

# Medfield's Sustainability Summary - 9

While there will not be a distinct chapter of Medfield's Master Plan on sustainability, the topic is a top priority for the Town and therefore, sustainability and resiliency will be integrated throughout the plan. When it comes to sustainability, Medfield is not starting from scratch. The Town has already been working to reduce greenhouse gas emissions, reduce waste, conserve water, and much more. Below is a summary of the actions and initiatives that the Town of Medfield has already taken. This summary should serve as a baseline from which to recommend further actions that help the Town mitigate and adapt to climate change and create a more sustainable community.

## HOUSING & POPULATION

Preparing Medfield residents for the effects of climate change is a key component of sustainability and resilience. This section lists completed actions that help prepare residents, especially particularly vulnerable residents, for emergencies.

- **Emergency Preparedness**

- Comprehensive Emergency Management Plan address hazard mitigation, preparedness, response and recovery from a variety of natural and man-made emergencies
- Town evacuation plan as part of the Comprehensive Emergency Management Plan
- Fire Department sends out emergency preparedness information on social media and is working to make this content available on the Town website
- Medfield High School is the town's designated community shelter
- Reverse 911 system in place to alert residents about emergencies



- **Vulnerable Populations**

- The town works with the Council on Aging to help provide shelter to seniors during extreme heat and cold weather
- The needs of vulnerable populations were carefully considered during the Municipal Vulnerability Preparedness (MVP) program

## ECONOMIC DEVELOPMENT

An initial review of economic development activity in Medfield turned up several *proposed* actions from existing plans that focus on incorporation of sustainable practices in the Town's businesses and schools.

- **Business Preparedness**

- Encourage the business community, major institutions and non-profits to work with the Town to develop, review and implement the hazard mitigation plan.

- **Curriculum expansion**

- Strengthen and expand district offerings in Science, Technology, Engineering, Arts, and Mathematics (STEAM)
- Support varied curricular, co-curricular, athletic, and club programming for a continued sense of community and



- connectedness for students (could include sustainability-related activities)
- Explore an interdisciplinary and project-based approach to curriculum PreK-12 (very conducive to sustainability education)

## MEMO & Business Resilience

Medfield's Employer's and Merchants Organization (MEMO) works to initiate, sponsor, support and promote projects and activities that expand educational and marketing opportunities for its member businesses. MEMO represents 70 local businesses and supports the resilience of the Medfield economy by serving as a resource for businesses and organizing town-wide events, such as Medfield Day and singing at the annual tree lighting event.

## HISTORIC AND CULTURAL RESOURCES

Protecting Medfield's historic and cultural resources is critical to preserving the town's character. Approaching this goal with a lens of resilience will aid the success of the Master Plan.

- **Community Resilience**
  - Completed a combined Municipal Vulnerability Preparedness plan (MVP) and Hazard Mitigation Plan (HMP) in 2019 to assess the community's strengths and vulnerabilities to the effects of climate change
- **Community Leadership**
  - The First Parish UU of Medfield's anti-idling initiative won the Community Inspiration category as part of the Cool Congregation Challenge (2016-2017)
  - Residents have participated in the Charles River Watershed Association's river clean ups



## NATURAL RESOURCES & OPEN SPACE/RECREATION

Natural resources and open space provide ecosystem services, such as carbon sequestration and air and water filtration. Medfield has already taken steps to protect the functioning of these services.

- **Water Resource Protection & Conservation**
  - Wetland bylaw to restrict activities that may negatively affect public or private water supply, groundwater, flood control, erosion control, storm damage prevention, water pollution control, wildlife habitat, recreation, or aesthetics
  - Aquifer Protection Overlay District to protect the drinking water supply
  - Water Management Act Permit that limits water use to 1.5 million gallons per day (MGD) or approximately 115 gallons per capita per day



- Medfield is home to part of the Charles River Natural Valley Storage area, a critical wetland that helps prevent flooding in down-river towns
- Water use restriction and ban bylaws
- Rain barrels sold at a discounted rate, as of 2018
- Division of Capital Asset Management and Maintenance's (DCAMM) Medfield Charles River Gateway project included comprehensive remediation of soil, sediment, and groundwater

● **Tree Resilience**

- The Highway Department has a tree trimming program to mitigate damage to trees and infrastructure during storms

● **Open Space**

- Medfield has 3305.64 acres of open space
  - 2594.73 acres of protected open space
  - 414.39 acres under private protection (i.e. Westwood Gun Club Wardner Farm Trust)
  - 284.72 acres of Parks and Recreation outdoor recreation lands

**MEASURING SUCCESS**

- **Tree City USA**  
Medfield has been a designated Tree City USA since 2014
- **Regional Collaboration**  
Active member of Neponset Stormwater Partnership since 2014
- **Acres of Open Space**  
Medfield has 3305.64 acres of open space
- **Floodplain area**  
There are 491 acres of Medfield that falls in a floodplain
- **Water Conservation**  
Medfield's Unaccounted-for Water (UAW), a measure of how efficiently municipal public water supply systems are using water, is down to 17%--an improvement from past years
- **Charles River Gateway Project at MSH**  
Medfield's Charles River Gateway Project was the largest environmental restoration project along the Charles, improving on over 3 acres

**TRANSPORTATION AND CIRCULATION**

Transportation is a major contributor to a town's greenhouse gas emissions. Medfield is seeking to reduce emissions associated with the transportation sector and create a transportation network that is accessible and well-maintained.

● **Roadways**

- Developed and implemented winter road maintenance procedures to minimize contamination of waterways
- Improved maintenance of 86 miles of roadway
  - Accepted roadways: 77.59 miles
  - Private: 5.03 miles
  - State: .64 miles
  - Unaccepted: 2.64 miles

● **Streetlights**

- Purchased all 347 streetlights from Eversource for \$1 in order to convert them to LEDs
- All streetlights switched to LEDs as of June 2019

● **Vehicles**

- Adopted an Energy Efficiency Vehicle policy (2015)
- Several initiatives to reduce anti-idling in town with relevant information available on the town website



**MEASURING SUCCESS**

- **LED Streetlights**  
The conversion to LED streetlights is expected to yield energy savings of 69,435 kWh/year (or 8.3 homes' energy use for one year). The estimated annual savings for the Medfield project is \$32,600.

## Townwide Master Plan Inventory & Assessment of Existing Conditions

- Added a science unit at the high school about anti-idling that was accompanied by outreach efforts
- **Trails**
  - Moved a section of the Bay Circuit trail that was on a busy street into the woods
  - Existing proposal for a Medfield Rail Trail that would make up a 1.3-mile section of the Bay Colony Rail Trail
  - A map of the Medfield trails, including shared-use paths, bike lanes, and foot trails is available on the Town website

## COMMUNITY FACILITIES AND SERVICES

Improving community facilities and services creates opportunities for energy and waste reduction—key sustainability metrics.

- **School Facilities**
  - Two boilers replaced at Wheeler Elementary School, increasing efficiency from 80% to 92% (2017)
  - Initiated a recommissioning project at Blake Middle School to identify needed energy reduction measures
- **Municipal Facilities**
  - HVAC control commissioning at the Town Garage to ensure efficiency (2016)
  - Lighting retrofits made at various Town facilities, including the wastewater treatment plant, the Council on Aging, Town Hall, and the library
  - Boiler replaced at Town Hall (2017)
- **Critical Facilities**
  - Police and Fire stations have natural gas fired backup generators
- **Waste Reduction**
  - Plastic bag ban effective as of November 1, 2019
  - Medfield Green Months in May and October for collection and proper discarding of specialty items (i.e. electronics, textiles)
  - Volunteer-run swap area to exchange used items
  - Food waste drop off area available to residents at the transfer station
  - Backyard composting systems available at a discounted price, made possible by a MassDEP grant
- **Stormwater Management**
  - Catch basins on public roads and property are properly cleaned according to Municipal Separate Storm Sewer System (MS4) Storm Water Management Program requirements
  - Proper maintenance and replacement of drainage infrastructure as needed
  - Stormwater management annual reports since in 2003
  - Participated in stormwater workshops hosted by the EPA and DEP
  - Established an informal Stormwater Management Committee



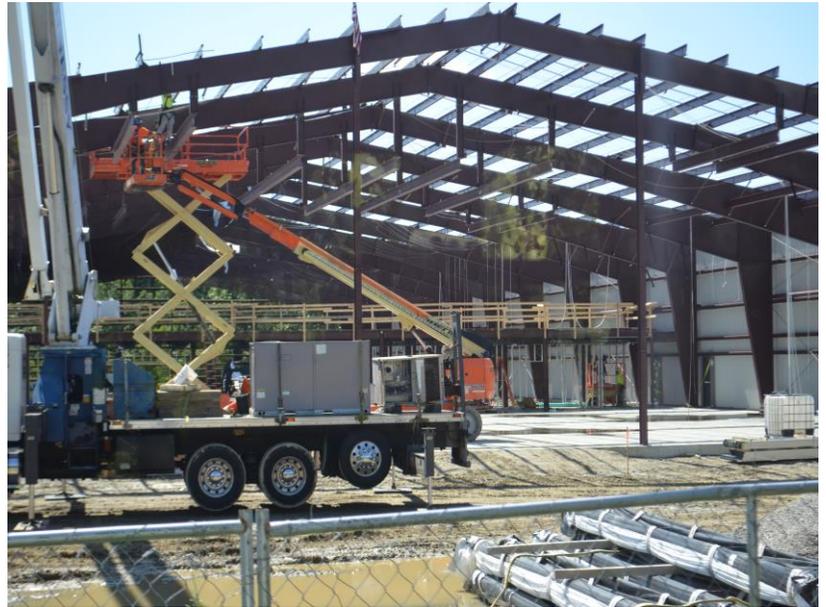
### MEASURING SUCCESS

- **Energy Star Ratings**  
All five public schools have been eligible for Energy Star ratings for energy efficiency

## LAND USE AND ZONING

Decisions about land use and zoning can have significant impacts on building efficiency and resiliency, sustainable development practices, and more.

- **Building Resilience**
  - Floodplain Conservation District that restricts development in areas along the Charles and Stop Rivers whose elevation is below 125 feet
- **Sustainable Development**
  - Set maximum for the percentage of any lot that can be covered by man-made impervious surfaces, such as buildings, structures, and nonporous paving
  - Earth Removal Bylaw that requires a permit for the removal of earth by a noncommercial property owner
  - Created written procedures for inspecting construction sites for proper sediment controls and conducting site plan reviews



## ENERGY CONSERVATION AND FUTURE RESILIENCY PLANNING

Medfield is working to reduce energy use at both the municipal and community level, while also considering how to increase the resilience of its energy supply.

- **Goal Setting**
  - Appointed an Energy Committee in 2008
  - Established an energy use baseline (2008) and developed a plan to reduce use by 20% within five years
  - Received a grant from the Department of Energy Resources to pay for an Energy/Facilities manager who worked for the Town for less than two years (2014). This position helped reduce energy costs by 30% through energy audits, lighting change outs, and other energy efficiency measures.
- **Building Energy Efficiency**
  - Adopted a Stretch Energy Code “for the purpose of regulating the design and construction of buildings for the effective use of energy” (2014)



- **Renewable Energy**
  - Adopted a Solar bylaw that provides as-of-right siting in designated locations and an expedited permitting process for as-of-right energy facilities (2014)
  - Have a 281 kW PV solar array ground mount at the wastewater treatment plant
  - Have a 60 kW PV solar array roof mount at the Public Safety building
  - Plan underway for 155 kW PV solar array at the Department of Public Works
  - Reinvested Solar Renewable Energy Credits (SECs) in the Wastewater Treatment Plant Sewer Enterprise Fund which reduced the planned 4% rate increase to 2%
  - Participated in the Solarize Massachusetts Challenge Program in 2016, resulting in 29 private installations
  - Have two large solar applications (greater than 1 MW) in the queue at the Ice House
- **Green Communities**
  - Designated a Green Community in 2017<sup>1</sup>



## MEASURING SUCCESS

- **Energy Reduction Target**

Medfield had already met its goal of 20% energy reduction from 2008 by the time it was recognized as a Green Community in 2017. However, energy use has since been trending upwards.
- **Townwide Solar Capacity**
  - Total: 1,600 kW AC
  - Residential: 634 kW AC (119 projects)
  - Commercial: 966 kW AC (10 projects)
- **WWTP Solar Generation**

In 2017, the solar array at the wastewater treatment plant generated 49% of the plant electricity
- **Public Safety Solar Generation**

In 2017, the solar array at the Public Safety Building generated 18.5% of the building's electricity
- **Solar Renewable Energy Credits**

In 2017, the Town received \$68,000 in Solar Renewable Energy Credits
- **Green Community Grant**

Medfield received an initial grant of \$146,738 from the Massachusetts Department of Energy Resources (DOER) to implement energy efficiency measures
- **Solarize Massachusetts 2016**

Through the program, 29 residents signed contracts with New England Clean Energy, leading to an 82% increase in PV capacity from residential generation

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<sup>1</sup> The [Green Communities Division \(GCD\)](#) provides grants, technical assistance, and local support from regional coordinators to help municipalities reduce energy use and costs by implementing clean energy projects in municipal buildings, facilities, and schools.