

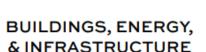


Climate Action and Adaptation Planning Plymouth, MA

Nantucket Coastal Conference

6/10/2025







NATURAL SYSTEMS



HEALTH, SAFETY, & PREPAREDNESS



TRANSPORTATION



WASTE













Plymouth by the Numbers:

- 37 miles of coastline
- 17,500 acres of protected open space
- Natural resources serve as a local economic driver
- Population of roughly 65,000

Select Board declares a Climate Emergency (2021):

- Creating the Climate Resiliency and Sustainability Planner position
- Creating the Climate Action Net-Zero (CANZ) Committee
- Creation of the Climate Action and Adaptation Plan (CAAP)

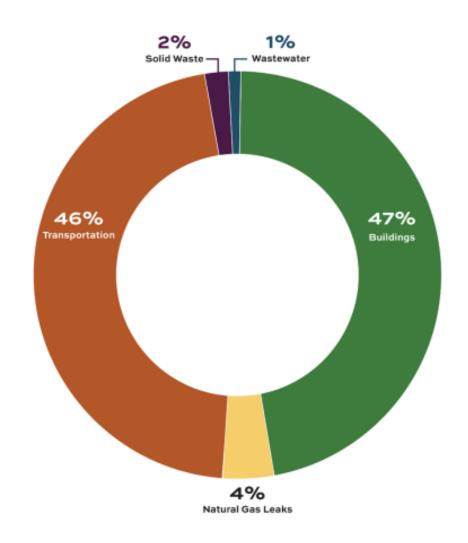












Plymouth's 2021 Community GHG Emissions by Sector⁹

Buildings: 47% / 292,803 MTCO₂e

Natural Gas Leaks: 4% / 23,965 MTCO e

Transportation: 46% / 284,805 MTCO e

Solid Waste: 2% / 12,527 MTCO₃e

Wastewater: 1% / 4,027 MTCO e

Total: 618,127 MTCO,e

MTCO_ge

GHG emissions are measured in terms of metric tons of carbon dioxide equivalent (MTCO₂e). CO₂e or carbon dioxide equivalent is a metric used to bundle and compare different types of GHG emissions (e.g., methane, nitrous oxide) by converting them to an equivalent amount of carbon dioxide, the most common GHG.







BUILDINGS, ENERGY, & INFRASTRUCTURE



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Buildings, Energy, and Infrastructure



 Action BEI 1.1.D – Develop energy efficiency standards for new and retrofitted municipal and school buildings.

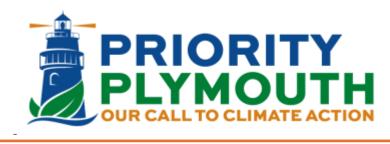




Natural Systems



• Action NS 1.1.A – Create an inventory, planting, and management plan of all Town trees that prioritizes planting native species and increasing tree coverage in high-heat areas, such as North Plymouth and West Plymouth.





Health, Safety, and Preparedness



 Action HSP.1.1A – Launch an inclusive and ongoing, multilingual climate preparedness activation campaign that provides information, resource, and sign-ups for CodeRED alerts for residents, businesses, and visitors.





Transportation



• Action T.1.1B – Expand the existing fuelefficient vehicle purchasing policy to include a phased vehicle replacement plan for all applicable municipal vehicle fleets.





Waste



• Action W 1.1.C - Partner with the Chamber of Commerce to pilot a "green restaurant destination" program.







 Action HSP 2.1.E – Build on the Town Brook restoration project's success to create a plan for removing three "significant hazard" dams: Fresh Pond Dam, Store Pond Dam, and Jenney Pond Dam.



 Action NS 2.2.A - Publicly promote maritime businesses that use sustainable harvesting and ecosystem management practices, including shellfish, oysters, and kelp farming industries.













- Dam Inventory Estimates 90,000 dams nationwide
- New England has more dams per sq. mile than any other region of the country - over 14,000 dams
- From 1990-2013, 127 were removed in New England
- Only 3% of total New England river length is unobstructed
- Obsolete stream obstructions







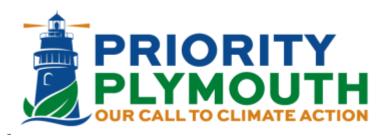


- Significant Hazard Dam
- Multiple inspections indicate a myriad of maintenance and repair work needs to occur
- Roadway is the crest of the dam, Mill immediately behind the spillway, businesses, and residential properties immediately downstream

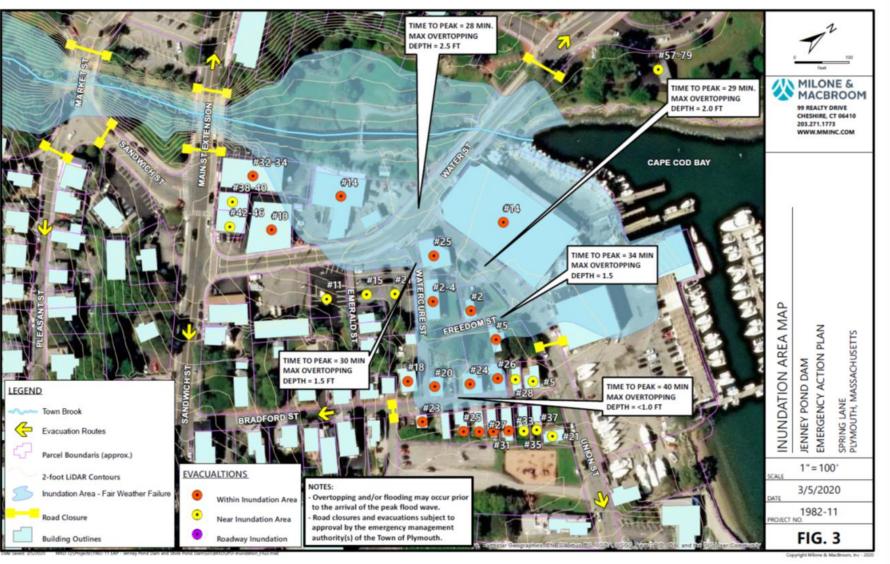




- Priority project in the CAAP
- In MA, in the top 1% of storm events has increased by 70% in the Northeast for the past 50 years
- 100-year storm (2024)
 - 7.49 inches in a 24-hour period (dam overtop by 0.7 inches)
- 100-year storm (2044)
 - 10 inches in 24-hour period
- 100-year storm (2084)
 - 11.7 inches in 24-hour period



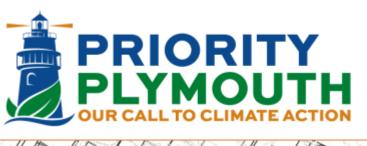


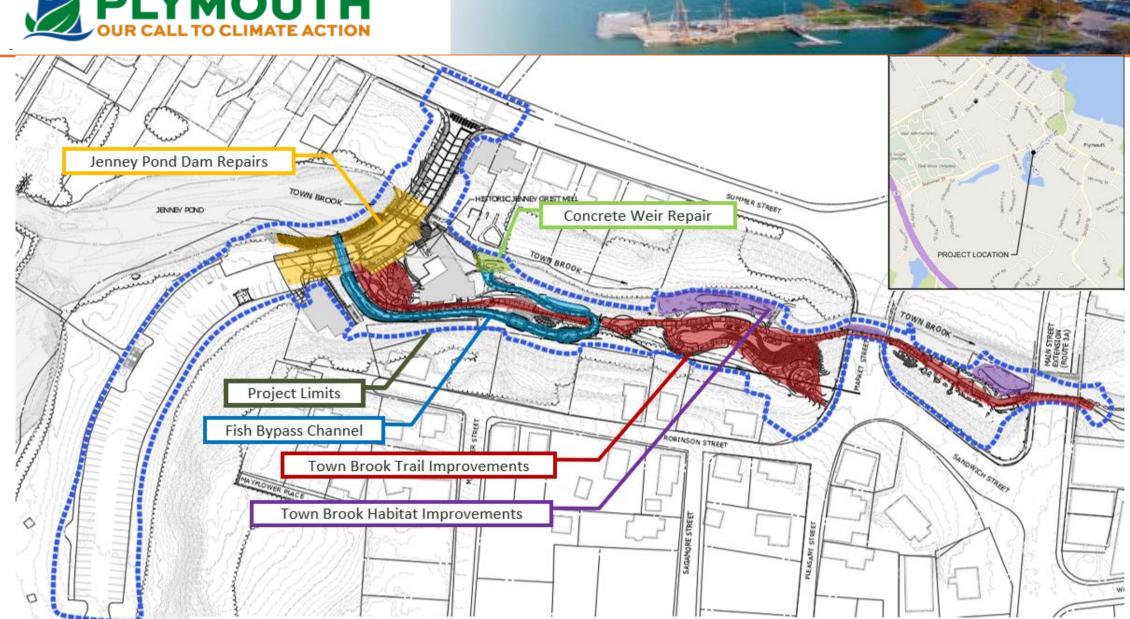


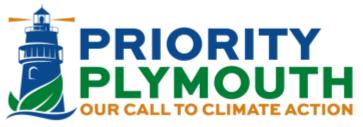






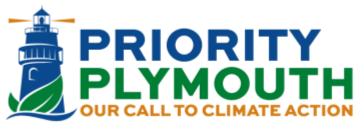




















Project Update:

- \$10,021,000 from NOAA \$1,050,000 for dredging, \$8,971,000 for Nature-like Fishway Bypass
- \$1,500,000 from CPA Trail work
- \$100,000 Visitor Services Board Trail Work
- \$6,738,500 from Town Meeting Dam Repairs and Bypass
- Dredging was completed this spring
- Dam Repairs, Bypass, and Trail Improvements will be completed by Spring 2026







 Action HSP 2.1E – Build on the Town Brook restoration project's success to create a plan for removing three "significant hazard" dams: Fresh Pond Dam, Store Pond Dam, and Jenney Pond Dam.



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Local Constraints:

- Limited funding and resources -
 - Competing against projects with more obvious urgency
- Lack of technical expertise -
 - Innovation driven by private sector

Local Strengths:

- Own land -
 - Locations to test tech
- Act as the local permitting agency -
 - Relationships with local boards and state agencies
- Legitimacy -
 - A known entity for other public agencies and private investors

Solution = Public/Private Partnerships!







Small Business:

- Must scale workforce to scale revenue
- Result = thinner margins and slower growth



Startup:

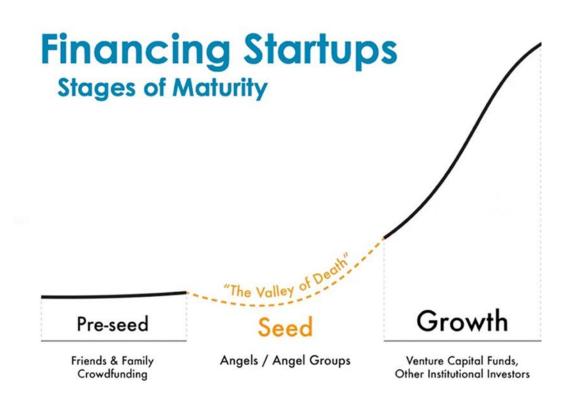
- Product can be widely used without proportionate employees
- Result = high margins and rapid growth





Startup:

- Carry significant investor risk
 - 90% of startups fail
- Investors seek low risk and high reward investments
- Each startup stage requires funding which is intended to carry it through the next stage
- The further along lower risk and lower reward







Financing Startups

Stages of Maturity

Pre-seed

Friends & Family Crowdfunding Seed

Angels / Angel Groups

Growth

Venture Capital Funds, Other Institutional Investors













Innovasea – Bedford, Nova Scotia

- Technology: AI for fisheries monitoring
- Pilot: Biological monitoring





Upstream Carbon

Upstream Carbon - Boston, MA

- Technology: Data driven land prioritization tool
- Pilot: Carbon sequestration accounting







Vycarb – Brooklyn, NY

- Technology: Marine carbon dioxide removal technology
- Pilot: Monitor and sequester marine carbon







InnSure – Boston, MA

- Technology: AI for Insurance innovation
- Pilot: Community embedded insurance modeling







Coastal Measures – Durham, NH

- Technology: Software to monitor marine conditions
- Pilot: Early alert system for coastal flooding events







Kai Pono Solutions – San Diego, CA

- Technology: Stormwater filtration solutions
- Pilot: Capture and treat stormwater along downtown corridor







Collaborative Workspace Program Funding:

- Physical location for cleantech startups to grow
- Access to permitting agencies



Sector Spark Grant Program Funding:

- Physical location for in-water testing facility
- Equipment and resources needed for marker space





"We firmly believe that the approval of Priority Plymouth by the Select Board is a crucial step towards realizing our shared vision of a more sustainable and resilient future for our community."

-The Plymouth Area Chamber of Commerce

"Implementing Priority Plymouth's plan will make Plymouth safer, healthier, and more financially resilient."

-Citizens' Climate Lobby

"In our ever-changing climate, developing an inclusive plan to increase community resilience in a holistic way is laudable and we support this work."

-Manomet Inc.

"It offers the opportunity for municipal government, large and small businesses, schools, and concerned environmental organizations and citizens to collectively create solutions."

-League of Women Voters

"Priority Plymouth exemplifies the best of community action to harness the commitment of our diverse and knowledgeable community member to chart a course to a sustainable, equitable, resilient climate future"

-South Shore Community Action Council

"The CAAP'S five key focus areas present a comprehensive approach to addressing the challenges of climate change."

-Sustainable Plymouth



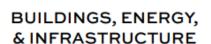


Thank You!

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