

Merrimack WWTF and Pump Stations

Phase III Upgrade

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Presentation Overview



Background
Project Details
Funding
Contact Information

Background

- Town of Merrimack owns, operates and maintains 9 remote pump stations and a 5 MGD WWTF.
- Convey and treat flow from a variety of commercial, residential and industrial sources.
- WWTF, Souhegan PS, and Thornton's Ferry PS were brought on-line in 1972.
- Compost Facility was brought on-line in 1994.

Background - Timeline

Phase II and Phase III Evaluation and Upgrades

2007

- Compost Facility Evaluation



2011

- WWTF, Thornton's Ferry PS, Souhegan PS Evaluations



2015

- WWTF Phase II

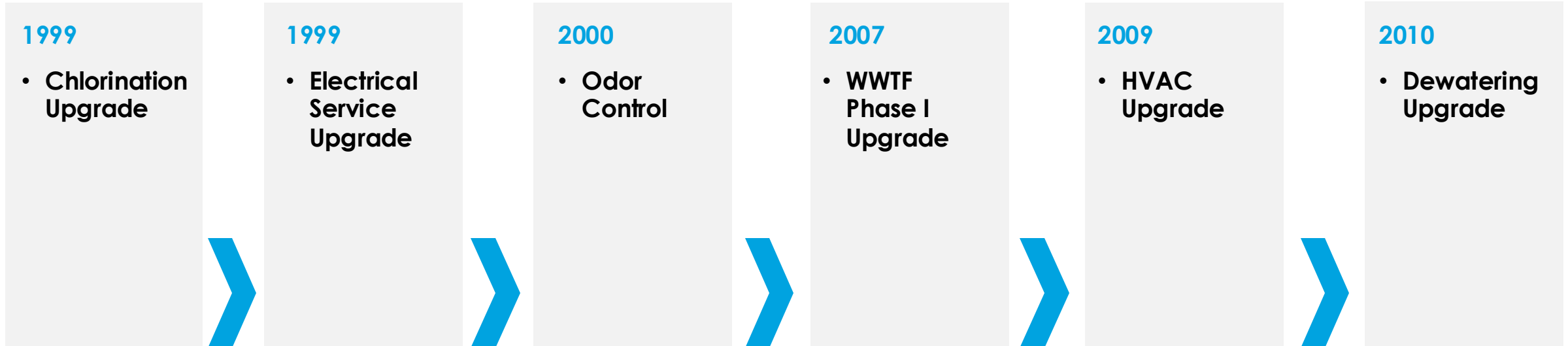


2021

- WWTF and Pump Stations Phase III Upgrade

Background

Other Significant Upgrades in the last 20 years



Three Main Goals for Phase III Upgrade

1

Replacing equipment that was well beyond its useful and recommended life

2

Addressing safety concerns

3

Addressing code-related deficiencies

Phase III Upgrade

- **New screenings building**
- **Main Pump Station, Thornton's Ferry Pump Station, Souhegan Pump Station**
- **Renovation of headworks building**
- **New standby generators**
- **Upgraded primary and secondary clarifiers**
- **Renovations to sludge holding tanks**
- **Renovations to the chlorination building**
- **Compost facility upgrades – new blowers and select ductwork**

Screenings Building



- Civil work for foundation and intercepting the influent interceptor
- New structure including influent channel, HVAC and electrical
- New Mechanical Bar Screen and Washpress



Main Pump Station



- Three new pumps – 60 HP, 5.5 MGD each
 - New piping, valves and Influent Flow Meter
- New VFDs and electrical feeder
- New influent grinder
- Manual transfer switch for portable generator
- New roof



Thornton's Ferry Pump Station



- Three New Pumps – 35 HP, 3.1 MGD each
 - New piping and Flow Meter
- New VFDs and electrical
- Refurbished Influent Grinder
- New Roof
- New Forcemain

Souhegan Pump Station



- Three new pumps – 15 HP, 1.6 MGD each
 - New piping and flow meter
- New VFDs and electrical
- Refurbished influent grinder
- New roof
- Power wash brick and graffiti-proof coating
- Relined forcemain



Headworks Building



- New piping and valves in Sludge Pumping Room, as well as reconfiguration
- Architectural Renovations
 - Lab
 - Offices
 - Conference Room
 - Locker Rooms
 - New roof



Headworks Building - Electrical



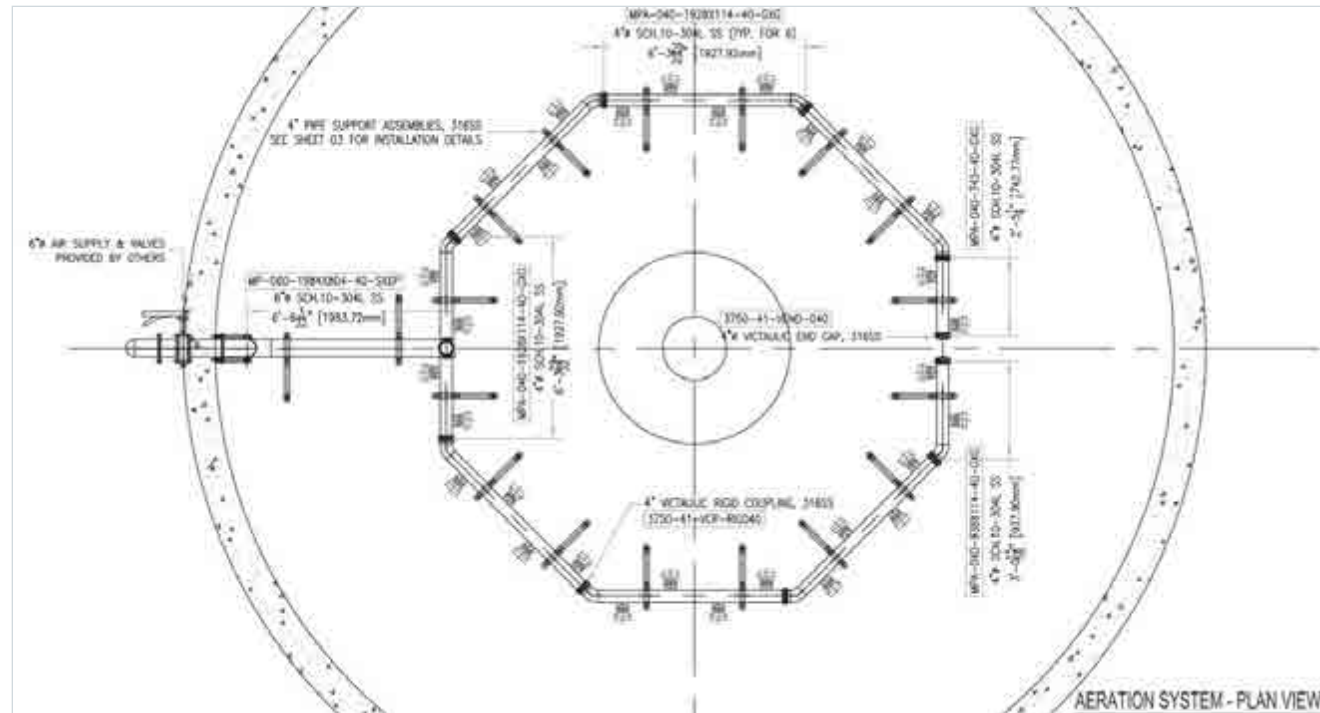
- Two new standby generators – 500 kW
- New switchboard including bussted cabling compartment, main CB and ATS
- Manual transfer switch for portable generator



Sludge Holding Tanks



- **Two new mixer / coarse bubble diffuser assemblies**
- **Blower rehab**
- **Removal and reinstall covers**



Primary and Secondary Clarifiers



- One new primary mechanism – 60' diameter
- Three new secondary mechanisms – 70' and 75' diameter



Chlorination Building



- Four new RAS pumps, piping, and valves
 - 10 HP - 1,070 gpm each
- New electrical service and MCCs
- Manual transfer switch for portable generator

Chlorination Building



Compost Facility



- Six new exhaust fans to existing biofilter
 - 50 HP - 14,690 cfm each
- Remaining ductwork that wasn't replaced in Phase II



Funding (construction)

| | |
|---------------------------------------|---------------------|
| • SRF Loan (original) | \$ 18,300,000 |
| • SRF Loan (amendment) ⁽¹⁾ | <u>\$ 7,300,000</u> |
| • Total SRF Loan | \$ 25,600,000 |
| • Town ARPA ⁽²⁾ | \$ 1,300,000 |
| • NHDES ARPA ⁽³⁾ | \$ 2,000,000 |
| • Town CRF ⁽⁴⁾ | <u>\$ 500,000</u> |
| • Total Construction Project Funding | \$ 29,400,00 |



Eversource Energy Rebate = \$34,000

Pump Station VFDs, LED lights, heat pumps

Funding

Change Order No. 4

\$2,034,567

- Added the Chlorination Building
- From Town ARPA (2) and Town CRF (4)

Change Order No. 6

\$8,898,845

- Added the Screenings Building
- Compost
- Architectural Improvements at Headworks and
- Washwater piping at Screenings
- From SRF Amendment (1) and NHDES ARPA (3)



Thank you to

- Town of Merrimack
 - NHDES
 - Methuen Construction
 - Wright-Pierce
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Only one of the examples of project teamwork

- Town and Methuen on-call 24/7!



Contact Information

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THANK YOU
