**Executive Summary**

**WRPTF FINDINGS AND RECOMMENDATIONS**

**v. 6-12-23**

**INTRODUCTION**

**Formation**

Manchester’s Select Board commissioned the Water Resource Protection Task Force (WRPTF or “Task Force”) in December 2021 at the urging of the Conservation Commission and based on a proposal authored by Con Com Chair Steve Gang.

The proposal noted that the Town is blessed with adequate supplies of drinking water but lacks a long-term strategy for maintaining its quantity and quality over the next 50 years. Complicating that situation, no single Board, Commission or Department has responsibility for long-term quantity and quality of our drinking water:

* DPW focuses on operation and maintenance of our water infrastructure, and on meeting our reporting requirements
* BOH focuses on septic systems and other point sources
* Con Comm conditions permits to limit contaminants in our wetlands
* SB sets water rates annually and grants occasional refunds

The proposal referenced a comprehensive study in 1989-90 by Horsley Witten Hegemann which analyzed our water resources, watersheds, contaminants and infrastructure. These consultants delivered a “Water Resources Protection Plan” to the Town in June 1990 (see Appendix), which included 60+ pages of specific recommendations regarding zoning protections, health regulations, wetland protection, regional collaboration and ongoing citizen involvement in a standing Water Resource Protection Committee reporting to the Select Board and the Town. This Committee was formed in 1989 but became inactive by 1993.

Rather than reconstitute the Water Resource Protection Committee, the Select Board determined in December 2021 that a project-based Task Force pick up where the 1990 work left off. The Task Force was instructed to complete its work and report back within 18 months. This document contains an Executive Summary and Details of the Task Force’s Findings and Recommendations, along with some important supporting documents in an Appendix.

**Mission & Objectives**

The December 2021 proposal to the Select Board set an overall objective:

“Define a vision for Manchester’s drinking water quantity and quality over the next five decades and recommend how the Town should mobilize to get there.”

Four specific deliverables were assigned by the Select Board to the Task Force:

* 1. Updates on the problems and opportunities identified in the 1990 Report   
     (e.g., climate change and new contaminants),
  2. Priorities among those problems and opportunities,
  3. Specific next steps including changes in Bylaws and Regulations, expenditures, organizational change and more-detailed study,
  4. Alternatives for assigning responsibility and accountability (including what metrics to use)

**Members, Staff & Budget**

The Task Force was formed in January and February 2022 with citizens and representatives of relevant Town boards and commissions. Members and Alternates included:

* Steve Gang, Chair (Conservation Commission)
* John Round (Select Board)
* Ann Harrison (Select Board Alternate)
* Ron Mastrogiacomo (Planning Board)
* Sarah Creighton(Planning Board Alternate)
* Peter Colarusso (Board of Health)
* Helen Bethell (Open Space and Recreation Committee)
* Olga Hayes (Open Space & Recreation Alternate)
* Jessica Lamothe (Stream Team)
* Francie Caudill (Stream Team Alternate))
* David Lumsden (Conservation Commission)
* Mike Carvalho (At-Large)
* Jeff Cochand (At-Large)
* Tom Kehoe (At-Large)
* Ron Parker (At-Large)
* Gordon Turner (At-Large)
* Ashley Ochs (Conservation Commission – resigned in May)

Other citizens lent their time for work and attended most if not all meetings: Randi Augustine, Fred Wales, Joe Sabella and others. The Task Force was provided seed money for FY 2022, part-time staff support from Sue Croft, TITLE along with an $80,000 budget approved for FY 2023 by Annual Town Meeting in April 2022 to hire expert consultants including Scott Horsley who authored the 1990 Report.

**Organization & Workplans**

After informal discussions early last year, the Task Force held its first public meeting under the Open Meeting Law on February 16, 2022. Work began with orientation and data collection, including:

1. Interviews with and introductory presentations by Chuck Dam, DPW Director, Nate Desrosiers, Town Engineer, and Scott Horsley, geohydrologist and author of the 1990 Water Resources Protection Plan
2. Tours of the Water Treatment Facility, the Lincoln Street Well and its treatment building, and a hike around Gravelly Pond
3. Assembling a bibliography, online resource library and background reading package for Task Force members
4. Adding a page to the Town website
5. Requesting 10 years of billing and usage records from DPW’s Water Division (props to Sue Taylor!)
6. Reviewing ongoing development within our watersheds, including proposed luxury cluster housing at 133 Essex Street and paving of Chebacco Road (both within Hamilton). Also held an introductory meeting with leadership at Gordon College.
7. Establishing contact with regional leaders and organizations, including Senator Bruce Tarr and his North Short Water Resiliency Task Force, Chebacco Lake Watershed, Ipswich River Watershed Assn, PIE Collaborative, Merrimac Valley Planning.
8. Clarification from Town Clerk that all Task Force meetings must be public meetings with proper notice, agenda and minutes.

In its initial meetings during February and March 2022 the Task Force identified 14 Key Questions and organized into 6 Working Teams to collect and analyze the data needed to answer these Key Questions:

1. How much water are we using?

2. How much water are we losing?

3. What are the primary impacts of climate change on our water supply & demand?

4. How is the Town acting to manage water demand?

5. How is the Town acting to manage our water supply?

6. How are neighboring towns managing their water supply and demand?

7. What are some best demonstrated practices nationally?

8. How dangerous are contaminants in our drinking water, including PFAs, chloromethanes and halomethanes, bromo- and chloroacetic acids, radium and other radioactives?

9. What’s the same and what’s changed since the 1990 Horsley-Witten Report?

10. What are the relevant laws and regulations pertaining to our drinking water at State and Federal levels?

11. How exactly do we treat our drinking water today?

12. What are our citizens’ attitudes and concerns about drinking water?

13. What are our options for increasing quantity of our drinking water?

14. What are our options for better protecting quality of our drinking water?

**SIX WORKING TEAMS – Members, Focus, Key Questions to Tackle**



**Experts**

The Task Force obtained a proposal from Scott Horsley for consulting and advisory work (see Appendices). In the course of its work, the Task Force also engaged Danna Truslow, geohydrologist, and Raftelis, specialists in setting water and sewer rates.

**SUMMARY OF KEY FINDINGS**

1. Of the 21 specific recommendations from the 1990 Horsley-Witten Hegemann Report, 5 have been fully implemented, 5 have not been implementation, and 11 have made progress (and are the subject of Task Force Recommendations).
2. Our town is fortunate to have exceptional management of DPW.
3. Manchester’s usage rates for drinking water are among the highest of all towns and cities in Massachusetts, because of:

* Excessive usage by a minority of households, mainly for summer watering
* Losing drinking water from leaky water mains and heavy usage in our WWTP

1. Manchester’s water rates are not promoting conservation of drinking water nor are they covering the full costs of providing clean safe water in ample quantities.
2. Contamination in our Lincoln Street Well from PFAS and NaCl pose immediate threats to Manchester residents
3. Water from our LSW must be filtered to remove PFAS in the very near future, based on the EPA’s new drinking water standards announced in March 2023.
4. At least three different strategies are available for remediating this contamination in LSW and ensuring continued good supply:
   1. Construct filtration facilities at the LSW site, replacing the existing treatment building
   2. Pipe raw water from LSW to the WTP for centralized filtration and distribution. Option to pipe finished water back LSW site for distribution or find another way to increase water pressure for outlying eastern and western sections of Town.
   3. Rebuild the tubular well field (Round Pond Well #2) under a revised withdrawal permit (no increment) while retiring LSW.
5. Our reservoir (Gravelly Pond) is fed mainly by groundwater, primarily flowing from the east – creating a significant threat of contamination from Hamilton’s nearby capped landfill.
6. Our reservoir, feeder well and watershed in Hamilton, Wenham and Essex are imperiled by road construction and planned/future private development.
7. Although replacement has recently increased, Manchester is far behind the curve in replacing ancient public water pipes.
8. Our water meters are past their useful life and most likely under-reporting usage.
9. Our town is not collaborating on watershed protection with our neighbors in Hamilton, Essex, Wenham and Gordon College.
10. Our current organizational structure (DPW operating and maintaining the drinking water system, Select Board acting as Water Commissioners to set rates and allow refunds) is insufficient to ensure long-term quality and quantity of drinking water.

**SUMMARY OF KEY RECOMMENDATIONS**

1. **Create ongoing responsibility and accountability within Town Government for preserving the quality and quantity of Manchester’s drinking water, by either:**
   1. Creating a new Water Advisory Board of 3 members appointed by Select Board with staggered three-year terms, budget and part-time staff support, OR
   2. Delegating to the Sustainability Committee, including 3 members focused on Town drinking water, with budget and part-time staff support.
2. **Change water rates to encourage conservation**
   1. Change water rates to reflect overall need to conserve, based on analysis and modeling initiated by Task Force. Design several phases of changed/increased rates to coincide with citizen education and awareness of water conservation (see table below). Emphasize households and businesses using largest amounts of drinking water in summer months especially during droughts.
   2. Specific new rates recommended for enacting effective 7/1/23 (FY 2024):
      1. Reduce to 4 tiers from current 6 tiers
      2. Significantly increase the rate differentials between lower and higher tiers
      3. Implement rate changes gradually, beginning July 1, 2023 with a first phase of higher increment block rates (roughly doubling existing rates for top two tiers).
      4. Inform households ahead of time if they are likely to be in top 2 tiers
      5. Track any changes in usage and monitor reactions carefully, using new digital smart meters (as available)



1. **Increase conservation awareness & education**
   1. Step up water conservation education and awareness efforts throughout the Town. Utilize North Shore Greenscapes and other existing providers for materials and training. Emphasize households and businesses using the largest amounts of drinking water per capita.
2. **Devote more time and money to protecting our watershed especially for Gravelly and Round Ponds and the feeder wells**.
   1. Set long-term objectives for purchasing land or getting Conservation Restrictions to protect these drinking water sources. Requires collaboration with neighboring towns, with Gordon College and with land preservation non-profits such as MECT and TTOR.
3. **Assess potential for reopening our Round Pond Well #2 (abandoned tubular well field further from landfill and development)**
4. **Support consideration of at least three alternatives for remediating PFAS (and NaCl) contamination of LSW by working with DPW and its consultant to model outcomes, capital & operating costs, risks and long-term strategic effects of:**
   1. Constructing new filtration facilities at the LSW site, replacing the existing treatment building
   2. Piping raw water from LSW to the WTP for centralized filtration and distribution.
      1. Including options to pipe finished water back LSW site for distribution or to provide increased water pressure for outlying eastern and western sections of Town.
   3. Rebuild the tubular well field (Round Pond Well #2) under a new withdrawal permit while retiring LSW.
5. **If LSW continues to provide drinking water (with remediation), ensure that this critical well is better protected from road salt, stormwater run-off from lawn chemicals and artificial turf, underground storage tanks, and water imported during droughts.**
6. **Install monitoring wells for Gravelly Pond and feeder well(s)**
   1. Install 2-3 monitoring wells around Gravelly Pond to detect contaminants and measure groundwater movement. Focus on potential for contamination from capped landfills near the Pond.
7. **Revise Water Overlay Districts to follow updated groundwater and surface water contribution zones (“watershed”) in western Manchester**
   1. Introduce Zoning Bylaw changes to reflect updated information about surface and groundwater sources for Gravelly Pond and Round Pond well(s) in 2024 ATM Warrant.
8. **Begin meaningful and constructive dialogue with elected officials in Hamilton, Essex and Wenham plus leadership at Gordon College and MECT about protecting the shared watershed and aquifers.**
   1. Emphasize the risks from capped landfills, increasing impervious surfaces and further development.
9. **Accelerate replacement and upgrade of drinking water infrastructure, including new meters for all users and water main replacement.**
   1. For new water meters, choose two vendors and administer a 6-month pilot test of ultrasonic meters with digital real-time reporting and user smartphone apps. After 6-month pilot test, authorize replacement of all water meters using a well-designed budget and timetable.
   2. Increase annual capital expenditures to replace ancient and leaky water mains, utilizing the long-range plan and model for 5 and 10 years.
   3. Move forward capital expenditures to repair the recycled water system at our Waste Water Treatment Plant.