Raindrop Rodeo
Lassoing Uncontrolled Stormwater Runoff Through Demonstration Practices
CWEA 2019 Stormwater Seminar – December 11, 2019
Presentation Overview

- The Site: Frederick County’s University of Maryland Cooperative Extension
- The “Restoration Toolbox”
- Project Financing
- Project Co-Benefits
- Project Unintentional Co-Benefits

www.tinyurl.com/StormwaterProject
The Site

Frederick County’s University of Maryland Cooperative Extension
The Site

- County-owned Property - University of Maryland’s Extension Office
  - Over 200 residents and business owners visit the site each month to learn
  - Frederick County Master Gardeners demonstration gardens
Site History

- The Major Problem the Master Gardeners were having:
  - Stormwater!
- Master Gardeners designed & installed rain garden
  - Drainage area was too large → practice was overwhelmed and failed
- Master Gardeners requested County assistance
Site History (con’t)

• Priority Site for the County:
  • County owned parcel with all impervious being uncontrolled
  • Site was actively eroding

• Project Goals:
  • Design practices which could be incorporated into the existing demonstration gardens while providing function
  • Demonstrate restoration opportunities for residents and small businesses
  • Several unintended Co-Benefits emerged……
Site Challenges & The “Restoration Toolbox”

Frederick County’s University of Maryland Cooperative Extension
Site Challenges

- Utilities
- Other site uses
  - Existing planting beds
  - Paw Paw trees
- Property grades/elevations
- Forest Resource Ordinance planting
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December 11, 2019

Site Challenges

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- Forest Resource
- Ordinance planting
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Pawpaw Patch
Frederick Master Gardener Demonstration Garden

Pawpaw, *Asimina triloba*, is a native tree that produces delicious fruit in the fall. The fruit has a custard-like consistency with a hint of vanilla-banana flavor. The trees are tremendously deer resistant, have large tropical-looking leaves and are the most northerly member of the Custard-apple Family, Annonaceae. Because they need cross-pollination, it is recommended to plant several small seedlings together to establish a new Pawpaw patch. They are naturally found along streams, so planting in a drainage area such as this one is a good idea.

Enjoy our native plants and wildlife!

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Frederick County
Master Gardener

University of Maryland Extension

Dewberry
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The “Restoration Toolbox”

- Filterras
- Micro-bioretention
- Cisterns/Rainwater Harvesting
- Conservation Landscaping
- Dry Creek Bed

Sketch by Fitch & Company, Inc.
Filterra Devices

- Site Challenges:
  - Extremely limited space
  - Grade issues
  - Paw Paw trees
  - Existing planting beds

Sketches by Fitch & Company, Inc.
Filterras Under Construction
Filterras
Completed
Micro-bioretention Facility

- Site Challenges:
  - Existing planting bed
  - Site grades
  - Geotechnical boring results

Sketch by Fitch & Company, Inc.
Micro-bioretention Under Construction
Micro-bioretention
Completed
Rainwater Harvesting

- Site Challenges:
  - Getting collected rainwater to other side of driveway
  - Potential freezing during winter
  - Redirecting downspouts

Sketches by Fitch & Company, Inc.
Rainwater Harvesting Under Construction
Rainwater Harvesting Completed
Project Financing

Frederick County’s University of Maryland Cooperative Extension
Project Financing and Long Term Maintenance

• Design: $126,000 utilizing County Funds
• Construction: $40,000 Grant* + $166,000 in County leveraged Funds
  • *Awarded a Maryland Department of Natural Resources’ Chesapeake and Atlantic Coastal Bays Trust Fund based on creative project design strategies and highly visible project

• Long term Maintenance
  • Master Gardener Interns are assigned portions of the project to maintain
  • County will provide structural maintenance and any other maintenance necessary
Project Co-Benefits

Frederick County’s University of Maryland Cooperative Extension
Project Co-Benefits

- Co-benefits
  - Project assists the County in meeting its Restoration and outreach goals under the NPDES MS4 Permit Requirements
  - Partnership with the Master Gardeners in developing the native planting plan
  - Developed a Story Map for the project: [www.tinyurl.com/StormwaterProject](http://www.tinyurl.com/StormwaterProject)
  - Provided climate resilient stormwater management to control local flooding while creatively integrating the project into the existing landscape
Project Unintended Co-Benefits

• Direct connection Master Gardeners had with stormwater and the demonstration garden
  • Turned it around into their new theme for the Frederick Fair

• Three stormwater management seminars which each have educated over 50 people per event
Project Unintended Co-Benefits

• “Tap” Opening Ceremony
  • County Executive
  • Area Extension Director Frederick, Howard & Montgomery Counties
  • Manager of Office of Sustainability
  • UME MG State Coordinator
  • Over 40 Master Gardeners Attended and approximately 30 County residents

• Master Gardener Annual Tour of Stormwater and Stream Restoration Practices
Questions?

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