# Master Plan Advisory Committee's

# Climate Change Resiliency and Sustainability Work Group

# Meeting Minutes

**Date: 5/10/19**

**Location: Lawrence Library History Room**

**Time: 1:30-3:30 PM**

Attending: Ken Hartlage, Sherrill Rosoff, Renee D'Argento

Absent: Rob Rand, Paula Terrasi, Jack Vizniewski

Meeting was called to order at 1:45 PM

Work Session:

Discussion centered on what the climate change work group should focus on going forward. Sherrill Rosoff discussed food security; Ken Hartlage stated that he had done research on food hubs for his coursework. Agreement was reached that we would focus on food hubs for the Economic Development chapter.

Sherrill and Renee to set up a meeting with Carl Hills to talk about local farming with him. As Sherrill had brought up food security as an issue at the previous MPAC, an interniew with Carl Hills will be part of her reporting back to the MPAC, along with research that Renee and Sherrill were doing regarding the state of farming nationally, and in Massachusetts.

Appended to these minutes:

1. research provided by Renee D'Argento and Sherrill Rosoff, with recommendations.
2. Interview with Carl Hills, dated 6/2/19.

<u>Farming Nationwide and in Massachusetts:</u>

The loss of farms nationwide over the past century has been extraordinary as farmlands and farm businesses have consolidated from the many to the few. With the loss of farms has come the loss of farmers. In 1840 almost 70% of the American labor force worked in agriculture; by 2000 barely 2% of the national labor force worked in agriculture.

And farmers are aging. According to the USDA (2012) the average farmer is 58 years old - close to retirement. About a third of farmers were older than 65. In Massachusetts the average age is 59 years old, and, interestingly, female farmers comprise 38.5%. (Mass DAR, 2017).

Its hard to make a living farming. The average farm in the United States is small. According to the USDA in 2012 about 75% of farmers made less than $50,000 annually and farms with sales less than $10,000 accounted for 55% of all farms. In 2017, the average farm in Massachusetts produced $65,000 worth of agricultural products on 68 acres. (Mass. DAR snapshot website: mass.gov/info-details/agricultural-resources-facts-and-statistics#current-statistics-)

Another way of looking at farming, according to the USDA in 2012 about 4% of US farms produced 66% of farm products by value.

Individually or family owned farms in Massachusetts accounts for 80% of all farms in the state. Major crops are (in order of generated revenue): greenhouse and nursery, vegetables, cranberries, dairy, livestock, miscellaneous crops, and aquaculture. Pepperell family farmers produce hay, miscellaneous crops, dairy, fruits and vegetables. The large farms include Wilkins, Kimballs, Blood Farm, Twin Valley, Gardener Farm, and Cloverleaf farm. There are also a number of smaller farmers who have their own land, lease town and ConservationTrust land, or farm their neighbor's land.

Climate change will have a major impact on farming in Pepperell, New England and, most significantly because of the consequences to national food production, the Mid-West. According to sources such as "Risky Business" which provides a concise overview of climate change impacts on each region of the United States, by the turn of this century extreme heat spreading across the lower Mid-Western states will create an estimated 50 - 70% annual crop yield failure in all major commodity products: corn, soybean, wheat, cotton. Whether this scenario will come to pass will depend in large part on new farming techniques, new seeds, and soil conservation efforts, to name a few.

To the FDA food security is about securing the consumer's access to safe foods; thus, its focus on food contamination (e.g., e coli). To the climate scientist and conservationist, food security is about the overuse of non-organic herbicides, pesticides, fertilizers; tilling methods that degrade soils and create impenetrable "plough pans" underneath top soils, and all sources of impediments for farmers to get their products to market (e.g. infrastructure).

Food consumers in Massachusetts are increasingly buying local because they want to know where their food comes from. "Direct market sales accounts for 21% of the state's total sales of agricultural products" and "ranks third in the nation for direct market sales per farm at $55,384." (MDAR) This means our local farmers are intensely entrepreneurial looking to secure local direct to consumer markets. This is about retail, not wholesale.

We want to protect and support our agricultural heritage and farming traditions in Pepperell. We seek to preserve our connection to local farms and farmers. To do so, we must encourage residents to know who

they are, support them economically by buying local, and value them as essential to preserving our open spaces and rural character.

For this chapter focused on our town's natural and cultural resources, we make the following recommendations regarding farming based on Tony Beattie's presentation and our own research:

We recommend:

A. Develop a "Get to know your farmers" community outreach

a. resuscitate Pepperell's Farm Fair tradition to promote agriculture. See Massachusetts Agricultural Fairs Association. (MAFA.org)

b. work with the North Middlesex Regional School District to introduce a business curriculum focused on climate science, agronomy and farming. Part of the curriculum design would include hands-on experiences such as summer internships. Explore collaboration with the Nashoba Valley Technical School that has an established agronomy program.

B. Revitalize our Agricultural Advisory Committee. This committee must expand its scope to help the town capture funding income streams for our local farmers and the town. Investigate towns which are recognized as having effective Agricultural Advisory Boards as templates for reviving our town's committee.

C. New construction permits must require developers to use 6% organic matter soils to a depth of 6" to improve lawn health and reduce the need for watering and fertilizers.

D. Instruct the water department to offer a discounted agricultural water rate to help promote local farming and CSA's.

E. Establish a town "community farm" on town land that would encourage residents to establish their own "victory gardens" and raise awareness of farming issues and practices, and environmental benefits of farms.

F. Encourage public awareness of "best practices' regarding soil health (use of pesticides, herbicides, fertilizers) and soil conservation.

Sources: Interviews with Tony Beattie and Carl Hills; "Forty Maps That Explain Food in America", Massachusetts Department of Agricultural Resources, Risky Business, 2013 riskybusiness.org.

Meeting with Carl Hills of Kimball Farm:

Farmers are being paid for soil conserving carbon sequestration practices - through off-season cover crops. winter rye; no plowing anywhere. UMASS is promoting promoting no till practices.

Farmers have created a “plow pan” from continuous plowing where the soil above and below is loose. He has a special auger machine that punches through the plow pan so that roots from his corn etc. can go below the plow pan. Over time, by punching through the plow pan, the pan will loosen up.

Different kinds of herbicides and he participates in UNH research projects as well as Mass Dept of Ag regarding their pesticide research. Contact herbicides are okay - and residual herbicides are bad for soil health.

Latest development are tunnel or hoop farming where farmers are now growing underneath protective coverings. These are different from greenhouses (which have temperature controls and fans) and hydroponics. Carl Hill does not use chemicals in his hydroponic tunnel but he does regulate the heat and sunlight.

His solar panels (124 panels) provide 80% of his farms energy needs. He will pay the panels off in four years; panels actually move to follow the sun. He wanted a wind tower but solar is faster pay off; he used solar panels made in Vermont - and these panels are 40% more efficient because they can turn so they adjust to the weather. He wrote a grant for the solar panels and received $200,000 in grant money which amount to 25% of the cost. he also got “amazing” tax benefits from state and feds (another 25% annually) and gets SREC. He received $12,000 last year; fed credits have gone away. Farmers don’t have to worry about net metering and caps and are exempt from the caps.

No setbacks for greenhouses.

He sells retail to restaurants and farm markets in Boston: Rose Kennedy Greenway, Harvard Square; he won’t sell wholesale. Small farmers are being pushed out by Hannafords/Shaws/Market Basket/Trader Joe’s but now there is no money in wholesaling, just retail. Brookdale Farm does do business with Hannafords. He plans to start a local restaurant route that will cover high end bistros in Boston.

We need to push the message to folks in pepperell: come to local farms to buy your produce - it’s the only way local farmers can survive.

His land is under APR. Land cannot lie fallow under APR; whoever buys his farm will have to be a farmer; has to be able to afford to buy the farm but federal FarmCredit is a source of financing for farmers

Food security to the FDA has o do with food safety such as icily contamination.

Regarding water for his farm: he has a 700’ well and dug himself a retention pond. Between these two he has a mile of underground irrigation pipe - this was also largely paid for by state grants.

Teaching young kids about farming is also key. Hollis has put a greenhouse in their high school and give a class in farming. He gives talks to farmers all the time.

Farmers are turning to hemp and marijuana as other cash crops.

Meeting adjourned at 3:20 PM