In July 2012 Chester Township installed 3 bioretention cells totaling 1,300 square feet and 3,806 square feet of pervious pavers within the Town Hall parking lot to capture, filter, and treat storm water runoff before it enters the existing storm sewer system and empties into Marsh Hawk Run, a tributary to the Chagrin River.

This project serves to demonstrate to local developers, businesses, public officials and residents in Chester Township and the greater Geauga County area that innovative stormwater retrofits can be effectively incorporated into existing commercial or public parking areas to treat stormwater runoff and reduce local flooding.

**Bioretention Cell Features**

- Shallow landscape depression with perforated storm sewer pipe below soil mix.
- 88% sand, 10% clay, 2% silt soil mix to a minimum depth of 2.5 feet
- Soil mix acts as a natural filter to remove pollutants.
- Plants help to transform and remove pollutants and reduce runoff through evapotranspiration.
- Bioretention cell ponds to a maximum of 6” water depth around catch basin before overflowing.
- Catch basins allow overflow into storm sewer during large rain events to prevent parking lot flooding.

**Chester Township Town Hall Bioretention Cell Construction**

- Bioretention cells are landscaping features that capture, store and treat stormwater runoff from impervious (hard) surfaces such as parking lots, roads and rooftops.
- During storms, water runoff temporarily ponds in the landscape depression and soaks into the bioretention cell’s plants, mulch, sand-soil mix and underlying gravel layers which remove pollutants such as oils, grease, leaked vehicle fluids, sediment and heavy metals from the water as runoff passes through the system.
- A perforated drainage tile within the bottom of the cell collects the filtered water and connects to the storm sewer system eventually draining the water into Marsh Hawk Run which ultimately flows to the Chagrin River.

Funding provided through a grant from the Ohio Environmental Protection Agency’s Surface Water Improvement Fund.
example planting scheme for bioretention features

1. New York Aster (Aster novi-belgii)
   Height: 4-5 feet
   Blooms: Midsummer to Frost

2. Bee Balm; Bergamont
   (Monarda fistula)
   Height: 2-3 feet
   Blooms: May to Frost

3. Happy Returns Daylily
   (Hemerocallis ‘Happy Returns’)
   Height: 1-3 feet
   Blooms: Midsummer

4. Western Sunflower
   (Helianthus occidentalis)
   Height: 1-2 feet
   Blooms: Summer

5. May Night Salvia
   (Salvia X Suprbia ‘Mainacht’)
   Height: 2 feet
   Blooms: Midsummer to Frost

6. Stella de Oro Daylily
   (Hemerocallis ‘Stella de Oro’)
   Height: 15 inches
   Blooms: May to Frost

7. Moonbeam coreopsis
   (Coreopsis verticillata ‘Moonbeam’)
   Height: 12 inches
   Blooms: All summer

8. Autumn Joy Sedum
   (Sedum x ‘Autumn Joy’)
   Height: 16 inches
   Blooms: Late Summer to Frost

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