



TOWN OF NANTUCKET
AGREEMENT BETWEEN
THE TOWN OF NANTUCKET
AND
ARCADIS U.S., INC.

THIS AGREEMENT made effective September 9, 2020, by and between the **TOWN OF NANTUCKET, MASSACHUSETTS**, a municipal corporation, acting by and through its Town Administration, with offices at Town Hall, Nantucket, Massachusetts 02554 (hereinafter called the "TOWN"), and **ARCADIS U.S., INC.** whose principal office address and state of incorporation are as set forth on Exhibit A (hereinafter called the "CONTRACTOR").

RECITALS:

WHEREAS, the TOWN desires to retain the CONTRACTOR to provide certain services for the TOWN, as described below, and the CONTRACTOR is willing to accept such engagement, all on the terms hereinafter set forth,

NOW, THEREFORE, in consideration of the mutual covenants hereinafter set forth, and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the parties agree as follows:

ARTICLE 1 - ENGAGEMENT OF THE CONTRACTOR

- 1.1 The TOWN hereby engages the CONTRACTOR, and the CONTRACTOR hereby accepts the engagement to perform certain services for the TOWN, as described in Article 2.
- 1.2 In the performance of any service under this Agreement, the CONTRACTOR acts at all times as an independent contractor. There is no relationship of employment or agency between the TOWN, on the one hand, and the CONTRACTOR, on the other, and the TOWN shall not have or exercise any control or direction over the method by which the CONTRACTOR performs its work or functions aside from such control or directions which are consistent with the independent contractor relationship contemplated in the Agreement.

ARTICLE 2 - SERVICES OF THE CONTRACTOR

- 2.1 The CONTRACTOR will perform the services described in the Scope of Services set forth on Exhibit A (the "Work").
- 2.2 The CONTRACTOR shall report, and be responsible, to the TOWN and its designee (if any) as set forth on Exhibit A.

- 2.3 There shall be no amendment to the Scope of Services or Work provided for in this Agreement without the written approval of the TOWN. The TOWN shall be under no obligation to pay for any services performed by the CONTRACTOR which are not explicitly agreed to by the TOWN in writing.
- 2.4 The CONTRACTOR represents and warrants to the TOWN that the CONTRACTOR (including all of its personnel, whether employees, agents or independent contractors) will be qualified and duly licensed (if necessary) to perform the services required by this Agreement and further agrees to perform its services in a professional manner, and in accordance with the reasonable standard of care implied by law and all applicable local, state or federal ordinances, laws, rules and regulations, all of which are incorporated herein by reference. The CONTRACTOR will obtain and pay for any and all permits, bonds and other items required for the proper and legal performance of the Work.
- 2.5 The CONTRACTOR represents and warrants to the TOWN that it is not a party to any agreement contract or understanding which would in any way restricts or prohibits it from undertaking or performing its obligations hereunder in accordance with the terms and conditions of this Agreement.
- 2.6 Ownership and Use of Documents: All written materials and any other documents (whether in the form of “hard” copies, graphics, magnetic media or otherwise) which are received and produced by the CONTRACTOR pursuant to this Agreement shall be deemed to be “work for hire” and CONTRACTOR grants to the TOWN a non-exclusive license to all such “work for hire” as it is completed by CONTRACTOR. The license to any “work for hire” shall terminate upon payment by TOWN to CONTRACTOR, at which time such “work for hire” shall be and become the property of the TOWN. The TOWN acknowledges that such materials are being prepared with respect to the specific project contemplated hereby and that any reuse of such materials by the TOWN in connection with any other project shall be at the TOWN’s sole risk, unless otherwise agreed to by the CONTRACTOR in writing.

Without limiting the foregoing, CONTRACTOR shall be deemed the author of the Work and shall retain all common law, statutory, and other reserved rights, including copyrights.

- 2.7 The CONTRACTOR shall be responsible for the professional and technical accuracy, and for the coordination, of all designs, drawings, specifications, estimates and other work or services furnished by CONTRACTOR or its consultants and subcontractors. The CONTRACTOR shall perform its work under this Agreement in such a competent and professional manner that detail checking and reviewing by the TOWN shall not be necessary. The CONTRACTOR shall supervise and direct the Work, using its best skills and attention, which shall not be less than such state of skill and attention generally rendered by the design and engineering profession for projects similar to the subject project in scope, difficulty and location.

- 2.8 The CONTRACTOR shall not use any subcontractors or sub-consultants (not identified herein) for any work required under this Agreement unless such use has been approved in advance in writing by the TOWN. The Contractor may perform the Work through a combination of its own employees and employees of its affiliates (as identified herein) and that the use of such affiliate labor shall not be deemed a subcontract for purposes of this Agreement.
- 2.9 Notwithstanding anything to the contrary in this Agreement, the CONTRACTOR shall not be relieved of its obligations under this Agreement by the TOWN's performance, or failure to perform, any of the TOWN's administrative duties under this Agreement, including, but not limited to, the TOWN's review and/or approval of plans, estimates, programs, documents, materials, work and services furnished by CONTRACTOR.

ARTICLE 3 - PERIOD OF SERVICES

- 3.1 Unless otherwise provided on Exhibit A, the term of this Agreement shall commence on the date hereof and continue until the Work is completed to the TOWN's reasonable satisfaction.
- 3.2 The CONTRACTOR shall proceed with the Work promptly after receiving Notice to Proceed and will diligently and faithfully prosecute the Work to completion in accordance with the provisions hereof. In any event, the Work shall be completed no later than the date set forth on Exhibit A. The CONTRACTOR acknowledges that time is of the essence of this Agreement.
- 3.3 If the CONTRACTOR is delayed in the performance of any of its obligations under this Agreement by the occurrence of an unforeseen event beyond its control such as fire or other casualty, abnormal adverse weather conditions, acts of God (collectively, "Unavoidable Events") which materially and adversely affect its ability to perform the Work, then the time for the CONTRACTOR to perform the Work shall be extended for such time as the TOWN shall reasonably determine is necessary to permit the CONTRACTOR to perform in light of the effects of the Unavoidable Event.

If an Unavoidable Event occurs which, in the TOWN's reasonable determination, makes the performance of the Agreement impossible without the expenditure of additional TOWN funds, the TOWN may, at its option, elect to terminate this Agreement upon thirty (30) days written notice.

ARTICLE 4 - PAYMENTS TO THE CONTRACTOR

- 4.1 The compensation due to the CONTRACTOR shall be paid in the amounts, and in the manner, set forth on Exhibit B, attached hereto.
- 4.2 The CONTRACTOR will bill the TOWN at the completion of the work unless otherwise provided on Exhibit B, with one or more invoices broken down to show the quantity of work performed and the percentage of the entire project completed, categories and amount

of reimbursable expenses (if any), and provide such supporting data as may be required by the TOWN.

- 4.3 The TOWN will pay the CONTRACTOR upon review and approval of such invoices by the TOWN or its designee.
- 4.4 This engagement may be subject to budgetary restrictions which may limit the total amount of funds available for the Work. Accordingly, unless otherwise stated on Exhibit B, the TOWN will not be obligated to pay any amount in excess of the maximum project amount without the express written approval of the TOWN.
- 4.5 The CONTRACTOR and its sub-contractors shall not be compensated for any services involved in preparing changes that are required for additional work that should have been anticipated by the CONTRACTOR in the preparation of the documents, as reasonably determined by the TOWN.

ARTICLE 5 – TERMINATION

- 5.1 This Agreement may be terminated, with cause, by either the TOWN or CONTRACTOR, upon written notice given by the non-defaulting party. For the purposes of this provision, "cause" shall include the failure of a party to fulfill its material duties hereunder in a timely and proper manner.
- 5.2 The TOWN shall have the right to terminate this Agreement for its convenience and without cause upon ten (10) days written notice.
- 5.3 Following termination of this Agreement, the parties shall be relieved of all further obligations hereunder except:
 - (a) unless the TOWN terminates for cause under paragraph 5.1, in which event the TOWN shall be under no obligation to make any payments to CONTRACTOR except for those services satisfactorily provided, the TOWN shall remain responsible for payments for the services satisfactorily performed and, unless this Agreement is for a lump-sum, expenses of CONTRACTOR reasonably accrued prior to the effective date of the notice of termination in compliance with this Agreement (less the value of any claims of the TOWN), all as determined by the TOWN in its sole discretion, but for no other amounts, including, without limitation, claims for lost profits on Work not performed; and
 - (b) The CONTRACTOR shall remain liable for any damages, expenses or liabilities arising under this Agreement (including its indemnity obligations) with respect to WORK performed pursuant to the Agreement.

ARTICLE 6 - INSURANCE AND INDEMNIFICATION

- 6.1 The CONTRACTOR agrees to indemnify and save the TOWN harmless from any and all manner of suits, claims, or demands arising out of any errors, omissions or negligence by

CONTRACTOR (including all its employees, its affiliates, agents and independent contractors) in performing the Work, or any breach of the terms of this Agreement by such CONTRACTOR and shall reimburse the TOWN for any and all costs, damages and expenses, including reasonable attorney's fees, which the TOWN pays or becomes obligated to pay, by reason of such activities, or breach. The provisions of this Section 6.1 shall be in addition to, and shall not be construed as a limitation on, any other legal rights of the TOWN with respect to the CONTRACTOR, in connection with this Agreement, and shall survive termination or expiration of this Agreement.

- 6.2 Before commencing work the CONTRACTOR shall obtain and maintain at its expense and from insurance companies of a Best Rating of A or better, which are licensed to do business in the Commonwealth of Massachusetts, insurance as set forth below. If the CONTRACTOR is permitted to sub-contract a material portion of the Work or is otherwise identifying an affiliate or third party to perform services for the Town, the CONTRACTOR shall assure that its affiliates, sub-contractors or other third parties also has such insurances as outlined below.
- (a) Workers' Compensation, covering the obligations of the CONTRACTOR in accordance with applicable Workers' Compensation or Benefits laws.
 - (b) Commercial General Liability Insurance on an occurrence basis with a combined single limit of not less than \$1 million. Coverage is to include premises and operations, coverage for liability of subcontractors. The policy shall contain an endorsement stating that the aggregate limits will apply separately to the work being performed under this Agreement.
 - (c) Automobile Liability Insurance of not less than \$1 million combined single limit covering owned, hired and non-hired vehicle use.
 - (d) Errors and Omissions Insurance of not less than \$2 million per claim. The coverage shall be in force from the date of execution of the Agreement to the date when all design and construction work is completed and accepted by the TOWN, unless, however, the policy is a "claims made policy," in which event the policy shall remain effective and in full force for a period of three (3) years after completion of all design and construction work relating to the engagement.
 - (e) Such additional insurance as may be required to be carried by the CONTRACTOR by law.
 - (f) Such additional insurance as the TOWN may reasonably require, as set forth on Exhibit A.

CONTRACTOR shall maintain such insurance during the term of Agreement and give the TOWN twenty (20) days written notice of any change or cancellation of coverage. Each insurer providing policies hereunder shall waive its rights to subrogate claims against the TOWN. The TOWN will be added as an additional insured with respect to each such

policy and such endorsement shall be reflected on a Certificate of Insurance to be delivered to the TOWN upon the execution of this Agreement and at such times thereafter as the TOWN may reasonably request.

ARTICLE 7 - GENERAL PROVISIONS

- 7.1 Upon the expiration or the termination of this Agreement for any reason, all data, drawings, specifications, reports, estimates, summaries and other work product which have been accumulated, developed or prepared by the CONTRACTOR (whether completed or in process) shall become the property of the TOWN upon payment for such to the CONTRACTOR and the CONTRACTOR shall immediately deliver or otherwise make available all such material to the TOWN.
- 7.2 Neither party may assign, transfer or otherwise dispose of this Agreement or any of its rights hereunder or otherwise delegate any of its duties hereunder without the prior written consent of the other party, and any such attempted assignment or other disposition without such consent shall be null and void and of no force and effect.
- 7.3 Except as otherwise expressly provided in this Agreement, any decision or action made by the TOWN relating to this Agreement, its operation, amendment or termination, shall be made by the Board, Committee or Authority of the TOWN specified in the initial paragraph of this Agreement, unless specifically authorized or delegated by a lawful vote of such body.
- 7.4 This Agreement, together with Exhibit A (Contractor, Scope of Work, Term), Exhibit B (Payments), and Exhibit C (Tax Compliance Certificate), and any additional exhibits referred to therein, constitute the entire agreement of TOWN and CONTRACTOR with respect to the matters set forth therein and may not be changed, amended, modified or terms waived except by a writing signed by TOWN and CONTRACTOR. If there is any conflict among the terms set forth in the body of this Agreement and the terms or provisions set forth in Exhibit A or Exhibit B, or in any other attachment hereto, or in any other document or law incorporated by reference herein, such conflict shall be resolved by giving precedence to the party's address above by certified mail, return receipt requested Terms or provisions contained in the following documents in accordance with the following hierarchy, with the topmost document of the highest priority:
- A. Applicable federal, state and local laws, rules and regulations.
 - B. Amendments to this Agreement, if any.
 - C. Exhibits A and B.
 - D. This Agreement.
 - E. Any other attachments to this Agreement.

To the extent the conflict is not resolved by applying the above hierarchy, the conflict shall be resolved in a manner that results in the highest quantity and best quality of goods and services to the TOWN.

- 7.5 This Agreement is governed by the law of The Commonwealth of Massachusetts and shall be construed in accordance therewith. The parties agree that exclusive jurisdiction for any action arising out of or relating to this Agreement shall lie with the state and federal courts having jurisdiction over the county and state in which the Town is located and the parties hereby irrevocably waive, to the fullest extent permitted by law, any objection which they may now or hereafter have to the venue of any proceeding brought in such location and further irrevocably waive any claims that any such proceeding has been brought in an inconvenient forum.
- 7.6 Any notices required or allowed shall be to the person's address above by certified mail, return receipt requested.
- 7.7 Notwithstanding anything to the contrary in this Agreement, this Agreement is subject to the appropriation and availability of funds.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement the day and year first written above.

CONTRACTOR:

TOWN OF NANTUCKET,
MASSACHUSETTS:



Jennifer Kelly Lachmayr
Vice Present
Arcadis U.S., Inc.

C. Elizabeth Gibson
Town Manager

DATE: 09/23/2020

DATE: 9/15/2020
FEIN: 57-0373224

Funding Org/Obj:

Approved as to Funds Available:

Purchase Order #: _____



Brian E. Turbitt, Director of Municipal
Finance or Bob Dickinson, Assistant
Town Accountant

DATE: 09/29/2020

CONTRACT EXHIBIT A

CONTRACTOR, SCOPE OF WORK, TERM

1. **Name of Contractor:** Arcadis U.S., Inc.
2. **State of Incorporation:** DE
3. **Principal Office Address:** 500 Edgewater Drive, Suite 511, Wakefield, MA 01880
Attention: Jennifer Kelly Lachmayr
4. **Description of Services:**

A. GENERAL:

A. Overview

Nantucket had approximately 10,000 residents in the 2010 census and more recent information puts the resident population in the region of 17,000. This is a vacation island with a seasonal summer population of approximately 50,000. One of the most striking features of the island for all residents and visitors is the 88 miles of coastline (including ocean, sound and harbor facing coastlines in the county), and the variety that it offers. Exposed southern and eastern shore of the island can have high rolling waves. Northern beaches, facing into Nantucket Sound are lower energy beaches and popular with families with younger swimmers. Nantucket and Madaket Harbors are used to moor boats, and like all other shores are used for swimming, walking and fishing. All these coastal areas are susceptible to Sea Level Rise (SLR) and various levels of erosion. The land, houses, businesses, roads and infrastructure adjacent to these coastal areas are at risk.

In more local contexts, much of the downtown area and neighboring residential areas are low lying and already susceptible to Storm Surge (SS). Some areas are susceptible to high tide flooding. This may be through seawater actively flowing onto streets and properties; and, through rainwater backing up in storm water systems when flap gates etc. are closed during or after rainfall at high tide. Several other low-lying areas of the island, including parts of downtown Nantucket, Brant Point neighborhood, adjacent to Madaket Harbor, along Polpis Road and occasionally Siasconset (A.K.A. 'Sconset), also experience flooding at high tides and during SS events.

Erosion has led to the loss or moving of substantial numbers of houses in recent decades. Parts of the south facing shore are eroding at around 5-12 feet per year and the east shore is retreating at around 0.5 to 4 feet per year (Data from Mass CZM MORIS mapping tool). By contrast, most of the Nantucket Sound facing shoreline of Coctue is accreting from around 0.5 to 3 feet per year. The north shore from Jetties to Eel Point has areas of accretion and erosion, but most of this shoreline is eroding at around 0.2 to 2 feet per year.

Most of the downtown streets and buildings were laid down and developed more than a century ago. Over the last 100 years the sea level in Nantucket Harbor has risen by approximately 14 inches. Nantucket is already feeling the effects of SLR with high tide flooding. These issues are

compounded by SS and Storm Water Drainage (SwD) issues. NOAA reports that storm frequency and intensity are increasing as a result of Climate Change (CC). This is and will lead to more impactful SS. Whether due to high tide flooding or due to SS, some downtown and low-lying properties now experience regular inundation. Nantucket's downtown was one of the first Historic Districts established due to its prevalence of historic buildings, many of which predate the Civil War and include some pre-Revolutionary War buildings. Maintaining the centuries-past charm of the island with respect to SLR, SS and other impacts is a high priority.

The harbor areas and shoreline will continue to be impacted by SLR into the future. By the year 2100, sea levels in Nantucket Harbor are projected to rise by about 2.5 to 3.2 feet using average projection data (Northeast Climate Science Center at the University of Massachusetts Amherst. Massachusetts Climate Change Projections, 2013). This is average projection data. The full range of the projection data for 2100 is predicted to be between 1.8 to 10.1 feet above 2000 sea level.

In 2019, Nantucket Select Board accepted both a Municipal Vulnerability Preparedness (MVP) Community Resilience Workshop Report and a Hazard Mitigation Plan (HMP). The MVP states that the Town of Nantucket requires a Coastal Resilience Plan (CRP). Both the MVP and HMP reports have actionable items that take in some coastal resilience measure. However, there are coastal areas and low-lying areas that require a Coastal Resilience Plan to mitigate against the worst impacts of rising coastal waters.

The Town of Nantucket requires a Coastal Resilience Plan to deal with the current and future impacts of Sea Level Rise, and more frequent and powerful storms in the face of Climate Change.

B. Purpose

The purpose of this Contract is to provide professional services to the Town of Nantucket to develop a Coastal Resilience Plan. The Coastal Resilience Plan will serve to analyze risks to the Town's population, housing stock, public infrastructure, economy, civic spaces and historic and natural resources, and propose projects for specific locations, and recommended priorities and implementation timeframes, along with guidelines for implementation. The plan will also include Coastal Resilience Planning Policies covering adaption and retreat policies for low-lying and eroding areas. Protection and adaption strategies shall also be developed, particularly for the Downtown and historic areas.

The plan should create a roadmap for community wide and island wide coastal resilience, with in-depth considerations for Sea Level Rise, storm surge / storm tide pathway projections, and erosion at multiple time intervals (2030, 2050, and 2100). For our critical infrastructure, plans and infrastructure that can be adapted over time to outlast 2100 would also be beneficial to include century to century longevity for coastal resilience.

C. Project Background & Resources

1. Background

The Town of Nantucket is a Municipal Vulnerability Preparedness (MVP) community. The MVP was accepted by the Town's Select Board in April 2019. One of the recommendations in this report was the necessity for a Coastal Resilience Plan.

In May 2019, the Select Board established the need and developed the charge for a “Coastal Resilience Advisory Committee” using the acronym CRAC. The charge and briefing for this committee is attached. This committee was convened on July 23, 2019. The Charge of CRAC reads “*This committee will work with the Coastal Resilience Coordinator to oversee and finalize the Coastal Resilience Plan...*”

To establish a Coastal Resilience Plan, the Town of Nantucket created the role “Coastal Resilience Coordinator” in May 2019. This position was filled on July 29, 2019.

Town of Nantucket and other organizations have resources available to support the development of the CRP as listed below.

1. Available Town Resources (include but are not limited to)

- (i) Nantucket’s Sustainability Program Report and Framework (2020)
Developing a sustainability program with actions and branding for the Town “ACK Local”
- (ii) Coastal Resilience Strategies Document (2020)
The Town of Nantucket commissioned a Coastal Resilience Strategies document. This is a primary background resource document that outlines the methods and strategies that are available to the Town of Nantucket.
- (iii) Hazard Mitigation Plan (2019)
In 2019, Nantucket accepted a Hazard Mitigation Plan, which covers some of the same resilience issues that may be considered. If there are overlapping issues or infrastructure required, they should be referenced in the CRP.
- (iv) Municipal Vulnerability Preparedness Report (2019)
A Municipal Vulnerability Preparedness report was also accepted in 2019. Some potential Coastal Resilience Plans are listed in this plan. If there are overlapping issues or infrastructure required, they should be referenced in the CRP.
- (v) Storm Tide Pathways & Hurricane Inundation Projections (2016)
Storm tide pathway projections and hurricane inundation projections are both presented on the Town of Nantucket GIS system <https://www.nantucket-ma.gov/151/GIS-Maps>
- (vi) Nantucket Master Plan (2009, to be amended 2020)
Guidelines for the physical development of the Island
- (vii) Coastal Management Plan (2014)
Establishes priorities and procedures for protecting and managing town owned infrastructure, public access points and roads around the island adjacent to the coastline
- (viii) Nantucket and Madaket Harbors Action Plan (2009, potential update in 2020)
Outlines management areas and practices for the two harbors in Nantucket

- (ix) Storm Surge and inundation Pathways (2016)
Empowering Coastal Communities to Prepare for and Respond to Sea Level Rise and Storm-related Inundation: A Pilot Project for Nantucket Island. CZM and Mark Borelli
- (x) Sewer Master Plan (in progress, Weston & Sampson)
The Sewer Master Plan is for the Town Sewer District wastewater collection system.
- (xi) Nantucket Beach Management Plan (2004, and 2018/9 draft plan)
The current working draft of the beach management plan is from 2004. Natural Resources Department staff are in the process of updating the plan, which was redrafted in 2018 and 2019.
- (xii) Open Space Plan (2009)
- (xiii) Parks and Recreation Master Plan (2019)
- (xiv) Select Board Strategic Plan (2019)

2. Other resources & projects and developing projects (include but are not limited to)

- (i) Nantucket One Big Beach Project
A Town-initiated easement project to allow access for beachgoers to walk from one beachfront property to the next without impediments or barriers. <https://www.nantucket-ma.gov/687/One-Big-Beach-Easements>
- (ii) Resilient Nantucket: Designed for Adaption (in development) *<https://www.nantucket-ma.gov/bids.aspx?bidID=484>

Services to develop guidelines for flooding adaptation and building elevation design details for historic properties and streetscapes on Nantucket
- (iii) Compass report. FEMA Region 1 coastal erosion study (in review)
- (iv) Storm water study commissioned by DPW (in development, Fuss & O'Neill)
- (v) Ponds Plan (in research within Natural Resources Dept.)
- (vi) Climate Action Plan (to be developed 2020/2021) **
- (vii) NOAA Sea Level Rise projections <https://coast.noaa.gov/slr/>

*The Resilient Nantucket: Designs for Adaption project will have significant overlap with this Coastal Resilience Plan, in the Historic Downtown area and ‘Sconset HDC area. The focus of the Resilient Nantucket: Designs for Adaption plan is on:

- a) Adaption strategies for private property owners in the Nantucket National Historic Landmark Districts
- b) Design guidelines and elevation designs for the Town of Nantucket locally-designated historic districts

Consultants on the CRP shall coordinate work with the consultants and resulting plans for the Resilient Nantucket; Designs for Adaption Plan. Identify areas and potential Coastal Resilience needs not identified in this plan and provide Coastal Resilience options.

**The future Climate Action Plan (CAP) may also have some overlap with this Coastal Resilience Plan. Should the Town have a consultant for the CAP at the time, consultants on the CRP shall coordinate work with the consultants and resulting plans for the CAP. Identify areas and potential Coastal Resilience needs not identified in this plan, for example; Green Infrastructure goals that will help both Coastal Resilience for the island, but also help with greenhouse gas emissions.

Other potential resources may be available on the CRAC online library and from the CRAC committee. CRAC, CRAC committee member organization, and other conservation organization on Island may also have research, useful information and extensive background information that may be pertinent and useful to consultants. <https://www.nantucket-ma.gov/1391/Coastal-Resiliency-Advisory-Committee>

Consultants should use the best and latest available data where possible.

3. Bylaws

Nantucket has a number of zoning and waterfront bylaws in the municipal code. These include Chapter 136 Wetlands, Chapter 137 Wharves and Waterways and Chapter 139 Zoning. These and other relevant bylaws shall be read and considerations made for potential additions or amendments to by-laws to aid the Coastal Resilience Plan and its recommendations.

4. Project Stakeholders

The primary stakeholders are the taxpayers, homeowners, business owners and residents of the island of Nantucket. The interests of these individuals are overseen by Town of Nantucket and the various Town Departments involved in shoreline management, water management, resource management, utility and road management such as Natural Resource Dept., Department of Public Works (DPW), Sewer Dept., Harbormasters Office, Town Admin., Public Safety/Police Dept.

Over half of Nantucket is under ownership by conservation organizations with a significant amount of coastal property. The main organizations with coastal properties are Nantucket Islands Land Bank (a quasi-municipal agency), Nantucket Conservation Foundation (a non-profit and the Island’s largest land owner), The Trustees of Reservations Coskata-Coatue Wildlife Refuge and Massachusetts Audubon Society.

The Nantucket Civic League and the member homeowner’s groups and resident’s associations are present throughout the island. There are also a number of special interest groups, advocacy groups and organizations to consider.

I. Project Scope

A. Data Gathering

- At a minimum, this step entails review of the Hazard Mitigation Plans, Community Resilience Plans, Coastal Erosion Studies and other related documents previously developed for the Town. Other information to be reviewed includes the Town’s Zoning Regulations, Conservation Commission Bylaw, Open Space Plans, and other local planning documents. The extent of damage from previous storms will also be investigated.
- GIS data collection. At a minimum, this step entails collection of relevant GIS data from the Town and other public sources to create a database of structures along the coast and their relation to existing topography. Elevation certificates on file may also be reviewed.
- Additional local expertise and data may be available from scientific, historic, and conservation organizations on island and in the region
- Additionally, information gathering from the Coastal Resilience Advisory Committee would be important. Other organization on Island such as Nantucket Conservation Foundation and Trustees of Reservations have research and potential plans on Coastal Resilience.

B. Public engagement

Public support and engagement for projects that result from this Coastal Resilience Plan is critical. Public meetings where planners can engage with the public is one of the deliverables for this project.

- Planning meetings with stakeholders
- Two Public workshops. First to outline Coastal Resilience, collect opinions and thoughts (within first two months). Second on the types of infrastructure or adaption strategies that may be implemented – gauge support for specific project types (within last 4 months)
 - Online survey to increase public engagement and response rate
- Two meetings with the Select Board
- Quarterly meetings with the Coastal Resilience Advisory Committee to provide updates and potential input from committee.
- Proposed works, implementation works, all public events and deliverables will be coordinated with the ACK Local branding initiative.

C. Methodology, environment & identifying Coastal Flood Hazards & Erosion Hazards

Provide background and supporting information on any methodologies used to evaluate coastal flood and erosion hazards as well as identify, environmental and structural characteristics that contribute to risk of flooding and erosion; and outline the current and future flood and erosion

areas.

- Recommend, describe and apply methodologies that will be used in modeling flooding, risk assessment and other diagnostic tools that will be used.
- Outline the environment (geology and topography) present on Nantucket and potential impacts from SLR, coastal flooding to multiple time intervals (2030, 2050, and 2100).
- Identify areas that are low-lying and that currently flood – regularly flood at high tides to flood in one in 10-year storms. Project forward to multiple time intervals (2030, 2050, and 2100) and model the potential coastal flood hazard areas. Base information for Risk assessment.
- Identify areas with (1) an imminent erosion threat to buildings, communities and infrastructure (<10 year), (2) impending erosion threat to buildings, communities and infrastructure (10 to 30 year) and (3) developing erosion threat to buildings, communities and infrastructure (by 2100).

D. Vulnerability Study and Risk assessment

Risk assessment. The consultant will use GIS data, existing plans, previous research on storm surge, sea level rise predictions, salt marsh migration sea level rise viewing tools and other information to identify future vulnerabilities (e.g., economic, infrastructure, community facilities, community services) and risks. Independent sea level rise projections will not be developed for this project.

Any Vulnerability study and risk assessment must include:

- Detailed method on how risk was assessed, and determinations made
- Differentiate between;
 - coastal flooding risk (storm event)
 - erosion risk to 2100, and approx. when properties will/ likely to be lost.
 - sea level rise risk to 2100
- Maps highlighting (i) coastal flooding risk (ii) erosion risk and (iii) sea level rise risk in terms of
 - Property at risk
 - Buildings at risk
 - Roads at risk
 - Infrastructure at risk
 - (1) Differentiate between public and private where possible
 - (2) Present as a geodatabase layer(s)
- **Sea Level Rise projections**

Mean sea level rise projections of 2.5 to 3.1 feet by 2100, above 2000 sea level are expected, and a range of Sea Level Rise of between 1.8 to 10.1 feet is possible. The

consultant will develop a design height standard for all projects, with additional redundancy, to make all projects viable to 2100. This will inform the Design Flood Elevations (DFEs).

E. Resilience strategies, proposed projects and Plan Implementation – proposal deliverables

First the Coastal Resilience Plan needs to identify all of the potential methods and adaption strategies that may be applicable on Nantucket. This needs to account for Massachusetts state law including Massachusetts Public Waterfront Act (Chapter 91) and Wetland Protection Act M.G.L 131 §40 and Nantucket Wetland Bylaw 136.

Second, The Coastal Resilience Plan needs to include an implementation section that needs to include specific recommendations, or suite of recommendations for specific locations. Each specific recommendation will include:

- A mapped location
- Project description
- Coastal resilience recommendation or suite of recommendations
 - Engineering report on each recommendation
 - Flooding resilience and/or control measures. Preference for green and gray infrastructure. Any other engineering options will also be considered
 - Recommended asset specific Design Flood Elevations (DFEs) for both protection of critical assets and planning future projects. A DFE represents an elevation that flood water (with the effects of changing climate conditions and sea-level rise) is expected to reach over the service life of the asset while also including the acceptable risk tolerance for that asset type. The recommended DFE will likely exceed the design flood elevations required by code or current best practices.
 - Erosion resilience and/or control measures. Preference for green and gray infrastructure. Other engineering options will also be considered
- Ranked necessity/ priority
 - Provide a recommended priority listing of projects using the risk-based assessment and methodology. May potentially use STAPLEE scoring system
- Approximate cost
 - Identify potential funding opportunities where possible
- Issue that the project addresses (SLR, SS, SwD, erosion, or combination)
- Estimated life expectancy of each project (to within 10 year)
 - Projects may also include future adaption, enhancement to continue resilience in later phases
- Emergency procedures or preferably infrastructure protection measures for severe storm events.
 - Investigate potential for emergency storm barriers
- Review of possible solutions. Relevant solutions will be reviewed and evaluated that relate

to the vulnerabilities identified in the risk assessment. These strategies should include a cost benefit analysis.

Resilience projects that use living shorelines, bolster natural areas, and or expand the ability of natural areas to buffer against the effects of storm surge and coastal flooding should be prioritized, whenever possible

Preparation of the draft Coastal Resilience Plan.

The results of the previous steps will be communicated in a draft plan to Coastal Resilience Coordinator and CRAC. The goal is for the plan to be easy to understand with risks and recommended solutions clearly stated. Recommendations will be developed with an eye toward implementation and will take into consideration potential costs, benefits and potential funding sources for implementation. Engineered solutions will be developed for specific public infrastructure vulnerabilities.

Public review of draft plan.

A well-advertised public input session will present the findings of the draft plan to the general public and relate to the public's initial concerns. This stage may also include meetings with various local boards for additional input.

Preparation of final Coastal Resilience Plan.

Using input received, revisions will be made to the draft plan. A final public presentation may be held at this stage if warranted due to the number and scope of revisions. The intention is for the final plan to be adopted by the Town as a planning document.

- **Scope of areas to include**

This is an all-islands Coastal Resilience Plan to cover all of Nantucket County. The main focus of a Coastal Resilience Plan is on the coastal and low-lying areas that are prone to coastal flooding and eroding areas. This does not mean that interior parts of the island are immune from the effects of events on the coasts as these areas can have impacts through loss of services. The sparsely populated western islands of Tuckernuck and Muskeget have severe erosion issues. Below is a recommended division of the island, however, if the consultant can develop or find another mutually agreeable method of dividing or parceling the County, they are invited to do so.

1. Twelve suggested areas

Twelve areas, see Figure 1, that are suggested to include in an all-island approach are:

- Brant Point neighborhood, north of HDC Old Historic District
- HDC Old Historic district issues not covered in Resilient Nantucket Designs for Adaption.
- Consue Springs to Pimney Point and boat basin outside of HDC Old Historic District
- Jetties to 40th Pole
- Madaket Harbor area from 40th Pole, include Hither Creek and smiths point to Madaket Road
- Tuckernuck and Muskeget
- South facing shore from Massachusetts Avenue to Tom Nevers Pond
- East facing shore from Tom Nevers Pond to Wauwinet

- Haulover, Great Point and Coatue, head of Harbor
- Polpis Harbor and southern shore of Nantucket Harbor
- Eastern Interior*
- Western Interior*

*Consider selecting a distance from coastal areas to work from. Also, consider elevation; emphasis on areas below a certain elevation.

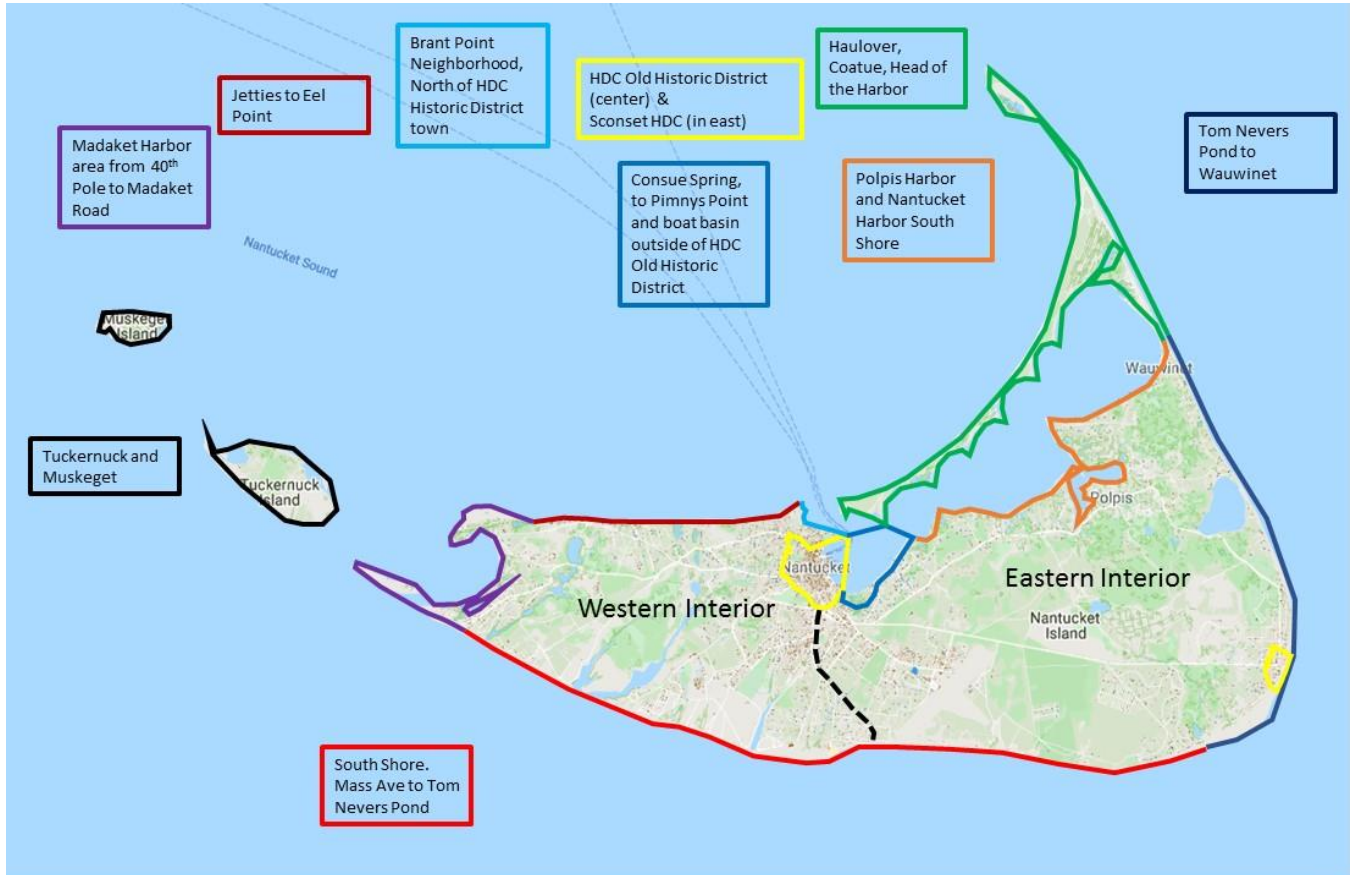


Figure 1. Twelve suggested areas to include in the Coastal Resilience Plan.

2. Targeted Subdivisions or need areas

These twelve main areas can be subdivided down to the street, street section, property groupings or individual properties should specific risk and need for localized infrastructure or resilience measures be identified.

3. Include all areas below selected elevation

Select a mutually agreeable elevation with justification below which all areas below the selected elevation will be included. For example, topography elevation 10 feet and below may be selected. The reason for using such an elevation is that (1) in a worst-case scenario, Sea Level Rise is predicted to be up to 10.1 feet by 2100 and (2) the Category 4 hurricane predictions could bring storm surge to Topography elevation 10 feet. This will also demonstrate inland impacts in relation to ponds and other inland low-lying areas.

F. Critical infrastructure

Due to its unique location, Nantucket has a number of pieces of critical infrastructure; more than most towns its size. These can be divided between Town owned infrastructure and other (generally private and state) which include;

Critical Town infrastructure

- Town-owned road network
- Nantucket Memorial Airport (Town-owned) *
- Nantucket Town Pier
- Town-owned Water Company
- Sewer Department communications infrastructure and sewer systems in Surfside and Sconset
- Waste Options Town Environmental Park (Town Dump)
- Backup generators
- Telephone, cell phone, microwave, radio and internet, both Town infrastructure and by services contract

Other Critical Private Infrastructure

- Private roads and one state road
- Docks (Nantucket Boat Basin Piers, various private piers, mooring fields in Nantucket, Polpis and Madaket Harbors’ all of which serve private boat traffic and are critical to island economy.
- Steamship Authority ferry terminal (traditional car and passenger ferry, fast passenger ferry and freight ferry services). Operates as a State Regulatory authority.
- Hyline fast passenger ferry services. Private company operating from a public port
- Electrical Utility infrastructure (undersea electric cables connection; distribution network, battery support aka Tesla array, and other backup generator services) – main points to consider are the undersea cable and above ground distribution service and how to make those services more resilient
- US Coast Guard Station Brant Point

*Airport has a Part 139, Class 1 operating certificate issued by the Federal Aviation Administration. Airport also falls under Mass DOT for funding.

A risk assessment of sea level rise, storm surge, erosion and potential storm damage to these communications assets shall be undertaken. Recommendation on how to make these communications assets more resilient shall also be included.

G. Public Preparedness Documents

Two simple and easy-to-use guides for the public to prepare for;

1. Storm events - Prepare themselves and their property for storm events
 - a. Know your risk, evacuation routes and public shelter centers
2. Long-term changes such as Sea Level Rise – protect, adapt & retreat methods for private property owners

These Public Preparedness Documents can be developed in conjunction with the Nantucket Emergency Management Coordinator, based in the Public Safety Facility, and may also be complementary to or in conjunction with FEMA, MEMA and/or Resilient Nantucket: Designs for Adaption documents.

H. Toolkit for private land owners

Develop a toolkit for private property owners and business owners to prepare properties for Coastal Flooding, Storm Surge, and Sea Level Rise. This can be based on FEMA recommendations and potential “Freeboard” elevation that the Coastal Resilience Advisory Committee may recommend. Resilient Nantucket; Designs for Adaption is also developing a Toolkit, aimed at the HDC Old Historic Downtown. Consultants are expected work with the consultants for Resilient Nantucket; Designs for Adaption and their resulting reports and Toolkit to (1) understand their Toolkit and be complementary and (2) develop a Toolkit for private property owners outside of the HDC Old Historic District.

I. Development criteria for private land owners – new planning policy and guidelines

There are a wide variety of land owners throughout the waterfront environments on Nantucket. Should a specific piece of infrastructure be decided upon and utilized on Town-owned municipal properties, the variety of ownerships could mean that there will be gaps in infrastructure. Consultants should investigate any potential changes to planning bylaws to ensure that private land owners must continue or match neighboring developments.

Investigate any potential changes or additions to the Nantucket Wetland Protection Regulations, Nantucket Bylaw Chapter 136 in terms of (1) wetland protection, (2) coastal waterfront protection, management and areas for coastal buffer zones and infrastructure and (3) Sea Level Rise mitigation and impacts. This could be to facilitate resilience project, enhance bio-retention, and plan for Sea Level Rise.

J. Key Deliverables

- Public engagement
- Risk assessment and vulnerability study
- Designs for coastal resilience infrastructure
- A resiliency projects implantation matrix
- Project necessity assessment for each proposed project
- Project costings for each proposed project (approx.)
- Longevity expectancy of each infrastructure project
- Toolkit for private property owners
- Recommend bylaw changes, policy changes and guidelines for future town development with respect to wetland management and Sea Level Rise

K. Reporting

Throughout the study the consultant(s) will work closely with Town staff and Coastal Resilience Advisory Committee and will provide regular updates at specified times. Monthly written reports and updates to Town staff and Committee, unless otherwise agreed. Quarterly meetings to discuss

updates and planned works. There will also be milestone reports.

Plan is expected to take about 12 months to create. The anticipated reporting schedule is;

- Monthly written report/ update
- Quarterly meeting, updates & planned works
- Mid project report due at 6 months from commencement
- Draft Coastal Resilience Plan expected 10-12 months from commencement (review by Town)
- Final Coastal Resilience Plan presented by the bidder to CRAC / SB

L. Analysis

A complete report will include an Executive summary, Methodology & site assessments, Data analysis & flood predictions at intervals up to 2100, Infrastructure justification with design and performance standards, Ranked necessity / Priority, Implementation matrix, cost estimates.

M. Project Completion

The consultant(s) must be ready to commence the project within 30 days of the contract award and must complete the project within 12 months of the Project Commencement.

Proposal Contents

- Project understanding
- Experience and projects undertaken by the proposer(s) that are similar to the needs of Nantucket
- Project organizational chart, and key staff availability for this project
- Project schedule and Gantt chart
- At least 3 references, 5 preferred
- References with at least one Massachusetts town/ municipality are preferred
- Experience with Coastal Resilience Plans for (i) island communities and/ or (ii) similar sized communities preferred.
- Each proposal must contain (i) a list of all staff that will be involved (ii) list of the dedicated lead staff and (iii) the technical ability and experience of the staff involved, emphasis on lead staff.
- Resumes for key staff
- Minimum 3 years of experience with Coastal Resilience Plans, Hazard Mitigation Plans and/or Municipal Vulnerability Preparedness; individually or in combination.
- Companies and lead staff with at least 10 years of experience undertaking Hazard Mitigation Plans, Municipal Vulnerability Preparedness and /or Coastal Resilience Plans are preferred.
- It is preferred is one member of the staff, preferably a lead staff member, is MVP certified. Consultants are expected to be on island for public meetings, reconnaissance work, etc. No extra support is available from the Town of Nantucket to supplement lodging and transportation costs.

5. **Person, Department, or Committee, if any, to whom CONTRACTOR reports** (§ 2.2): Vincent Murphy, Coastal Resilience Coordinator, or designee
6. **Term of Agreement** (§3.1):
7. **Completion Date** (§3.2): September 30, 2021
8. **Additional Insurance Coverage** (§6.2(e)): None

AGREEMENT EXHIBIT B

PAYMENTS

1. Lump Sum Method
 - a. **Maximum Project Amount:** \$549,977
 - b. **Payment Increments:** CONTRACTOR shall submit monthly invoices based on a percentage of work complete work as delineated in a progress report accompanying each invoice for approval and processing by the TOWN. The TOWN agrees to pay the CONTRACTOR within thirty (30) days after receipt of each undisputed invoice.
 - c. **Reimbursable Expenses (if any):** None.



Town of Nantucket

TAX COMPLIANCE CERTIFICATION

Pursuant to M.G.L. 62C, §49A, I certify under the penalties of perjury that, to the best of my knowledge and belief, I am in compliance with all laws of the Commonwealth relating to taxes, reporting of employees and contractors, and withholding and remitting child support.

57-0373224

Federal Employer ID Number

Arcadis U.S., Inc.

Name of Corporation

By: John A. Gilley
President's Signature

Date: June 18, 2020

CERTIFICATE OF NON-COLLUSION

The undersigned certifies under penalties of perjury that this bid or proposal has been made and submitted in good faith and without collusion or fraud with any person. As used in this certification, the word "person" shall mean any natural person, business, partnership, corporation, union, committee, club, or other organization, entity, or group of individuals.



Signature of person signing contract

Arcadis U.S.


Name of Business



SIGNATURE CERTIFICATE

TRANSACTION DETAILS	DOCUMENT DETAILS
<p>Reference Number AD08507A-DB94-4C05-ACC8-C5F859335FD9</p> <p>Transaction Type Signature Request</p> <p>Sent At 09/23/2020 19:24 EDT</p> <p>Executed At 09/29/2020 15:42 EDT</p> <p>Identity Method email</p> <p>Distribution Method email</p> <p>Signed Checksum 049b85c6b4d729d8a901c36e568856cb33fe69ae55c5f5da2db13883dd3eb12a</p> <p>Signer Sequencing Disabled</p> <p>Document Passcode Disabled</p>	<p>Document Name Arcadis Crp Contract Signed Final</p> <p>Filename arcadis_crp_contract_signed_final.pdf</p> <p>Pages 25 pages</p> <p>Content Type application/pdf</p> <p>File Size 666 KB</p> <p>Original Checksum 3084ea14d0ce711bb4c91594942cfc95f96464263057ce5742b1dd080599f7f9</p>

SIGNERS

SIGNER	E-SIGNATURE	EVENTS
<p>Name Bob Dickinson</p> <p>Email bdickinson@nantucket-ma.gov</p> <p>Components 2</p>	<p>Status signed</p> <p>Multi-factor Digital Fingerprint Checksum a6308676abb9ea3ee830d122976eab031bbf4d87cc4772d8f6bf7b9497d53298</p> <p>IP Address 208.87.236.201</p> <p>Device Chrome via Windows</p> <p>Drawn Signature </p> <p>Signature Reference ID 5D15B426</p> <p>Signature Biometric Count 157</p>	<p>Viewed At 09/29/2020 15:42 EDT</p> <p>Identity Authenticated At 09/29/2020 15:42 EDT</p> <p>Signed At 09/29/2020 15:42 EDT</p>
<p>Name C. Elizabeth Gibson</p> <p>Email lgibson@nantucket-ma.gov</p> <p>Components 2</p>	<p>Status signed</p> <p>Multi-factor Digital Fingerprint Checksum ed0364709c9dc2a6346f05d7e8aa73f15639ba28e1c718845c7231308f7edcd2</p> <p>IP Address 208.87.236.201</p> <p>Device Chrome via Windows</p> <p>Drawn Signature </p> <p>Signature Reference ID 702DBC69</p> <p>Signature Biometric Count 434</p>	<p>Viewed At 09/23/2020 19:24 EDT</p> <p>Identity Authenticated At 09/23/2020 19:25 EDT</p> <p>Signed At 09/23/2020 19:25 EDT</p>

AUDITS

TIMESTAMP	AUDIT
09/29/2020 15:42 EDT	Bob Dickinson (bdickinson@nantucket-ma.gov) signed the document on Chrome via Windows from 208.87.236.201.
09/29/2020 15:42 EDT	Bob Dickinson (bdickinson@nantucket-ma.gov) authenticated via email on Chrome via Windows from 208.87.236.201.
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09/23/2020 19:24 EDT	Erika Mooney (emooney@nantucket-ma.gov) created document 'arcadis_crp_contract_signed_final.pdf' on Chrome via Windows from 208.87.236.201.