

Manchester by the Sea Water System Overview

Presented to the Water Resources Task Force by the Department of Public Works on Wednesday March 2, 2022

Regulatory

310 CMR 22.00 (plus guidelines)

Registration

ASR

CCR

Quarterly

Monthly

SWAP

ERP

Administrative

Water (2.25% increase across all tiers)

- \$6.36 per 100 cf., for first 900 cubic feet used (prior year \$6.22)
- \$6.47 per 100 cf., for 900-1,700 cubic feet used (prior year \$6.33)
- \$7.11 per 100 cf. for 1,700-5,700 cubic feet (prior year \$6.95)
- \$7.72 per 100 cf., for 5700-16,000 cubic feet used (prior year \$7.55)
- \$8.34 per 100 cf., for 16,000-39,000 cubic feet used (prior year \$8.16)
- \$8.96 per cf., for 39,000+ cubic feet used (prior year was \$8.76)

Water Department

- 3 Full Time Staff

Water Clerk

- Billing

DPW Director and Town Engineer

- Manage the day-to-day and overall operations of the Dept
- Capital Improvements planning, engineering, and construction



Water Treatment System

Gravelly Pond Water Treatment Plant

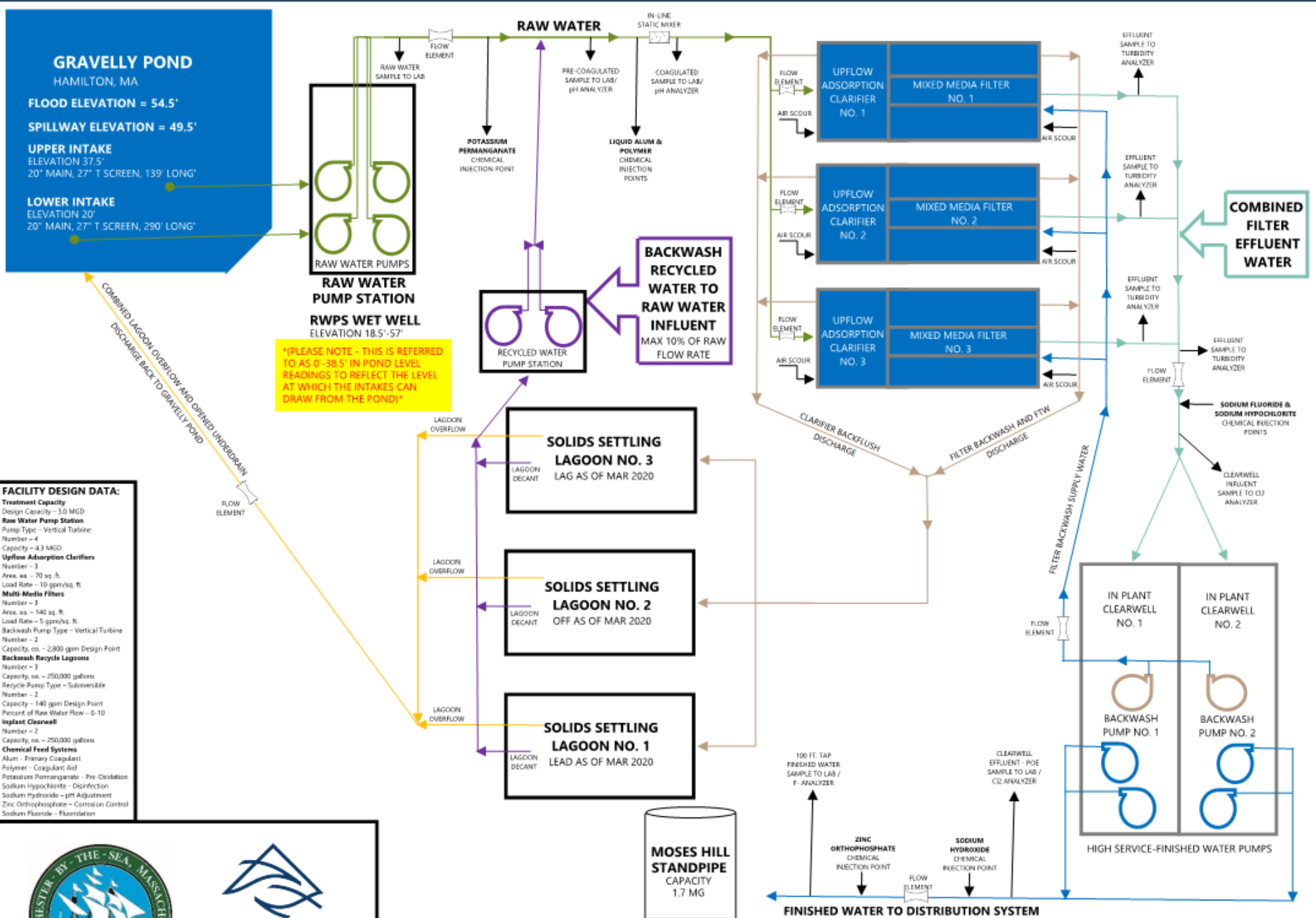
- 3.0 MGD (Capacity)

Lincoln Street Well

- 0.38 MGD (Registered Daily Average)

Round Pond Well

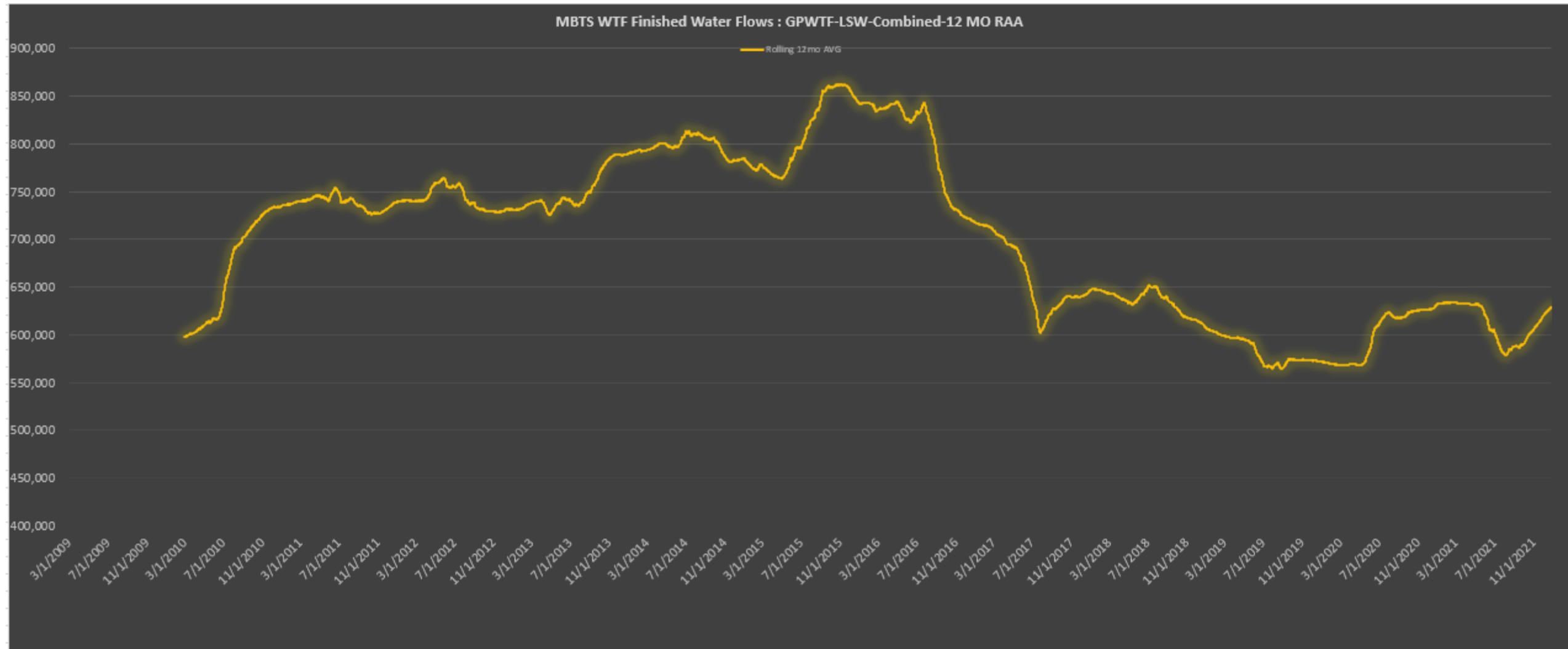
- 0.43 MGD (Registered Daily Average)



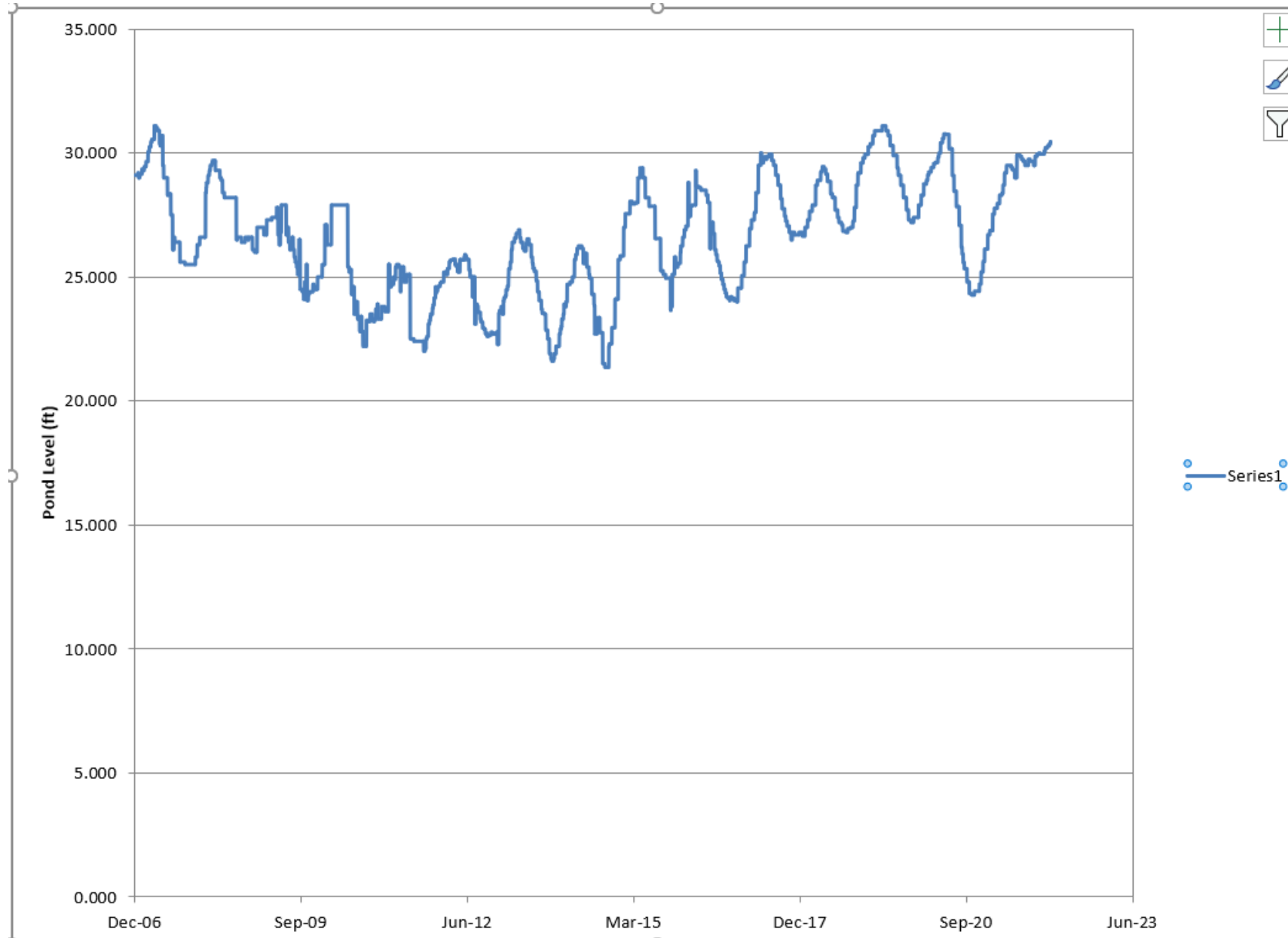
GRAVELLY POND WATER TREATMENT FACILITY PROCESS SCHEMATIC

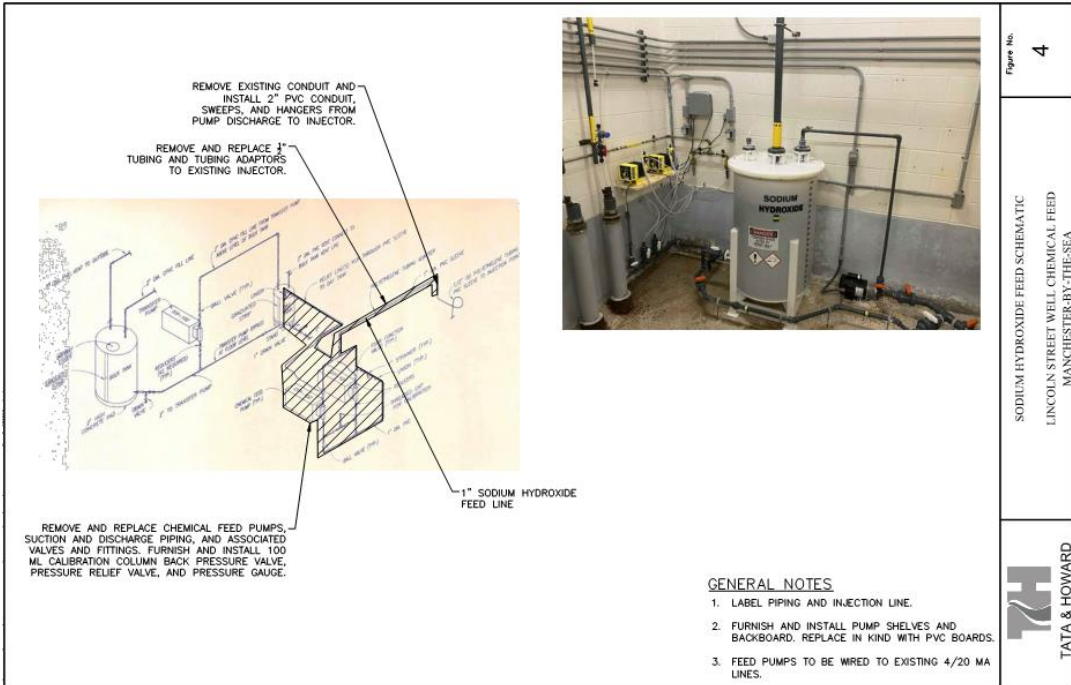
MANCHESTER-BY-THE-SEA, MA WATER TREATMENT FACILITIES

Finished Water/Day - 12 Month Rolling Average

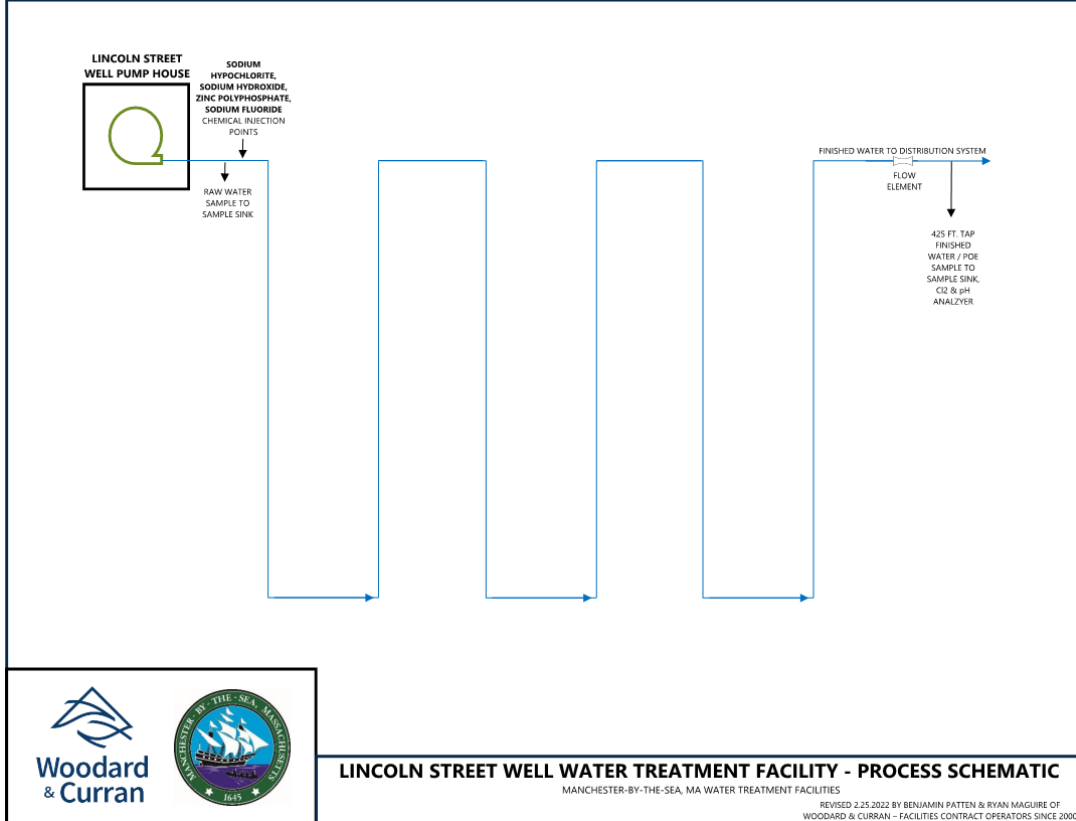


Gravelly Pond Water Level





- GENERAL NOTES**
1. LABEL PIPING AND INJECTION LINE.
 2. FURNISH AND INSTALL PUMP SHELVES AND BACKBOARD. REPLACE IN KIND WITH PVC BOARDS.
 3. FEED PUMPS TO BE WIRED TO EXISTING 4/20 MA LINES.





ROUND POND
WELL PUMP HOUSE



SODIUM
HYPOCHLORITE
CHEMICAL
INJECTION
POINT

100 FT
SAMPLE TAP

TREATED WATER TO SOLIDS SETTLING LAGOON

SOLIDS SETTLING LAGOON

SUPERNATANT, SETTLED WATER
TO GRAVELLY POND

GRAVELLY POND
HAMILTON, MA



ROUND POND WELL TRANSFER STATION - PROCESS SCHEMATIC

MANCHESTER-BY-THE-SEA, MA WATER TREATMENT FACILITIES

REVISED 2.25.2022 BY BENJAMIN PATTEN & RYAN MAGUIRE OF
WOODARD & CURRAN - FACILITIES CONTRACT OPERATORS SINCE 2000

Water Distribution System

44 miles of distribution pipe

- 6" to 16" Pipe

Majority was installed pre-1900

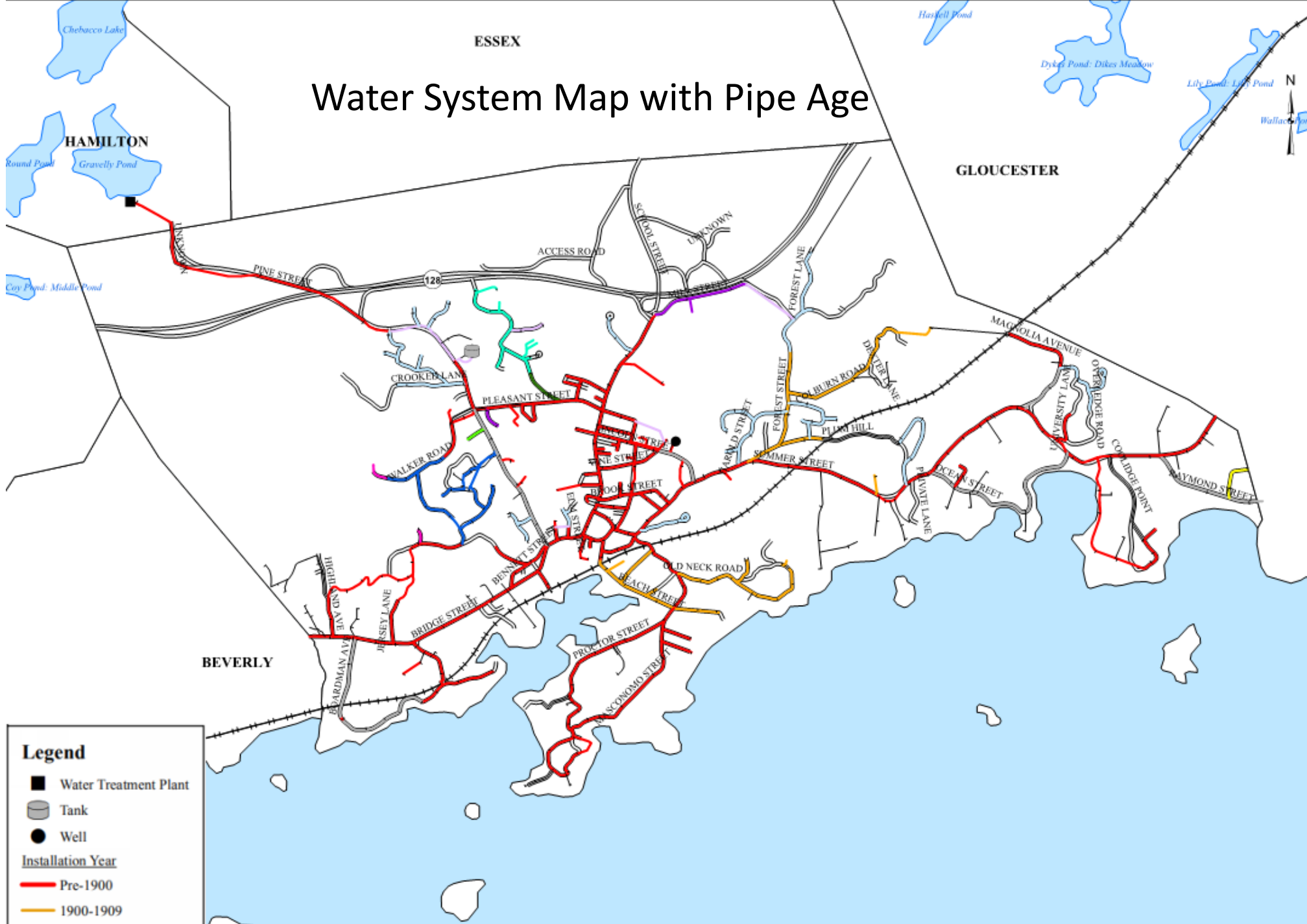
Tuberculation

Water Meters

Valve Replacement

Fire Hydrants & Flushing

Water System Map with Pipe Age



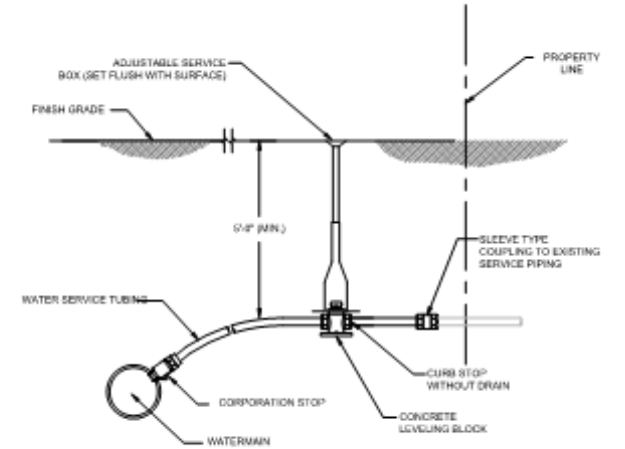


Water Main Cleaning



Cement Lined Water Main

Tuberculated 8" Water Main from North Street 3/1/22



NOTES:

1. ALL JOINTS SHALL BE COMPRESSION TYPE.
2. WATER SERVICES SHALL BE BACKFILLED WITH SAND BY HAND TO 6" ABOVE COPPER TUBING AT 95% COMPACTION.
3. CORPORATION STOP LARGER THAN ONE INCH SHALL HAVE A SADDLE.
4. SERVICE TO BE WRAPPED WITH #12 TRACER WIRE FROM CORPORATION TO CURB STOP AS SPECIFIED.

WATER SERVICE CONNECTION

NOT TO SCALE