

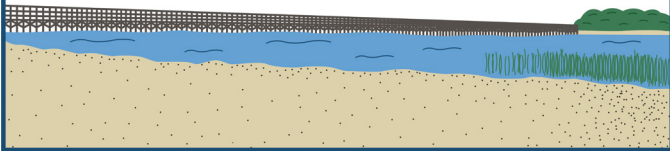


Sustainability - Climate

DRAFT: TO BE REFINED WITH YOUR HELP!

DRAFT FOR DISCUSSION 12-12-18

Envision Duxbury



Envision Duxbury is a comprehensive master plan being developed by the Town of Duxbury to guide the future growth and economic development of the town, using goals and ideas generated by community members.

Climate change is one of the most compelling environmental, economic, and social issues of our time. It is a global phenomena with direct local impacts. Duxbury has had the foresight to protect its rich fabric of cultural and natural assets over past decades. Relative to climate impacts and local protection, Duxbury Beach is a critically important resource affording shoreline protection to the Town and neighboring communities, supporting threatened and endangered species habitat, enabling diverse recreation opportunities, and supporting economic vitality.

However, Duxbury routinely experiences coastal flooding and inundation, even with the relatively moderate occurrence of a lunar high tide. Projected sea level rise and changes in intensity of storm and precipitation events compel the need to assess the vulnerability of Duxbury's people and places as well as plan for protecting its future. In addition, scientists expect temperature increases to result in 58 days annually toward the end of the century where temperatures reach over 90 degrees and more frequent and intense precipitation events. Duxbury could experience an increase of five inches of precipitation annually by 2050 and six inches by 2100 with the greatest increase during the winter.

Recommendations

The following goals and strategies are intended to support continuing efforts to prepare Duxbury for the impacts of climate change and to strengthen community resilience.

Goal 1: Incorporate climate resiliency into all local and regional planning efforts.

- Establish a Climate Resilience Task Force/municipal committee which oversees the implementation of Duxbury Climate Vulnerability Assessment and Action Plan, Natural Hazard Mitigation Plan and the Envision Duxbury Master Plan Sustainability element.
- Maintain the Town's MA Executive Office of Energy and Environmental Affairs Municipal Vulnerability Preparedness Designation every five years.
- Continue to leverage local funds with state and federal climate resilience and natural hazard mitigation funding opportunities to implement resilience measures across the Town.
- Explore zoning that prohibits or regulates building in high hazard areas to strengthen resilience.
- Ensure capital improvements (such as transportation, stormwater systems, park improvements, municipal buildings, etc.) incorporate design standards that will mitigate climate change impacts and strengthen resilience.
- Create climate resiliency regulations or incentives related to increasing safety and minimizing damage related to coastal storms.

Goal 2: Create a resilient shoreline.

- Support the health of existing living shorelines such as salt marshes and eel grass meadows. Engage in restoration projects that enable ecosystem services and adaptive capacity of living shorelines.
- Practice and support beach nourishment and sacrificial dune opportunities to increase coastal infrastructure protection, wildlife habitat, and recreation opportunities.

- Create a plan to manage sea walls. Plan sea wall investments to be able to withstand future sea level rise and coastal inundation for the projected lifetime of the sea wall (approximately 30-50 years).
- Explore voluntary coastal buy-back programs for residences and businesses in high hazard or repetitive loss areas. Utilize state funding through the Environmental Bond Bill H.4835 or FEMA Coastal BuyBack program (when active).
- Investigate the use of earthen berms for increased shoreline protection along coastal roads with persistent coastal flooding such as Bay Road, King Caesar Road, Washington Street in Snug Harbor, Powder Point Road, Gurnet Road, Duxbury Beach Access Road, Pine Point Road and Marginal Road.
- Explore opportunities to acquire and protect land along the shoreline to enhance coastal flood management, increase recreational access to the shoreline, and reduce infrastructure vulnerability.

Goal 3: Position Duxbury’s coastal economy to remain vibrant through climate change.

- Engage in a community-led district resilience planning and development effort of Snug Harbor that includes resilience zoning, development, migration (where applicable), and resilience project prioritization.

- Work with the commercial fishing industry and other coastal business (yacht club, Duxbury Bay Maritime School, etc.) to create a sustainable coastal access area resilient to sea level rise and coastal flooding.
- Commit and realize Net Zero goals to minimize local contributions to ocean warming (detrimental to marine ecosystem function) and ocean acidification (threatening commercial fish and shellfish industries).
- Strengthen the viability and resilience of the Powder Point Bridge to withstand coastal storms and ice jams to protect recreational access to Duxbury Beach.

Goal 4: Protect Duxbury’s water resources from the impacts of climate change.

- Reduce stormwater runoff into Duxbury’s waterways by using green infrastructure and other natural filtration systems.
- Ensure that investments in wastewater systems are climate resilient to prevent contamination of Duxbury’s waterways from storm surge, coastal flooding and riverine flooding.
- Explore salt water intrusion vulnerability of Duxbury’s aquifers with sea level rise.
- Promote actions for sustaining and improving water quality in Duxbury Bay to ensure healthy marine ecosystems such as salt marshes, eel grass beds, and marine life habitat.

Questions for Stakeholders

1. What is your initial reaction to this material?
2. Given what you know about major goals, challenges, or opportunities in the Town, does anything appear to be missing or seem incomplete?
3. Are there goals or strategies that are difficult to understand or that need to be clarified?
4. Does this material raise any additional questions for you?
5. From your perspective, what is the highest priority among the goals and strategies?
6. What do you think your role, or the role of the group you represent, could be in implementing these goals and strategies?
7. Is there someone else who we should talk to in Duxbury who is knowledgeable of this topic?
8. What action items do you see as critical to achieving these goals and strategies?
9. Do you know of other resources that could be used to address these goals and strategies?
10. How do you see this element relating to other elements of the Master Plan?
11. Do you have any other comments?