*City of Rochester, New Hampshire*
PUBLIC WORKS DEPARTMENT
45 Old Dover Road • Rochester, NH 03867
(603) 332-4096
www.RochesterNH.net

# MEMO PUBLIC WORKS & BUILDING COMMITTEE AGENDA

**TO:** **PUBLIC WORKS AND BUILDINGS COMMITTEE**

**FROM:** **PETER C. NOURSE, PE**
**DIRECTOR OF CITY SERVICES**

**DATE:** April 13, 2023

**SUBJECT:** Public Works & Buildings Committee Meeting
Meeting Date ***Thursday April 20,2023 at 7PM***

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There will be a Public Works and Buildings Committee Meeting held on Thursday April 20, 2023, at 7PM. This meeting will be at City Hall in City Council Chambers

**AGENDA**

1. Approval of the February 16, 2023, PWC Minutes (packet pages 3-31)
2. Public Input
3. 165 Charles St Pavement Moratorium Waiver Request (Attached)
4. Howe Street / Apple Orchard – Walking Path
5. Autumn Street – Sidewalk Request
6. Water Main Transmission Line Rehab Project Update
7. EPA Regulatory Limits for Per and Polyfluoroalkyl Substances (PFAS) as a Proposed National Primary Drinking Water Regulation.
8. Wastewater Treatment Plant issued new EPA National Pollution Discharge System (NPDES) individual permit. (packet pages (32-39)
9. CLF Petitions EPA to Exercise for Residual Designation of Authority of Storm water Discharges (packet pages 40-43)
10. Drinking Water Watershed Conservation Opportunity

11. Rt.11 Safety and Capacity Improvement Update
12. Traffic Calming Speed Tables
13. Highway Block Aid Funding Available for Pavement Program
14. Gonic Sewer Mystery Slime Revealed
15. Bandstand Vandalism
16. Ian’s Way Pavement Damage
17. Other

# Public Works and Buildings Committee
# City Hall Council Chambers
# Meeting Minutes
# February 16, 2023 7PM

**MEMBERS PRESENT**

Councilor Donald Hamann, Chairman
Councilor Jim Gray, Vice Chairman
Councilor John Larochelle
Councilor Steve Beaudoin
Councilor Alexander de Geofroy

**OTHERS PRESENT**

Peter C. Nourse PE, Director of City Service
Lisa Clark, Deputy Director DPW
Dan Camara, Coordinator GIS & Asset Mgmt.



## MINUTES

Councilor Hamann called the Public Works and Building Committee to order at 7PM

1. **Approval of January 19, 2023 Meeting Minutes**
   ***Councilor Beaudoin made a motion to accept the minutes of the January 19, 2023 meeting as presented. Councilor Larochelle seconded the motion. The motion passed unanimously.***
2. **Public Input**
   No Public Input.

3. **Colonial Pines Phase 4 Sewer Routing Options**
   Mr. Nourse displayed on the monitor the original phasing plan for the Colonial Pines Sewer Extension Project (attached). He stated that in October 2022 he had reviewed the project strategy for Phase 4 of this large project. He stated that Phase 4 includes homes on Hemlock Street, Meadow and Balsam Lane. He noted that the current scope of Phase 4 has highest cost of all phases. He stated it includes approximately 74 homes and has 9000 feet of sewer main with 10,000 feet of new drainage and road surface. Mr. Nourse stated that the current project estimate is $9.1Million. He stated that this project scored high for a Clean Water State Revolving Fund (CWSRF) Loan, but there is only a 10% principal forgiveness with this CWSRF loan. Mr. Nourse stated that given that this area consists of newer homes, larger parcels where homes are further than the 100-foot mandatory tie-in, and the compression of the Sewer Capital Improvement Project Budget (CIP), he has looked at prioritizing and breaking the Phase 4 Project into two phases. One phase to be completed now, and one phase that could be completed at a later time based on the need for public sewer. Mr. Nourse stated that the engineers have drawn up two options for the next phase and the preferred phase would capture all the homes that have known problems with existing septic systems. Mr. Nourse stated that in August of 2022 he had sent out survey letters to all homes within the Phase 4 area. He displayed a

map of the area on the monitors that showed the responses to the survey. This map is attached to minutes. He noted that 60% of the homes in the area had responded to the survey and 55% of those responses (shown in green) stated that they would like to tie-in to City Sewer. The properties in red responded but said they are not interested in tie into sewer at this time. The parcels in light gray did not respond. Mr. Nourse then displayed a map on the monitors that showed the two possible options of the reduced scope. This map is attached to minutes. Mr. Nourse stated that Option 1 is shown in orange and reduces the next phase of cost estimate to $4.4Million. He stated that this option would capture all systems that are currently known to be in distress. He stated that Option 2 is shown in blue and reduces cost estimate to $4.3Million. Mr. Nourse stated that his recommendation is for Option 1as it would reduce the scope of Phase 4 and it picks up all the homes with noted septic system distress and all homes that stated a preference to tie in except for 29 Hemlock. He stated that he had spoken with the property owner of 29 Hemlock Street, and they report that they are interested in tie-in, but their current septic is not in distress. Mr. Nourse stated that Option 2 could be completed later, possibly several years later as the Sewer Fund CIP is heavy with other priority projects. Mr. Nourse stated that the FY2024 CIP request will fund the Option 1 at $4.4Million and the funds for Option 2 are programmed for FY2025 and could be pushed if necessary, with consideration of other projects. Councilor Gray ask about the sections that have both orange and blue lines. Mr. Nourse stated that just means both options would cover that area, but if option one completes that work, it will not be necessary in the next option. Councilor Beaudoin expressed his support for reducing the scope and going with Option 1 and suggested we may see additional Federal or State funding coming in during the interim. Mr. Nourse stated it is important to note that this neighborhood is expecting the Sewer Extension and that Councilors may receive inquiries from residents in the area regarding it if it is pushed off. Councilor Hamann stated his approval of Option 1 for Phase 4. Councilor Gray suggested using the terms Phase 4 and Phase 5 going forward vs. Options 1 & 2.

Mr. Nourse stated that the Committee had previously asked him process of decommissioning current septic tanks. He informed the Committee that per State of NH requirements the contents are pumped out, filled with stone, and crushed in place and then loamed over.

4. **Cocheco Well – Water Treatment Plant Upgrades**

Mr. Nourse gave the Committee some background information on the current Cocheco Well. He stated that the City of Rochester started investigating groundwater supply back in the late 1990's. He said aquifer studies were conducted and test wells were drilled to determine yield productions. He stated that in 2000 there were thirteen sand and gravel packed areas identified as favorable for groundwater extraction sites with 4 being ranked the highest. Eventually the best zone was determined to be the site of the Cocheco Well which is located off RT11 just north of Two Rod Road. The facility was built in 2010 with American Recovery and Reinvestment Act Funds (ARRA). Mr. Nourse stated that the well is permitted for up to one-million gallons per day and typically provides approximately 15% of the City's demand when in operation. He called the well both supplemental and redundant, stating it is supplemental when it is on because it reduces the workload and the stress of the Strafford Road Surface Water Plant. He stated that it is redundant because it has its own watershed and power grid. He stated that there have

been times when the well has provided up to 25% of our need. Mr. Nourse stated that the well has limitations to use based on the flow rates of the Cocheco River. He stated that there is an average of forty-five days in the summer that we cannot operate the well due to these limits. He stated that the original design was completed with provisions for a future connection that would provide treatment of Iron and Manganese. Mr. Nourse explained the advantages of blending the surface water and well water within our system. He stated that the Total Organic Carbon (TOC) that comes out of the well is approximately 1/16$^{th}$ of what comes from the surface water reservoir. He says this is important to reducing disinfection biproducts. Mr. Nourse explained that disinfection biproducts are halogenated compounds that are regulated by the Environmental Protection Agency (EPA) and we are required to test and report for this. Mr. Nourse stated that in addition to the lower TOC levels the lower water temps from the well vs. surface water retard the kinetics for disinfection bi-product formation which plays into better water quality. He stated that this assists us to stay in compliance with the maximum contaminate levels (MCL) set by the EPA. Mr. Nourse stated that there is also a downside to groundwater wells. He stated that they can have Manganese and Iron that can have detrimental effects that have been historically viewed as nuisances such as staining of fixtures and clothing, taste, and odor, and they can also accelerate the formation of biofilm in the City's water system. Mr. Nourse stated that the EPA and State have regulated these metals as Secondary Contaminants because they are not health hazards. Since the Cocheco Well went online in 2011 it has shown a steady increase in Iron and Manganese. He displayed charts displaying the increases over time for both Iron and Manganese. He stated that while both show an increase, these charts show that Manganese is the prominent issue. Mr. Nourse explained that in 2004 the EPA issued a Drinking Water Health Advisory for Manganese. He stated that an advisory is not enforceable for action but is meant to be used as a guideline for addressing Manganese contamination. The advisory explains that manganese is ubiquitous in air, soil, and water and is an essential nutrient for humans and animals. The advisory states that chronic high doses or exposure may be harmful and that the nervous system is primary target. Mr. Nourse stated that there is substantial data supporting neurological disorders from inhaled exposure in trade environments, but there is little data regarding oral exposure. He stated that there is little data supporting links to cancer. He stated that the groups thought to be most sensitive to exposure are the very young and the elderly due to the speed in which the body can metabolize the manganese. The Advisory recommends reducing the level of manganese to 0.05 milligrams per liter (MG/L), which happens to be Secondary Contaminant level that the EPA has promulgated. Mr. Nourse stated that the lifetime health advisory is set at 0.3 MG/L for infants younger than six months. Attached to minutes is the EPA Fact sheet on Iron and / or Manganese in Drinking Water. In December of 2020 based on the EPA Advisory New Hampshire's Ambient Groundwater Quality Standards for Manganese in drinking water was dropped from 0.84 MG/L to 0.30 MG/L. This standard was to be enforceable for Public Water Systems and further a public notification would be required to be issued if concentrations in produced water reached 0.1 MG/L. Mr. Nourse stated that although our Cocheco Well finish water is below the limit of 0.30 MG/L, it is routinely above the public notification level of 0.1 MGL. Mr. Nourse stated that even though our well comes out into the system via Rt. 11 and blends with the surface water, we would still be subject to the notification process

regulation. He stated given this information he asked our Drinking Water Engineering Consultant to design an upgrade to the Cocheco Well Water Plant to treat for the Manganese and Iron. He stated the goal was set to treat the Manganese level to 0.03MG/L which is 1/10$^{th}$ of the primary level of 0.3 MG/L. He stated that we do have options that would accomplish this goal and the design includes treatment for Iron reduction to reach 0.2 MG/L He stated that this is lower than the current Secondary Contaminate level of 0.3 MG/L. Mr. Nourse stated that this would be a significant upgrade to the Cocheco Well Plant with an original estimate of $5.6Million which has been funded and authorized by the City Council. He stated that there are American Rescue Plan Act (ARPA) Funds, Drinking Water and Ground Water Trust fund Grant and Loans committed to this project. Mr. Nourse stated that this estimate for the project was very rough and is now outdated given the inflation rates. He stated that the estimate for this project is now $12Million. Mr. Nourse stated that NHDES contacted Rochester and other Public Water Systems last month to advise that the implementation of an enforceable standard for Manganese has been suspended indefinitely due to policy and legal issues. He stated the requirement to reduce to the 0.3 MG/L and to issue notifications at 0.1 MG/L are not required at this time. Mr. Nourse stated that although this is not required at this time NHDES is encouraging the reductions and have said that they may adopt the reduced levels at a later date and could take enforcement actions by issuing Administrative Orders. He stated that the Regulators may also prioritize public funding for the treatment of Manganese in Public Water Systems. He stated that currently the Secondary Contaminant level for Manganese remains at 0.05 MG/L. Mr. Nourse stated that as a Public Water System we are still interested in reducing Manganese due to the nuisance and biofilm issues and in preparation of future regulation. Mr. Nourse explained with the current funding we are going to pilot a green sand program that will likely assist us with reduction as planned and we are going to explore possible additional external funding sources for this project. Councilor Larochelle asked if the City receives complaints about the water quality nuisance issues. Mr. Nourse stated we do receive complaints about the color and staining. He noted some issues at East Rochester homes. The Committee was in support of the Pilot Program and was pleased that staff will look for additional grant funding.



5. **Gonic Dams Removal Project Update**

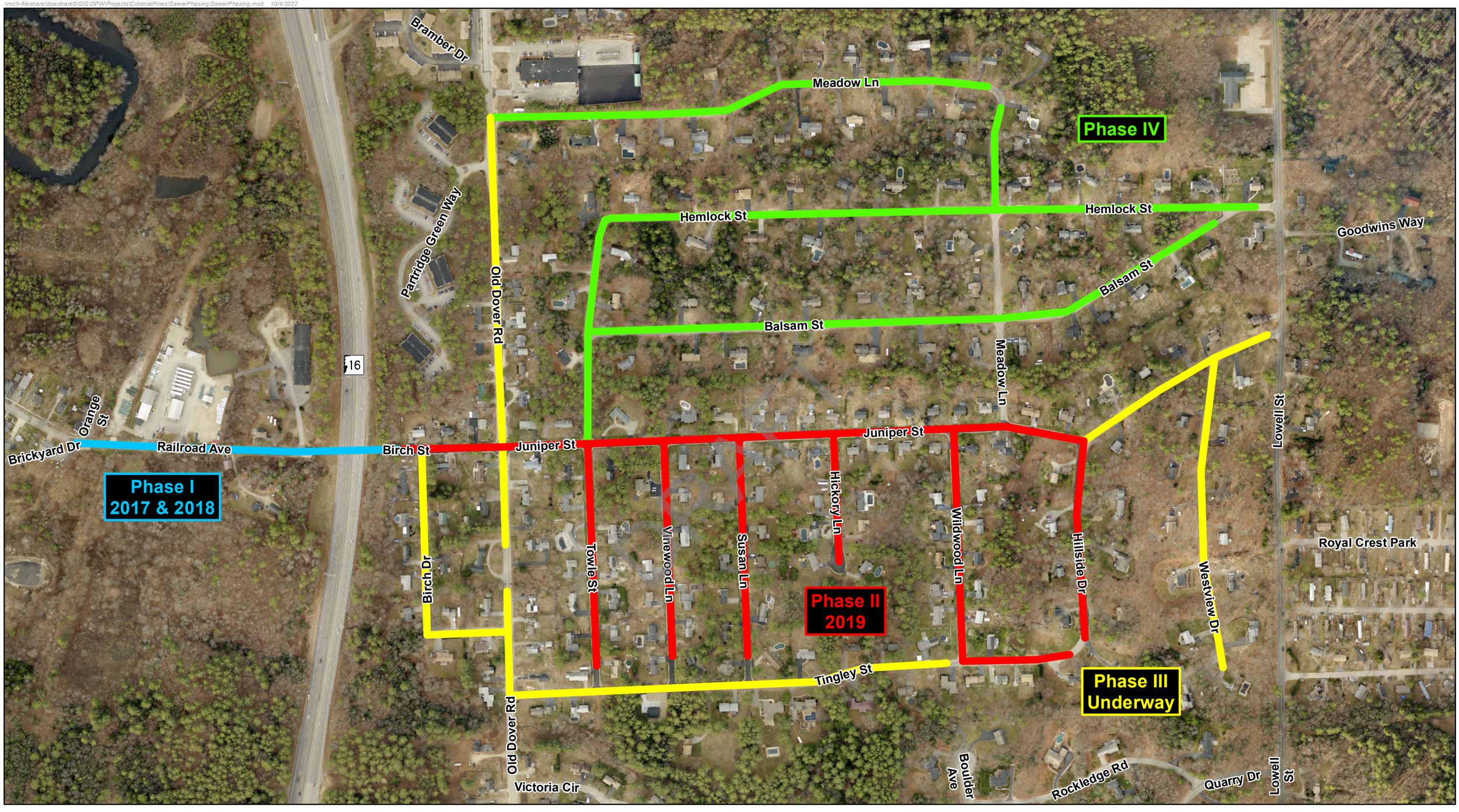
Mr. Nourse stated he last discussed this project with the Committee in October of 2014. He stated that this is a long-standing project that has had fits and starts and a recent funding opportunity has sparked it for progress again. He explained that this is a State of NH initiated project to remove both the Gonic Mill Dam and the Gonic Sawmill Dam. He stated that this has been in the works for over twenty years. The State's cited reasons for removal are in regards to public safety and for the ecological health of the Cocheco River. Mr. Nourse displayed graphic showing the location of the Gonic Dams. He stated the removal of the dams will improve resilience to extreme weather events and flooding by reducing water stage and flood inundation areas and removal would also reconnect 13 miles of river and improve water quality in the Gulf of Maine. Attached to these minutes is a pictorial presentation Mr. Nourse put together to show the Dam locations and previous work in the area. Mr. Nourse stated that a failure of the dams could result in damage to the City's sewer main that runs through this area. He also discussed the source and previous efforts to mitigate the sediment contamination of soils in these areas. Mr.

Nourse stated that the State of NH and the owner of the Gonic Dam (Gosport Co.) have reached a legal settlement that mandates the removal of both Dams prior to 2025 by owner, Gosport. An ARPA Grant for Critical Flood Infrastructure in the amount of $150,000 was awarded to the City of Rochester. Although the City is not the owner of the Dams, only Public Entities can apply for ARPA Grants. Mr. Nourse stated that the City has become the Grantee and has a subrecipient agreement with Gosport to execute the work. The Scope of the work to be covered by the Grant includes Final Design for Dam removal, a Sediment Management Plan and Report, Sewer System Protection, Permitting and Bid Documents. Mr. Nourse stated that he believes there is no liability for the City on this project. Gosport is responsible to make this happen. Councilor Larochelle asked if a decision was made regarding the responsibility of the contaminated sediments that are on "Lot 3" of the plan. Mr. Nourse stated that this is still not resolved as the ownership of Lot 3 has not been determined. Mr. Nourse stated that it does look good for future funding opportunities for the dam removal and contaminate mitigation. Mr. Nourse stated that there is a Kick Off meeting for the project at Gosport Office. Councilor Gray asked for the meeting details as he may be able to attend. Mr. Nourse stated he would forward details to Councilor Gray and other Gonic Representatives. .

6. **Winter Operations Policy Update**
   Mr. Nourse stated that at the last meeting he had presented an updated Winter Operations Policy and that Ms. Clark had emailed the Committee the existing policy and the red lined version. He asked if the Committee had a chance to look at it and asked if there were any questions or comments. Councilor Gay stated that it was much shorter in length. There were no questions or concerns.
7. **Other:**
   **Portland Street Road Closure** – Councilor Gray asked if there was any additional information on this. He stated he saw a posting for road closure. It was determined that the Road Closure was for Railroad repairs on 2/20/2023 through 2/21/2023.
   **Gonic Sewer Issue** – Mr. Nourse stated that investigations into the "mystery slime" located in the Gonic Sewer Mains continues. He stated he is hopeful to provide a full report next meeting. Councilor Beaudoin asked if this has caused issues at the Wastewater Treatment Facility (WWTF). Mr. Nourse stated that it has not caused problems at the WWTF, but the Sewer Pump Station has had several clogs requiring staff to go in and clean out.

***Councilor Hamann adjourned the meeting at 7:42 PM.***

Minutes respectfully submitted by Lisa J. Clark, DPW Deputy Director Operations & Administration.




**Legend**

- Phase I
- Phase II
- Phase III
- Phase IV

1 inch = 350 feet

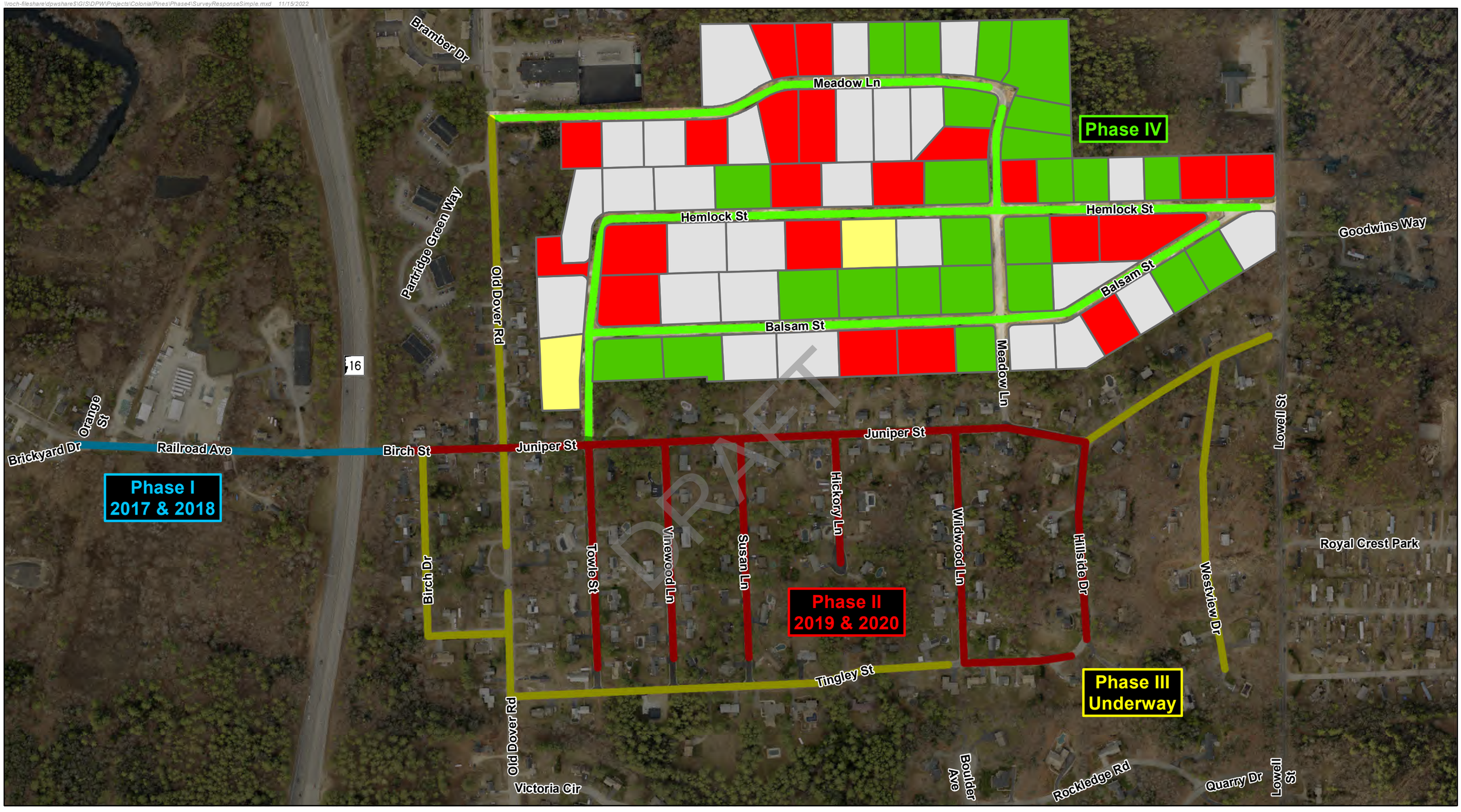
0 350 700 Feet




This map is intended for planning purposes only.
All features shown should be considered approximate.
Date: 10/4/2022
Author: DC - Rochester, NH
Source: NHGRANIT, ArcGIS Online, City of Rochester

Sewer Project Phasing
Colonial Pines

Rochester, NH




**Legend**

- "Yes" Response to Survey (24)
- "No" Response to Survey (21)
- No Preference Provided in Response to Survey (2)
- No Response Received (29)

- Phase I
- Phase II
- Phase III
- Phase IV

1 inch = 350 feet

0 350 700 Feet



This map is intended for planning purposes only.
All features shown should be considered approximate.
Date: 11/15/2022
Author: DC - Rochester, NH
Source: NHGRANIT, ArcGIS Online, City of Rochester

Phase IV Survey Response
Colonial Pines

Rochester, NH

Option 2
Sewer: 4,050 LF
Drainage: 3,950 LF
Roadway: 4,400 LF
Total Budget: $4.3M

Option 1
Sewer: 4,100 LF
Drainage: 3,600 LF
Roadway: 4,800 LF
Total Budget: $4.4M

Preliminary Sewer Routing Options 2/15/23

MEADOW LANE
HEMLOCK STREET
HEMLOCK ST
BALSAM STREET
JUNIPER ST
TINGLEY STREET
OLD DOVER ROAD
SPAULDING TURNPIKE
RAILROAD AVENUE
BIRCH DRIVE
TOWLE ST
VINEWOOD LN
SUSAN LANE
HICKORY LANE
WILDWOOD LANE
WEST VIEW DRIVE
HILLSIDE DR.

DRAFT

SCALE: 1 INCH = 160 FT.

ISSUE FOR
APPROVAL By –
Date –
CONSTRUCTION By –
Date –
RECORD DRAWING By
Date

| NO. | REVISIONS | APP'D |
|---|---|---|

Drawn/Chk. RMG
Designed DJR
Checked –
Approved –
Date 1/4/2022
Book No. 2272
Project No. 2272
Dwg. ID 2272 Base_Ph3
Scale AS SHOWN

PRELIMINARY
JANUARY, 2023
NOT FOR CONSTRUCTION

UNDERWOOD engineers
25 Vaughan Mall, Portsmouth, N.H. 03801
Tel. 603-436-6192 Fax. 603-431-4733

BASELINE LAYOUT

COLONIAL PINES SEWER EXTENSION – PHASE 4

CITY OF ROCHESTER
ROCHESTER, NH



DWG NO G7
SHEET 8 OF 40

ENVIRONMENTAL Fact Sheet

NEW HAMPSHIRE DEPARTMENT OF Environmental Services

29 Hazen Drive, Concord, New Hampshire 03301 • (603) 271-3503 • www.des.nh.gov

WD-DWGB-3-8 2019

# Iron and/or Manganese in Drinking Water



**INTRODUCTION AND OCCURRENCE**

Iron and manganese occur naturally in the earth's crust and are released into water by weathering processes. Both elements are very common in both shallow and deep wells in New Hampshire. Concentrations in groundwater vary widely depending on the local geology and groundwater chemistry, from barely detectable levels of 0.05 mg/L or less, to more than 1.0 mg/L manganese or greater than 10 mg/L iron. Depending on localized pH and oxygen levels in the aquifer, these constituents may be found in their reduced, soluble forms ($Mn^{2+}$, $Fe^{2+}$), or as oxidized, colloidal, particulate forms. Laboratory analyses of total versus filtered metals may be used to establish their relative presence as dissolved or particulate in order to evaluate treatment options.

**HEALTH EFFECTS**

Iron and manganese are generally considered secondary or aesthetic contaminants due to their staining of plumbing fixtures and laundry. This still holds true for iron, however, the US EPA issued a manganese Health Advisory Level of 0.3 mg/L in 2004 indicating that infant exposure should be avoided because of their inability to purge excess manganese. Based on these studies, NHDES recommends that water used to reconstitute/dilute infant formula should have no detectable manganese. Private well users should have their water tested, and customers of community water systems should contact their water supplier or NHDES to become informed about their own drinking water quality. If manganese is present in the water supply, parents of infants should consider treatment (see below), or the use of bottled water that shows no detectable manganese. For information about the health effects of manganese, particularly the potential neurotoxic effects on children, please see NHDES Fact Sheet ARD-EHP-15, "Manganese: Health Information Summary."

**HEALTH STANDARDS OR ADVISORIES**

In addition to EPA's Manganese Health Advisory of **0.3 mg/L for infants**, New Hampshire's ambient groundwater quality standard (AGQS) for manganese is **0.840 mg/L**. The AGQS is a health based standard and is enforceable for public water systems and groundwater discharges. There are no health-based standards for iron in drinking water in New Hampshire. The federal and state **secondary** or **aesthetic standards**, established under the Safe Drinking Water Act of 1974, are **iron at 0.30 mg/L and manganese at 0.05 mg/L**. Secondary standards are reference levels where the contaminant may contribute to taste or staining of plumbing fixtures or laundry.

**TESTING**

Obtain water sample bottles by contacting an accredited laboratory from the list provided at des.nh.gov, or a web search for "NHDES Private Wells." NHDES recommends testing for the Standard Analysis suite of parameters which includes iron, manganese, bacteria, arsenic, lead, uranium and other important water quality parameters. NHDES recommends testing for the standard analysis suite **every 3 to 5 years**.

**MITIGATION AND TREATMENT**

Treatment for iron and/or manganese depends on raw water levels and whether the minerals are dissolved, particulate, or both. Co-occurrence with other contaminants such as hardness, sulfide or arsenic also affects the selection of treatment. Whole-house treatment is recommended in order to control staining of fixtures and laundry. Installation cost for a typical residential whole-house system is $1,500 to $3,000 for a single filtration step, regardless of technology. Common options are:

**a) Oxidation-Filtration –** filter tradenames for this technology include Birm®, Greensand®, Clack MTM® and Filox®. This is the preferred option for residential and public water supplies regardless of contaminant levels, due to its selectivity to iron and manganese, and avoidance of brine discharge to the environment.

When ***manganese*** is present, a strong pre-oxidant such as potassium permanganate ($KMnO_4$) or chlorine pellets are required for filtration to be effective. Residential systems can be equipped with a permanganate or chlorine pellet feed tank for either intermittent (batch) or continuous pre-oxidation.

For **iron only**, AIR pre-oxidation is adequate. In some cases, fine colloidal iron may pass through the filter. If so, a deeper filter bed, or multi-layer bed including a fine garnet layer may be used to improve iron capture.

**b) Softening –** cation exchange "softening" may be used when there is iron or manganese co-occurrence with high hardness over 150 mg/L. This process exchanges all cations (calcium, magnesium, iron, manganese) with the 'softer' minerals sodium or potassium. The softener is regenerated with standard salt (sodium chloride), with the brine waste discharged to your septic system or a drywell. Advantages of softening systems are their simplicity and low maintenance cost. However, they are highly inefficient for iron/manganese because they must remove all the "good minerals" calcium and magnesium first, which are present at two to three orders of magnitude higher concentration. Other disadvantages are the high volume of brine discharges which contaminate the groundwater including your own well and those of your neighbors, and the increased sodium levels which may be a concern for those on a sodium-restricted diet.

**Reducing Salt Use –** if a softener must be used, reducing salt discharge to the environment is extremely important to protect groundwater and nearby streams. Recommendations to reduce salt discharges are:

- Avoid water softeners unless water hardness is over 150 mg/L AND causing aesthetic issues.
- Use non-salt treatment technologies such as Birm or Greensand filtration for Iron or Manganese.
- Use a "demand-based" unit which backwashes based on actual water use rather than on a fixed timer.
- Reduce the brine loading to 6-8 pounds salt/CF instead of the factory setting of 10-12 pounds/CF.



**FOR MORE INFORMATION**

Contact the Drinking Water and Groundwater Bureau at (603) 271-2513 or dwgbinfo@des.nh.gov, or visit us at www.des.nh.gov. You may also input your water test results to the "***NHDES Be Well Informed"*** water treatment application (available via a web search) to interpret your results and identify appropriate treatment options.

**Note:** This fact sheet is accurate as June 2019. Statutory or regulatory changes or the availability of additional information after this date may render this information inaccurate or incomplete.

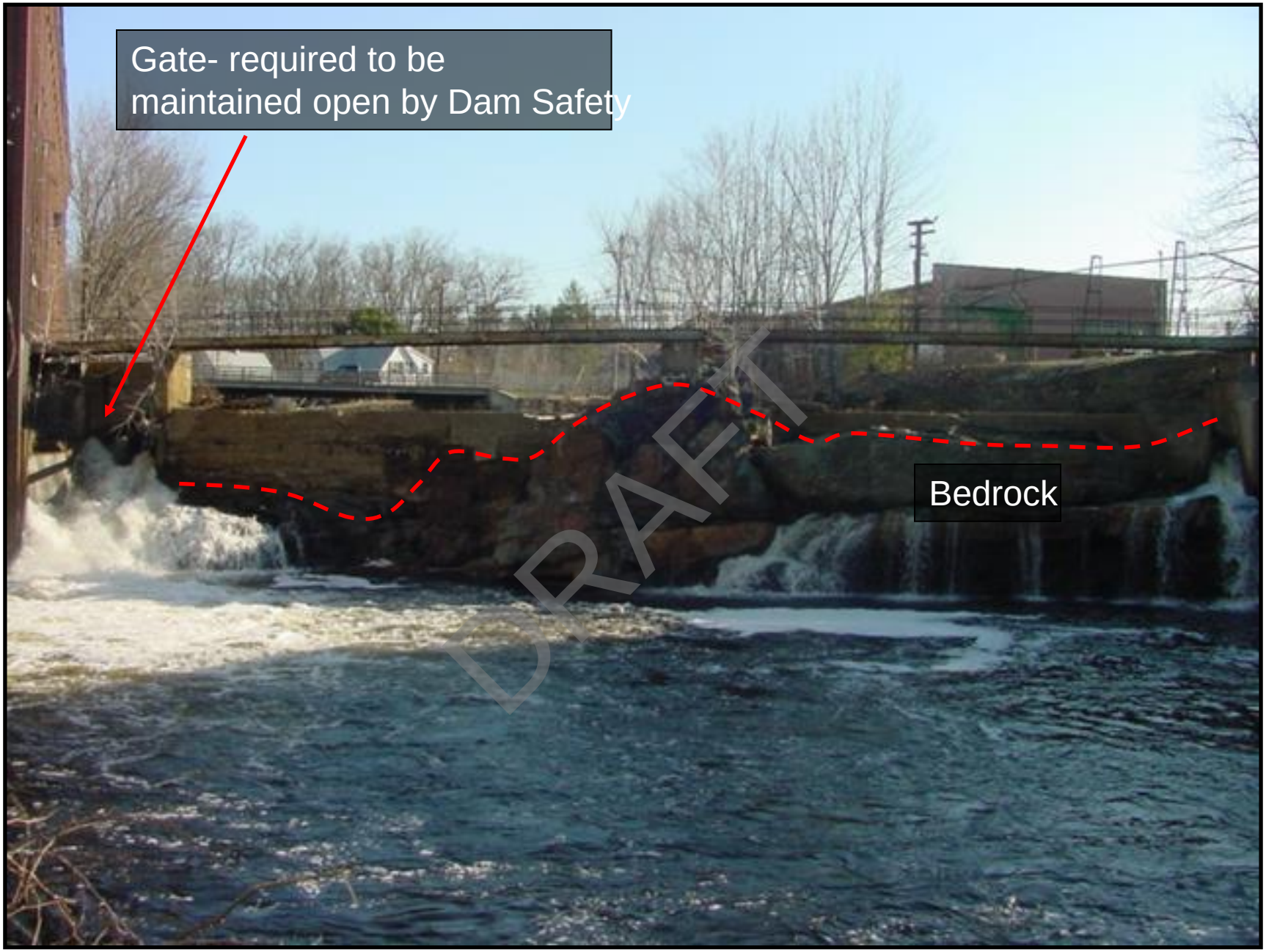

# Gonic Dam & Gonic Sawmill Dam Removal Project

GOMEZ AND SULLIVAN Engineers, P.C.

SANBORN HEAD

Building Trust. Engineering Success.

# Gonic Dam




**Gonic Dam- Looking upstream at dam**

# Gonic Sawmill Dam

# Gonic Sawmill Dam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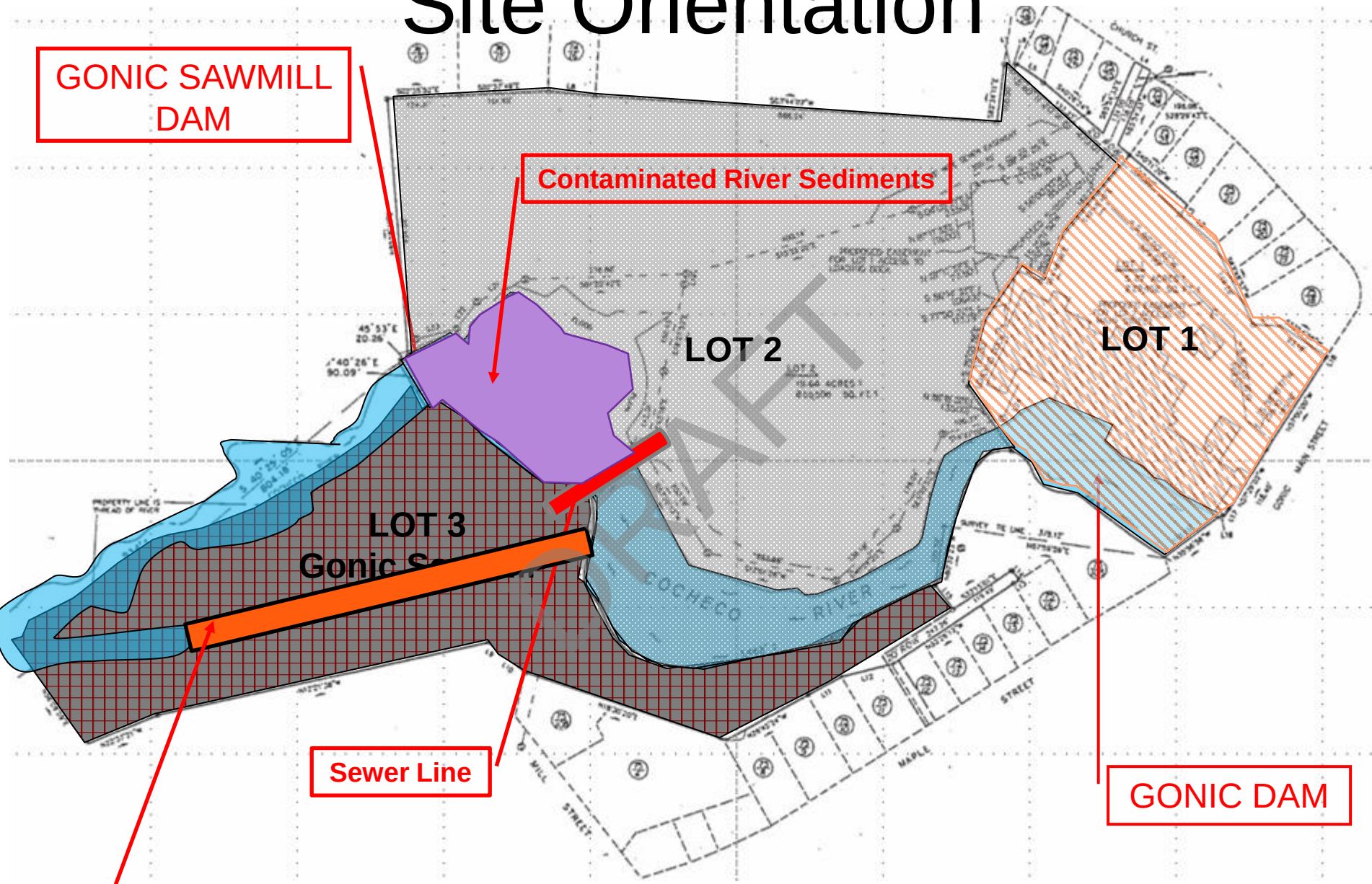
9

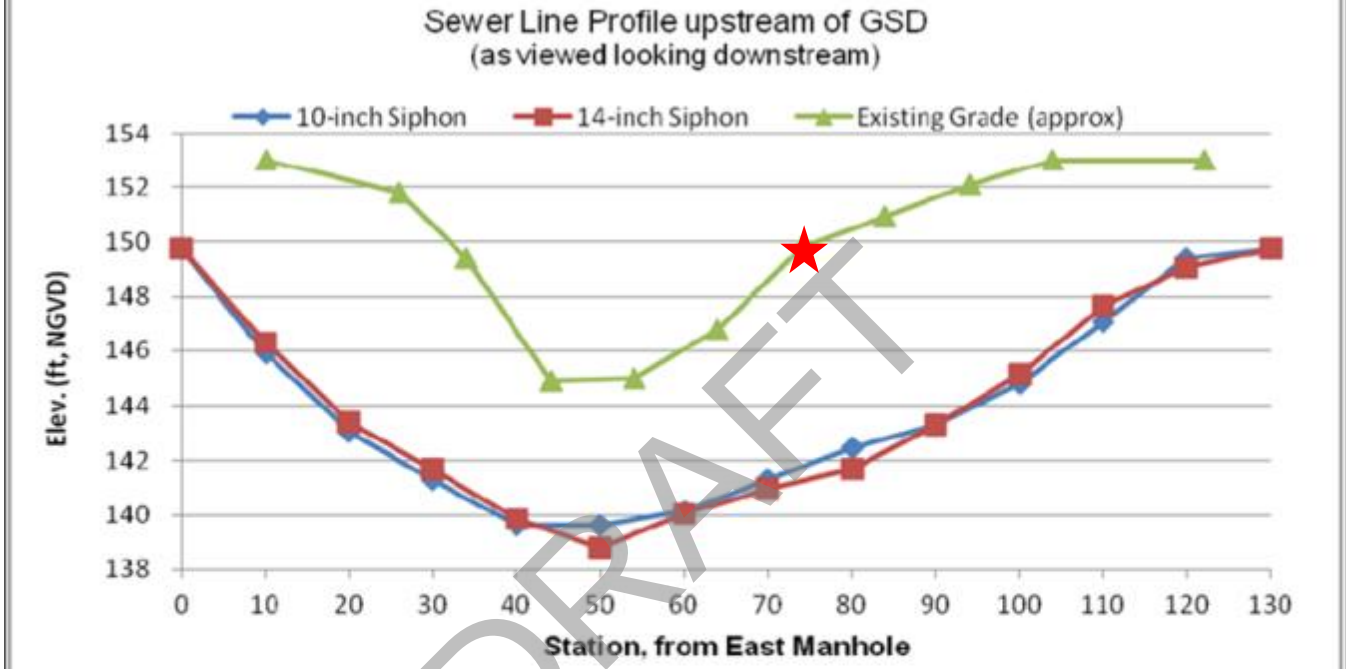
# Site Orientation



Hypothetical failure of the Gonic Sawmill Dam may imperil a sewer line that crosses the Gonic Sawmill Impoundment.



# SEWER LINE SCOUR ANALYSIS

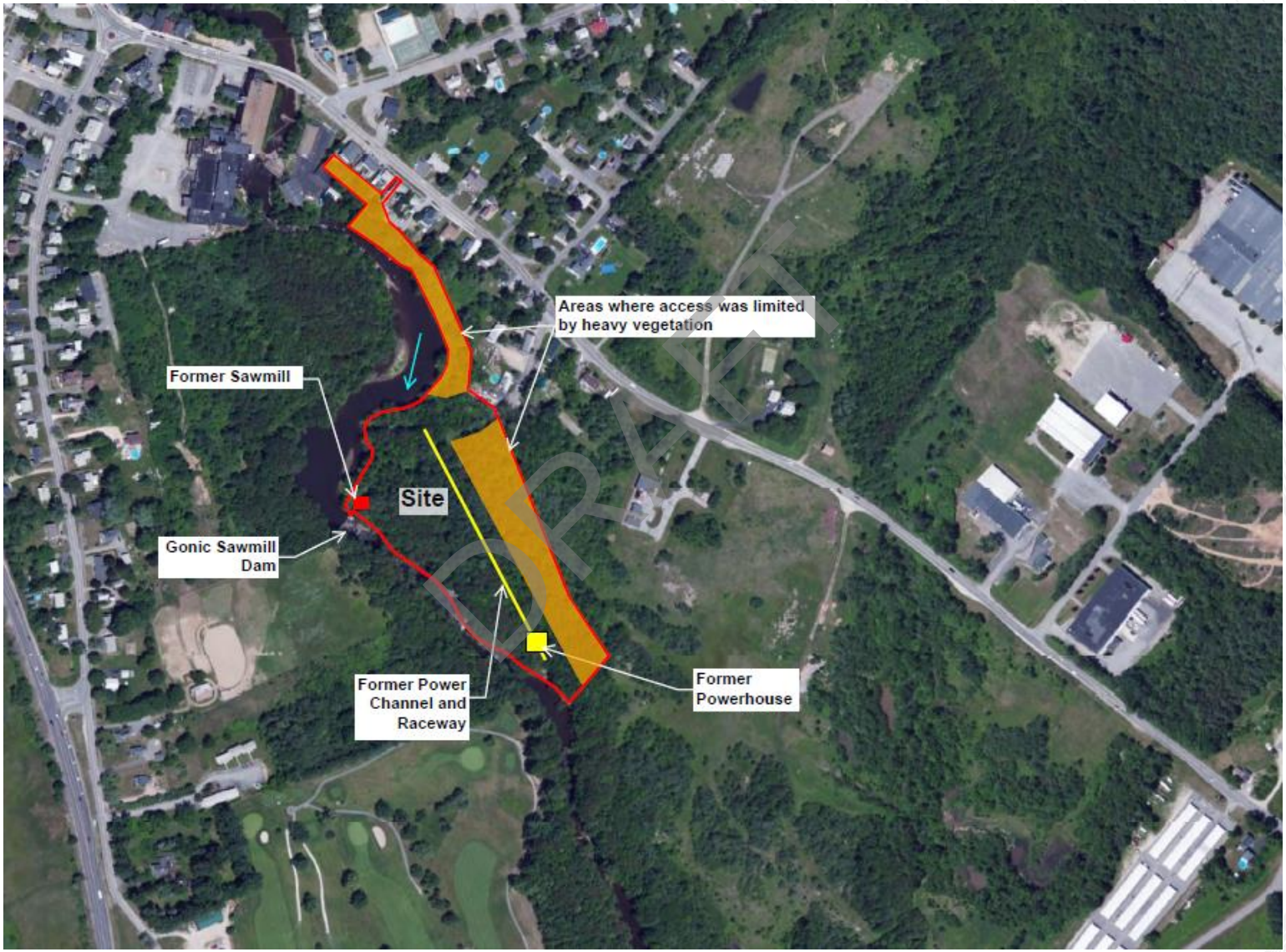





[1] The thalweg is lowest elevation ( or deepest point) at the stations along the transect where water and sediment depths were measured.

[2] Note that the sediment depth measurements at these transects was collected in 2004, thus the sediment distribution may have changed since the original survey.

# Phase I ESA



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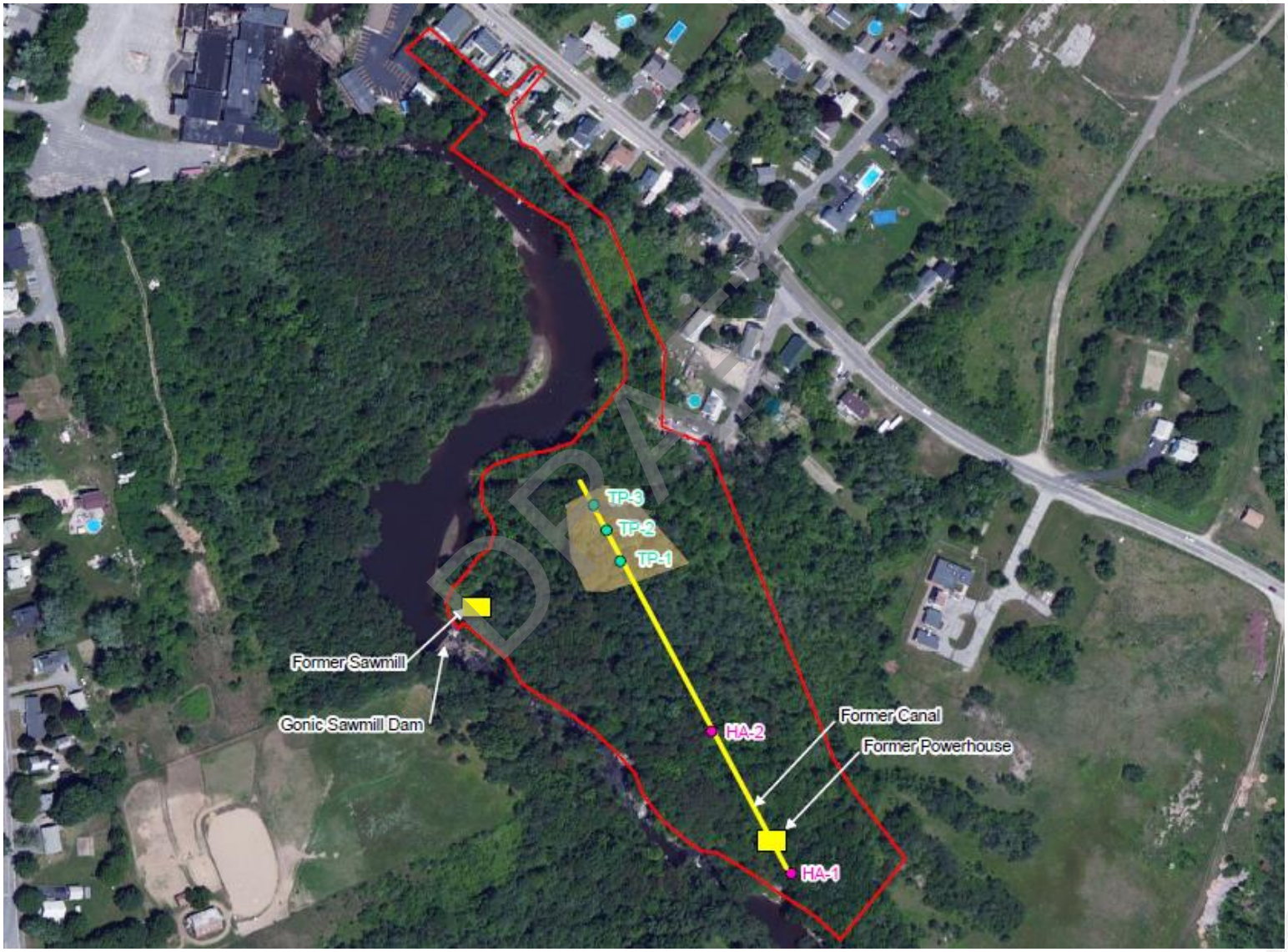
# At 1pm….. Site walk

# Phase II ESA



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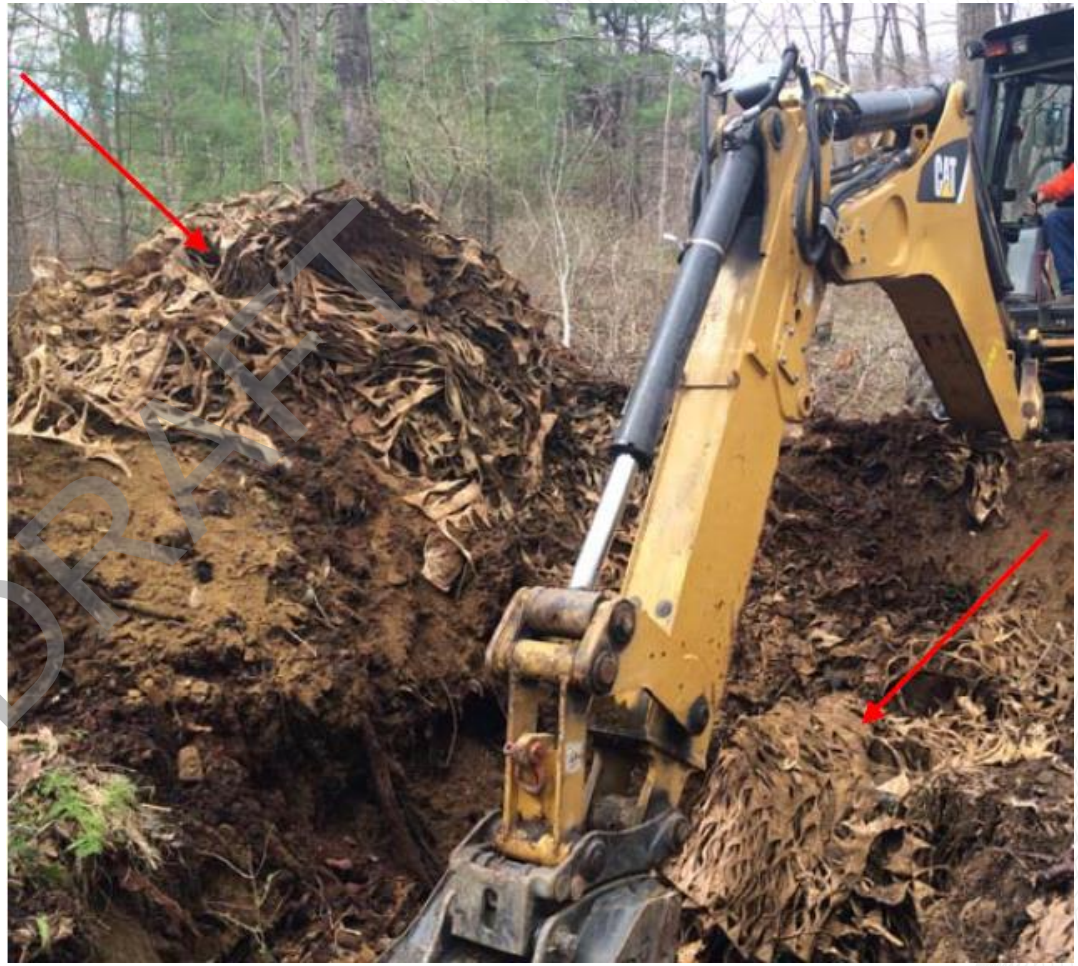
# Phase II Findings – Filled Portion of Canal



# Phase II Findings – Remaining Portion of Canal



SANBORN HEAD

RATH
YOUNG
PIGNATELLI

INSIGHT MATTERS

**Sherilyn Burnett Young**
Attorney-At-Law
sby@rathlaw.com
Please reply to: Concord Office

April 7, 2023

City of Rochester
Blaine Cox, City Manager
Members, Public Works Committee
City Hall
31 Wakefield Street
Rochester, NH 03867

**RE: Extensive New Compliance Obligations under NPDES WWTF Permits**

Dear Mr. Cox and Members of the Rochester Public Works Committee:

In following up on my letter dated December 20, 2022, I write to alert you to the requirements for adequate staffing of the City of Rochester's wastewater treatment facility (WWTF) that will be necessitated by the final National Pollutant Discharge Elimination System (NPDES) permit for the WWTF that EPA Region 1 issued on March 20, 2023. The final permit issued by EPA disregarded the City's public comments and denied the City's request for extended schedules for the various compliance schedules for new monitoring and maintenance activities set forth in the permit. This is in addition to the low phosphorus limit of 0.12 mg/L which will require an upgrade to the WWTF. The City of Rochester plans to file an appeal with the Environmental Appeals Board ("EAB") by April 19, 2023 to challenge the new phosphorous effluent limit and various other new obligations created by the permit, including increased monitoring, maintenance, reporting and PFAS sampling. Filing a Petition for Review will stay any challenged provisions; however, uncontested provisions in the final permit will become effective on June 1, 2023.

Rochester's Final Permit and each of the other final NPDES permits include significant new compliance provisions, increased frequency of testing, and time-bound deliverables for new programs and reports. Given that the current NPDES permit was issued in 1997, there are vastly increased compliance requirements for programs, monitoring and reporting than are in your current permit.

In addition to this anticipated final individual NPDES permit, the City of Rochester is currently complying with the requirements of a November 2020 Great Bay Total Nitrogen

General Permit (**Nitrogen GP**) covering discharges from thirteen wastewater treatment facilities, including Rochester, that discharge treated wastewater containing nitrogen into the Great Bay watershed. The Nitrogen GP provisions include effluent limitations and extensive studying, monitoring and reporting requirements.

While the City will appeal unlawful or arbitrary and capricious requirements in its final individual NPDES Permit, based on the experience of other communities, Rochester will inevitably be forced by EPA's issuance of a final permit to expand its programs, monitoring and reporting obligations. These new compliance obligations will be *in addition to* the ongoing obligations to comply with the terms and conditions of its Nitrogen GP. There is a genuine issue as to the City's ability to manage compliance with these two permits, considering the combined feasibility and costs of these significantly increased compliance standards.

Rochester, like other municipalities, is challenged by the national manpower shortage and reduction in qualified operations workforce. The combined Nitrogen GP and the individual NPDES final permit will no doubt require the City to hire additional management and operations staff in the midst of these challenging economic times. To do otherwise is at its peril, as there are considerable risks to the City if it fails to meet its compliance requirements.

The City's 2020 Nitrogen GP states: "Any permit noncompliance constitutes a violation of the Clean Water Act and is grounds for enforcement action…". Further it contains a section on Civil and Administrative penalties, including criminal penalties for negligence in compliance.

The City's March 2023 final individual NPDES permit states: "The permittee shall provide an adequate staff to carry out the operation, maintenance, repair and testing functions required to ensure compliance with the terms and conditions of this permit." It further requires the City to submit a description of sufficient staffing necessary to properly operate and maintain the sanitary sewer collection system and how the operation and maintenance program is staffed.

To put the totality of Rochester's Clean Water Act commitments into broader perspective, in order to comply with the effluent limitations of the Nitrogen GP, Rochester entered into an Administrative Order on Consent with EPA in March 2021 that grants Rochester an interim

Total Nitrogen (TN) effluent limit until October 31, 2025. During this interim period, Rochester has committed to implement the following projects to meet the nitrogen effluent limitation of 198 lbs/day set forth in the Nitrogen GP. Those projects include:

1. Pilot Septage Facility Upgrade – The City completed and evaluated a pilot septage receiving facility upgrade which included pilot testing of septage quantities and process response conditions when adding septage at the Headworks Facility. A report was generated and submitted to EPA in September 2021.

2. Permanent Septage Facility Upgrade –The City must design, bid and construct the full septage facility upgrade at the Headworks Facility utilizing the results of the pilot and evaluation. Because of the timing of the City's receipt of federal funding for this project, EPA granted a one-year extension for the City to complete the facility by December 31, 2023. Upon completion, the City will evaluate efficacy of the constructed, permanent septage facility upgrade and report results in the Nitrogen Reduction Report.

3. Carbon Storage and Feed Building - The City designed this project to provide a permanently installed building at the WWTF to house four (4) 10,000 gallon storage tanks, feed pumps, piping, controls and appurtenances for supplemental carbon to support the simultaneous nitrification/denitrification (SND) system that the City is currently operating to reduce effluent total nitrogen. The facility is now operational as of October 2022, but there remain outstanding punch-list items to be completed by year end, with final site work to be completed this Spring. The City will evaluate the efficacy of the carbon storage and feed building project and report results in the Nitrogen Reduction Report.

4. Aeration Automation Project – Due to a change in contractors and delayed delivery of equipment, the City sought an extension to complete the work, which EPA approved. The City completed the Aeration Automation Project which was operational as of March 3, 2023. The

City will track and report results of this project in its Nitrogen Reduction Report.

5. Sewer System Master Plan Study – The City continues the ongoing work for the Sewer System Master Plan conducted by Weston & Sampson, including flow metering and modelling efforts, infrastructure evaluation and facility inspections to fully evaluate the sanitary system and identify and reduce sources of inflow and infiltration (I/I) into the WWTF. The City will continue the study for approximately two years and will report the findings and recommendations of the study in its Nitrogen Reduction Report.

6. Nitrogen Reduction Report – The City is required to submit a Nitrogen Reduction Report to EPA and NH Department of Environmental Services by October 31, 2024. This Report will indicate what actions the City will take to further reduce Nitrogen discharges to ensure consistent compliance with its rolling seasonal average effluent limit for Total Nitrogen of 198 lbs/day (effective as of October 31, 2025). Upon submission of the Report, the City will begin to implement the recommended actions.

As is evident from the above, the Nitrogen General Permit has significant compliance requirements, including new projects, programs, monitoring and reporting by the City. The final individual NPDES permit includes significantly increased programs, monitoring and reporting requirements, such as:

1. Collection System Mapping – EPA will require the City within 30 months of the effective date of the permit to prepare a map of the City's entire sewer collection system;

2. Collection System Operation and Maintenance Plan –
   a. Within 6 months of the effective date of the permit (by December 1, 2023), the City must submit to EPA the following:
      (1) a description of the collection system management goals, *staffing*, information management and legal authorities;

(2) A description of the collection system and the overall condition of the collection system including a list of all pump stations and a description of recent studies and construction activities; and,
(3) A schedule for the development and implementation of the full Collection System Operation and Maintenance (O&M) Plan.

b. After submission of the above requirements to EPA, the City must develop and *implement* the Operation & Maintenance (O&M) Plan within 24 months of the effective date of the permit (by June 1, 2025) that includes:

- a description of the collection system management goals, *staffing*, information management and legal authorities;
- a description of the collection system and the overall condition of the system; a preventive maintenance and monitoring program for the system;
- *a description of sufficient staffing necessary to properly operate and maintain the collection system and how the O&M program is staffed*;
- a description of funding, the sources of funding and provisions for funding sufficient for implementation of the plan;
- identification of known and suspected overflows and back-ups, including manholes;
- a description of the City's program for preventing Inflow and Infiltration (I/I) related effluent violations and unauthorized discharges of wastewater;
- an educational public outreach program for all aspects of I/I control; and
- an Overflow Emergency Response Plan to protect public health from overflows and bypasses or upsets;

3. Annual Reporting Requirements – The City must submit a summary report of activities related to the implementation of its Collection System O&M Plan during the previous year, by March 31 annually, *that includes a description of the staffing levels maintained during the year, among other items*.

4. Reporting Unauthorized Discharges – The City must report any unauthorized discharge such as discharges of wastewater from any other point sources or sanitary sewer overflows (SSOs) that are not authorized by the permit within 24 hours of the City becoming aware of the discharge. The City must provide a notification to

the public of any SSO that impacts water ways or the public within 24 hours (including posting on its website for 12 months), effective as of June 1, 2023 (unless appealed).

5. The City must acquire and install an alternative power source (generator) sufficient to operate the WWTF;

6. The City must develop an Industrial Users and Pretreatment Program that enforces specific effluent local limits for Industrial Users and others within 90 days of the effective date of the permit (by September 1, 2023), which includes:

    - Carrying out inspections, surveillance and monitoring procedures to ensure industrial user compliance;
    - Issuing or renewing necessary industrial user control mechanisms;
    - Obtaining appropriate remedies for noncompliance by industrial users;
    - Maintaining an adequate revenue structure for continued implementation of the Pretreatment Program; and
    - Submitting an annual report to EPA and the State describing the prior year's pretreatment program activities;

7. A new and likely expensive program is the annual requirement for sampling influent and effluent for all 40 analytes of Per– and-Polyfluorinated Substances (PFAS) chemicals which are found in various types of industrial dischargers into the WWTF such as commercial car washes, platers/metal finishers, landfill leachate, firefighting training facilities, airports and "any other known or expected sources of PFAS;"

8. There are special conditions for the sampling of PFAS and disposal of sludge generated by the WWTF, and the generation of PFAS contaminated sludge is likely to be a significant issue for all wastewater and water treatment facilities. An annual report of a Biosolids/Sewage Sludge Report must be submitted to EPA and the State.

9. Ambient Phosphorus Monitoring – The Final permit also includes new obligations to take total phosphorus samples in the Cocheco River upstream from the WWTF

outfall from April through October to establish ambient phosphorus conditions beginning in 2024. This sampling will occur during even numbered years.

The above is just a summary of some of the more significant new programs, plans, sampling and reporting requirements that are contained in Rochester's final individual NPDES permit. ***These new obligations sit <u>on top of</u> the extensive effluent limitations and monitoring requirements that are contained in the final permit***.

The new Total Phosphorus (TP) effluent limit of 0.12 mg/L included in the final NPDES permit will generate considerable additional compliance obligations, including a likely upgrade to the WWTF at an estimated capital cost of about $18.3 million, and an estimated $300,000 annual operating cost (in 2022 dollars). A new TP treatment system would be enclosed in a building that would house the reaction tanks, tertiary clarifiers, chemical storage and all associated equipment and controls. The process would include, among other equipment, five (5) concrete reaction tanks operating in series, each approximately 11 feet wide by 11 feet long and 11 feet deep; two (2) concrete rectangular tertiary clarifiers, each approximately 45 feet long and 15 feet wide; and two (2) clarifier sludge collection systems. This TP project alone would be a heavy burden on City staff to accomplish.

Based on our conversations with Mr. Nourse and his team, they understand these extensive permit requirements. No doubt, additional staffing will be necessary to ensure compliance. This is typical of the experience of other WWTFs in the Seacoast area, including Portsmouth. The time and effort needed to recruit, hire, and train these additional staffers is challenging. We strongly recommend that the City begin *now* to anticipate, budget for and implement the hiring processes necessary to ensure future compliance with these extensive and new WWTF obligations of the combined Nitrogen GP and a final individual NPDES permit.

As stated above, the City will file an appeal with the EAB to challenge the new TP limit, new sampling and effluent requirements and request a reasonable extension or schedule for compliance with the new obligations outlined above. However, any provisions of the final permit that are uncontested will be effective as of June 1, 2023.

We'd be happy to attend a meeting with you, Mr. Nourse and his staff to discuss this in further detail if you care to do so.

RATH
YOUNG
PIGNATELLI

INSIGHT MATTERS



Very truly yours,

Sherilyn Burnett Young

cc: Peter Nourse, Director of City Services
Michael Bezanson, City Engineer
David Green, WWTF Chief Operator

RATH YOUNG PIGNATELLI
INSIGHT MATTERS

**MEMORANDUM**

**TO:** **Peter Nourse, P.E., Director of City Services**

**FROM:** **Rath, Young & Pignatelli, P.C.**

**DATE:** **April 12, 2023**

**RE:** **Summary of the Conservation Law Foundation's Petition to EPA for Remedial Designation Authority and Potential Impacts on the City of Rochester**

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On February 15, 2023, the Conservation Law Foundation ("CLF") filed a Petition for Residual Designation Authority ("RDA") with the Environmental Protection Agency ("EPA") pursuant to 40 CFR 122.26 (a)(9)(i)(D). The purpose and intent of the petition is to require EPA to make a determination that certain non-regulated stormwater discharges are negatively impacting water quality of the Great Bay Estuary. The CLF RDA specifically requests that the EPA issue an RDA covering the Great Bay Watershed including 18 communities subject to the New Hampshire Small Municipal Separate Storm Sewer System ("MS4") Permit for stormwater discharges, including 9 communities subject to the Great Bay Total Nitrogen General Permit, as well as 18 communities not subject to the NH Small MS4 permit. The Petition requests that EPA issue a designation that discharges from all industrial, commercial, and institutional properties exceeding .75 acres of impervious area in MS4 communities and 1.5 acres of impervious area in non-MS4 communities be subject to the RDA and apply for coverage under a new general NPDES permit to regulate stormwater discharges. Based upon discussions with CLF on Wednesday, April 12, 2023, the RDA would cover commercial, industrial and institutional properties located in the City, but would **not** include municipally owned property (including public schools, for example).

This RDA gives EPA the ability to regulate stormwater discharges via the Clean Water Act's ("CWA's") primary permitting program, the long-established National Pollutant Discharge Elimination System ("NPDES"). For sites where EPA determines that storm water controls are needed for the discharge as part of meeting the required total maximum daily loads (TMDLs), that the discharge or category of stormwater discharges within a geographic area contributes to a violation of a water quality standard, or that the stormwater discharge is a significant contributor of pollutants to waters of the United States, RDA allows EPA to designate these stormwater sources for regulation. A TMDL is essentially a pollution budget that establishes a maximum amount of the pollutant that can enter a water body, and it allocates load reductions necessary from various sources of the pollutant.

Essentially, what RDA does is to allow the federal government to expand the scope of the CWA's permitting coverage beyond the traditional industrial and municipal general permit

programs to include the regulation of sites on a case-by-case or category-by-category basis by issuing NPDES permits for discharges of stormwater which result in localized adverse impacts to water quality. The RDA will require all commercial, industrial, and institutional properties within the designated area that meet the criteria to manage stormwater discharges from their respective properties to minimize the discharge of pollutants, particularly nitrogen. CLF clarified that the interpretation of "institutional" is only privately owned property, not publicly owned institutional properties such as public schools or public buildings.

Interestingly, the RDA petition omits application to residential properties with septic systems that cumulatively account for approximately 29% of the nitrogen load to the Great Bay Estuary. It also does not specifically exempt those discharges either to or from a system already subject to a NPDES permit or other stormwater permits. This is inconsistent with the recent RDA decision by EPA in Region 1 for the Charles River, Neponset River, and Mystic River watersheds, as well as the exemption for regulated discharges in a Vermont RDA issued after litigation in 2015. The RDA petition also ignores the impact of point and non-point sources from 12 communities in Maine, including 10 wastewater treatment facilities that discharge to the Great Bay Estuary.

Properties already subject to MS4 Permit requirements with more than .75 acres of impervious area would also need to apply for a general stormwater NPDES permit under the RDA program that may require them to institute additional best management practices ("BMPs") such as good housekeeping (sweeping, catch basin cleaning, etc.) and install structural devices to capture and treat stormwater such as low impact development and green infrastructure. These same properties already must comply with the MS4 regulations and development/redevelopment obligations, thus subjecting them to double regulation.

This double regulation could also impact the City of Rochester's ability to institute and implement a stormwater utility to establish a stable fund for stormwater related improvements. Properties subject to the MS4 and RDA general permit requirements to manage stormwater would likely strongly object to further municipal regulation and fees pursuant to a stormwater utility. Further adding to the uncertainty surrounding stormwater regulation is the upcoming renewal (possibly this Fall) of the NH small MS4 permit. EPA is contemplating further regulatory requirements within the renewed MS4 permit.

The RDA petition could impact the cost of construction, limit investment and growth in Rochester and other communities subject to the RDA in the Great Bay Estuary watershed. The timing of this CLF Petition is also questionable. Rochester and the other Municipal Alliance for Adaptive Management ("MAAM") communities are in the middle of their first 5-year term of the recently issued Nitrogen General Permit. As part of that process, the communities and EPA have committed to undertaking extensive additional studies to better

understand the impact of nitrogen levels in the Great Bay Estuary, and what other impacts unrelated to nitrogen may be negatively affecting eel grass health in the Estuary. Further, in Rochester, Portsmouth and Dover's settlement agreements with CLF, each municipality committed to exploring the possibility of implementing a stormwater utility. Each of these communities is currently doing so, and the impact of this RDA Petition puts those efforts in doubt.

EPA technically has 90 days to respond and make a determination as to how it will proceed. However, EPA often does not respond within this time frame, and CLF has sued EPA over other RDA Petitions to force it to respond. EPA has recently indicated to us that the RDA process is a long and deliberate one based on scientific data and analyses regarding stormwater impacts. It will require a finding that defined stormwater discharges are impairing the Great Bay Estuary. One limitation is the lack of a TMDL for nitrogen in the Great Bay Estuary. The RDA issued in Vermont and the Charles River watershed were based upon established TMDLs that had identified the sources of stormwater discharges. An RDA issued for Long Creek near Portland, Maine was not based upon a TMDL, but upon extensive data and studies conducted by the State of Maine.

While the Piscataqua Region Estuaries Partnership ("PREP"), University of New Hampshire ("UNH") and MAAM have studied the health of the Great Bay Estuary, EPA will likely need to conduct additional studies to determine the sources of nitrogen, whether and how they create an impairment, and evaluate the land uses and parcels in each regulated community. This will surely result in additional delay in either an RDA finding or implementation of a general permit by EPA.

One additional challenge for CLF is that EPA has issued waivers to a number of NH Small MS4 communities in the Great Bay Watershed. This is problematic to CLF's petition because EPA can only grant a waiver with a finding that discharges from those communities are not impacting or causing an impairment of water quality.

If EPA makes an RDA determination for the Great Bay Estuary, EPA would then need to issue a general NPDES permit which would be subject to public comment and potential challenges from the various impacted stakeholders. So clearly IF this process goes forward, it will be a long and involved one. Recently EPA Region 1 has urged the MAAM communities to meet with CLF and EPA to discuss these concerns, and the timing and scope of the Petition. Working with representatives of Dover and Portsmouth we met with Tom Irwin and Melissa Paly with the CLF to discuss the concerns and potential impacts of the RDA petition. CLF was open to the concerns raised that the RDA could impact, stall or otherwise restrict the ability of the three communities to develop, approve and implement stormwater utilities. CLF is very interested in making sure those programs move forward

and may be willing to consider a carve-out or exemption for communities in the RDA area that implement a stormwater utility. The parties discussed setting up a follow-up meeting with CLF and EPA in mid-May.