

SCOPE OF WORK

Woodard & Curran will complete the following services under this Agreement with the Client.

1 Kickoff meeting with DPW

- a Develop a meeting agenda with input from the DPW, and coordinate and attend a kickoff meeting to review the goals of the DPW for this study. This meeting will ensure that the study results meet the objectives of the DPW.
- b Throughout the course of the project meet with the DPW to provide periodic updates on the current status of the project to ensure that we are proceeding on our initial goals and to determine/discuss if any adjustments/corrections are necessary.

2 Review previous studies

- a Review previous studies including the pilot studies and basis of design reports previously completed for the proposed White Pond water treatment plant, water system master plans, Comprehensive Wastewater Resources Management Plans, DEP Annual Statistical Reports of water usage, water conservation plans and practices, MAPC and master plan population projections, Zone II and other hydrogeologic studies.

3 Replacement of existing transmission main

- a Evaluate options to replace the existing transmission main including conventional open cut methods and/or trenchless technologies. Trenchless technologies, generally more expensive than open cut methods, will be evaluated as an option to minimize disruption to adjacent environmentally sensitive areas, which exist along the transmission main route.
- b Develop and evaluate up to three alternative routing options for transporting water from White Pond to the Maynard water distribution system.
- c Prepare cost estimates for each of the options evaluated.
- d Contact the U.S. Fish & Wildlife Service to obtain their input on the replacement options for the White Pond transmission main.
- e Provide a recommendation for the White Pond transmission main replacement and routing.

4 Siting Evaluation

- a Evaluate two options for siting the proposed White Pond water treatment facility. One option will be to locate the facility adjacent to White Pond in Stow and the second option will be to locate the facility at a site in Maynard. The evaluation will consider the following;

® Land Ownership

Cost, including land purchase

Land Size

Availability of Utilities; electric, gas, phone, and sewer

Proximity to wetlands and other environmentally sensitive areas

Depth to ground water and bedrock, if known

Topography

Site access/proximity to existing road network

Proximity to residences

5 Relocation of existing pump house

- a a. Evaluate the feasibility of relocating the existing pump house to a higher elevation on the existing site. The evaluation will also include the feasibility of relocating the existing intake pipe from the pond and setting it at a lower elevation to provide for additional storage capacity within the pond.

6 Evaluation of water treatment options

- a Review the pilot data and results, and the basis of design report to evaluate the reports recommendations with consideration of current regulatory requirements including the Long Term 2 Enhanced Surface Water Treatment Rule and the Stage 2 Disinfection Byproducts Rule.
- b Develop preliminary life-cycle cost (capital and operation and maintenance) estimates for implementation of a new treatment facility for White Pond. The preliminary cost estimates will include capital construction costs for a new intake structure, raw water pumping, treatment facility building and treatment equipment, finish water pumping, backwash water handling, and new transmission main to serve the existing distribution system. The preliminary operations and maintenance costs will include chemical costs, electrical cost, maintenance and labor. The capital and operation and maintenance costs will be estimated by updating the costs presented in the 1994 Basis of Design Report.

7 Feasibility of developing wells onsite

- a Complete a geophysical exploration (seismic refraction) to determine the saturated thickness of unconsolidated materials at suitable locations near White Pond.
- b Complete subsurface exploration at White Pond including installation of a pair of 2-1/2 inch diameter test wells, performing a 2 hour pumping test and at the conclusion of the pumping test performing water quality testing in accordance with MassDEP guidelines for test wells. The purpose of this task will be to assess the suitability of the area surrounding White Pond as a ground water supply source in terms of quantity and treatment requirements.
- c Based on the subsurface exploration, develop cost estimates for developing a groundwater source at White Pond.

8 Evaluate and cost comparison of investing in existing resources.

- a Review previous studies including exploration, pumping test reports, and Zone II delineations, and published geologic and hydrologic maps, to determine the feasibility of developing additional capacity from the existing Old Marlboro Road and Well No. 4 ground water supply sources.
- b Review existing Old Marlboro Road and Well No. 4 well sites to determine if the sites can accommodate increased well yield by improvement in well maintenance practices. Historical well pumping and water level data, including original pumping test report and well maintenance records, will be reviewed to determine if the wells are operating at their highest and most efficient yields or if additional yield can be obtained by performing traditional or alternative well rehabilitation techniques.
- c Review the existing Old Marlboro Road and Well No. 4 well sites to determine if the sites can support construction of an additional well that would actually increase capacity from the site during simultaneous operation of the existing and new well(s). Consideration of this alternative needs to review the impacts of the following issues, at a minimum: new well is reviewed according to the DEP New Source Approval Process; new well does not cause too much well interference on existing wells but would result in a material increase in total site capacity; and that the town can control the well site access and Zone I wellhead protection area.
- d Review the existing Old Marlboro Road and Well No. 4 well sites to determine if the Town would benefit from construction of a satellite well.
- e Review potential new sites that have never been explored as potential groundwater supply sources. USGS geologic map and exploration and pumping test studies prepared for the Town's existing wells will be reviewed to determine if there are aquifers that exist in Town that would meet the Zone I land control requirements of DEP, are located in a potentially productive aquifer, are accessible for construction and

connection to the town water system, and appear to be permeable without costly and burdensome permitting requirements. Review of potential well locations will take into account the proximity to environmental receptors sensitive to impacts from well withdrawals, such as wetlands or streams, to assess the potential that a prospective site may be burdened with too many well flow restrictions due to concerns about causing impacts due to drawdown to make an alternative feasible.

- f Feasible alternatives will be further evaluated by performing a preliminary cost estimate for developing the new groundwater supply.
- g Review existing sources to determine the most feasible option for obtaining additional long-term source capacity. In our review of feasible options, we will consider reactivation of existing source to full service such as expansion and upgrade of existing treatment plants such as the Old Marlboro Road Well Water Treatment Plant to fully utilize the capacity at that well site. The feasibility of options will consider not only available yield for an alternative, but the cost of implementing that alternative.

9 Availability of Federal or State Funding

Identify potential Federal and State Funding opportunities for the project. This will include MassDEP State Revolving Loan Fund program, USDA Rural Development grant and loan opportunities, and Community Development Block or Action Grants.

- 10 Evaluate the feasibility of selling excess capacity to Hudson or Sudbury
 - a Determine if excess capacity exists within the Maynard water system and if there is available quantity for use by Hudson or Sudbury.
 - b Contact both Hudson and Sudbury to gauge their interest in buying water from Maynard and seek to obtain a firm commitment from both of the Towns.
- 11 Evaluate the feasibility of a cost sharing proposal in having Hudson or Sudbury share in the cost of plant construction
 - a Evaluate cost sharing with the Town's of Hudson and Sudbury for the White Pond water treatment facility.
- 12 Evaluate the feasibility of a connection with Stow
 - a Evaluate the impact of supplying 11,000 gallon per day to the Town of Stow. The evaluation will consider the additional operation and maintenance costs that would be associated with this additional demand and will also evaluate the legal requirements for the Town to allow service connections to properties along the transmission main route into Stow.
 - b The evaluation will also consider if a higher demand from Stow is more realistic and the impacts of this higher demand on the Maynard water system, knowing that Stow may be looking to provide water service to the Town Hall, library and elementary schools.
- 13 Provide estimated time line for design, construction, costs and permitting by DEP and other regulatory agencies
 - a Prepare a time line for the recommended alternative for permitting, design and construction.
- 14 Prepare and submit to the DPW a draft Assessment of Water Resources Report, revise report based on **Town** comments, and meet with Selectmen to discuss final report
 - a Prepare and submit ten copies of a draft report to the DPW, and attend a meeting to present the results and discuss the opinions and feedback of the DPW.
 - b The draft report will summarize the results of the water resources assessment and include recommendations on the direction the Town should proceed for future water supply development, including a decision matrix

that includes a presentation of advantages and disadvantages for each alternative considered, and the probable cost of implementation for each alternative. The report will also include the results of our evaluation of the feasibility of selling excess capacity and cost sharing with the Towns of Hudson and Sudbury and the results of our evaluation on the feasibility of a Stow connection and the estimated time line for permitting, design and construction of the recommended alternative.

- c Incorporate the comments that are received on the draft report and submit ten copies of the final report to the DPW. One PDF of the final report on CD will be included with the submission.