

Water Quality and Wastewater Planning

The following summarizes the various tasks that will be completed under this Scope of Services. AECOM will perform professional services at the level of effort set forth in the budget associated with this scope of services.

1. Facilities Engineering

This task covers the conceptual and preliminary design tasks required to advance the traditional engineering tasks including Disposal Site Investigations, Facilities (Wastewater Treatment and Disposal) Preliminary Design, Downtown Planning and Cost Estimating.

- a. Disposal Site Investigations - The following will be evaluated for a new disposal site for the Tri-Town WWTF discharge (Cloverleaf Route 6A) and for a new Meetinghouse Pond Watershed Satellite WWTF discharge (223 Beach Road):

(1) Preliminary Site Characterization.

- Review previous hydrogeologic investigations including subsurface borings, soils analyses, infiltration tests, dispersion modeling as well as other relevant studies and field investigations.
- Collect and review abutter, land use, zoning and land ownership information.
- Conduct site visits to potential groundwater discharge locations to verify site access, identify potential monitoring and test well locations, and other site characteristics.
- Prepare proposal to conduct preliminary hydrogeologic investigation and submit to MassDEP.

(2) Preliminary Hydrogeologic Investigation.

- Meet with MassDEP and the Town to review comments on the Proposed Preliminary Hydrogeologic Investigation.
- Conduct site visits with MassDEP and the Town to selected sites to perform witness test pit investigation.
- Coordinate and observe soil borings and monitoring wells installation and maintain contact with the Town and MassDEP.
- Collect soil samples for grain size analysis.
- Collect water level data and water quality data (Temperature, pH, Conductivity, Chlorides, Total Nitrogen, Nitrate-Nitrogen, Total Phosphorous, and Orthophosphate) once the monitoring wells have been installed.
- Summarize and evaluate the field data collected during the preliminary hydrogeologic site investigations. Data will include water level data, water-quality results, soil sample analysis results, and estimation of groundwater flow direction.
- Conduct groundwater modeling to estimate groundwater discharge flow direction, potential groundwater mounding, and groundwater travel time.

- Prepare Technical Memorandum summarizing the results of the preliminary Hydrogeologic investigation; conduct Workshop with Board of Selectmen to review results of the investigation.
- (3) Prepare two Groundwater Discharge Permit Applications for Cloverleaf Route 6A (Exit 12) Site and 223 Beach Road Site.
- Prepare groundwater discharge permit application for the Cloverleaf Route 6A site and submit to MassDEP for review. This will include WWTF design information relevant to influent and effluent characteristics.
 - Prepare groundwater discharge permit application the 223 Beach Road site and submit to MassDEP for review. This will include WWTF design information relevant to influent and effluent characteristics. Note: Initiation of this sub-task will await approval of the Town, pending results of studies, budget expenditures and other results of work related to the Exit 12 disposal site investigations.
- b. Downtown Planning - The goal of this task is to conduct planning and engineering services for development of a Town Center Master Plan that will support water quality and wastewater planning on a sub-watershed basis. This plan will be based on the approved Orleans Comprehensive Plan and will consider other planning efforts and studies on the downtown area including but not limited to the Economic Analysis of the Village Center. This task will include a feasibility analysis relating to the design of wastewater management facilities for the downtown area. The area to be addressed in this task is the Town Center Study Area which includes all business districts along the Route 6A corridor.
- (1) Review previous downtown planning studies including previous build-out analyses, the Town's Comprehensive Plan and other economic development plans. Meet with Board of Selectmen to confirm objectives for confirming/updating previous studies and gather input on current and anticipated trends for amount and type of development in the Downtown area. A public workshop may be required for this sub-task.
- (2) Conduct updated build out analysis based on existing Town regulations, including zoning, Board of Health, Conservation Commission, and other relevant regulations. The build out analysis will be conducted on a parcel basis and categorized by sub-watershed area with the Downtown.
- (3) After review, confirmation and update of previous studies, develop/refine a build-out plan that would occur with implementation of the Town's Comprehensive Plan, considering existing land uses, market demand, short-and long-term development opportunities and other factors. Identify transportation, land use, environmental protection and utility improvements (i.e. traffic, noise, lighting and other utilities, including particularly wastewater and septage management services) that would be needed to support implementation of the Comprehensive Plan. This analyses shall include a range of three build-out scenarios including high, low and moderate growth and market demand projections.
- (4) Prepare Technical Memorandum on Potential Land Use/Market Analyses and Updated Build Out Analyses. Information will be provided on the sub-watersheds within the Downtown area.
- (5) Based on the above analyses and direction from the Board of Selectmen, develop future wastewater, septage and biosolids flows and loads and project the timing and volumes/rates of these demands for the three build-out scenarios. Define nitrogen loading

parameters for each scenario; This information will be input to the wastewater/septage planning tasks to define facility requirements to meet the range of potential future demands.

- (6) Provide summary report projecting wastewater and septage flows, timing of increased flows, methods to manage and allocate sewer capacity and strategies to control growth in a manner consistent with Orleans Comprehensive Plan. Provide a plan, including draft regulations, required to obtain zero interest financing through MassDEP SRF program,. Include specific recommended zoning and regulatory changes needed to achieve strategies and objectives.
 - (7) Conduct a workshop with the Board of Selectmen (and other invited participants to be determined by Town) to review findings and recommendations of the Downtown planning investigations.
- c. Facilities Preliminary Design - Additional investigations and conceptual or preliminary design will be required for the traditional elements of the Amended Plan, including:
- (1) Collection System (GS, LPS, VS and potentially STEP/STEG as appropriate).
 - Review existing information (ie. CWMP and other Town documents regarding the Downtown and Meeting House Pond proposed service areas).
 - Develop a wastewater and septage/solids collection and transport technology screening and prioritization matrix.
 - Identify technology screening criteria (ie. existing density/lot size, topography, utilities, aesthetics, land ownership, environmental, disruption to property owners during construction, capital costs, and operation and maintenance costs).
 - Perform screening evaluations and determine recommended technology for various parts of the proposed service areas.
 - Meet with the Town to confirm preferred technology(s).
 - Develop preliminary design of the Collection System (ie. list of project components, preliminary system layout, design criteria/criteria, preliminary list of permits and regulatory approvals, and capital costs and operation and maintenance costs).
 - (2) Wastewater Treatment, Residuals, Septage Components, and Effluent Disposal Transmission/Pumping.
 - Develop a Wastewater/Septage Treatment technology screening and prioritization matrix.
 - Identify Wastewater/Septage Treatment technology screening criteria (ie. type of equipment, building requirements, secondary system requirements, level of treatment, current and future permit requirements, residue disposal, aesthetics, effluent quality, environmental, energy and chemical usage, capital costs, and operation and maintenance costs).
 - Perform Wastewater/Septage Treatment screening evaluations and determine recommended technology.

- Develop a Residuals technology screening and prioritization matrix.
 - Identify Residuals technology screening criteria (ie. type of equipment, building requirements, secondary system requirements, impact to treatment system, end product disposal, reuse capability, environmental, energy and chemical usage, capital costs, and operation and maintenance).
 - Perform Residuals screening evaluations and determine recommended technology.
 - Develop a Effluent Disposal Transmission/Pumping technology screening and prioritization matrix.
 - Identify Effluent Disposal Transmission/Pumping technology/routing screening criteria (ie. type of equipment, building requirements, secondary system requirements, topography, utilities, aesthetics, land ownership, environmental, disruption to property owners during construction, capital costs, and operation and maintenance costs).
 - Perform Effluent Disposal Transmission/Pumping screening evaluations and determine recommended technology/routing.
 - Develop preliminary design of the Wastewater Treatment, Residuals, Septage Components and Effluent Disposal Transmission/Pumping (ie. list of project components, preliminary layouts, design criteria/data, preliminary list of permits and regulatory approvals, and capital and operation and maintenance cost estimates), as applicable.
- (3) Groundwater Disposal
- Using the Disposal Site Investigations conducted under Facilities Engineering, develop preliminary design of the Groundwater Disposal sites (ie. list of project components, type of groundwater disposal (for example wick vs RIB), preliminary disposal site layout, design criteria/data, preliminary list of permits and regulatory approvals, and capital and operation and maintenance cost estimates), as applicable.
- (4) Water Reuse Systems
- Confirm regulatory requirements for reuse applications.
 - Review the design criteria/data for the Tri-Town WWTF and Meeting House Pond Watershed Satellite WWTF and identify additional process components required to meet regulatory reuse requirements.
 - Identify potential reuse sites (ie. golf courses, irrigation of Town fields, etc.).
 - Develop a site screening and prioritization matrix and criteria (ie. land ownership, land uses in vicinity, proximity to drinking water wells/Zone 2s, proximity to abutters, ability to apply year round vs seasonal).
 - Perform screening evaluations and prioritize sites.
 - Assist the Town with the investigation and discussion with potential water reuse users.
 - Develop preliminary design of the Water Reuse System (list of project components,

preliminary facility layout, design criteria/data, preliminary list of permits and regulatory approvals, and capital costs and operation and maintenance costs), as applicable.

- d. Cost Estimating - Update and refine existing capital (ie. construction, engineering, legal, Town administration, etc.) and operation and maintenance (ie. labor, powers, chemicals, etc.) cost estimates for all structural, non-structural and management components of the plan using Town spreadsheet model, supplemented, as required, with new or additional information. These estimates will include estimate for the Demonstration Projects covered in Section 3 below, as well as best estimates for the full-scale implementation projects, assuming the technologies are cost-effective.
- Review previous reports and design memos for detail on assumptions and source of cost data.
 - Meet with existing WWTF personnel to confirm operation and maintenance activities.
 - Verify and adjust, if necessary, the costs associated with capital improvements.
 - Update costs to current day dollars based on Engineering News Record (ENR).

Deliverables

- Proposal to Conduct Preliminary Hydrogeologic Investigation (Outline, 50% Rough Draft Proposal and Final Proposal).
- Technical Memorandum on Results of the Preliminary Hydrogeologic Investigation (Outline, 50% Rough Draft and Final Memorandum).
- Groundwater Discharge Permit Application for Route 6A Cloverleaf Site (Outline, 50% Rough Draft, and Final Memorandum).
- Groundwater Discharge Permit Application for 223 Beach Road Site (Outline, 50% Rough Draft, and Final Memorandum).
- Technical Memorandum on Updated Downtown Build-Out Analysis and Land Use/Market Conditions and Development Constraints (Outline, 50% Rough Draft, Final Memorandum).
- Technical Memorandum on Downtown Future Growth Scenarios, Strategies to Limit Growth, and Draft Regulations to Obtain Zero Interest Financing (Outline, 50% Rough Draft, Final Memorandum).
- Technical Memorandum on Implications for Wastewater Loading Impacts and Other Community Impacts in the Downtown (Outline, 50% Rough Draft, Final Memorandum).
- Technical Memorandum on Management of Future Downtown Wastewater Flows and Biosolids (Outline, 50% Rough Draft, Final Memorandum).
- Technical Memorandum on Collection System (GS, LPS, VS and possibly STEP/STEG, as appropriate) (Outline, 50% Rough Draft, Final Technical Memorandum).
- Technical Memorandum on Wastewater Treatment, Residuals, Septage Management, Effluent Transmission and Pumping components of the WWTF (Outline, 50% Rough Draft, Final Technical Memorandum).

- Technical Memorandum on Groundwater Disposal (Outline, 50% Rough Draft, Final Technical Memorandum).
- Technical Memorandum on Water Reuse Systems (Outline, 50% Rough Draft, Final Technical Memorandum).
- Technical Memorandum on Updated Capital and O&M cost estimates (Outline, 50% Rough Draft, Final Technical Memorandum).

2. Tri-Town Transition Requirements

The following tasks will be required in support of the decisions of the Board of Selectmen with regard to the disposition of the existing Tri-Town Septage Treatment Facility:

- a. Interim Use Options - Evaluate management and financial options for continued interim use of the facility in the case of extension of the existing groundwater discharge permit by MassDEP being considered to allow time for implementation of the Consensus Plan. Review cost estimates previously prepared by others, update costs, and identify safety related repairs and replacement actions. Prepare technical memorandum summarizing Interim Use Options
- b. Coordination with MassDEP – Coordinate with MassDEP regarding compliance with MassDEP permit, site assignment and other requirements for the project, including possible design and construction of an interim septage transfer station.
- c. Design Criteria for Demolition of the Facility - Should the Board decide to demolish the facility, prepare design criteria for the construction (demolition), environmental safety requirements, material disposal plan, site restoration requirements, cost estimating and other aspects of plant demolition .Conduct workshop on potential procurement options (among the options to be discussed is DB, and DBO if appropriate.)

Deliverables

- Technical Memorandum on Interim Use Option (Outline, 50% Rough Draft, Final Technical Memorandum).
- Technical Memorandum on Potential Cost Savings for Doing Demolition of Existing Facility and Construction of New Facility Together (Outline, 50% Rough Draft, Final Technical Memorandum).
- Technical Memorandum on Demolition of Existing Facility (Outline, 50% Rough Draft, Final Technical Memorandum).
- Materials to be provided for Procurement Workshop (fact sheets, project examples, etc.).
- Technical Memorandum on Procurement Recommendations (Outline, 50% Rough Draft, Final Technical Memorandum).

3. Demonstration Project Design and Implementation

A number of pilot or demonstration projects for non-traditional technologies will be developed in further detail during FY 2016. Effort for each project will include site selection based on key criteria, facilities planning, preliminary easement and/or land acquisition activities, preliminary design tasks for the facilities as well as for the monitoring program, and regulatory review. A work plan for implementation

of the scope of work for each demonstration project will be prepared, including responsible implementation parties and responsibilities, schedule of tasks, budgets, and identification and solicitation of Commission and state grants to supplement funding for each project. The demonstration projects will be prepared for the following technologies: Floating Constructed Wetland, Aquaculture/Shellfish Propagation, and Permeable Reactive Barriers. Certain projects, such as the PRB demonstration projects, will require soils testing, hydrogeologic studies, bench-scale lab testing and other investigations. Experts in various technologies will assist the team in the technical development and implementation of the projects. Monitoring plans for the projects will be prepared as noted.

a. Floating Constructed Wetlands

(1) Characterization of sites identified in Consensus Agreement (five sites).

- Review existing information (ie. water quality, usage, ownership, abutters, access and easement requirements, and benthic conditions).
- Identify siting criteria (ie. conflicts with existing uses, permissibility, aesthetic impacts, current N loads, and ability to be co-located with other NT technology).
- Screen and prioritize sites.
- Prepare technical memorandum summarizing site characteristics, screening, and prioritization.

(2) Preliminary Engineering Design and Work Plan for Preferred Site(s).

- Develop preliminary design of the Floating Constructed Wetlands sites (ie. planting matrix, vegetation, planting schedule, equipment and other supplies, labor resources maintenance, preliminary list of permits and regulatory approvals for the demonstration projects, a projected DEP/CCC agreed upon permitting plan or approach for full scale NT projects, and capital and operation and maintenance cost estimates).
- Develop monitoring program (ie. identify criteria, frequency, seasonality, and resources required).
- Identify potential funding sources including responsible funding source, time of availability and eligibility criteria.
- Prepare Draft Preliminary Engineering Work Plan, including permitting pathway for the demonstration project.

b. Aquaculture/Shellfish Propagation

(1) Characterization of sites identified in Consensus Agreement (five sites).

- Review existing information (ie. Water quality, current usage, land ownership, abutters, access and easement requirements, and benthic conditions).
- Identify screening criteria (ie. conflicts with existing uses, permissibility, aesthetic impacts, current N loads, and ability to be co-located with other non-traditional technologies).
- Screen and prioritize sites.
- Prepare technical memorandum summarizing site characteristics, screening, and prioritization.

(2) Preliminary Engineering Design and Work Plan for Preferred Site(s)

- Develop preliminary design of the Floating Constructed Wetlands sites (ie. planting matrix, vegetation, planting schedule, equipment and other supplies, labor resources, maintenance activities, preliminary list of permits and regulatory approvals for the demonstration projects, a projected DEP/CCC agreed upon permitting plan or approach for full scale NT projects, and capital and operation and maintenance cost estimates).
- Develop monitoring program (ie. identify criteria, frequency, seasonality, and resources required).
- Identify potential funding sources including responsible funding source, time of availability and eligibility criteria.
- Prepare Draft Preliminary Engineering Work Plan.

c. Permeable Reactive Barriers

(1) Site Characterization (up to four sites, one of which is Town Landfill site).

- Review existing information (for example, soils, depth to groundwater, groundwater quality, topography, site ownership, existing uses, access and easement requirements).
- Identify screening criteria (for example, amount of nitrogen reduction required, rate of groundwater flow, groundwater travel time to estuary, location of N concentration if data available (shallow vs deep in aquifer)).
- Identify up to two sites (one with nitrogen concentration shallow in aquifer and one with nitrogen concentration deep in aquifer).
- Screen and rank sites.

- (2) Preliminary Engineering (up to two sites: Town Landfill having nitrogen concentration shallow in aquifer and an additional site with nitrogen concentration at a deeper level).
- Evaluate site access or easement (identify ownership and easement requirements).
 - Prepare Underground Injection Control (UIC) permit application for submittal to MassDEP. Meet with Board of Selectmen to review the plan for UIC and the permit application.
 - Conduct injection test at Town Landfill site and one additional site (ie. identify radius of influent, migration duration, migration extent, and secondary impacts).
 - Develop preliminary design of Permeable Reactive Barriers sites (ie. location and depth of injection wells and monitoring wells, selection of substrate, equipment and other supplies, labor resources, maintenance, preliminary list of permits and regulatory approvals for the demonstration projects, a projected DEP/CCC agreed upon permitting plan or approach for full scale NT projects, and capital and operation and maintenance cost estimates).
 - Develop monitoring program (identify criteria, frequency, seasonality, and resources required).
 - Identify potential funding sources including responsible funding source, time of availability and eligibility criteria.

Deliverables

- Technical Memorandum on Site Characterization for Floating Constructed Wetland (criteria and ranking) (Outline, 50% Rough Draft, and Final Technical Memorandum).
- Preliminary Engineering Work Plan for Floating Constructed Wetland (drawings, preliminary specifications, cost estimates, funding sources, and monitoring plan) (Outline, 50% Rough Draft, Final Work Plan).
- Memo on Site Characterization for Aquaculture/Shellfish Propagation (criteria and ranking) (Outline, 50% Rough Draft, and Final Technical Memorandum).
- Preliminary Engineering Work Plan for Aquaculture/Shellfish Propagation (drawings, preliminary specifications, cost estimates, funding sources, and monitoring plan) (Outline, 50% Rough Draft, Final Work Plan).
- Memo on Site Characterization for Permeable Reactive Barriers (criteria and ranking) (Outline, 50% Rough Draft, and Final Technical Memorandum).
- Preliminary Engineering Work Plan Permeable Reactive Barriers (drawings, preliminary specifications, cost estimates, funding sources, and monitoring plan) (Outline, 50% Rough Draft, Final Work Plan).
- Underground Injection Control (UIC) Permit.

4. Adaptive Management Plan Implementation

The CWMP proposed an adaptive management plan and approval of the CWMP was conditioned (by the DRI Decision of the Cape Cod Commission) on a number of monitoring and reporting activities to allow incorporation of new technical information into the evaluation and decision making process. While adaptive management will be part of the entire wastewater program, there are a number of adaptive management tasks that must be undertaken to support and refine the program as it goes forward, including:

- a. Water Quality Monitoring and Modeling - Water quality monitoring and modeling activities were conducted in the development of the CWMP and have continued over the last 10 years. A substantial amount of data and modeling exists for Pleasant Bay, while less data and modeling exists for Nauset Marsh. An integrated consolidated plan will be prepared to confirm monitoring conducted, adequacy of monitoring data, additional monitoring and modeling data required to support the implementation of the Consensus Plan, identify trends and confirm water quality changes; compliance with water quality standards and support demonstration project studies is critical for successful planning and will be developed by the Consultant in close coordination with the School for Marine Science and Technology (SMAST)
 - (1) Baseline Monitoring - Consolidation of data from a number of on-going programs (including monitoring conducted by the Town) and collection of new data associated with the demonstration projects will be done to define current water quality conditions in ponds and estuaries with respect to nutrients (nitrogen and phosphorus) and other parameters. Reconciliation with MEP "baseline" (and revised baseline conditions) conditions will be done as well. Baselines at new stations may be recommended to supplement the MEP locations.
 - (2) Long Term Waterbody Monitoring – Review and recommend a consolidated long term monitoring program to measure compliance and water quality standards attainment in ponds and estuaries will be required.
 - (3) Non-structural Technology Performance Analysis – Review, analysis and adjustment to the monitoring and implementation of the demonstration projects to measure nutrient removal accomplished by the various technologies as part of the development of a long term implementation of Non-structural Technologies.
 - (4) MEP Study Update Monitoring – Verify the applicability of the consolidation of existing and newly collected data to updating the existing MEP Model.
 - (5) Stormwater and Fertilizer Program Monitoring – The Town has a separate consultant providing required evaluation of stormwater and fertilizer. Any new findings from these studies will be reviewed and incorporated as appropriate into the Adaptive Management Plan.
- b. MEP Study and Report Updates - Coordination with SMAST to plan the update and refinement of the MEP simulation models and conclusions required because of changes in the hydrodynamic features of the estuaries, the need to confirm boundary conditions effects and to reflect more recent information and new baseline conditions.

Deliverables

- Technical Memorandum on consolidation and comparison of water quality data with MEP baseline of existing water quality data (Outline, 50% Rough Draft, Final Memorandum).

- Technical Memorandum on recommendations for long term water quality monitoring (Outline, 50% Rough Draft, Final Memorandum).
- Technical Memorandum on the water quality sampling program for Demonstration Project performance evaluation (Outline, 50% Rough Draft, Final Memorandum).
- Technical Memorandum on the applicability of the consolidation of existing data to updating the existing MEP Model (Outline, 50% Rough Draft, Final Memorandum).
- Technical Memorandum on MEP Model Update co-ordination (Outline, 50% Rough Draft, Final Memorandum).
- Technical Memorandum on Incorporating Findings from the Stormwater and Fertilizer Program Monitoring program, as appropriate (Outline, 50% Rough Draft, Final Memorandum).
- Draft MEP Study and Report Update (Outline, 50% Rough Draft, Final Update).
- Final MEP Study and Report Update. (Outline, 50% Rough Draft, Final Update if needed; if changes between Draft and Final Report Update are minor, all three deliverables may not be warranted).

5. Financial Evaluation

The preliminary financial evaluation completed during FY15 will be reviewed and modified to provide an updated model with greater functionality. The updated model will provide greater definition of revenue generation options, financing options, potential cost impacts on community financial conditions and implication for affordability for different customers/rate payers. It is assumed that the Town will provide the consultant with the latest version of the financial model developed by the Town under an earlier contract for use going forward.

- a. Revenue Generating Options - Continued evaluation of the optimal balance of tax revenue, betterments, connection fees, user fees, other revenue sources (e.g. septage) to generate equitable, value-based user rates.
 - (1) Review/Update Total Revenue Requirement based on updated program capital, operating and management costs.
 - (2) Review and update capital and operating offsets.
 - (3) Review and update capital, operating, renewal and replacement, and debt service reserves.
 - (4) Review and update user charges revenue requirements for the three towns.
 - (5) Run customer rate scenarios for a full range of relevant cost, revenue and financial variables.
 - (6) Develop Revenue Generation Plan showing optimal balance of tax revenue, betterments, connection fees, user fees, other revenue sources (e.g. septage) to generate equitable, value-based user rates.
- b. Financing Options - Evaluation of MassDEP SRF program and other financing options.

- (1) Review and update long- and short-term financing sources and terms
 - (2) Review and update capital outlay assumptions.
 - (3) Review and update reserve financing assumptions (O&M, Capital, Debt, Operating),
 - (4) Develop/refine financing option plan.
- c. Program Cost Impact Assessment - Continued financial evaluation of changes in program capital and operating cost estimates and potential impact on rates and revenues by user class (commercial, residential (sewered and on-site)). Determine how cost changes affect program affordability.
- (1) Run Program Cost Impact Assessments.
 - (2) Run Revenue Scenarios.
 - (3) Compile Revenue Proof.
 - (4) Review/Update/Enhance affordability model functionality.
 - (5) Run affordability scenarios (use EPA wastewater planning methodology as updated by EPA Integrated Planning Policy and Guidance).
 - (6) Refine Cost Impact Assessments.
- d. Public Private Partnership Options – Identify and, develop financial methods for evaluation and implementation of public private financing options including DBO and DBOF options for a WWTF at the current site of the Tri-Town Plant.
- (1) Conduct workshop with Board of Selectmen and others regarding P3 opportunities.
 - (2) Identify and evaluate potential private partners and investors (commercial). Use the financial model to run up to three scenarios for P3 options, estimating the overall cost-savings of each option.
 - (3) Determine viability of further evaluation of P3 as funding/financing source/establishments/developers.
 - (4) Prepare Technical Memorandum summarizing options, overall cost-implications, advantages and disadvantages for public-private financing options.
 - (5) Integrate P3 options into the recommended Financing Plan.
 - (6) As requested by the Town, evaluate for engineering, cost, financial, constructability or regulatory feasibility, plans developed by others for a separate, privately-permitted and constructed WWTF to serve the Downtown or Meetinghouse Pond areas.

Deliverables

- Technical Memorandum on Revenue Generating Options and Revenue Generating Plan (Outline, 50% Rough Draft, Final Memorandum).

- Technical Memorandum of Evaluation of SRF and other Financing Options. Development/Refinement of Financing Option Plan (Outline, 50% Rough Draft, Final Memorandum).
- Financial Model Update, to be adaptable in the future and allow for modification of assessments by the Town and its consultants).
- Technical Memorandum on Program Cost Impact Assessment and Affordability.
- Technical Memorandum Summarizing P3 Options and Revenue Impact.
- Meeting and presentation to the Orleans BOS

6. Regulatory Review and Coordination

While the Amended CWMP will not require formal MassDEP or MEPA review and approval in FY2016, the following coordination will be required:

- a. Cape Cod Commission- Continued coordination with the Commission will entail:
 - (1) Review and concurrence with the nitrogen reduction assumptions of the revised plan.
 - (2) Agreement on the DRI conditions that continue to comply with the revised plan and plans for compliance with those provisions.
 - (3) Review and concurrence with work plans for and design of demonstration projects that will be undertaken in 2016.
 - (4) Coordination of financial analyses and coordination with financial and funding support for plant implementation.
 - (5) Coordination to define Cape Cod Commission and MEPA requirements for the Amended CWMP when it is ready for submission for formal review, and to reflect those requirements in task work plans during FY 2016.
- b. MassDEP - Coordination with MassDEP.
 - (1) Coordination of informal, but detailed, review of the revised CWMP to attain compliance with MassDEP regulations, design standards, TMDL requirements and other factors.
 - (2) Coordination of pilot and demonstration projects to develop design and implementation in compliance with MassDEP requirements as they are developed for non-traditional technologies.
- c. Meet with MassDEP to review status of Rock Harbor Creek and DEP status with regard to water quality conditions and UAA. Prepare technical memorandum summarizing the meeting discussion. Other Agencies - Coordination with DMF, Natural Heritage, the Orleans Conservation Commission, Barnstable County Health Department, the Orleans Health department, the Department of Transportation and other agencies, as required for traditional and non-traditional projects.

Deliverables

- Technical Memorandum Summarizing Compliance Requirements to meet Cape Cod Commission Approval (Outline, 50% Rough Draft, Final Technical Memorandum).
- Technical Memorandum Summarizing MassDEP Compliance Requirements (for each of the demonstration projects as well as potential treatment, disposal or reuse) (Outline, 50% Rough Draft, Final Technical Memorandum).
- Technical Memorandum summarizing Meeting with MassDEP on status of Rock Harbor Creek water quality and potential UAA.
- Technical Memorandum Summarizing MassDEP and CCC Comments on the Draft CWMP (Outline, 50% Rough Draft, Final Technical Memorandum).
- Technical Memorandum on Compliance Requirements of the various agencies (Outline, 50% Rough Draft, Final Technical Memorandum).

7. Preparation of the Amended CWMP

- a. Prepare draft amended CWMP for the Town's review and comment. Meet with the Town to discuss and resolve any issues raised during review of the draft amended CWMP. Amend the CWMP to include the conceptual and preliminary design required to advance the traditional and non-traditional projects.
- b. Prepare Final Amended CWMP for submission to the Cape Cod Commission, MassDEP and MEPA for review and approval.

Deliverables

- Draft Amended CWMP with Relevant Appendices (Outline, 50% Rough Draft, Final Draft Amended CWMP).
- Response Summary to Issues and/or Questions.
- Final Amended CWMP with Relevant Appendices (Outline, 50% Rough Draft, Final Amended CWMP).
- Meeting and presentation to the Orleans BOS