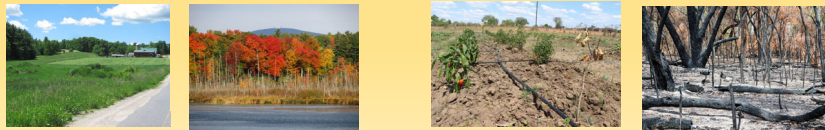


Preparing Sterling for an Uncertain Future - Considerations for Sustainability and Resilience in the face of Climate Change

Sterling Master Plan Committee
September 19, 2019

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Resilience and Sustainability Concepts

Resilience: Establishing and maintaining community preparedness against a wide range of adversities, with emphasis on climate change impact

Sustainability: A long-term community strategy to help cope with climate change that anticipates future needs and demands, based on cooperation, adaptability, resource management

It is my recommendation that **resilience** and **sustainability** be considered overlays for all decision-making with respect to the Sterling Master Plan.

I hope that any and all discussions regarding incorporating resilience and sustainability can be considered apolitical; this is after all an effort to work together for the betterment of the Sterling Community. Individual citizens can express their opinions regarding strategies to reduce CO₂ emissions, find global solutions to climate change through their votes and support for causes.

Features of a Resilient Community

A resilient community

- has strong and diverse social networks
- has a robust infrastructure that is able to support recovery after adversity
- has plans in place for taking deliberate, collective action in the face of a local disaster
- has resources (material, physical, social, and psychological) available for dealing with longer term aspects of recovery from a crisis situation



A Sterling Example of Community Resilience

Sterling has already strengthened its natural disaster resilience, thanks to the installation at *The Sterling Light Department* of an energy storage system which can provide up to 12 days of emergency backup electric power to police and emergency dispatch center.



Sterling Light Department
A success story

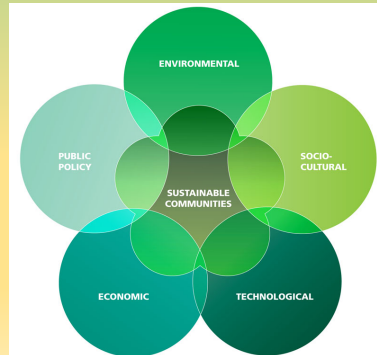
EXTRA BENEFIT:

By spring 2019, Sterling Light Department has saved its customers over \$1 million by strategically drawing power from the energy storage battery during peak usage periods. These savings were achieved in collaboration with Massachusetts Municipal Wholesale Electric Company (MMWEC), which serves as an electric power wholesaler.

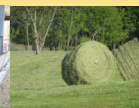
Sustainable Community Initiatives

Actions applicable to Sterling:

- Make farming an essential economic component of the town
- Promote equitable, affordable housing with low energy footprint
- Provide opportunities for entrepreneurship that produces sustainable products, services and/or activities
- Enhance opportunities for companies and businesses with an environmentally strong business model



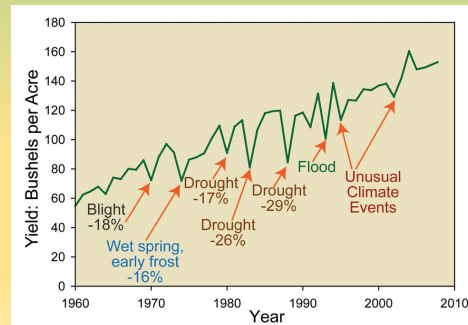
Sterling Farms



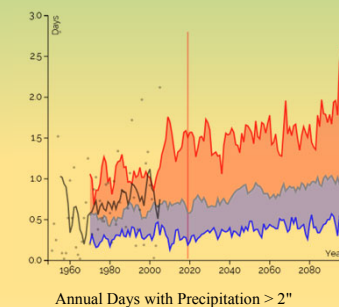
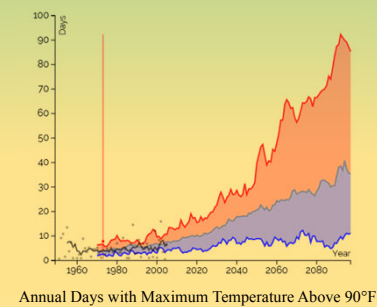
Climate Factors influence Crop Yield

Exactly how future weather will affect agricultural production is difficult to predict....

.... but the graph demonstrates the clear relationship between crop yield (corn) in bushels per acre and climate events from the recent past



Examples of Predicted Changes in Weather Patterns for MA



SOURCE: Forecasts for New England http://www.resilientma.org/datagrapher/?c=Temp/state/pcpn_2/ANN/MA/

Farming Challenges and Opportunities



Extreme situations that we hope to avoid

FARMING CHALLENGES:

- Cope with impact of a warmer climate, such as insect infestations
- Be ready for more unpredictable weather patterns: heavier rainfall and longer heat waves
- Be mindful of protecting natural resources, such as soil, water, and ecosystem diversity
- Farm with limited use of chemical fertilizers, weed and pest control through chemical means

FARMING OPPORTUNITIES:

- Develop a local *food system* through coordinating and streamlining the growing, harvesting, packaging and distributing locally grown food
- Find ways of greater involvement of residents in operating the food system
- Give priority to nutritional and health aspects of locally grown food
- Make farming a local economic development priority
- Set up food co-ops and local farm-to-table restaurants

Infrastructure Preparedness

Climate change in the form of extreme weather will be a major challenge to the future upkeep of Sterling's infrastructure.

We will likely face heavier rainfalls, stronger wind storms and more intense blizzards, leading to flooding, wind damage, and power outages.



Examples of infrastructure preparedness :

- Water and sewer systems to be well-maintained and adequate for demands
- Road structures upgraded to withstand much heavier downpours
- Well-equipped emergency responder and fire departments
- A resilient communication system for police and other emergency responders
- Fully supplied emergency shelters

Housing as part of the Community Infrastructure

Housing is an essential part of the community infrastructure. The individual house owner has broad latitude regarding size and design. Nonetheless, houses today must be built according to standards and code.

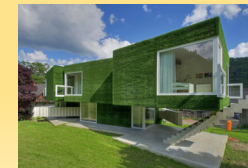
IMPORTANT TOPICS TO CONSIDER

- Should future housing construction be required to meet certain energy efficiency standards?
- Should the energy sources for new homes be required to be renewables, i.e. no oil or gas?
- Should building materials be required to have been produced with minimal environmental impact?
- Should Sterling consider housing development concepts, such as cluster housing on smaller lots?



Green Housing Designs

Many ideas, concepts and designs exist



Sources of Community Strength

Existing sources of community strength:

- The Sterling Fair has become a thriving and successful event that highlights Sterling's farm heritage
- The Senior Center has a very diverse program, with meals, physical activities, music, discussions and excursions
- The youth athletics programs appear strong
- The Rec Dept. activities program for all ages, the summer outdoor concerts series, new pickle ball courts and hiking trails to explore
- The number of local clubs and societies (Garden Club, the Historical Society, The Grange, etc)



Possible new initiatives:

- More ways of making local farm products available to local residents and to local eateries
- Invigorating the center of Sterling through improved sidewalks, upgraded appearance, better parking and renovation/demolition of vacant structures
- Skill-trading and tools-sharing – practical learning from local folks
- Use of the 1835 building (venue for local artists, a book trading café, music etc)
- More programs highlighting Sterling's past and presenting future opportunities

Sterling Master Plan Subcommittees: Where can resilience and sustainability measures be valuable?

S&R 1: Provide a reliable supply of electricity and an affordable rate, from expanding the use of storage batteries, solar farms and households with solar panels and/or heat pumps

S&R 2: Strengthen community infrastructures, such as reliable water supply, road network with minimal wash-out and erosion, hardened communication network

S&R3: Strong farm community, well-integrated into local food network, can help ensure access to affordable and readily available healthy local food

S&R4: Stricter rules for new housing construction regarding energy consumption to house construction and ability to withstand more severe weather events

S&R5: Strengthen Sterling's community network to better utilize the wide range of artistic talents, farming and repair skills, available tools for rent

Natural and Cultural
resources

Community
Facilities & Services

Open Space &
Recreation

Economic
Development

Housing

Circulation and
Transportation

Land Use

Funding Opportunities for Resilience Preparedness

Municipal Vulnerability Preparedness (mvp) Grant Program

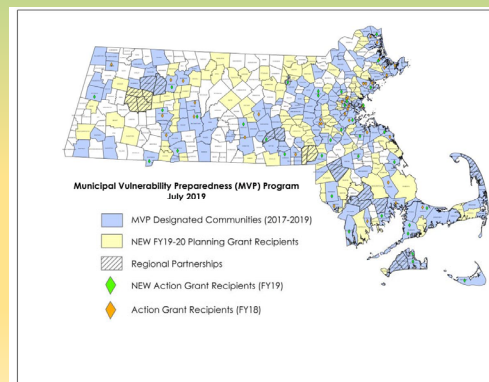
<https://www.mass.gov/service-details/mvp-program-information>

Baker-Polito Administration Awards \$12 Million to Municipalities to Prepare for Climate Change

71 Percent of Massachusetts Communities Now Enrolled in
Municipal Vulnerability Preparedness Program. 6/19/2019.

<https://www.mass.gov/news/baker-polito-administration-awards-12-million-to-municipalities-to-prepare-for-climate-change>

MVP Funding



Climate preparedness grants

Auburn \$18,000
 Brookfield \$28,000
 Clinton \$20,000
 Harvard \$35,000
 Hudson \$18,000
 Leicester \$20,000
 Marlboro \$31,000
 Sutton \$15,000
 Uxbridge \$15,000
 West Boylston \$15,000

Municipal Vulnerability Preparedness (mvp) Grant Program

<https://www.mass.gov/service-details/mvp-program-information>

The Municipal Vulnerability Preparedness grant program (MVP) helps communities to:

- Define extreme weather and natural and climate related hazards
- Understand how their community may be impacted by climate change
- Identify existing and future vulnerabilities and strengths
- Develop and prioritize actions for the community

MVP Funding Opportunities, cont'd

MVP Planning Grants:

The MVP Planning Grant offers funding to municipalities that wish to assess their vulnerability to and prepare for climate change impacts, build community resilience and receive designation from the Executive Office of Energy and Environmental Affairs (EEA) as a Climate Change Municipal Vulnerability Preparedness (MVP) program municipality.

MVP Action Grants:

The MVP Action Grant offers financial resources to municipalities that are seeking to advance priority climate adaptation actions to address climate change impacts resulting from extreme weather, sea level rise, inland and coastal flooding, severe heat, and other climate impacts.

All MVP Planning Grant proposals must provide the following:

- A signed letter of support from the chair of the board of selectmen, mayor, a town administrator, or similar city or town official
- A short statement of the community's commitment to taking on this grant and planning for the impacts of climate change in the city or town
- The name of a qualified employee of the municipality, committee member or volunteer who can serve as the local project manager and point of contact for the grant
- A summary of community support and any project partners and letters of support from all relevant local boards, departments, commissions, businesses, organizations and other partners
- A description of any ongoing planning efforts such as local hazard mitigation plans, open space plans, master plans, etc.
- A description of the community's need to address climate change, expected impacts, and any ongoing climate-change related projects within the community or region
- If the community wishes to expand the scope of the planning grant, a description of the additional work you intend to complete is required.

Thank you for you attention

Time for discussions