



## Medfield Public Library Rain Garden and Native Pollinator Garden Request for Funding

June 15, 2017

The Medfield Public Library is requesting \$3,958.68 from the Town of Medfield's Local Meal Tax Fund to create a rain garden and a pollinator garden at the entrance of the library. The total cost of the project is \$9,468.68.

Increasing water bans and localized urban flooding identify a need to educate the community about gardening and landscaping practices that will reduce water consumption and manage storm water runoff. The library is excited to further its goal as a community educator with this important project. Its downtown location is at the geographical heart of the town's maximum foot traffic. There are several walkways moving horizontally and vertically from the main entrance. A rain garden and accompanying native pollinator garden would provide vital educational opportunities to any citizen, young or old, as they enter the library or use the walkways to access surrounding businesses and the Town Hall across Main Street.

### **Rationale**

Rain gardens are an inexpensive, simple to implement and environmentally sound solution to residential and urban storm water runoff caused by increased imperviousness of roads, parking lots and other hard surfaces. By mimicking the natural absorption of a forest or meadow, rain gardens can absorb runoff more efficiently – as much as 30% - 40% more than a standard lawn. An average American family uses 320 gallons of water per day--30 to 60% in irrigation depending on dryness of climate or drought conditions which Medfield has experienced severely in the last two years. Even more wasteful is that 50% of irrigated water is lost through evaporation, run-off or quick application.

By capturing rainwater in a rain garden, holding it, and then slowly releasing it into the soil, the rush of runoff from a large storm can be slowed and cleaned – quickly, neatly and naturally. Rain gardens are low-tech, inexpensive, sustainable, aesthetically pleasing and teachable landscape features. By using native plants in both gardens, the need for irrigation will be less because native plants have a deep root system and can better withstand drought conditions. Also, the plants attract pollinators native to the Northeast such as numerous species of bees, wasps, flies, beetles, butterflies, moths, and hummingbird, all contributing to the pollination of crops and flowering plants.

Volunteers from the Medfield Garden Club vetted landscape design companies for the project and recommend Land Escapes Design, a sustainable garden design company. Land Escapes will provide the garden design and the site prep (soil, amendments and rocks). The suggested plants will be purchased from Garden in The Woods, an organic nursery specializing in native plants.



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Informational signage featuring QR codes will direct people to library resources, further enhancing the educational component of the project. Medfield groups and private citizens will be asked to help with the actual planting under the guidance of Medfield Garden Club volunteers, making this a true community project.

### Schedule

The project is slated to begin in late September-early October since the cool weather in early fall is best for planting. It is estimated that it will take a day for the site prep and 2-3 days for planting. Signage will be installed in the spring after the gardens are better established. We will hold a grand unveiling of the gardens during Earth Week in April, 2018 and the library will host workshops and public programs for all ages on adapting our gardens and landscape to deal with storm water management, drought and the overall effects of climate change.

### Design Specifics

Area specified for water redirection and run-off reduction: 30 x 30 ft. roof, or 900 sq. ft., above the downspout to the immediate left of the library main entrance.

Percolation rate: April 22, 2017. Hole 8" wide by 12" deep. Filled and drained once. Second drain 8" in 38 minutes. Full 12" drain in less than one hour.

Size of rain garden: 150 sq. ft. to handle a 1" rain event for 900 sq.ft. of roof area

Depth of vegetative basin: 6-9 " deep; bottom layer 50% gravel, median layer 30% compost, top layer 20% loam, 3" composted mulch for weed control and moisture retention

Downspout disconnection: see illustration below. Lines indicate cuts to downspout





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9" above stand pipe/ground entry; stand pipe capped with a removable stone cap if garden is moved in future

Rain garden distance from foundation: 10 ft.

Run-off slow down: Stone stream at base of downspout into rain garden basin extending through entire bed between crab apple trees

Overflow: Bermed at downside of the vegetative basin 6-8 ft. above walkway with infiltration into the entire width of downside garden base. Removed soil will be used at top of garden to create a slight grade and to build the berm

Planting techniques: Hydrozone planting using a combination of sun to shade native perennials depending on position of sun during the day

### **Summary**

Rain gardens are a beautiful and colorful way for homeowners, businesses and municipalities to help ease storm water problems. There is a growing national trend by municipalities and homeowners to incorporate natural processes such as rain gardens to help relieve flooding and pollution. It is our hope that this project will start a critical conversation about water and conservation management making Medfield a model for neighboring cities and towns in community education on sustainable landscapes.