

## Preliminary Design Funding for 2024 ATM

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Recognizing that the Town's funding schedule is based upon a single, Annual Town Meeting, the Wastewater Commission has requested through the Facility Manager that we establish a preliminary design placeholder budget, pending completion of the CWMP in the next six to nine months. The purpose of establishing this preliminary design budget now is to allow for continued progress on meeting the Town's water quality and system expansion goals without having to wait for a full year following likely CWMP completion and MassDEP approval.

Preliminary design tasks are expected to focus on four specific areas of design development, including: preliminary design of WWTF upgrades; preliminary design of a Sengekontacket groundwater discharge system; preliminary design of Sengekontacket wastewater collection system; and, preliminary design of a permeable reactive barrier pilot project. The costs below are subject to change based on the outcome of the CWMP project and stakeholder feedback. At present, we believe a budget of \$3,100,000 would advance the preliminary design activities listed below such that they would be ready for final design funding at the spring 2025 Annual Town Meeting. We anticipate refining these budgets in the coming months as more information becomes available.

### **WWTF Upgrade Preliminary Design (\$800,000)**

- Topographic Survey
- Geotechnical Investigation
  - WWTF Site Borings
  - Geotechnical Design Memorandum
- Basis of Design Report
  - Define Design Parameters (Flows & Loads)
  - Identify Required Process Upgrades to Address Flow Increase
  - Complete Process Sizing Calculations
  - Identify Preliminary Equipment Selections
  - Produce Updated Process Flow Diagram for WWTF
  - Produce Conceptual Layout for Site & New Unit Operations
  - Develop Opinion of Probable Construction Cost

**Sengekontacket Groundwater Discharge Preliminary Design (\$600,000)**

- Topographic Survey (Covered Under Collection System Item)
- Preliminary Site Investigations (Assume 4 Locations)
  - Identify Sites & Secure Access Agreements
  - Geotechnical Borings
  - Test Pit Excavation
  - Desktop Groundwater Mounding Analysis
  - Evaluate Physical & Environmental Constraints
  - Preliminary Site Investigation Summary Memorandum
    - Field Program Summary
    - Discharge Capacity Assessment
    - Impacts to Downgradient Receptors
    - Opinion of Probable Construction Cost
    - Identify Preferred Location
- Hydrogeologic Evaluation (Assume 1 Preferred Location)
  - Submit Hydrogeologic Plan of Study to MassDEP
  - Develop Additional Borings & Test Pits
  - Perform Slug Tests & Grain Size Analysis
  - Collect & Analyze Baseline Water Quality Samples at Site
  - Develop Test Cell or Wick Well Pilot Program
  - Install Test Cell or Wick Well
    - Perform Load Testing
  - Develop Groundwater Model
    - Evaluate Groundwater Mound
    - Evaluate Effluent Fate & Transport
  - Identify and Evaluate Downgradient Receptor Impacts
  - Develop Discharge System Layout
  - Develop Hydrogeologic Study Report

- Develop Hydrogeologic Report Permit Application
- Develop Discharge Piping Route
  - Develop Pipe Routing Plan
  - Evaluate Wetland Impacts
  - Evaluate NHESP Impacts
  - Evaluate Archaeological Impacts
  - Evaluate Easement Needs
  - Develop Conceptual Pump Station Design
  - Develop Opinion of Probable Construction Cost

### **Collection System Preliminary Design (\$1,200,000)**

- Topographic Survey
  - Aerial Survey
    - Ground Control Survey and Aerial Flight
    - Data Processing
- Ground Survey
  - Differential Leveling for Benchmarks and Plan Check
  - Acquire Sill Elevations
  - Acquire Utility Information
- Subsurface Investigation
  - Locate every 300 FT+/- Along Sewer Layout
  - Preclearing Locations to 6' depth
  - Borings
- On-site Disposal Systems
  - Coordinate with the Board of Health to Obtain Records
  - Based on Existing Records Incorporate into the Contract Drawings
- Cultural Resource Evaluation
  - Archaeological Investigations in two phases:
    - Research
    - Field Survey

- Performed in Accordance with Federal and Mass Historical Commission Rules and Regulations
- Incorporate the Results and Construction Requirements into the Contract Documents
- Develop Preliminary System Configuration
  - Develop Profiles Showing Gravity Sewer and Pressure Sewer
  - Estimate Quantities
- Capacity Analysis at Interconnections with Existing System
- Develop Opinion of Probable Construction Cost

**Permeable Reactive Barrier Pilot Program (\$500,000)**

- Identify Potential PRB Sites (3 Assumed)
  - Evaluate Site Constraints (Physical, Environmental & Permitting)
  - Install Preliminary Borings & Monitoring Wells
  - Conduct Baseline Sampling
  - Develop Conceptual PRB Design
  - Estimate PRB Cost
  - Estimate PRB Nitrogen Removal
  - Prepare Summary Report with Recommendations for Full-Scale Implementation

[https://tighebond-my.sharepoint.com/personal/ibcatlow\\_tighebond\\_com/Documents/Projects/Edgartown/Proposals/Preliminary Design Budget Memo 111323.docx](https://tighebond-my.sharepoint.com/personal/ibcatlow_tighebond_com/Documents/Projects/Edgartown/Proposals/Preliminary%20Design%20Budget%20Memo%20111323.docx)