% SRF loan for other WWTP upgrades, separate future pump station upgrades and collection system rehabilitation plans
- **Investigating other grant options that may be available to us**
 - Congressional Earmarks
 - MVP & MassWorks
 - Utilizing Wright-Pierce and Weston & Sampson financial group for assistance
- **Established a schedule for Sewer User Fees**
- Ten Year Rate study findings – Approximately \$75 annual increase each year over next 4 years for average home (\$375 more per household for sewer only in 4 Yrs.)

Groundwater Discharge Alternatives

- Details are in the 2022 CWMP
- Rational, Engineering, Estimated Costs
- Seven potential sites identified
- Met with stakeholders
- Shortlisted sites two golf courses and Southern Land (landfill/McCarthy's) removed
 - Union Point (reduced in size)
 - Jefferson School
 - Esten School Land
 - Former Pleasant St. Landfill
- Reduced site size with soil info
- Costs are additional and **NOT included** in the Facility Upgrade planning



Groundwater Discharge – Potential Effluent Disposal Site Details

Site Name	Parcel Size (acres)	Usable Disposable Area (acres)	Disposal Capacity (gpd)	
			1.5 gpd/sq ft	4 gpd/sq ft
Beech Hill Landfill	16	1.9	124,100	331,100
Esten School	19	13	849,400	2,265,100
Jefferson School	6.5	3.8	248,300	662,100
Union Point	63	42	2,744,300	7,318,100

Groundwater Discharge – Estimated Costs

	1.1 MGD Capacity	2.7 MGD Capacity	0.12 MGD Capacity	0.25 MGD Capacity	0.85 MGD Capacity
Site	Union Point		Beech Hill Landfill	Jefferson School	Esten School
Effluent Disposal Cost (\$)	\$10,700,000	\$25,700,000	\$1,800,000	\$2,900,000	\$8,400,000
Rockland WWTP Secondary Upgrades Costs (\$)	\$16,000,000	\$16,000,000	\$16,000,000	\$16,000,000	\$16,000,000
Sewer Routing Cost (\$)	\$18,500,000	\$18,500,000	\$15,000,000	\$6,100,000	\$1,900,000
Total Costs (2022 pricing)	\$45,200,000	\$60,200,000	\$32,800,000	\$25,000,000	\$26,300,000

Groundwater Discharge – Flow Shedding Options

Forest Street Pump Station

- Rated capacity of 400 GPM
- 576,000 GPD peak flow
- Average daily flow shed of 240,000 GPD

Hingham North Pump Station

- Rated capacity of 1,000 GPM
- 1,440,000 GPD peak flow
- Average day flow shed of 686,000 GPD

Combination of both

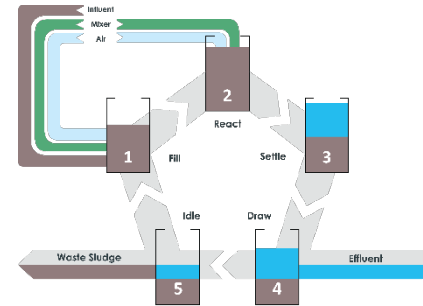
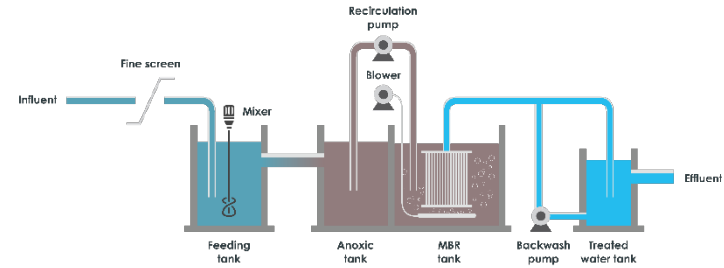
- 926,000 average GPD shed
- 1,000 – 35,000 GPD additional from Needs Area 1



Groundwater Discharge – Flow Shedding Decentralized WWTF

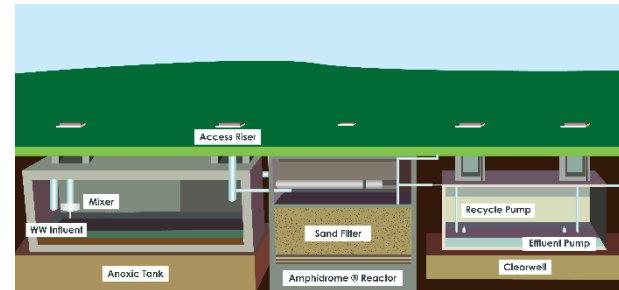
Decentralized WWTF

- 0.5-1 MGD (larger for Union Point developer flows)
- Receive flows from Forest Street and/or Hingham North Pump Station
- Approximately 1 acre needed for facility
- Biological treatment
 - Membrane Bioreactors (MBR), Sequencing Batch Reactors (SBR), or Amphidrome



Union Point Disposal Site

- 2.7-7.3 MGD disposal capacity based on loading rates from 1.5-4 gpd/SQFT



Groundwater Discharge – Decentralized System Costs - Union Point Option

	Forest Street PS Shedding	Hingham Street, North PS Shedding	Both Pump Stations
Effluent Disposal Cost (\$)	\$5,900,000	\$22,200,000	\$31,100,000
Decentralized WWTF (\$)	\$26,500,000	\$46,300,000	\$56,500,000
Sewer Routing Cost (\$)	\$3,300,000	\$6,700,000	\$10,000,000
Total Costs (2022 pricing)	\$35,700,000	\$75,200,000	\$97,500,000

The Sewer Department is funded through user fees and charges, which come with unique challenges:

- ❑ Sewer rates across the country are increasing by 6% per year, on average **Rockland is forced to go up 10% each Yr. for the next 5 Yrs. Not enough**
- ❑ Balancing between rate increases, impact to users (Town residents), state and federal regulations, and maintaining aging infrastructure
- ❑ A number of significant proposed Capital Improvement Projects (CIP), including:
 - WWTP Upgrade – last significant upgrade was done in 1977 and the Facility was built in 1962
 - Upgrade is necessary to meet federal and state requirements
 - Infiltration and Inflow (I/I) Projects -
 - Federal and state enforcement to locate and remove sources of I/I in Town's sewer collection system



- The Sewer Department is proactively working on addressing the known I/I issues
- The Sewer Commission asks for the public's help to identify private inflow sources
 - Smoke Testing Program – To identify public and private sources
 - Scheduled to begin September 16, 2024
 - Educational material is posted on Sewer / Town's website
 - Building Inspection Program – To identify private sources

