

DESIGN ENGINEERING SERVICES AGREEMENT

This Design Engineering Services Agreement ("Agreement") effective this October 15, 2015, is by and between Town of Orleans, Massachusetts, a ("Client"), and AECOM Technical Services, Inc., a California corporation, ("AECOM"); each also referred to individually as ("Party") and collectively as ("Parties").

In consideration of the mutual covenants and promises contained herein, the Parties agree as follows:

1. SCOPE OF SERVICES

1.1 AECOM shall perform the services set forth in **EXHIBIT A** ("Services"), incorporated herein by reference.

1.2 AECOM will provide the work products ("Deliverables") in accordance with the schedule ("Project Schedule"), if applicable, as set forth in **EXHIBIT A**.

2. **TERM OF AGREEMENT** Upon execution by the Parties, this Agreement shall have the effective date set forth above. This Agreement shall remain in force until all obligations related to the Services, other than those obligations which survive termination of this Agreement under Article 22, have been fulfilled, unless this Agreement is sooner terminated as set forth herein.

3. **COMPENSATION AND PAYMENT** AECOM shall be paid for the performance of the Services in accordance with **EXHIBIT B** ("Compensation and Payment"), incorporated herein by reference.

4. **NOTICE** All notices, requests, claims, demands and other official communications herein shall be in writing. Such notices shall be given (i) by delivery in person, (ii) by a nationally recognized commercial courier service; or (iii) by United States Postal Service, registered mail, postage prepaid and return receipt requested. Notices shall be effective upon actual delivery to the other Party at the following addresses:

TO CLIENT:

Town of Orleans, MA

19 School Road, Orleans, MA 02653
Attn: John Kelly, Town Administrator

TO AECOM:

9 Jonathan Bourne Road,

Pocasset, MA 02559

Attn: Tom Parece, Project Manager

Claims-related notices shall be copied to:
Chief Counsel, Americas Design and Consulting Services
515 South Flower Street, Suite 1050
Los Angeles, CA 90071

or to which address the receiving Party may from time to time give notice to the other Party. Rejection or other refusal to accept, or the inability to deliver because of changed address for which no notice was given, shall be deemed to be receipt of the notice as of the date of such rejection, refusal to accept, or inability to deliver.

5. AECOM'S RESPONSIBILITIES

5.1 AECOM shall perform the Services in accordance with the degree of professional skill, quality and care ordinarily exercised by members of the same profession currently practicing in the same location under comparable circumstances and as expeditiously as is consistent with professional skill and the orderly progress of the Project. The full extent of AECOM's responsibility with respect to the Services shall be to perform in accordance with the above standards and to remedy any material deficiencies or defects in the Deliverables at AECOM's own expense, provided that AECOM is notified by Client, in writing, of any such deficiency or defect within a reasonable period after discovery thereof, but in no event later than 90 days after AECOM's completion or termination of the Services. AECOM MAKES NO OTHER REPRESENTATIONS OR WARRANTIES, EXPRESS OR IMPLIED, INCLUDING ANY IMPLIED WARRANTIES OF FITNESS FOR A PARTICULAR PURPOSE, MERCHANTABILITY, INFORMATIONAL CONTENT OR OTHERWISE.

5.2 AECOM will endeavor in good faith, as needed, to obtain from the appropriate authorities their interpretation of applicable codes and standards and will apply its professional judgment in interpreting the codes and standards as they apply to the Project at the time of performance of the Services. Notwithstanding the above, the Parties agree that, as the Project progresses, such codes or standards may change or the applicability of such codes or standards may vary from AECOM's original interpretation through no fault of AECOM and that additional costs necessary to conform to such changes or interpretations during or after execution of the Services will be subject to an equitable adjustment in the Compensation and Project Schedule.

5.3 AECOM shall be responsible for its performance and that of AECOM's lower-tier subconsultants and vendors. However, AECOM shall not be responsible for health or safety programs or precautions related to Client's activities or operations or those of Client's other contractors and consultants or their respective subcontractors and vendors ("Contractors"). AECOM shall have no responsibility for (i) construction means, methods, techniques, sequences or procedures; (ii) for the direction of Contractors' personnel; (iii) selection of construction equipment; (iv) coordination of Contractors' work; (v) for placing into operation any plant or equipment; or (vi) for Contractors' failure to perform the work in accordance with any applicable construction contract. AECOM shall not be responsible for Client's pre-existing site conditions or the aggravation of those preexisting site conditions to the extent not caused by the negligence or willful misconduct of AECOM. AECOM shall not be responsible for inspecting, observing, reporting or correcting health or safety conditions or deficiencies of Client, Contractors or others at project site ("Project Site") other than AECOM's employees, subconsultants and vendors. So as not to discourage AECOM from voluntarily addressing health or safety issues while at the Project Site, in the event AECOM does identify such issues by making observations, reports, suggestions or otherwise, AECOM shall have no authority to direct the actions of others not under AECOM's responsibility and control and shall have no liability, responsibility, or affirmative duty arising on account of AECOM's actions or forbearance.

5.4 Notwithstanding anything contained in this Agreement, AECOM shall have no responsibility for the discovery, presence, handling, removal, transportation, storage or disposal of, or exposure of persons to hazardous materials in any form related to the Project.

5.5 AECOM shall bear no responsibility for the construction work to be performed ("Work"), including without limitation, (i) the construction means, methods, techniques, sequences, or procedures; (ii) the direction of construction personnel; (iii) selection of construction equipment; (iv) the allocation of space where the Work is being performed ("Project Site"); (v) placing into operation any plant or equipment; or (vi) quality control of the Work. In addition, AECOM shall not be responsible for and shall have no authority to exercise any control over Owner's employees, contractors, consultant and vendors, or their respective officers, directors, employees, representatives, lower-tier subcontractors, agents or invitees ("Construction Team").

5.6 AECOM shall not be responsible for construction observation or for reporting or correcting health or safety conditions or deficiencies relating to the Work or for the conditions at the Project Site. However, so as not to discourage AECOM from voluntarily addressing health or safety issues while at the Project Site, in the event AECOM does observe potential health or safety issues, AECOM may bring such health and safety issues to the attention of Owner and, where appropriate, may bring such observations to the attention of the Construction Team. In the event that AECOM makes such observations, reports, suggestions or otherwise brings attention to the potential health and safety issue, AECOM shall have no authority to stop the performance of the Work and shall bear no liability or assume any affirmative duty relating to such health and safety issue.

5.7 In the event that the Services include construction observation or similar field services, AECOM's responsibility shall be limited to determining general conformance with AECOM's design. Visits by AECOM to the Project Site and observations made by AECOM shall not relieve the Construction Team of its obligation to conduct comprehensive inspections of the Work sufficient to ensure conformance with the intent of the construction contract documents, and shall not relieve the Construction Team of its responsibility for means, methods, techniques, sequences and procedures necessary for coordinating and completing all portions of the Work and for all safety precautions incidental thereto.

5.8 Any opinions of probable construction costs provided by AECOM represent AECOM's good faith professional judgment in light of its experience, knowledge and the information reasonably available to AECOM at the time of preparation of the opinion. However, since AECOM has no control over the market, economic conditions or the bidding procedures, AECOM, its directors, officers and employees and subconsultants do not make any guarantees or warranties whatsoever, whether express or implied, with respect to such opinions and accept no responsibility for any loss or damage arising therefrom or in any way related thereto. Third parties relying on such opinions do so at their own sole risk.

6. CLIENT'S RESPONSIBILITIES

6.1 Client shall provide in writing any specific Client requirements or criteria for the Project.

6.2 Client shall furnish to AECOM all information and technical data in Client's possession or control reasonably required for the proper performance of the Services. AECOM shall be entitled to reasonably rely without independent verification upon the information and data provided by Client or obtained from generally accepted sources within the industry, except to the extent such verification by AECOM is expressly required as a defined part of the Services.

6.3 Client shall arrange for access and make all provisions necessary for AECOM to enter upon public and/or private property as required for AECOM to properly perform the Services. Client shall disclose to AECOM any known or suspected hazards at the Project Site which may pose a threat to human health, property or the environment.

6.4 If any document or inquiry requires Client to approve, comment, or to provide any decision or direction with regard to the Services, such approval, comment, decision or direction shall be provided within a reasonable time within the context of the Project Schedule, or if not identified in the Project Schedule, within a reasonable time to facilitate the timely performance of the Services.

7. INDEPENDENT CONTRACTOR Nothing contained in this Agreement shall be construed to create a partnership, joint venture, or create a relationship of employer/employee or principal/agent between Client or Client's Contractors and AECOM.

8. CONFIDENTIALITY

8.1 AECOM shall treat as confidential information and data delivered to it by Client or developed in the performance of the Services that are specified in writing by Client to be confidential ("Confidential Information"). Confidential Information shall not be reproduced, transmitted, disclosed or used by AECOM without the consent of Client, except in the proper performance of the Services, for a period of 5 years following completion or termination of this Agreement.

8.2 Notwithstanding the above, these restrictions shall not apply to Confidential Information which (i) is already known to AECOM at the time of its disclosure; (ii) becomes publicly known through no wrongful act or omission of AECOM; (iii) is communicated to a third party with the express written consent of Client and not subject to restrictions on further use or disclosure; (iv) is independently developed by AECOM; or, (v) to the extent such Confidential Information is required by Law to be disclosed to any governmental agency or authority; provided that before making such disclosure, AECOM shall promptly provide Client with written notice of such requirement and a reasonable opportunity for Client to object to the disclosure or to take action at Client deems appropriate to maintain the confidentiality of the Confidential Information.

8.3 Upon termination of this Agreement or upon Client's written request, AECOM shall return the Confidential Information to Client or destroy the Confidential Information in AECOM's possession or control. Notwithstanding the above, AECOM shall be entitled to retain a copy of such Confidential Information relating to the Services or this Agreement for its archives, subject to AECOM's continued compliance with this Article 8.

9. DATA RIGHTS

9.1 All Deliverables set forth in **Exhibit A** shall become the property of Client upon proper payment for the Services. AECOM shall bear no liability or responsibility for Deliverables that have been modified post-delivery or used for a purpose other than that for which it was prepared under this Agreement.

9.2 Notwithstanding Section 9.1 above, AECOM's proprietary information, including without limitation, work papers, drawings, specifications, processes, procedures, software, interim or draft documents, methodologies, know-how, software and other instruments of service belonging to or licensed by AECOM and used to develop the Work Product ("AECOM Data"), shall remain the sole property of AECOM. To the extent the Deliverables contain or require the use of AECOM Data, AECOM hereby grants to Client, upon proper payment for the Services, a non-exclusive, non-transferable and royalty-free license to use such AECOM Data solely for the purposes for which the Deliverables were developed.

9.3 Nothing in this Article shall be construed to prohibit AECOM from using skills, knowledge or experience gained by AECOM in the performance of the Services for other purposes, provided that AECOM does not use Client's Confidential Information.

10. **RECORD DRAWINGS** Owner shall direct the Construction Team to provide AECOM with updated red-line documentation which accurately and completely reflects any changes between the original design and the final construction. Record drawings to be delivered by AECOM to Owner as a part of the Services ("Record Drawings") reflect the design provided by AECOM as modified by such updated information. Consistent with AECOM's defined Services, AECOM shall not have an obligation to independently validate such information related to the actual construction. AECOM makes no warranty or guarantee with regard to the accuracy or completeness of the information provided by the Construction Team and third parties and shall bear no responsibility for any errors or omissions arising from or related to any defects or deficiencies in such information.

11. ELECTRONIC FILES

11.1 Electronic files to be delivered under this Agreement contain information to be used for the production of contract documents for the Project and are provided solely as an accommodation to Owner. The official Contract Documents of Record ("Contract Documents") are those documents produced by AECOM which bear seals and/or signatures. Unless otherwise expressly set forth in the Services, the electronic files delivered under this Agreement are not Contract Documents.

11.2 The electronic files were created to supplement the official Contract Documents. Due to the possibility that files of this nature can be modified, either unintentionally or otherwise; or that the information contained in these files can be used in a manner for which they were not originally intended; or that electronic data may be corrupted by electronic transmission, AECOM makes no representation that the files,

after delivery, will remain an accurate representation of the source data in AECOM's possession, or are suitable for any other purpose or use.

11.3 All indications of AECOM's and AECOM's subconsultants' involvement, including but not limited to seals and signatures, shall be removed from each electronic display and shall not be included in any prints produced therefrom.

11.4 Owner understands and agrees that the right to use the electronic files provided under this Agreement is specifically limited to the Project and is conditioned upon proper payment for such use.

11.5 If a third-party license is required to access or use electronic files, Owner acknowledges its responsibility at its own expense to obtain all applicable hardware and software needed to legally access the electronic files.

12. CERTIFICATION

12.1 For purposes of this Agreement, "certification" means to state or declare a professional opinion based on the standard of performance set forth in Section 5.1 above.

12.2 AECOM shall not be required to execute certificates that would (i) result in AECOM having to certify, guarantee or warrant the existence of conditions whose existence AECOM cannot reasonably ascertain under the existing Services; (ii) require knowledge, services or responsibilities beyond the Services; or (iii) may, in AECOM's reasonable judgment, require AECOM to make a certification that would not normally be covered by AECOM's professional or other liability insurance. In addition, Owner agrees not to make resolution of any dispute with AECOM or payment of any amount due to AECOM in any way contingent upon AECOM executing such certificates.

12.3 A professional's certification in no way relieves other parties from meeting their respective requirements imposed by contract or other means, including commonly accepted industry standards and practices. If required as a part of its Services, AECOM will provide a written report stating whether, in AECOM's professional opinion and based on periodic site visits, the construction work complies generally with the Contract Documents.

13. CHANGED SITE CONDITIONS - The unexpected discovery of hazardous materials, hazardous wastes, pollutants, contaminants or concealed obstructions or utilities that could not reasonably have been anticipated from information reasonably available to AECOM may constitute a changed site condition. To the extent that such changed site condition materially increases the health and safety risks associated with the Services or requires AECOM to perform services materially different or materially in excess from those set forth in the Services, AECOM may, at its sole discretion, elect to suspend and/or terminate the related Services and shall be paid for the related Services up through the date of such termination. To the extent that the changed site conditions materially impact the cost, level of effort or schedule of the Services, an equitable adjustment shall be made to the Services.

14. MATERIALS AND SAMPLES - Any items, substances, materials or samples removed from the site for testing, analysis, or other evaluation will be returned to the Project Site unless otherwise agreed to by the Parties in writing. Owner recognizes and agrees that AECOM is acting as a bailee and at no time assumes title to said items, substances, materials or samples.

15. COMPLIANCE The Parties shall comply with applicable treaties, compacts, statutes, ordinances, codes, regulations, consent decrees, orders, judgments, rules, and other requirements of governmental or judicial entities that have jurisdiction over the Services ("Law").

16. FORCE MAJEURE Neither Party shall be responsible for a delay in its respective performance under this Agreement, other than a delay in payment for Services already performed, if such delay is caused by extraordinary weather conditions or other natural catastrophes, war, terrorist attacks, sabotage, computer viruses, riots, strikes, lockouts or other industrial disturbances, acts of governmental agencies or authorities, discovery of Hazardous Materials or differing and unforeseeable site conditions, or other

events beyond the reasonable control of the claiming Party. AECOM shall be entitled to an equitable adjustment to the Project Schedule in the foregoing circumstances.

17. INSURANCE

17.1 AECOM will maintain the following insurance coverages and amounts:

- 17.1.1 Workers Compensation insurance as required by Law;
- 17.1.2 Employer's Liability insurance with coverage of \$1,000,000 each accident/employee.
- 17.1.3 Commercial General Liability insurance with coverage of \$2,000,000 per occurrence/aggregate;
- 17.1.4 Automobile Liability insurance with coverage of \$1,000,000 combined single limit; and
- 17.1.5 Professional Liability insurance with coverage of \$2,000,000 per claim/aggregate.

18. INDEMNITY

18.1 AECOM agrees to indemnify Client, its officers, directors and employees, from loss or damage for bodily injury or property damage ("Claims"), to the extent caused by AECOM's negligence or willful misconduct.

18.2 If the Services include AECOM's performance during the construction phase of the Project, Client shall require Client's Contractors working on the Project Site to include AECOM, its directors, officers and employees in any indemnity that the Contractors are required to provide to Client relating to their work.

19. CONSEQUENTIAL DAMAGES WAIVER IN NO EVENT SHALL EITHER PARTY, THEIR PARENTS, AFFILIATES, SUBSIDIARIES OR THEIR RESPECTIVE DIRECTORS, OFFICERS OR EMPLOYEES BE LIABLE TO THE OTHER FOR ANY INDIRECT, INCIDENTAL, SPECIAL, CONSEQUENTIAL OR PUNITIVE DAMAGES WHATSOEVER (INCLUDING, WITHOUT LIMITATION, LOST PROFITS, LOSS OF REVENUE, LOSS OF USE OR INTERRUPTION OF BUSINESS) ARISING OUT OF OR RELATED TO THIS AGREEMENT, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

20. RISK ALLOCATION AND RESTRICTION OF REMEDIES THE PARTIES HAVE EVALUATED THE RESPECTIVE RISKS AND REMEDIES UNDER THIS AGREEMENT AND AGREE TO ALLOCATE THE RISKS AND RESTRICT THE REMEDIES TO REFLECT THAT EVALUATION. CLIENT AGREES TO RESTRICT ITS REMEDIES UNDER THIS AGREEMENT AGAINST AECOM, ITS PARENTS, AFFILIATES AND SUBSIDIARIES, AND THEIR RESPECTIVE DIRECTORS, OFFICERS, SHAREHOLDERS AND EMPLOYEES, ("AECOM COVERED PARTIES"), SO THAT THE TOTAL AGGREGATE LIABILITY OF THE AECOM COVERED PARTIES SHALL NOT EXCEED THE ACTUAL PAID COMPENSATION FOR THE SERVICES. THIS RESTRICTION OF REMEDIES SHALL APPLY TO ALL SUITS, CLAIMS, ACTIONS, LOSSES, COSTS (INCLUDING ATTORNEY FEES) AND DAMAGES OF ANY NATURE ARISING FROM OR RELATED TO THIS AGREEMENT WITHOUT REGARD TO THE LEGAL THEORY UNDER WHICH SUCH LIABILITY IS IMPOSED. CLAIMS MUST BE BROUGHT WITHIN ONE CALENDAR YEAR FROM PERFORMANCE OF THE SERVICES UNLESS A LONGER PERIOD IS REQUIRED BY LAW.

21. DISPUTES RESOLUTION

21.1 Either Party may initiate a dispute resolution by providing written notice to the other Party setting forth the subject of the claim, dispute or controversy ("Claim") and the requested relief. The recipient of such notice shall respond within 5 business days with a written statement of its position and a recommended solution to the Claim.

21.2 If the Parties cannot resolve the dispute through negotiation, either Party may refer the Claim to a panel ("Panel") consisting of a designated senior representative from each Party ("Representative"), who shall have the authority to resolve such Claim. The Representatives shall not have been directly involved in the Services and shall negotiate in good faith. No written or verbal representation made by either Party in the course of any panel proceeding or other settlement negotiations shall be deemed to be a party admission. If the representatives are unable to resolve the dispute within 3 weeks, either Party may pursue its respective legal and equitable remedies.

21.3 Owner shall make no Claim for professional negligence, either directly or in a third-party claim, against AECOM unless Owner has first provided AECOM with a written certification executed by an independent design professional currently practicing in the same discipline as the Services and licensed in the state in which the Project is located. This certification shall (i) contain the name and license number of the certifier; (ii) specify each and every act or omission that the certifier contends is a violation of the standard of care set forth in Article 5; and (iii) states in detail the basis for the certifier's opinion that each such alleged act or omission constitutes a violation of Article 5 of this Agreement.

22. GOVERNING LAW This Agreement shall be governed by and interpreted under the laws of the State of California, excluding the conflict of law provisions.

23. TERMINATION

23.1 This Agreement may be terminated for convenience by either Party upon 30 days advance written notice. On termination, AECOM will be paid for all Services performed up through the termination date.

23.2 This Agreement may be terminated for cause by the non-defaulting Party if the defaulting Party fails substantially to perform its obligations under this Agreement and does not commence correction of such non-performance within 5 business days of receipt of written notice and then diligently complete such correction thereafter. The respective rights and obligations of the Parties predating such termination shall survive termination of this Agreement.

24. ASSIGNMENT

24.1 Neither Party may assign this Agreement without the written consent of the other Party.

24.2 Notwithstanding Section 24.1 above, the Parties recognize that AECOM has affiliated companies who have specialize expertise, necessary certifications/registrations or other capabilities that may make use of such affiliates more suitable for the performance of all or part of the Services. AECOM shall be entitled without additional consent to assign this Agreement or performance of the Services, in whole or in part, to any of AECOM's subsidiaries or affiliates upon written notice to Client; provided, however, that AECOM shall remain liable for the performance, obligations and responsibilities of such Affiliates under this Agreement.

25. PARTIES IN INTEREST Nothing in this Agreement, expressed or implied, is intended to confer on any person or entity other than the Parties any right or remedy under or by reason of this Agreement. The provisions of this Agreement shall bind and inure solely to the benefit of the Parties and their respective successors and permitted assigns.

26. WAIVER Either Party may in writing waive any provisions of this Agreement to the extent such provision is for the benefit of the waiving Party. No waiver by any Party of a breach of any provision of this Agreement shall be construed to be a waiver of any subsequent or different breach.

27. SEVERABILITY AND SURVIVAL The invalidity or unenforceability of any particular provision of this Agreement shall not affect the other provisions, and this Agreement shall be construed in all respects as if any invalid or unenforceable provision were omitted. Articles 4 (Notice), 5 (AECOM's Responsibilities), 6.2 (Reliance on Data), 8 (Confidentiality), 9 (Data Rights), 10 (Record Drawings), 11 (Electronic Records), 12 (Certifications), 14 (Materials and Samples), 17 (Insurance), 18 (Indemnity), 19

(Consequential Damages Waiver), 20 (Risk Allocation), 21 (Disputes Resolution), 22 (Governing Law), 24 (Assignment), 25 (Parties in Interest) and 27 (Survival) shall survive termination of this Agreement.

28. PREPARATION OF AGREEMENT Each Party has had the opportunity to avail itself of legal advice and counsel. Neither Party shall be deemed to be the drafter or author of this Agreement. In the event this Agreement is subject to interpretation or construction by a court of law or panel of arbitration, such court or panel shall not construe this Agreement, or any portion hereof, against either Party as the drafter of this Agreement.

29. SIGNATURES Each person executing this Agreement warrants that he/she has the necessary authority to do so on behalf of the respective Party. This Agreement may be executed in one or more counterparts, each of which shall be deemed an original, but all of which together shall constitute a single agreement.

30. ORDER OF PRECEDENCE

| | |
|--------------------------------------|------------------------------|
| EXHIBIT C | Change Orders |
| Consulting Services Agreement | Article 31 |
| Consulting Services Agreement | Articles 1 through 30 and 32 |
| EXHIBIT B | Compensation and Payment |
| EXHIBIT A | Services |
| Other contract documents | |

31. SPECIAL TERMS AND CONDITIONS: The following changes are made in Terms 1-30 of this Agreement

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|---|
| <i>Article 5.1 delete 90 days and replace with 365 days.</i> |
| <i>Article 17.1.5 added text: With the exception of coverage required under 17.1.1 and 17.1.5, Town of Orleans shall be named an additional insured on all policies of insurance.</i> |
| <i>Article 20 - Delete</i> |
| <i>Article 21.3 - Delete</i> |
| <i>Article 22 delete text: "State of California, excluding the conflict of law provisions" and replaced with "Commonwealth of Massachusetts".</i> |
| <i>Article 23.2 delete text: "5 business days" and replaced with "10 business days"</i> |

32. ENTIRE AGREEMENT This Agreement contains all of the promises, representations and understandings of the Parties and supersedes any previous understandings, commitments, proposals or agreements, whether oral or written. This Agreement shall not be altered, changed, or amended except as set forth in a written amendment to this Agreement, duly executed by both Parties. The attached **EXHIBIT C** ("Change Order"), incorporated herein by reference, is the preferred form for such use.

AECOM Technical Services, Inc.

CLIENT: Town of Orleans, MA

Betsy Shreve-Gibb
Signature

John F. Kelly
Signature

Betsy Shreve-Gibb
Printed Name

John Kelly
Printed Name

Vice President
Printed Title

Town Administrator
Printed Title

Address
250 Apollo Road
Chelmsford, MA 01824

Address
19 School Road
Orleans, MA 02653

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TOWN ACCOUNTANT'S CERTIFICATE

I hereby certify that an appropriation in the amount of this contract is available therefore and that the undersigned official of the Town has been authorized to execute said contract and approve all requisitions and change orders.

David Williams 10/20/15
Town Accountant

EXHIBIT A**SERVICES**Services:

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|---|
| Scope of Services attached (Attachment 1 to Exhibit A- Scope of Services) |
| |
| |

Schedule:

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|--|
| Project Schedule attached (Attachment 2 to Exhibit A). |
| Detailed milestone schedule linked to payment (Attachment 1 to Exhibit B) is also being prepared and will be provided to the Town. |

Deliverables:

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| Deliverables are noted in the Scope of Services attached (Attachment 1 to Exhibit A- Scope of Services). |
| |
| |

AECOM Project Manager

| | |
|---------------|----------------------|
| Name | Tom Parece, PE |
| Title | Project Manager |
| Phone Number | 978 905 2354 |
| Email Address | tom.parece@aecom.com |

Client Project Manager

| | |
|---------------|--|
| Name | George Meservey |
| Title | Director of Planning and Community Development |
| Phone Number | 508-240-3700 (Ext. 335) |
| Email Address | gmeservey@town.orleans.ma.us |

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2.3 ANNUAL HOURLY LABOR RATE ADJUSTMENTS The Labor costs to remain constant through completion of FY16. Labor cost of Services authorized in subsequent fiscal years will be based on the applicable Hourly Labor Rate Schedule for those years.

3. REIMBURSEABLE EXPENSES Reimbursable expenses are expenditures made by AECOM for goods, travel expenses and vendor services in support of the performance of the Services. Such expenditures will be billed at the actual cost to AECOM plus ten percent (10%) to cover related administrative costs.

4. CHANGE ORDERS The Parties may at any time and by written agreement make changes in the Services, Project Schedule, Deliverables, Compensation or other terms and conditions in this Agreement. The Parties shall effect such change through the use of a written Change Order. **EXHIBIT C** is the preferred form for such use.

5. DELAY To the extent not the fault of AECOM, if the Project Schedule is extended or delayed, or if the orderly and continuous progress of the Services is impaired, then an equitable adjustment shall be made to this Agreement.

6. INVOICING AECOM will invoice Client on a monthly basis unless otherwise set forth herein. If Client disagrees with any portion of an invoice, it shall notify AECOM in writing of the amount in dispute and the specific reason for Client's objection within 30 days of receipt of invoice. Client shall pay the undisputed portion of the invoice as set forth below. Documentation supporting the invoice will be made available upon request.

7. PAYMENT

7.1 If payment is based on Time and Materials with a NTE, once AECOM reaches the NTE, AECOM will stop further Services pending a Change Order to adjust the budget and schedule for the continued performance of the Services.

7.2 Timely payment is a material term of this Agreement. Client shall pay all undisputed portions of AECOM's invoices within 30 days of receipt without holdback or retention. AECOM may suspend the Services pending receipt of such payment for amounts remaining unpaid 30 days. In addition, AECOM retains its unrestricted rights under Article 18 (Termination) of the Agreement.

7.3 If the Project is suspended by Client for more than 120 days, AECOM shall be paid for all Services performed prior to the effective date of suspension within 120 days of such suspension. Upon resumption of the Project, AECOM shall be entitled to an equitable adjustment in cost and schedule to compensate AECOM for expenses incurred as a result of the interruption and resumption of the Services.

7.4 Except as otherwise specifically provided herein, Client shall pay or reimburse AECOM, as appropriate, for all categories of taxes other than income tax, including without limitation, sales, consumer, use, value added, gross receipts, privilege, and local license taxes related to the Services.

7.5 Client shall make payments to AECOM using one of the following methods:

7.5.1 AECOM LOCKBOX:

AECOM Technical Services, Inc.
1178 Paysphere Circle
Chicago, IL 60674

7.5.2 ELECTRONIC FUNDS TRANSFER/ACH PAYMENT:

Account Name: AECOM Technical Services, Inc.
Bank Name: Bank of America
Address1: Building D
Address2: 2000 Clayton Road
City/State/Zip: Concord, CA 94520-2425
Account Number: 5800937020
ABA Routing Number: 071000039

7.5.3 WIRE TRANSFER:

Account Name: AECOM Technical Services, Inc.
Bank Name: Bank of America
Address: 100 West 33rd St
City/State/Zip: New York, NY 10001
Account Number: 5800937020
ABA Routing Number: 026009593
SWIFT Code: BOFAUS3N

7.5.4 Questions related to payment can be sent to:

AECOM Cash Applications Supervisor by phone at (804) 515-8490 or by email at cashappsremittance@aecom.com

(End of page)

AECOM Project Name: _____
AECOM Project No.: _____
Change Order No.: _____

EXHIBIT C

CHANGE ORDER FORM

In accordance with the Design Engineering Services Agreement dated *Insert the effective date of the Agreement*, 20____ between *Insert the name of the Client's legal entity* _____ ("Client"), and AECOM Technical Services, Inc. is listed because it is the primary AECOM legal entity used within the USA. However, a different AECOM legal entity may be required in certain states to meet registration requirements. Check with the Legal team to confirm the applicable AECOM legal entity. If a different AECOM legal entity is used, you need to replace AECOM Technical Services, Inc. with that other AECOM legal entity here, on the signature page, and in any Change Orders. AECOM Technical Services, Inc., a California corporation, ("AECOM"), this Change Order, with an effective date of _____, 20____ modifies that Agreement _____ as follows:

1. Changes to the Services:

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2. Change to Deliverables:

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3. Change in Project Schedule (attach schedule if appropriate):

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4. Change in Consultant's Compensation:

The Services set forth in this Change Order will be performed on the following basis:

CHOOSE ONE OF THE FOLLOWING TYPES OF COMPENSATION BY MARKING THE APPROPRIATE []

No change to Compensation

Time & Material (See **Exhibit B** for the Hourly Labor Rate Schedule)

Time and Materials with a Not- to-Exceed amount of (\$ *Numerical Amount*). The Hourly Labor Rate Schedule is set forth in **EXHIBIT B** (if applicable). Reimbursable expenses are included in the overall Not to Exceed cap.

Lump Sum [*\$ Numerical Amount*]

| Milestone/Deliverable & Date | Payment Amount |
|------------------------------|----------------|
| | \$ |

Cost Plus Fixed Fee: [Cost \$ *Numerical Amount* and Fee \$ *Numerical Amount*]

Therefore, the total authorized Compensation, inclusive of the Change Order is \$ *Numerical Amount*.

5. **Project Impact:** *Insert any anticipated additional impact of the Change on the Project in addition to the direct changes in the cost, schedule or scope contained in the Change Order (e.g., the Change will cause other activities to be delayed; Change will require re-sequencing of the other work on the Project; etc.). If there is no additional impact, insert "NONE".*

6. **Other Changes** (including terms and conditions): *Changes to the terms and conditions of this Agreement require Contract Reviewer/Analyst's approval. If there are no changes, insert "NONE" in the box below.*

7. All other terms and conditions of the Agreement remain unchanged.
8. Each Party represents that the person executing this Change Order has the necessary legal authority to do so on behalf of the respective Party.

AECOM Technical Services, Inc.

Insert Client Legal Name

Signature

Signature

Printed Name

Printed Name

Printed Title

Printed Title

Address

Address

[End of Agreement]

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, acreage of water body available, current usage (type and location), land ownership, abutters, access and easement requirements, and benthic conditions).
- Identify screening criteria (ie. Adequacy of acreage, 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 Aquaculture/Shellfish Propagation site(s) (ie. Location within water body, species, number of seed batches, anchor system (if applicable), seeding 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

Task No. 1 - Facilities Engineering

| Number | Deliverable | Outline | Draft | Final |
|--------|--|---------|-------|-------|
| 1 | Proposal to Conduct Preliminary Hydrogeologic Investigation. | 20% | 50% | 30% |
| 2 | Technical Memorandum on Results of the Preliminary Hydrogeologic Investigation. | 20% | 50% | 30% |
| 3 | Groundwater Discharge Permit Application for Route 6A Cloverleaf Site. | 20% | 50% | 30% |
| 4 | Groundwater Discharge Permit Application for 223 Beach Road Site (pending Town authorization) | 20% | 50% | 30% |
| 5 | Technical Memorandum on Updated Downtown Build-Out Analysis and Land Use/Market Conditions and Development Constraints. | 20% | 50% | 30% |
| 6 | Technical Memorandum on Downtown Future Growth Scenarios, Strategies to Limit Growth, and Draft Regulations to Obtain Zero Interest Financing. | 20% | 50% | 30% |
| 7 | Technical Memorandum on Implications for Wastewater Loading Impacts and Other Community Impacts in the Downtown. | 20% | 50% | 30% |
| 8 | Technical Memorandum on Management of Future Downtown Wastewater Flows and Biosolids. | 20% | 50% | 30% |
| 9 | Technical Memorandum on Collection System (GS, LPS, VS and possibly STEP/STEG, as appropriate). | 20% | 50% | 30% |
| 10 | Technical Memorandum on Wastewater Treatment, Residuals, Septage Management, Effluent Transmission and Pumping components of the WWTF. | 20% | 50% | 30% |
| 11 | Technical Memorandum on Groundwater Disposal. | 20% | 50% | 30% |
| 12 | Technical Memorandum on Water Reuse Systems. | 20% | 50% | 30% |
| 13 | Technical Memorandum on Updated Capital and O&M cost estimates. | 20% | 50% | 30% |

Task No. 2 - Tri-Town Transition Requirements

| Number | Deliverable | Outline | Draft | Final |
|--------|---|---------|-------|-------|
| 1 | Technical Memorandum on Interim Use Option. | 20% | 50% | 30% |
| 2 | Technical Memorandum on Potential Cost Savings for Doing Demolition of Existing Facility and Construction of New Facility Together. | 20% | 50% | 30% |
| 3 | Technical Memorandum on Demolition of Existing Facility. | 20% | 50% | 30% |
| 4 | Materials to be provided for Procurement Workshop (fact sheets, project examples, etc.). | N/A | NA | 100% |
| 5 | Technical Memorandum on Procurement Recommendations. | 20% | 50% | 30% |

Task No. 3 - NT Demonstration Projects

| Number | Deliverable | Outline | Draft | Final |
|--------|---|---------|-------|-------|
| 1 | Technical Memorandum on Site Characterization for Floating Constructed Wetland (criteria and ranking). | 20% | 50% | 30% |
| 2 | Preliminary Engineering Work Plan for Floating Constructed Wetland (drawings, preliminary specifications, cost estimates, funding sources, and monitoring plan). | 20% | 50% | 30% |
| 3 | Memo on Site Characterization for Aquaculture/Shellfish Propagation (criteria and ranking). | 20% | 50% | 30% |
| 4 | Preliminary Engineering Work Plan for Aquaculture/Shellfish Propagation (drawings, preliminary specifications, cost estimates, funding sources, and monitoring plan). | 20% | 50% | 30% |
| 5 | Memo on Site Characterization for Permeable Reactive Barriers (criteria and ranking). | 20% | 50% | 30% |
| 6 | Preliminary Engineering Work Plan Permeable Reactive Barriers (drawings, preliminary specifications, cost estimates, funding sources, and monitoring plan). | 20% | 50% | 30% |
| 7 | Underground Injection Control (UIC) Permit. | N/A | N/A | 100% |

Task No.4 - Adaptive Management

| Number | Deliverable | Outline | Draft | Final |
|--------|--|---------|-------|-------|
| 1 | Technical Memorandum on consolidation and comparison of water quality data with MEP baseline of existing water quality data. | 20% | 50% | 30% |
| 2 | Technical Memorandum on recommendations for long term water quality monitoring. | 20% | 50% | 30% |
| 3 | Technical Memorandum on the water quality sampling program for Demonstration Project performance evaluation. | 20% | 50% | 30% |
| 4 | Technical Memorandum on the applicability of the consolidation of existing data to updating the existing MEP Model. | 20% | 50% | 30% |
| 5 | Technical Memorandum on MEP Model Update co-ordination. | 20% | 50% | 30% |
| 6 | Technical Memorandum on Incorporating Findings from the Stormwater and Fertilizer Program Monitoring program, as appropriate. | 20% | 50% | 30% |
| 7 | Draft MEP Study and Report Update. | 20% | 50% | 30% |
| 8 | Final MEP Study and Report Update. Update if needed; if changes between Draft and Final Report Update are minor, all three deliverables may not be warranted). | 20% | 50% | 30% |

Task No. 5 - Financial Evaluation

| Number | Deliverable | Outline | Draft | Final |
|--------|---|---------|-------|-------|
| 1 | Technical Memorandum on Revenue Generating Options and Revenue Generating Plan. | 20% | 50% | 30% |
| 2 | Technical Memorandum of Evaluation of SRF and other Financing Options. Development/Refinement of Financing Option Plan. | 20% | 50% | 30% |
| 3 | Financial Model Update. To be adaptable over time and allow for modification of assessments by the Town and its consultants). | 20% | 50% | 30% |
| 4 | Technical Memorandum on Program Cost Impact Assessment and Affordability. | 20% | 50% | 30% |
| 5 | Technical Memorandum Summarizing P3 Options and Revenue Impact. | 20% | 50% | 30% |
| 6 | Meeting and presentation to the Orleans BOS. | 20% | 50% | 30% |

Task No. 6 - Regulatory Review and Coordination

| Number | Deliverable | Outline | Draft | Final |
|--------|--|---------|-------|-------|
| 1 | Technical Memorandum Summarizing Compliance Requirements to meet Cape Cod Commission Approval. | 20% | 50% | 30% |
| 2 | Technical Memorandum Summarizing MassDEP Compliance Requirements (Demonstration projects, potential treatment, disposal or reuse). | 20% | 50% | 30% |
| 3 | Technical Memorandum Summarizing Meeting with MassDEP on status of Rock Harbor Creek WQ and potential UAA. | N/A | N/A | 100% |
| 4 | Technical Memorandum Summarizing MassDEP and CCC Comments on the Draft CWMP. | N/A | N/A | 100% |
| 5 | Technical Memorandum on Compliance Requirements of the various agencies. | N/A | N/A | 100% |

Task No. 7 - Preparation of the Amended CWMP

| Number | Deliverable | Outline | Draft | Final |
|--------|--|---------|-------|-------|
| 1 | Draft Amended CWMP with Relevant Appendices. | 20% | 50% | 30% |
| 2 | Response Summary to Issues and/or Questions. | N/A | N/A | 100% |
| 3 | Final Amended CWMP with Relevant Appendices. | 20% | 50% | 30% |
| 4 | Meeting and presentation to the Orleans BOS | N/A | N/A | 100% |

Town of Orleans, Massachusetts
 Water Quality and Wastewater Planning
 Preliminary Project Schedule

| Task Number | Description | October | November | December | January | February | March | April | May | June | July |
|-------------|---|---------|----------|----------|---------|----------|-------|-------|-----|------|------|
| 1 | Facilities Engineering | | | | | | | | | | |
| | a. Disposal Site Investigations | | | | | | | | | | |
| | b. Downtown Planning | | | | | | | | | | |
| | c. Facilities Preliminary Design | | | | | | | | | | |
| 2 | Tri-Town Transition Requirements | | | | | | | | | | |
| | a. Interm Use Options | | | | | | | | | | |
| | b. Coordination with MassDEP | | | | | | | | | | |
| | c. Design for Demolition of the Facility | | | | | | | | | | |
| 3 | Demonstration Project Design and Implementation | | | | | | | | | | |
| | a. Floating Composted Wastewater | | | | | | | | | | |
| | b. Aquaculture/Shellfish Propagation | | | | | | | | | | |
| | c. Permeable Reactive Barriers | | | | | | | | | | |
| 4 | Adaptive Management Plan Implementation | | | | | | | | | | |
| | a. Water Quality Monitoring and Modeling | | | | | | | | | | |
| | b. MIEP Study and Report Updates | | | | | | | | | | |
| | c. Program Cost Impact Assessment | | | | | | | | | | |
| 5 | Financial Evaluation | | | | | | | | | | |
| | a. Revenue Generating Options | | | | | | | | | | |
| | b. Financing Options | | | | | | | | | | |
| | c. Public-Private Partnership Options | | | | | | | | | | |
| 6 | Regulatory Review and Coordination | | | | | | | | | | |
| | a. Cape Cod Commission | | | | | | | | | | |
| | b. MassDEP | | | | | | | | | | |
| | c. Other Agencies | | | | | | | | | | |
| 7 | Preparation of the Amended CWMP | | | | | | | | | | |
| | a. Draft Amended CWMP | | | | | | | | | | |
| | b. Final Amended CWMP | | | | | | | | | | |

Town of Orleans, MA
 FY 2016 Water Quality and Wastewater Planning
 Level of Effort - Summary

| Task | Task Description | AECOM Labor | | | Subcontractors and ODCs | | | Project Totals | | | |
|---------------------------------------|------------------|--------------|-------------------|-------------------|-------------------------|--------------------|-------------------|------------------|------------------|--------------|-------------------|
| | | Hours | Cost | Fee | Hours | Subcontractor Cost | Subcontractor Fee | ODCs | | Hours | Fee |
| | | | | | | | | Cost | Fee | | |
| 1. Facilities Engineering | | 1,264 | \$ 73,144 | \$ 204,879 | 378 | \$ 135,350 | \$ 139,411 | \$ 3,250 | \$ 3,250 | 1,642 | \$ 347,540 |
| 2. Tri-Town Transition Requirements | | 588 | \$ 33,544 | \$ 92,830 | - | \$ - | \$ - | \$ 4,000 | \$ 4,000 | 588 | \$ 96,830 |
| 3. NT Demonstration Projects | | 544 | \$ 27,357 | \$ 76,842 | 915 | \$ 199,500 | \$ 205,485 | \$ 3,000 | \$ 3,000 | 1,459 | \$ 285,327 |
| 4. Adaptive Management Implementation | | 200 | \$ 10,594 | \$ 28,477 | 352 | \$ 57,000 | \$ 58,710 | \$ 2,500 | \$ 2,500 | 552 | \$ 89,687 |
| 5. Financial Evaluation | | 104 | \$ 8,164 | \$ 21,199 | 308 | \$ 41,580 | \$ 42,827 | \$ 3,000 | \$ 3,000 | 412 | \$ 67,026 |
| 6. Regulatory Review and Coordination | | 268 | \$ 14,000 | \$ 37,882 | - | \$ - | \$ - | \$ 4,000 | \$ 4,000 | 268 | \$ 41,882 |
| 7. Preparation of the Amended CWMP | | 384 | \$ 20,920 | \$ 58,019 | - | \$ - | \$ - | \$ 3,689 | \$ 3,689 | 384 | \$ 61,708 |
| Totals | | 3,352 | \$ 187,723 | \$ 520,128 | 1,953 | \$ 433,430 | \$ 446,433 | \$ 23,439 | \$ 23,439 | 5,305 | \$ 990,000 |