Comprehensive Wastewater Management Plan

Groundwater Discharge Workshop

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Presentation Overview

- Introductions
- Project Overview
- Goals for Today
- Groundwater Discharge Locations
- Next Steps

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Project Team

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Rockland's CWMP

1. Phase 1 – Assessment of Existing Conditions
2. Phase 2 – Alternatives Identification and Screening
3. Phase 3 – Evaluation of Short-Listed Alternatives in Phase 2 and Develop a Recommended Wastewater Management Plan

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EPA Order

- Reduce Flows to WWTF
  - I/I reduction
  - Peak Flow Reduction
- Evaluate "Flow Shedding"
  - Groundwater Discharge
- Alternative Surface Water Discharge

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").

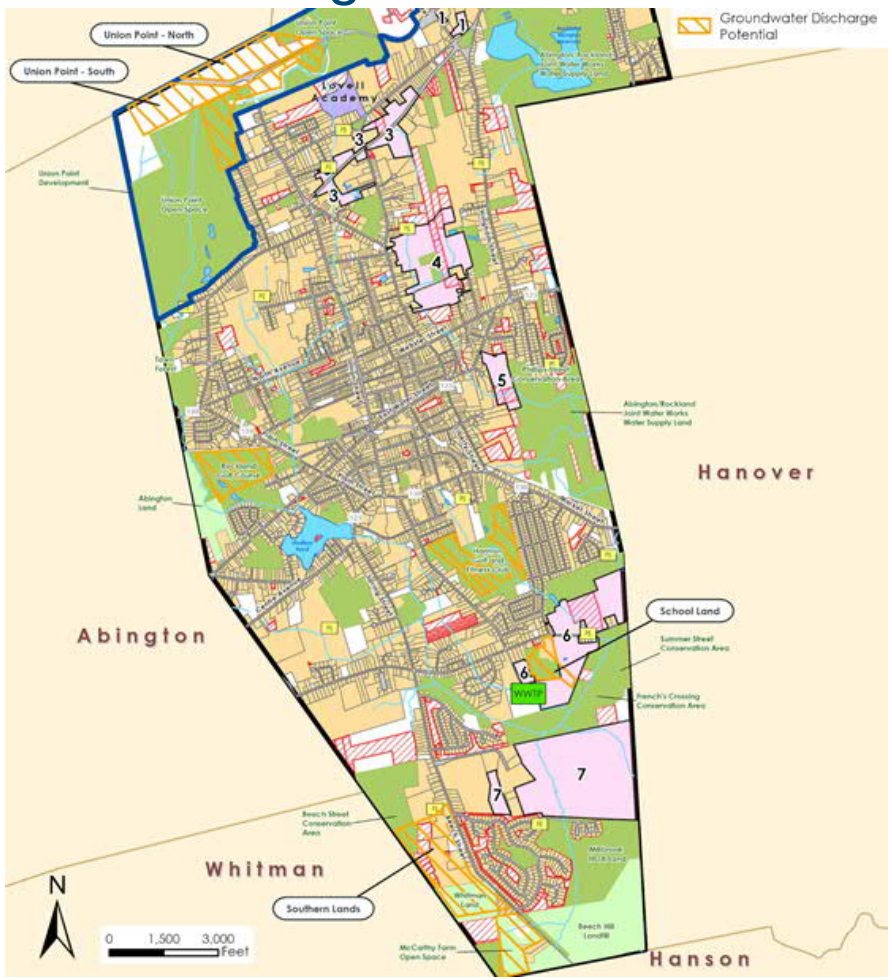
Goals for Today

- Understand the Why
- What Would Groundwater Disposal Look Like?
- Would Groundwater Disposal Impact How Land is Used?
- Get Input on Locations from Stakeholders
- Modify Final List for CWMP Phase 3 Evaluation

What is Groundwater Discharge/Effluent Disposal?

- Treated Wastewater – More Stringent Requirements Than Normal Septic Systems
- Discharge Permits, issued by MassDEP, Require Low Nitrogen Limits
- Groundwater Monitoring Upstream and Downstream
- Several Different Methods Available
  - Gravity
  - Pressure Distribution
- Recharges Groundwater

Groundwater Discharge



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Groundwater Discharge – Cont'd

Area Name	Area Size (square feet)	Usable Area (square feet) 50% usage	Disposal Volume	
			2 gpd/sq. ft. rate	5 gpd/sq. ft. rate
Union Point	6,300,000	3,150,000	6,300,000	15,750,000
Rockland Golf Course	1,900,000	950,000	1,900,000	4,750,000
Harmon Golf Club	1,800,000	900,000	1,800,000	4,500,000
School	835,000	417,500	835,000	2,087,500
Southern Lands	3,700,000	1,850,000	3,700,000	9,250,000
McCarthy Farm	1,400,000	700,000	1,400,000	3,500,000

What Are the Options?

- Subsurface Leaching
- Subsurface Drip Dispersal
- Rapid Infiltration Basins (open sand beds)
- Spray Irrigation
- Wicks

What Are the Options?

- Subsurface Leaching
  - Commonly Used
  - All Underground
  - Low Loading Rates
  - Large Space Required

What Are the Options?

- Drip Dispersal
  - Underground, Shallow Bury
  - Good in High Groundwater
  - Needs Pumping
  - Effective for odd shaped disposal areas and can be used in wooded areas

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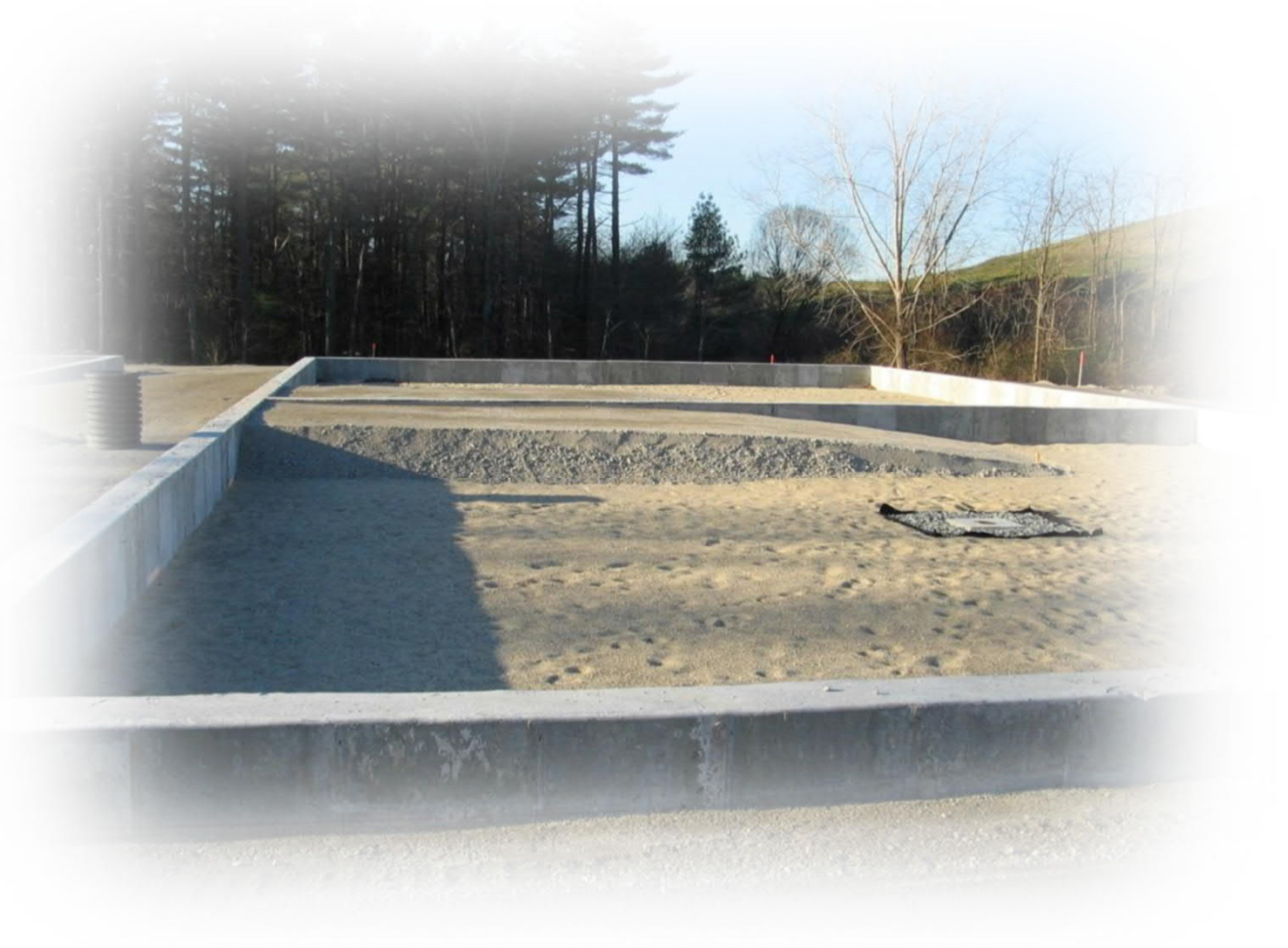
What Are the Options?

- Rapid Infiltration Basins
  - High Loading Rates Possible
  - Easy to Maintain
  - Aboveground, open systems



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What Are the Options?

- Spray Irrigation
  - Aboveground, Spray
  - Can be Constructed in Woods
  - Low Loading Rates
  - Winter Storage Required in NE Climate

What Are the Options?

- Wicks
  - Very Small Footprint
  - Minimal Aboveground Infrastructure
  - Needs Very High Effluent Quality, TSS in low single digits
  - Limited Use, Experience in New England

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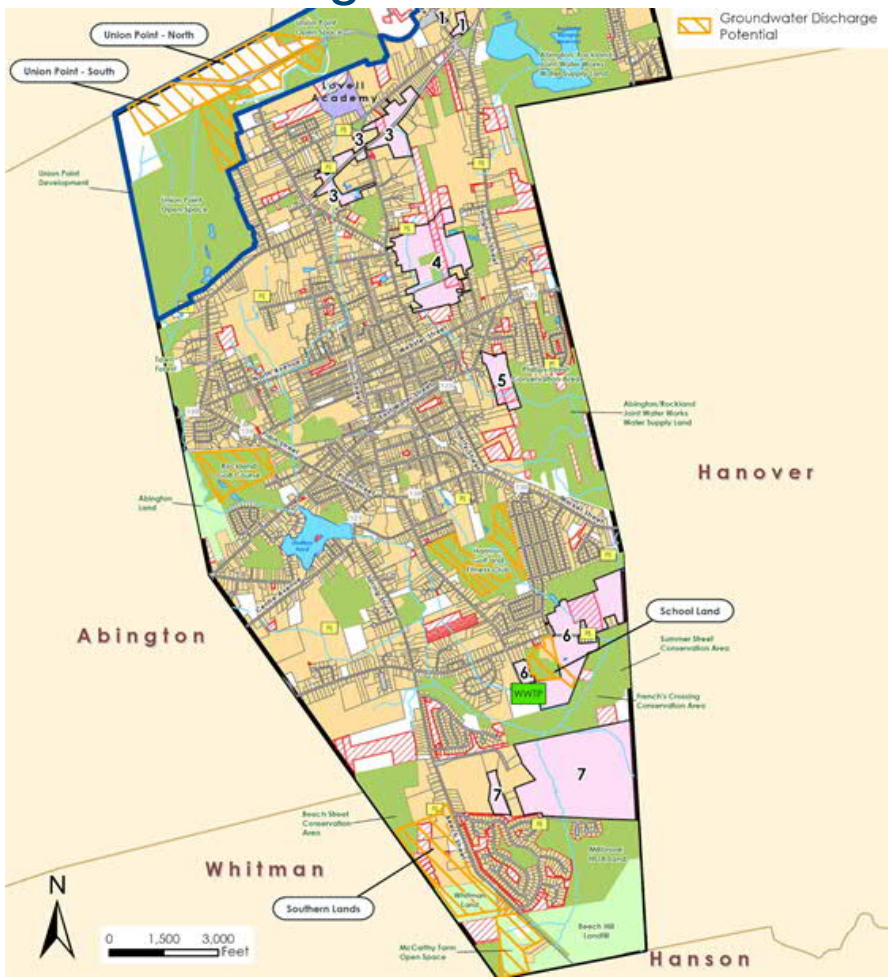
How Does it Affect Me?

- Property/Ownership Challenges
- Field Work Required Before and During Design
- Depending on Type Selected, Minimal Impact Aboveground
- Requires Construction, Land Disturbance
- WWTF Onsite or Nearby
- Monitoring After Project
- Maintenance/Upkeep of Disposal Area/Equipment

Groundwater Discharge – Location Discussion



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What Happens Next?

Phase 3 Evaluation

- Shortlisted Options from Today
- Further evaluate short-listed sites
- Provide Costs for Effluent Disposal Sites
- Provide Costs for New WWTP
- Provide Costs for New Collection System and Potential Collection System Modifications
- Recommend Further Investigation (Site) and Evaluation

What Happens Next?

Further Investigation (Site) and Evaluation

- Identify Permitting Hurdles
- Engage Hydrogeologist
  - Field Work
  - Mounding Analysis
- Meet with DEP
  - Hydrogeological Assessment
    - Field Work
    - Hydraulic Modeling
    - Report
- Design Disposal Site

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THANK YOU

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