Meetinghouse Pond (Phase 2) Sewer Construction

Residents Meeting

April 30, 2024

Topics

- Purpose of the Project ← Why
- Team Introduction ← Who
- Service Area ← Where
- Construction Schedule
- Post-Construction Timeline ← When
- Resident Resources
- Sewer Construction Overview ← How
- Looking Ahead to Future Phases

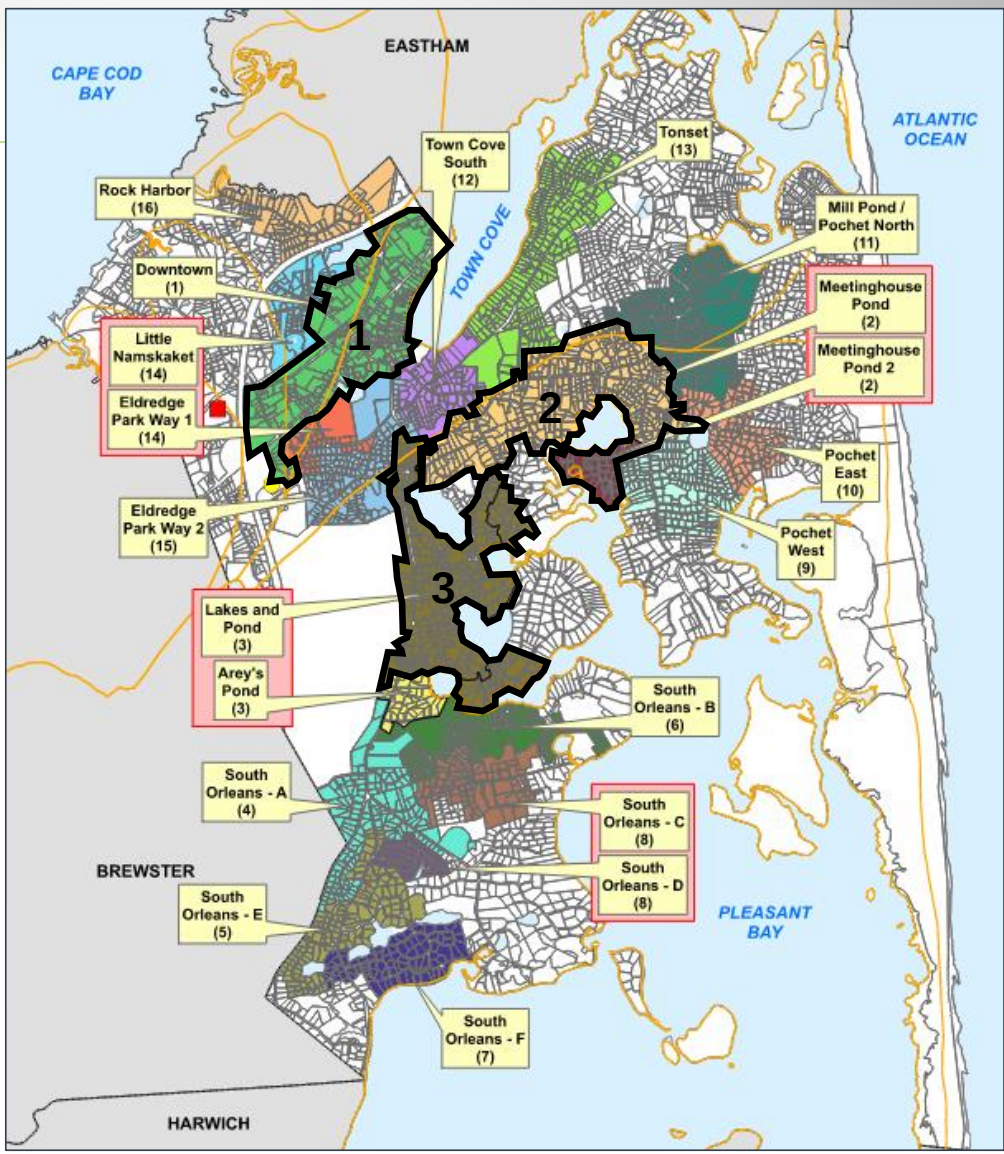
Why This Project Is Important

- For the Environment
  - Nutrient loads from septic systems are damaging water quality
  - Ponds and estuaries are seeing ecosystem changes
- For the Town
  - Continued use and benefit of clean waters
  - Tourism, Swimming, Fishing, Boating, Shellfishing
- For the Residents
  - See Environment and Town benefits above
  - Avoided Innovative/Alternative (IA) septic system requirements (Title 5 revisions)

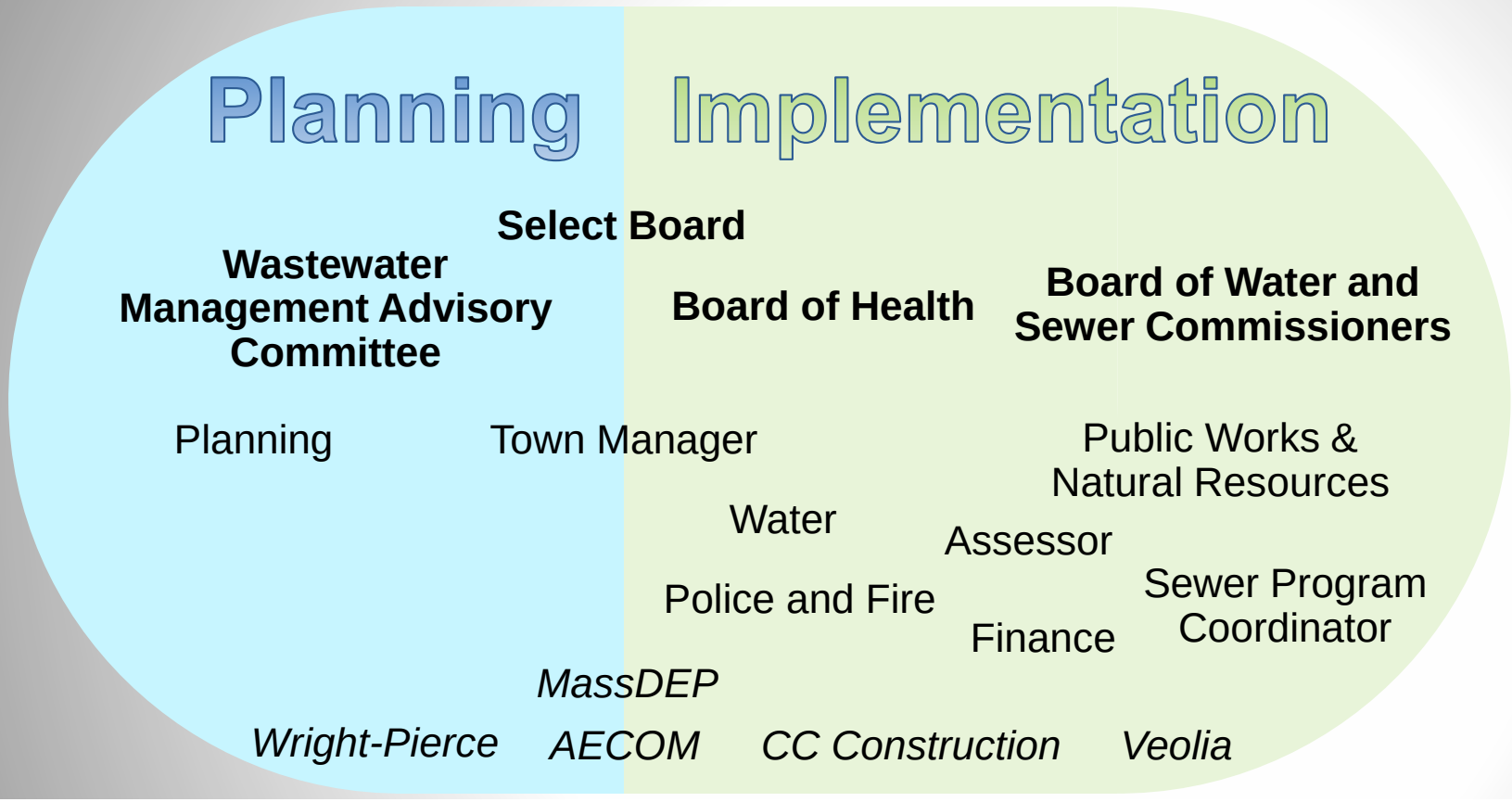
Why This Project Is Important

- Nitrogen is the primary septic pollutant impacting estuaries and saltwater habitat
- ~60% of Town anticipated to be sewered to address water quality needs

Phase	% of CWMP Acreage	Nitrogen Removed (kg/yr)	% of Total Nitrogen Removed
1	11%	~4,600	~31%
2	13%	~1,900	~13%
3	12%	~1,200	~8%
4-16	64%	~7,300	~49%

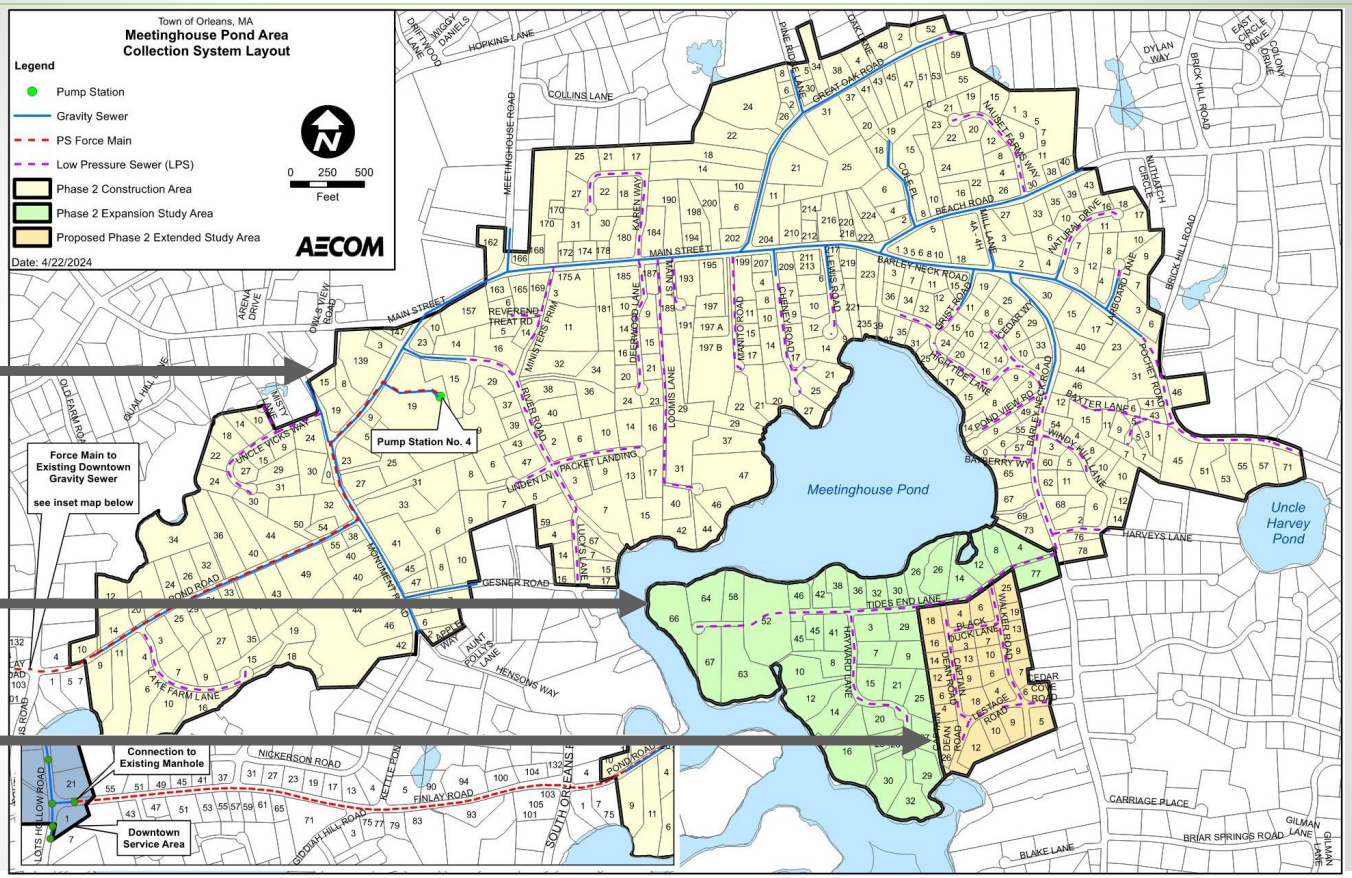


Who is Working on this Project



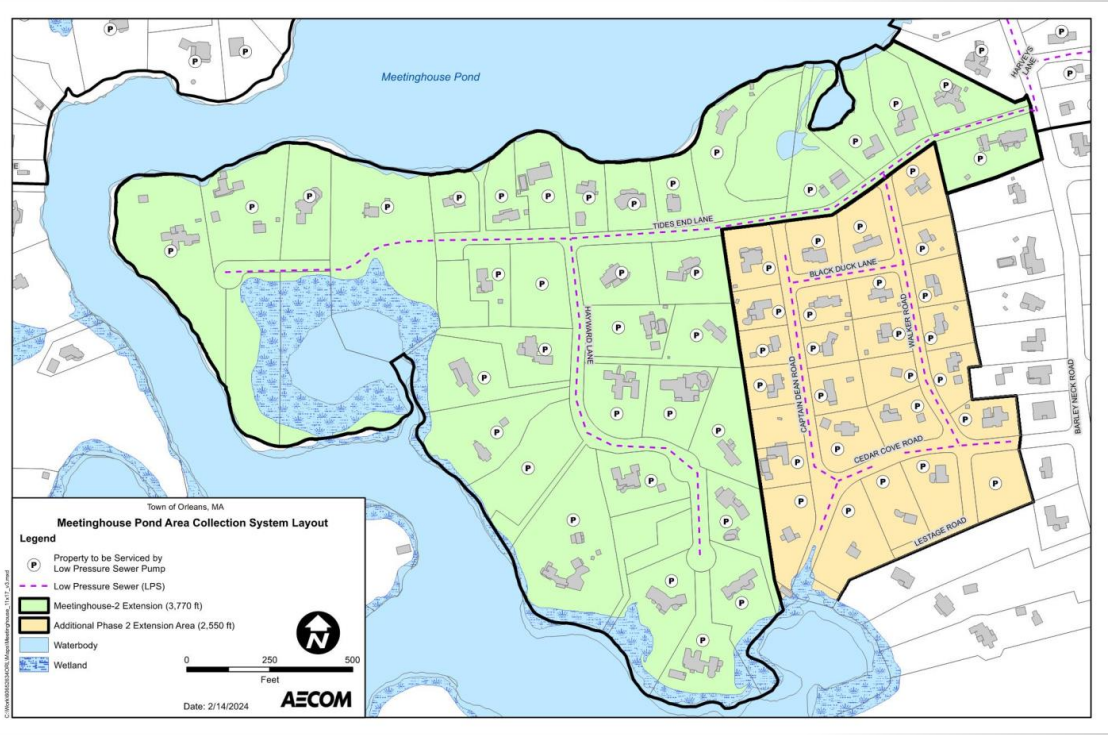
Where Is the Sewer Service Area

- Current construction contract
- Authorized extension area (Oct 23 STM)
- Proposed extension area (May 24 ATM)



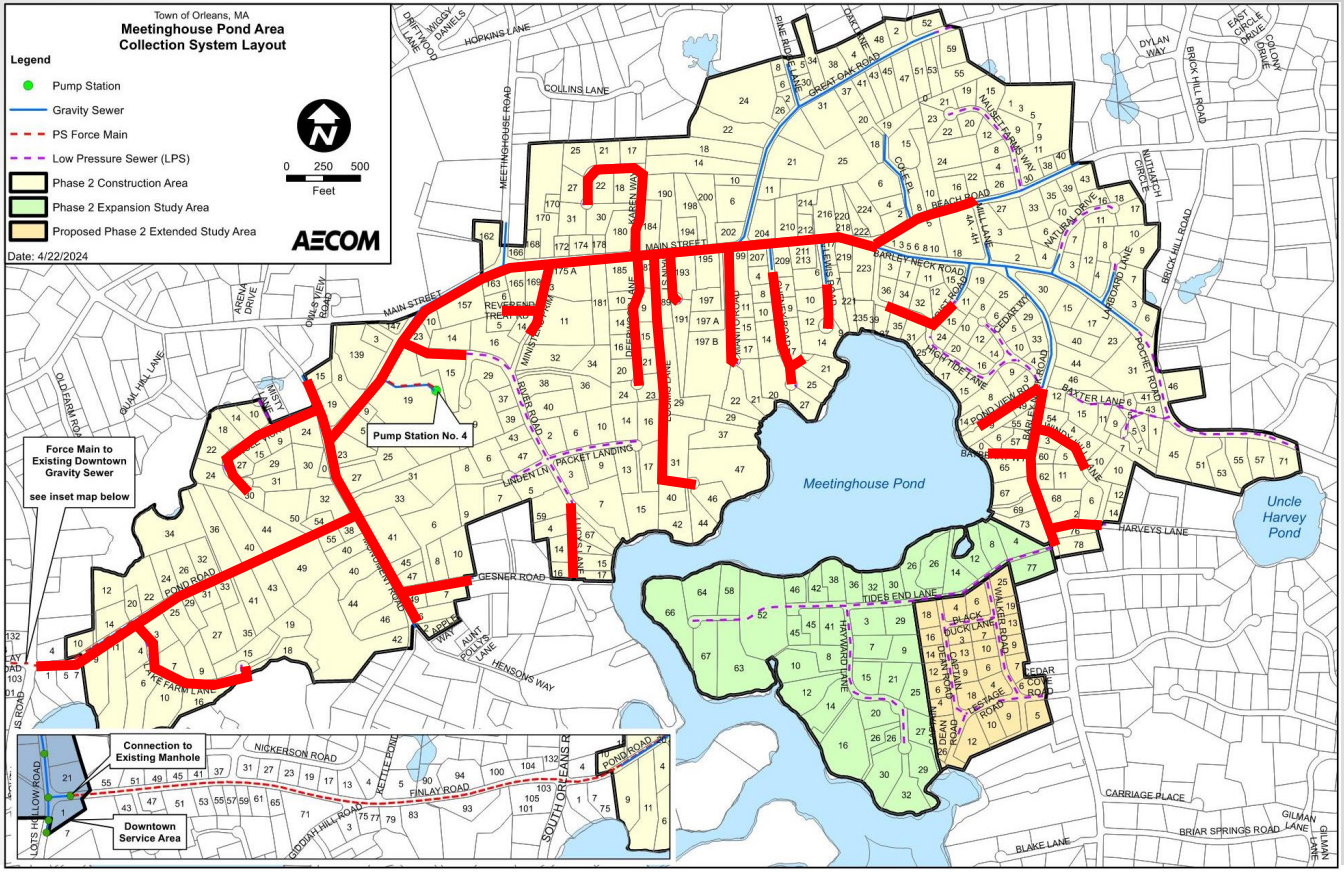
Extension Areas

- Potential for benefits within existing appropriation
- Tides End Lane Area
  - Collecting field data for design
  - Contractor to provide quote
  - Town to obtain utility easement
  - DEP eligibility approval required
- Walker Road Area
  - Town Meeting vote in May 2024
  - Same process as above



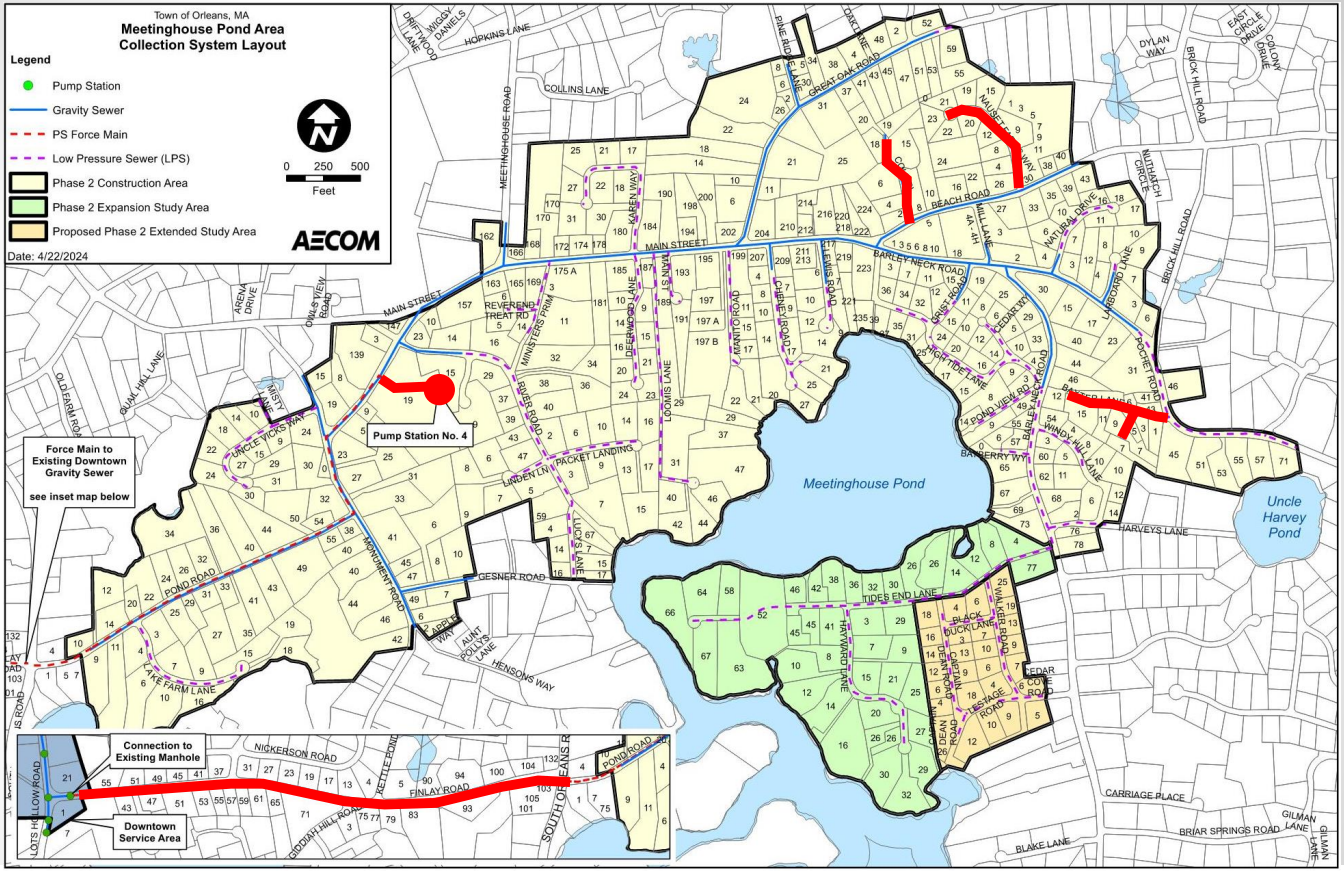
Work Completed from Project Start Through 5/17/24

- Completed Work
  - Gravity Mains
  - Force Main
  - Low Pressure Mains
  - Water Main
  - Sewer Services
  - Water Services
  - Drainage
  - Temporary Paving
- Remaining Work
  - Final Restoration
  - Final Paving
  - Sewer & Water Services for Main and Beach



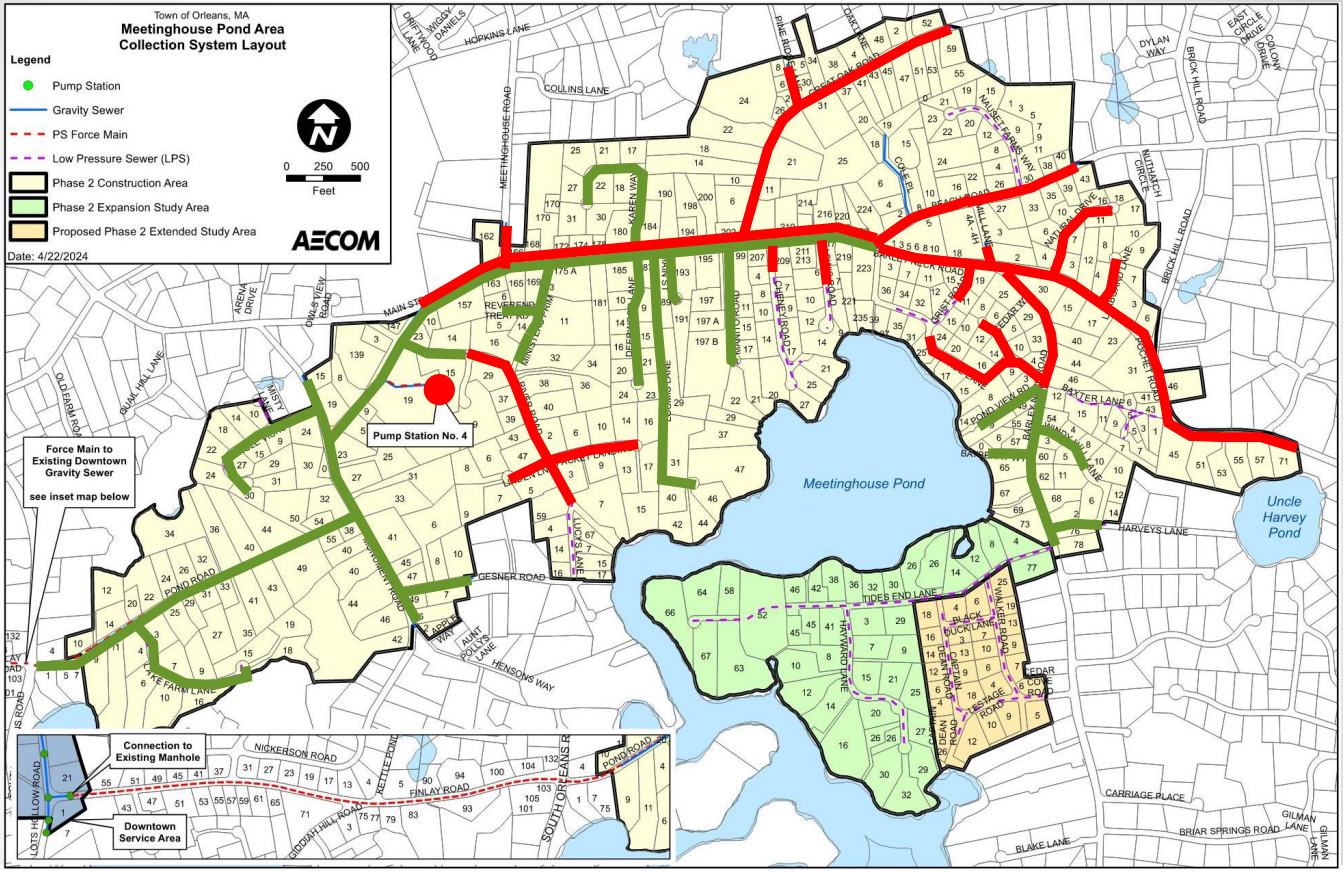
When Will Construction Occur (Summer Work Sites)

- Locations
  - Town Hall
  - Finlay Road
  - Nauset Farms Way
  - Cole Place
  - Baxter Lane
- Work Type
  - Pump Station
  - Gravity Mains
  - Force Main
  - Low Pressure Mains
  - Sewer Services
  - Water Services
  - Temporary Paving



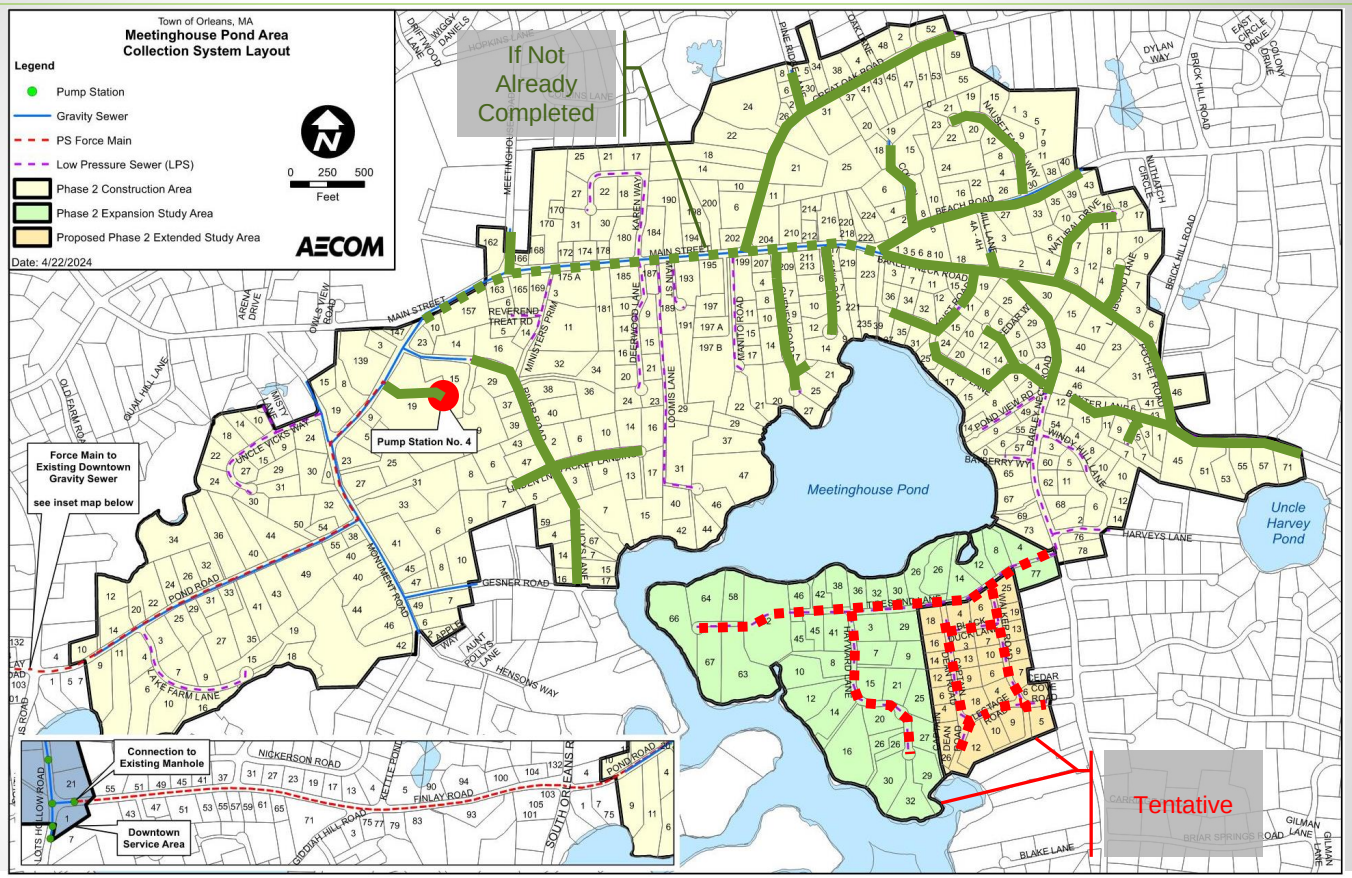
When Will Construction Occur (Fall Work Sites)

- Locations
  - Town Hall
  - Red streets
- Work Type
  - Pump Station
  - Gravity Mains
  - Low Pressure Mains
  - Water Main
  - Sewer Services
  - Water Services
  - Temporary Paving
  - Final paving/road restoration for sites completed by 5/17



When Will Construction Occur (2025)

- Locations
  - Town Hall
  - Streets without final paving
  - Expansion areas (Tentative)
- Work Type
  - Final paving/road restoration
  - Pump station startup
  - WWTF equipment
  - Sewer and related work (Tentative)

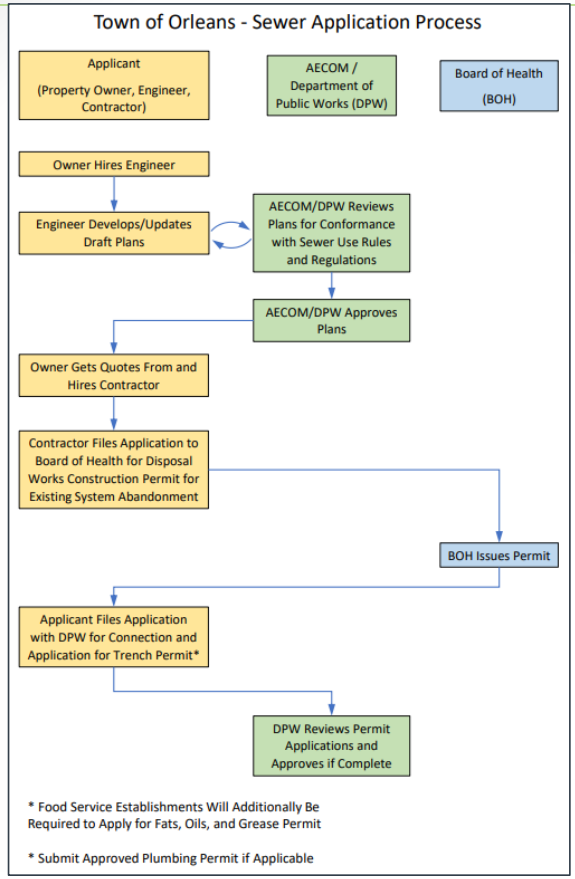


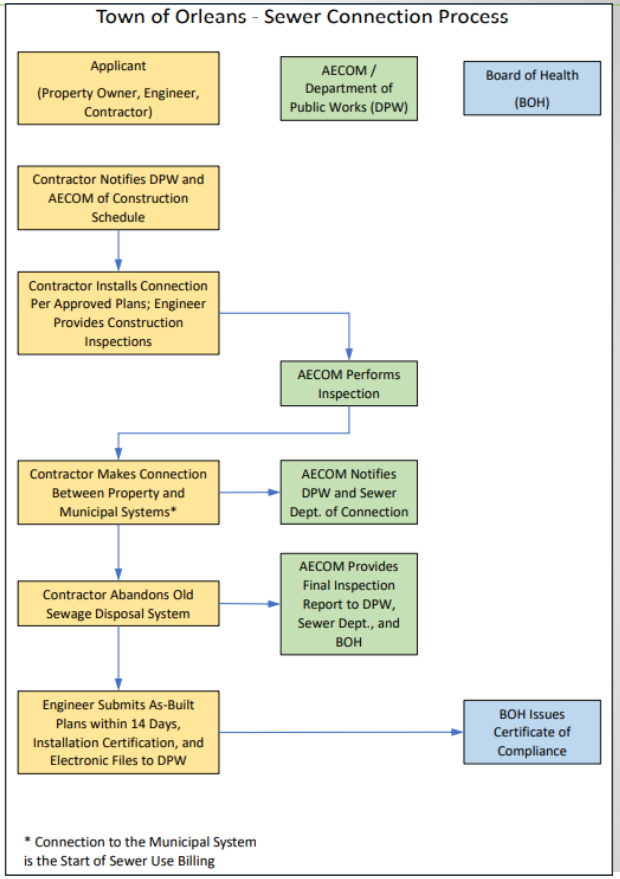
Post Construction Timeline (Best Estimate as of 4/30/24)

Milestone	Estimated Date
Substantial Completion	December 2025
Extended Operation Period Begins	December 2025
Board of Water and Sewer Commissioners Notifies Board of Health	December 2025
Board of Health Issues Notice to Connect Letters to Parcel Owners	December 2025
Letter to Pleasant Bay Alliance and DEP for Nitrogen Credit	January 2026
Extended Operation Period Ends	December 2026
Connection Deadline	December 2026
Project Final Costs Determined	March 2027
Board of Water and Sewer Commissioners Certifies Sewer Unit and Betterment Amounts	May 2027
Apportionment Letters Mailed to Parcel Owners	June 2027
Betterments Issued on Actual Tax Bills	January 2028

Connection Process

- Flowchart is available on Town's website
- Recommendations
  - Work with your engineer prior to getting quote from contractor
  - Check that your engineer is familiar with the SURR
  - Include inspection service and record drawings as part of your agreement with the engineer
- AquiFund loans available to year-round residents (0-5% loans)
- Local banks are developing financial products to help businesses



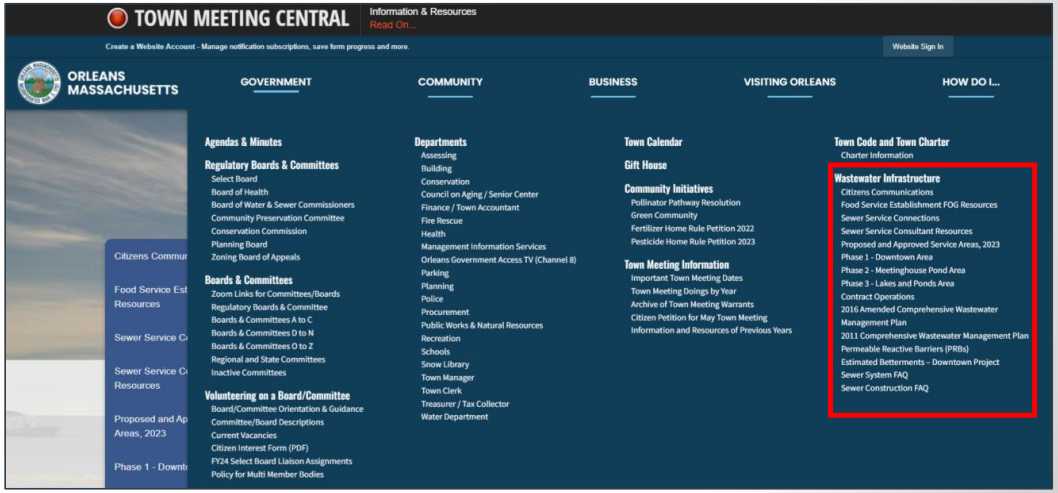


Betterments

- Betterment is used to recover project costs by distributing applicable costs to all properties within the service area
- Based on water use and project cost
- Sewer Unit
  - Minimum basis of the betterment
  - Average flow of single family residences as measured over 3 years
- Betterment assessed as part of tax bill to property owner
  - Multiple units will need to create arrangements for payment
  - Betterment can be financed over 30 years at 0-2% interest with the Town

Resources for Residents and Businesses

- Town Ombudsman – Reggie Donoghue – 508-833-6967; rdonoghue@town.orleans.ma.us
- Sewer Coordinator
- Department of Public Works and Natural Resources
- Board of Health
- Town Website
  - Wastewater Main Page
  - Wastewater Citizens Communications
  - FAQs
    - General
    - Construction
  - Sewer Service Connections



How the Project Gets Built – Infrastructure Overview

- Pump Station
  - Used to lift sewage to a higher elevation
  - Orleans uses underground pump stations
  - Surface features may include electrical enclosure, generator, and transformer
- Pipeline
  - Gravity – Pipes that do not require pumps to convey sewage
  - Force Main – High pressure pipe conveying sewage from a pump station
  - Low Pressure Main – Low pressure pipe conveying sewage from grinder pumps
- Manhole
  - Angle points of sewer system
  - Provides access to gravity sewer system – ONLY THE SEWER SYSTEM OPERATOR

How the Project Gets Built – Infrastructure Overview

Pump Station 1 on Old Colony Way at West Rd

12” Gravity Main on Main St

Buried and Surface Manhole Components

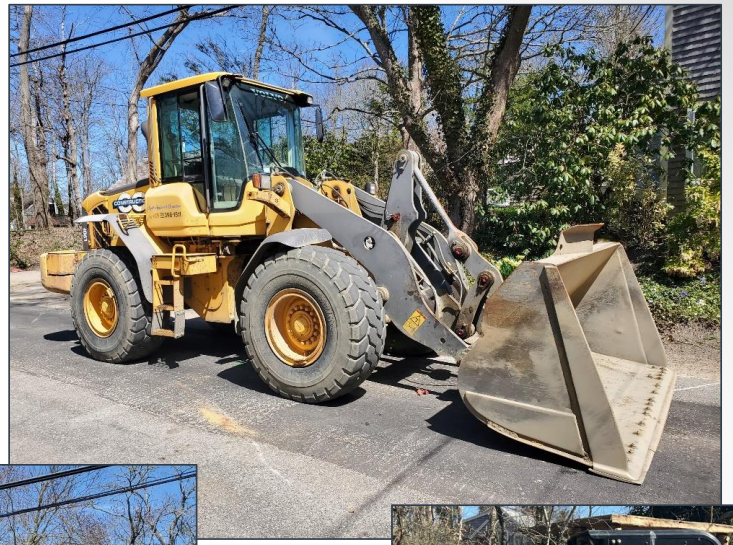
How the Project Gets Built – Field Personnel

- Contractor
  - Superintendent – Overall field coordination and oversight
  - Foreman – Leader of individual work crews
  - Crew – Foreman, equipment operators and laborers
- Town/Engineer
  - Resident Project Representatives – Monitors adherence to contract requirements

How the Project Gets Built – The Equipment

Excavator and Shoring

Front Loader



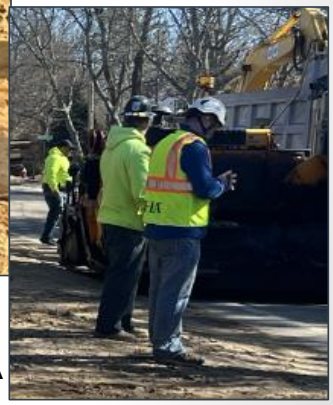
Tri-axle Dump Truck

Skid Steer

How the Project Gets Build - Safety

High Visibility Marking

Police Details



OSHA

How the Project Gets Built – The Process

- Site Preparation
  - Utility marking
  - Tree pruning
  - Pavement cutting
- Installation
  - Stormwater management practices
  - Excavation
  - Shoring
  - Pipe installation
  - Temporary paving
  - Testing
- Final Paving
  - Occurs after settlement period
  - Final surface to match original
- Site Restoration

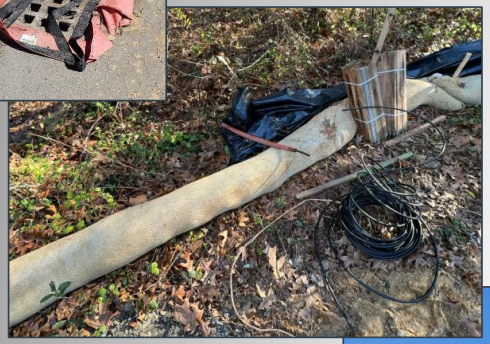
Pavement Cutter

Setting Shoring for a Lateral

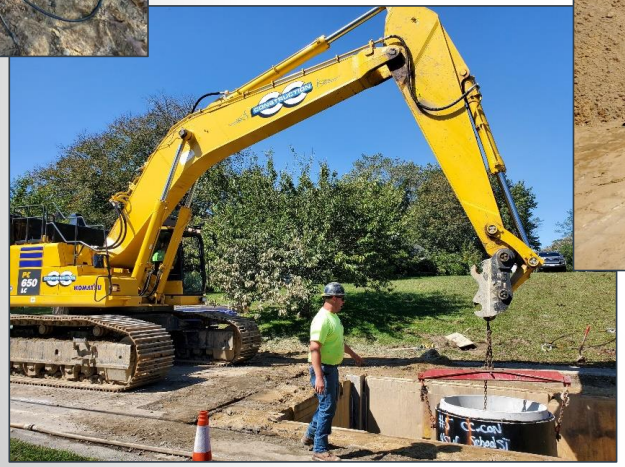
Paving

How the Project Gets Built – The Process

Sediment Management



Staging the Spoils on Main St



Setting a Manhole on School Rd

New Water Service Connection

Impacts to You During Construction

- Detours
  - Signage
  - Website
- Parking and access
  - Emergency vehicles can always get through
  - Advance coordination and planning important
- Potential temporary water shutoff
- Potential utility interruptions
- Tree trimming
  - Contractor is working with an arborist to maintain tree health and mitigate visual impact

Detour on Main St at Meetinghouse Rd

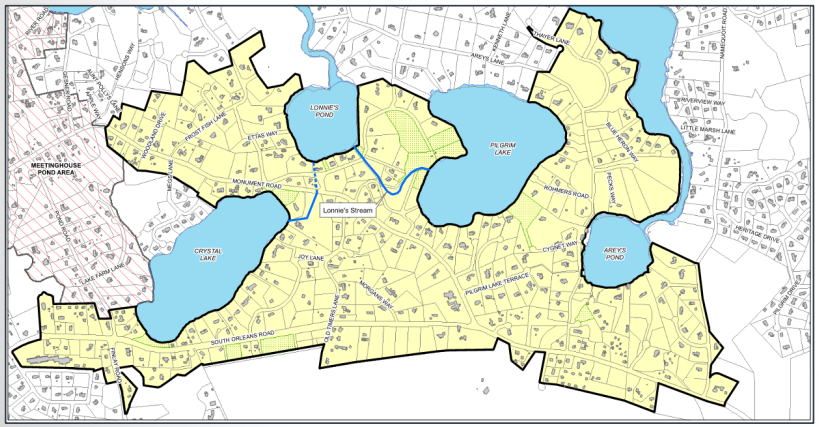
Mini-Excavator on Bayberry Way

Unmarked Utility Strike

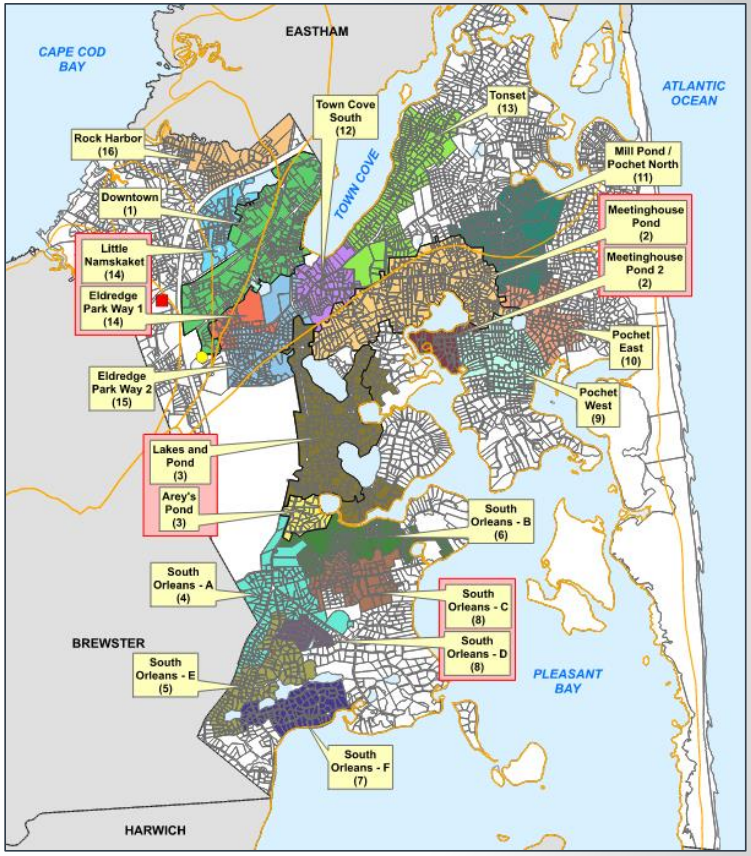
Future Phases

- 16 Phases of sewer implementation
  - Amended Comprehensive Wastewater Management Plan
- Phase 3 construction start in Summer 2026
- Phasing order based on:
  - Watershed permit
  - Efficient connectivity
  - Town priorities

Phase 3 Study Area



Phasing Plan



Thank You