Woods Hole Group worked for the Town of Marshfield, Massachusetts to conduct a technical evaluation of the preliminary Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRMs) issued in May 2013. The preliminary FIRMs added approximately 1,800 new properties and businesses to the Special Flood Hazard Area (SFHA). Due to the significance of the potential map changes, the Town requested an independent technical review to determine if an appeal was warranted.

Woods Hole Group conducted a systematic review of the Flood Insurance Study and flood zone delineation process. The evaluation included a coastal engineering analysis using methodologies described in FEMA’s “Atlantic Ocean and Gulf of Mexico Coastal Guidelines Update” to Appendix D and “Guidance for Coastal Flooding Analyses and Mapping”.

Woods Hole Group worked with Town officials to select specific transects for detailed evaluation.

Specific components of the FEMA study that were evaluated by Woods Hole Group include:

- Offshore significant wave heights and corresponding wave periods
- 100-yr stillwater elevations
- Wave setup
- Overland wave transformation and wave crest elevations using WHAFIS
- Wave runup and overtopping
- Flood zone and Base Flood Elevation (BFE) mapping

Revised flood zone maps based on the technical evaluation were prepared showing a significant reduction in the SFHA, specifically for properties at the upper reaches of the North River estuary. Technical documentation and maps necessary to support an appeal were provided to the Town of Marshfield.

The work was completed on an accelerated schedule in order to fall within the statutory FEMA appeal period. The appeal was accepted and FEMA is currently in the process of updating the FIRMs.

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