

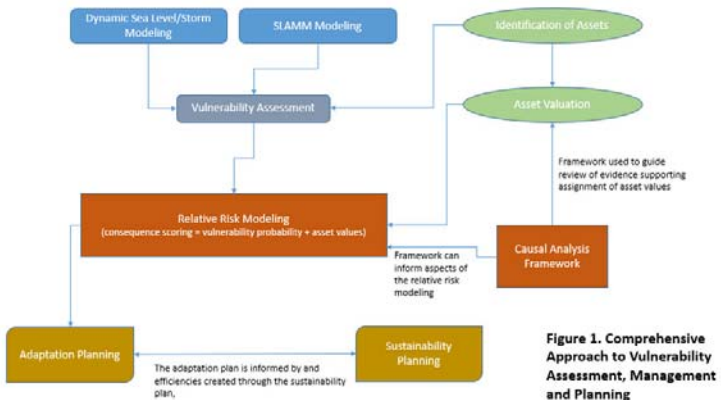
Coastal Vulnerability Index, Mapping and Assessment Trustees of Reservations (Massachusetts)

Project Characteristics:

- Dynamic and probabilistic sea level risk and storm surge modeling
- Consequence scoring (asset value ranking)
- Risk index calculations
- Geographic Information System (GIS) analyses
- Spatial analysis

Woods Hole Group is working with the Trustees of Reservations (TOR) to conduct a comprehensive assessment of the vulnerability of their coastal properties (35 properties and over 2100 assets) to sea level rise and storm surge inundation. Using a dynamic and probabilistic sea level rise and storm surge model, modelers generate probabilities of inundation in 2030 and 2070. The model provides outputs such as flood probabilities, flood duration, inundation depth and flood pathways. The probabilities are calculated (min, max and spatially weighted average) for each asset on each coastal property.

The inundation model outputs are combined with consequence (comparative evaluation of loss of asset due to inundation) data for each asset on each property. Working with Woods Hole Group, the Trustees selected criteria for use in determining the value of each asset. The multiple valuation criteria scores are combined into a consequence score for each asset.



A coastal vulnerability index (CVI) is used to strategically rank each asset based on the value and vulnerability. The projects that are both the most valuable to the mission of TOR and the most vulnerable will be at the top of this list.

Woods Hole Group identified the most vulnerable properties and asset classes, prepared conceptual adaptation plans for the top 5 vulnerable assets and provided general recommendations for all 35 properties.

Currently, Woods Hole Group is developing a more detailed adaptation plan for one of the most vulnerable properties.

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