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Date: **January 9, 2019**

To: **John Grande, Town of Tisbury**

From: **John Ramsey**

Subject: **Progress Update for Tisbury MCZM Coastal Resilience Grant**

Task	Scheduled	Completed
Task 1a. Kick-off Meeting	09/15/2019	100%
Task 1b. Site-specific Analysis of Coastal Flooding	09/01/2019 to 02/28/2020	60%
Task 2. Quantitative Analysis of Coastal Change and Sediment Transport Processes	10/01/2019 to 03/15/2020	30%
Task 3. Initial Engineering Analysis to Screen Alternatives	01/01/2020 to 04/30/2020	5%
Task 4a. Working Session #1	04/15/2020	0%
Task 4b. Prioritize Shore and Flood Protection Strategies	01/01/2020 to 04/30/2020	0%
Task 4. Working Session #2	05/31/2020	0%
Task 6: Draft Report	05/01/2020 to 06/01/2020	0%
Task 7: Final Report	06/15/2020 to 06/30/2020	0%

Following the kickoff meeting held with the Town of Tisbury, MA Coastal Zone Management (CZM), and Applied Coastal on November 06, 2019, Applied Coastal began initial development of management strategies and analysis of coastal flooding scenarios. To analyze the potential impacts of flooding to downtown Tisbury, Applied Coastal used long-term historical water level data recorded at both Nantucket and Woods Hole tide gauge. The use of LiDAR topography and bathymetry provides some basic insight into what portions of town are most at risk for certain flood elevations, as shown in Figure 1. In addition to risk determined from surge, impacts from sea level rise were included in the analysis using data from the Intergovernmental Panel on Climate Change (IPCC). Applied

Coastal will finalize the analysis and prepare alternatives so that the Town may decide the best way to plan for resilience moving forward.

Applied Coastal also began developing hydrodynamic and wave simulations to determine sediment transport patterns in the harbor. To estimate typical transport patterns, a year of average wave conditions using data from NOAA's 44020 buoy in Nantucket Sound was collected. Alternatively, a shorter time series that consisted only of NE waves during an above average year was developed to include in modeling efforts. Results from the analysis will be used to test different management alternatives. Applied Coastal will consult the recent Tisbury MVP report, in addition to discussions during the kick-off meeting for the development and testing of alternatives.

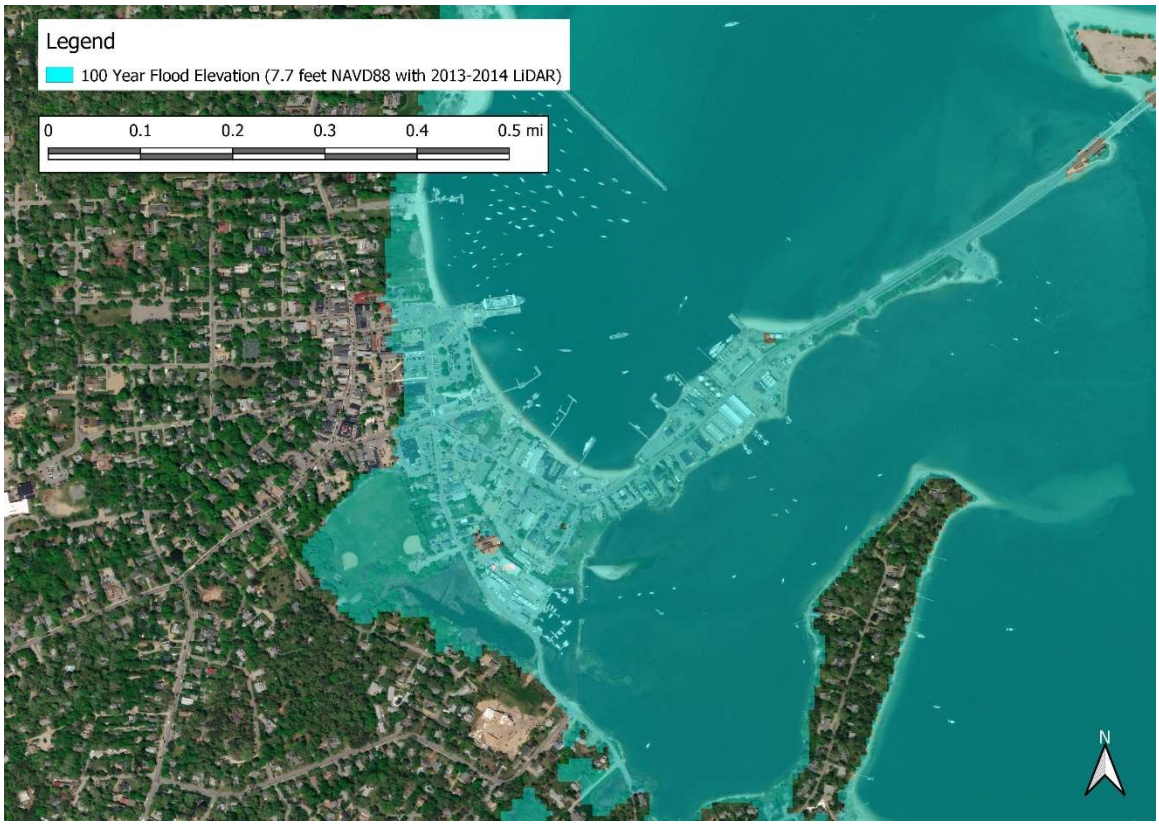

Figure **Error! No text of specified style in document.**1 Map of downtown Tisbury with regions impacted by a 100-year flood of 7.7 feet NAVD highlighted in blue. With sea level rise, a flooding event equivalent to the current 100-year flood level will be met more frequently.