RUTGERS UNIVERSITY
Water Resources Program
New Jersey Agricultural Experiment Station

Green Infrastructure Champion Workshop: Designing Rain Gardens for Property Owners

Edison, NJ

April 28, 2026

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AGENDA

1. Introduction and review of program objective
2. Highlight the importance of giving an educational presentation
3. Instruction on how to deliver an in-person technical design workshop
4. Discuss advertising workshop
5. Questions?

Program Objective

Train Green Infrastructure Champions on how to design rain garden for property owners

How do we get property owners to want a rain garden?

1. Education people on what a rain garden is and why they are important
2. Emphasize personal responsibility – doing your part to save the planet

Who is our target audience?

1. Environmental Commissioners, Green Team Members, and Shade Tree Commissioners
2. Environmentally Conscientious Property Owners
3. School Teachers and Principals
4. Youth Groups

How do we educate them?

1. Rain Garden Commercial – video and/or PowerPoint (15 minutes)
2. Rain Educational PowerPoint Presentation (45 minutes)
3. Rain Garden Design Session (45 minutes)

What tools do we have to help?

1. Rain Garden Design Manual
2. Rain Garden App
3. Rain Garden Templates (we'll show you later)
4. AmeriCorps Watershed Ambassadors
5. RCE County Agents
6. RCE Water Resources Program

Steps to Get Started

Once you have an interested group of people:

- Provide a sign-up for a Homeowner Rain Garden Educational Session
- Host an educational session via Zoom or in Person (we can provide the PowerPoint we use). This will get residents educated on what a rain garden is and its purpose.
- Once interested participants attend the educational session, they can sign up for a design session (which we typically do a week or two later)
- Next, we will run through a design session example

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Example of what we use when we sign people up for a design session:

The design session will be held on _____from _____ to _____. Contact your local Green Infrastructure Champion to sign up to get your free rain garden design.

Josephine Smith, GI Champion
JSmith999@aol.com

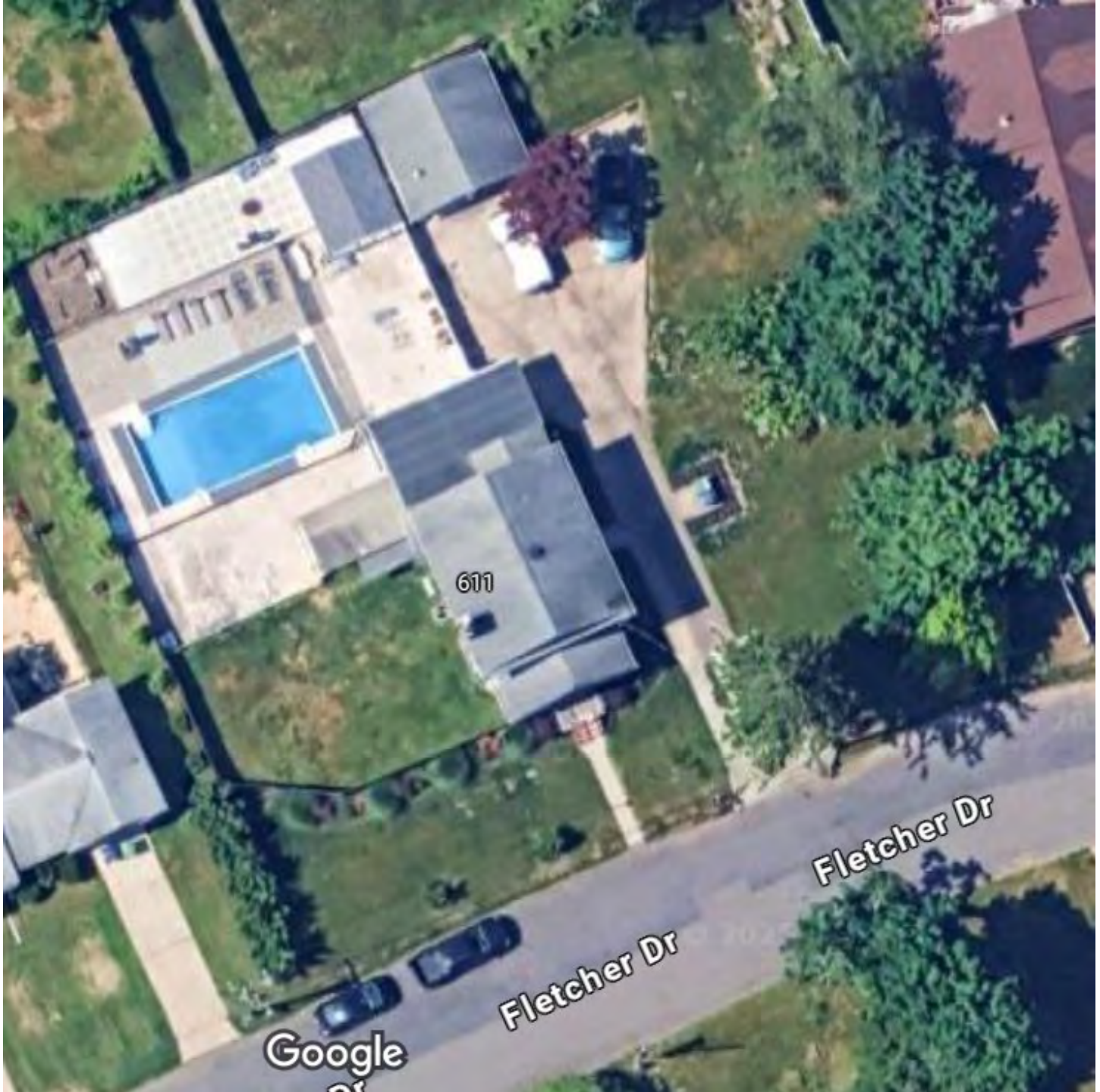
How to Run a Rain Garden Design Session

Materials available sample designs

1. Posterboard of sample designs are available for each GI Champion that hosts a workshop (12 posters)
2. Rain garden manual will be provided
3. Homeowner rain garden throughout the years PowerPoint presentation and booklet will be provided
4. Plant fact sheet books will be provided
5. Green infrastructure guidance manual will be provided

Steps to developing a design

1. Ask homeowner where they want the garden (google maps can be used to view the home to determine if this is an appropriate location)
2. Determine the area that would drain to the garden (google maps' measure tool can be used to calculate the drainage area)
3. Use Web soil survey to identify soil type and infiltration test data to determine if the soils drain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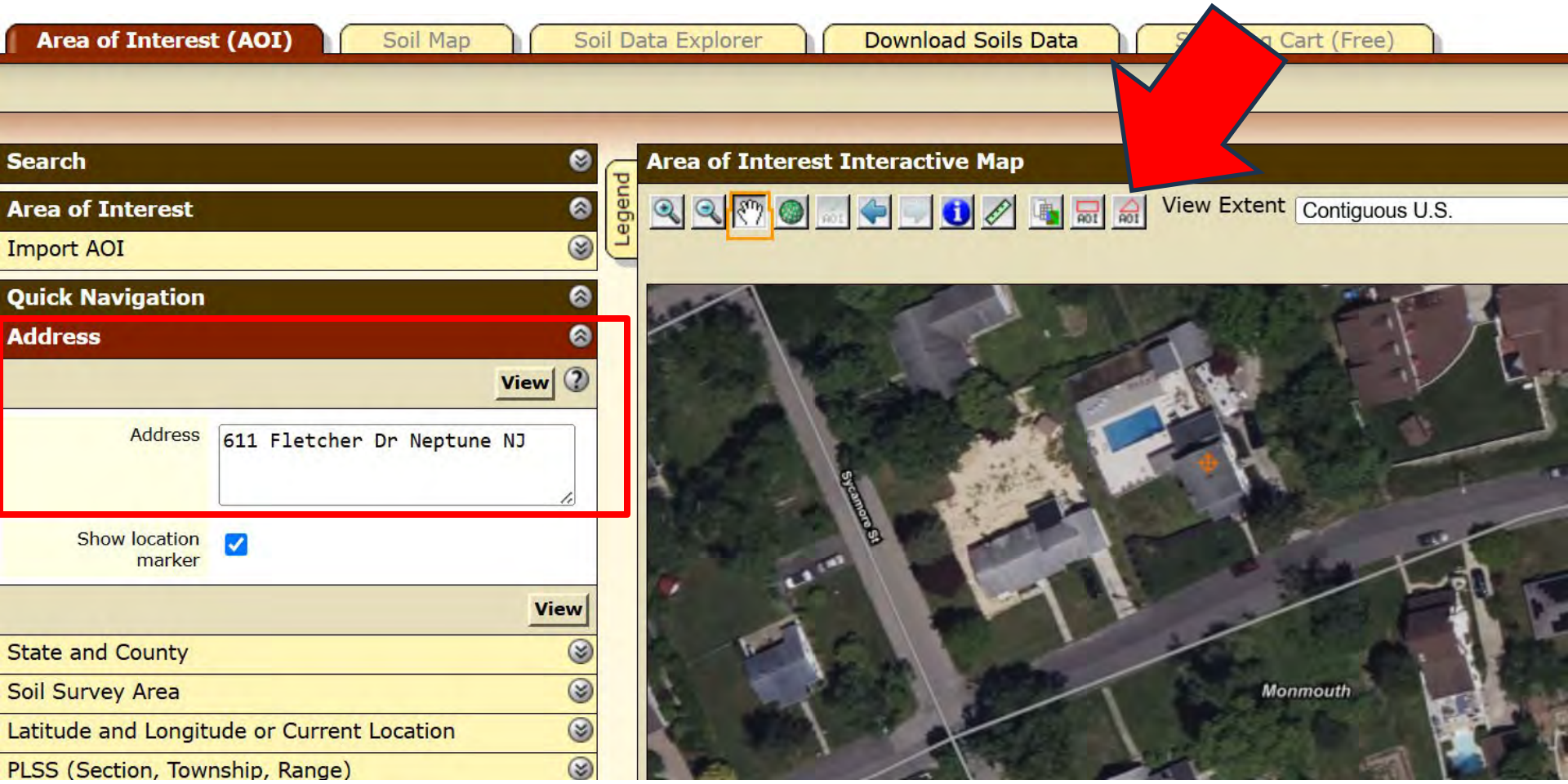

Area of Interest (AOI)
Soil Map
Soil Data Explorer
Download Soils Data
Cart (Free)
Search
Area of Interest
Import AOI
Quick Navigation
Address
View
Address
611 Fletcher Dr Neptune NJ
Show location marker
View
State and County
Soil Survey Area
Latitude and Longitude or Current Location
PLSS (Section, Township, Range)
Legend
Area of Interest Interactive Map
View Extent
Contiguous U.S.
Sycamore St
Monmouth

Area of Interest (AOI) | **Soil Map** | Soil Data Explorer | Download Soils Data | Shopping

Search

Map Unit Legend

Monmouth County, New Jersey (NJ025)

Monmouth County, New Jersey (NJ025)

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
DouB	Downer-Urban land complex, 0 to 5 percent slopes	0.5	100.0%
Totals for Area of Interest		**0.5**	**100.0%**

Legend

Soil Map

Scale (not to scale)

Map Unit Description

Printable Version

Report — Map Unit Description

Monmouth County, New Jersey

DouB—Downer-Urban land complex, 0 to 5 percent slopes

Map Unit Setting

National map unit symbol: 4j72
Elevation: 0 to 170 feet
Mean annual precipitation: 28 to 59 inches
Mean annual air temperature: 46 to 79 degrees F
Frost-free period: 161 to 231 days
Farmland classification: Not prime farmland

Map Unit Composition

Downer and similar soils: 60 percent
Urban land: 30 percent
Minor components: 10 percent

Estimates are based on observations, descriptions, and trans
mapunit.

Description of Downer

Setting

Landform: Low hills, knolls
Landform position (three-dimensional): Interfluve
Down-slope shape: Linear, convex
Across-slope shape: Linear
Parent material: Loamy fluviomarine deposits and/or grave
fluviomarine deposits

Typical profile

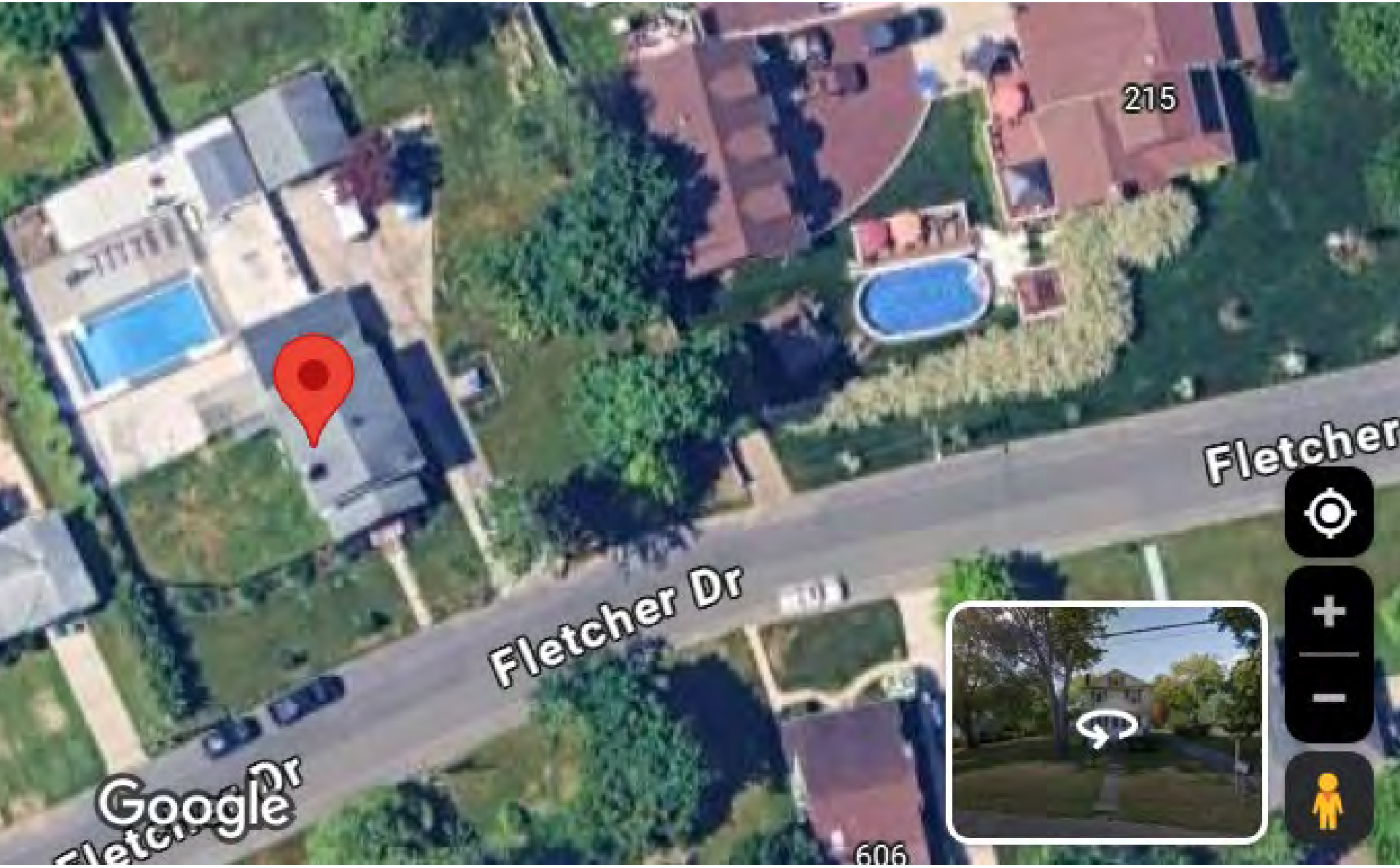
Ap - 0 to 10 inches: sandy loam
Bt1 - 10 to 16 inches: sandy loam
Bt2 - 16 to 36 inches: sandy loam
C1 - 36 to 48 inches: loamy sand
C2 - 48 to 80 inches: stratified sand to sandy loam

Properties and qualities

Slope: 0 to 5 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat):
Moderately high to high (0.60 to 6.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Moderate (about 6.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: A
Ecological site: F153DY160NJ - Well Drained Coarse-Loamy Upland
Hydric soil rating: No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Fletcher
Fletcher Dr
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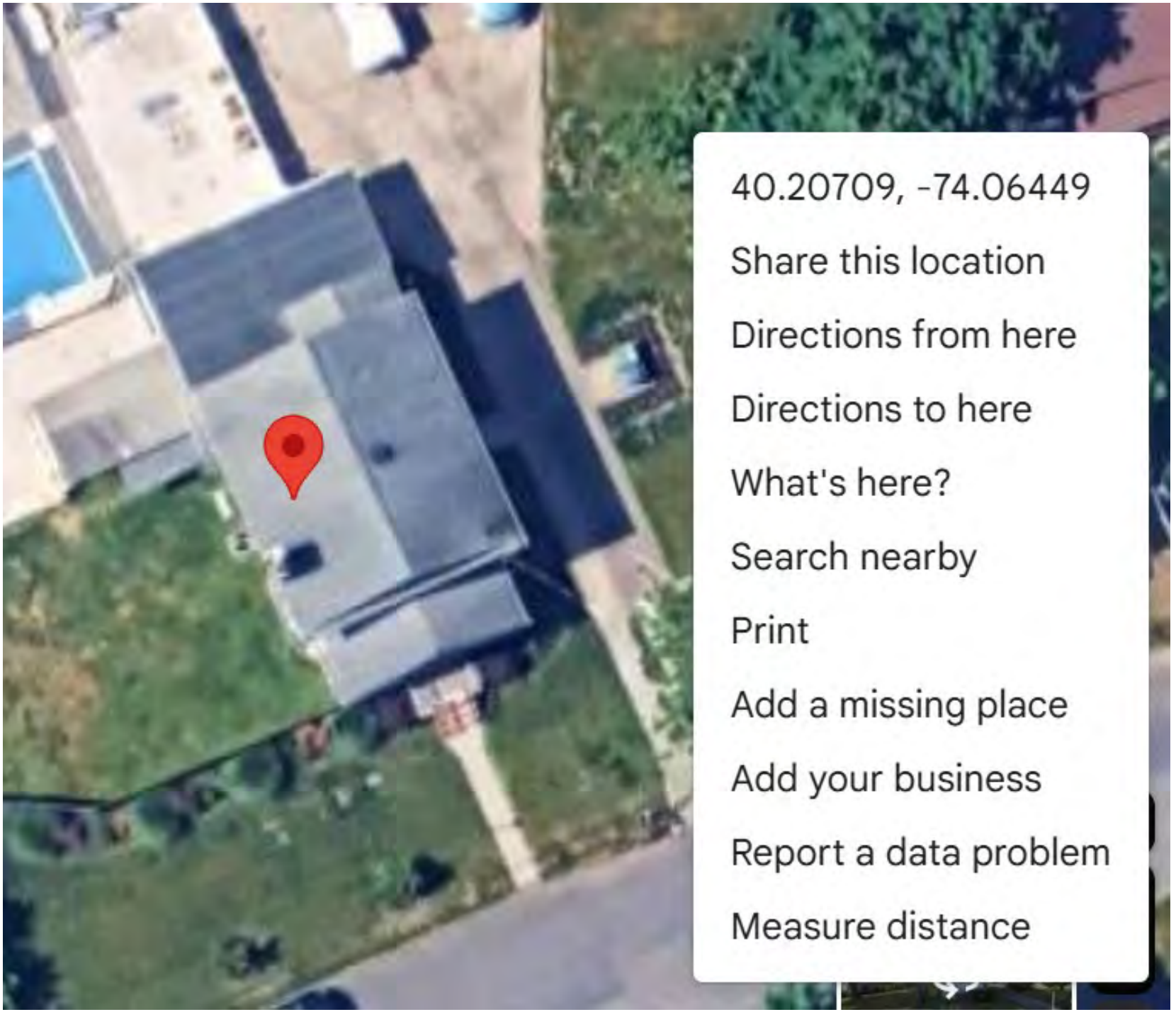
Google


40.20709, -74.06449
Share this location
Directions from here
Directions to here
What's here?
Search nearby
Print
Add a missing place
Add your business
Report a data problem
Measure distance

15.0 ft x 33.3 ft = 500 sq.ft.

Steps to developing a design

1. Select a rainfall total for the design
2. Use residential rain garden design form to determine rain garden size or
3. Use the spreadsheet to determine size of rain garden
4. If soil amendments are needed, use the spreadsheet to calculate quantities
5. Add dimensions to the rain garden cross-section of the rain garden design form

Steps to developing a design

2. Complete rain garden design program form

Date:

Time:

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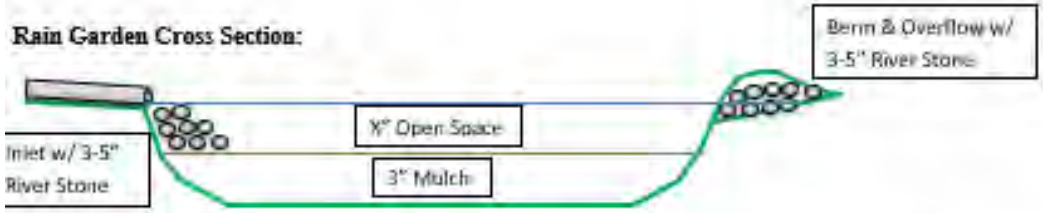
Residential Rain Garden Design Program

Name:	**Address:**
Impervious Cover Calculation:	**Property Soil Type:**
Rain Garden Size:	**Amendments (if necessary):**
Notes:	

Rain Garden Cross Section:



For Reference:

Depth (Soils)	Rainfall	Drainage Area (SF)						
		100	200	300	400	500	750	1000
3" (Clay)	1.25"	40 SF	85 SF	125 SF	165 SF	210 SF	315 SF	415 SF
	1.5"	50 SF	100 SF	150 SF	200 SF	250 SF	375 SF	500 SF
6" (Silt/Loam)	1.25"	20 SF	40 SF	65 SF	85 SF	105 SF	155 SF	210 SF
	1.5"	25 SF	50 SF	75 SF	100 SF	125 SF	190 SF	250 SF
8" (Sand)	1.25"	15 SF	30 SF	45 SF	65 SF	80 SF	115 SF	155 SF
	1.5"	20 SF	40 SF	55 SF	75 SF	95 SF	140 SF	190 SF

Date:
Time:

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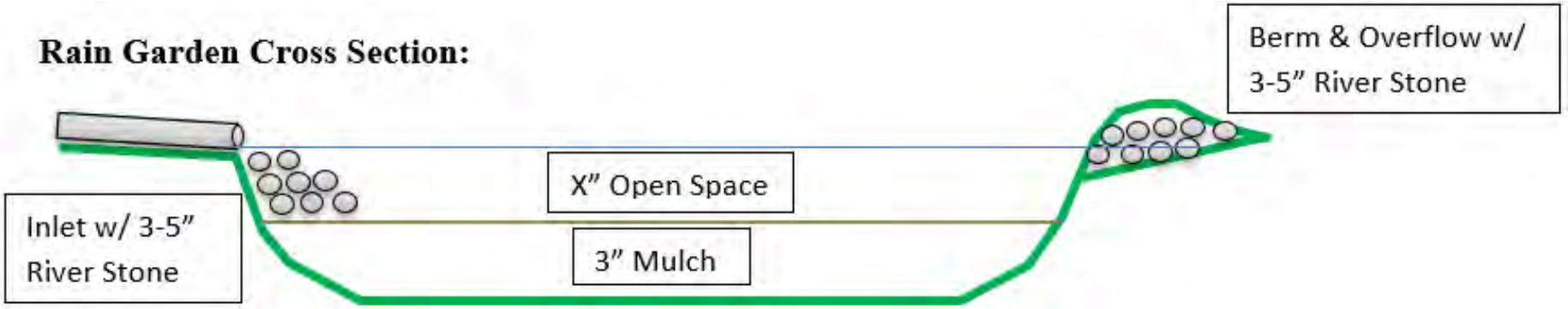
Residential Rain Garden Design Program

Name:	**Address:**
Impervious Cover Calculation:	**Property Soil Type:**
Rain Garden Size:	**Amendments (if necessary):**
Notes:	

Rain Garden Cross Section:



For Reference:

Depth (Soils)	Rainfall	Drainage Area (SF)						
		100	200	300	400	500	750	1000
3" (Clay)	1.25"	40 SF	85 SF	125 SF	165 SF	210 SF	315 SF	415 SF
	1.5"	50 SF	100 SF	150 SF	200 SF	250 SF	375 SF	500 SF
6" (Silt/Loam)	1.25"	20 SF	40 SF	65 SF	85 SF	105 SF	155 SF	210 SF
	1.5"	25 SF	50 SF	75 SF	100 SF	125 SF	190 SF	250 SF
8" (Sand)	1.25"	15 SF	30 SF	45 SF	65 SF	80 SF	115 SF	155 SF
	1.5"	20 SF	40 SF	55 SF	75 SF	95 SF	140 SF	190 SF

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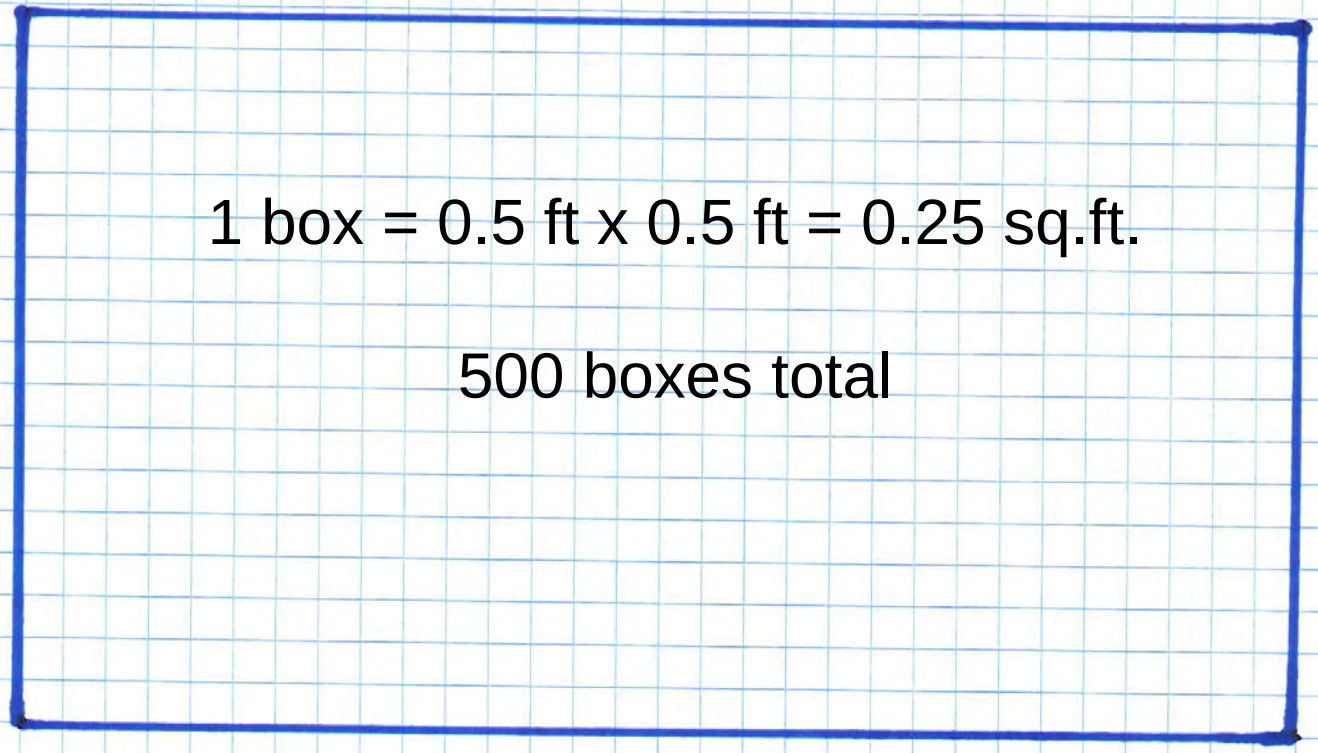
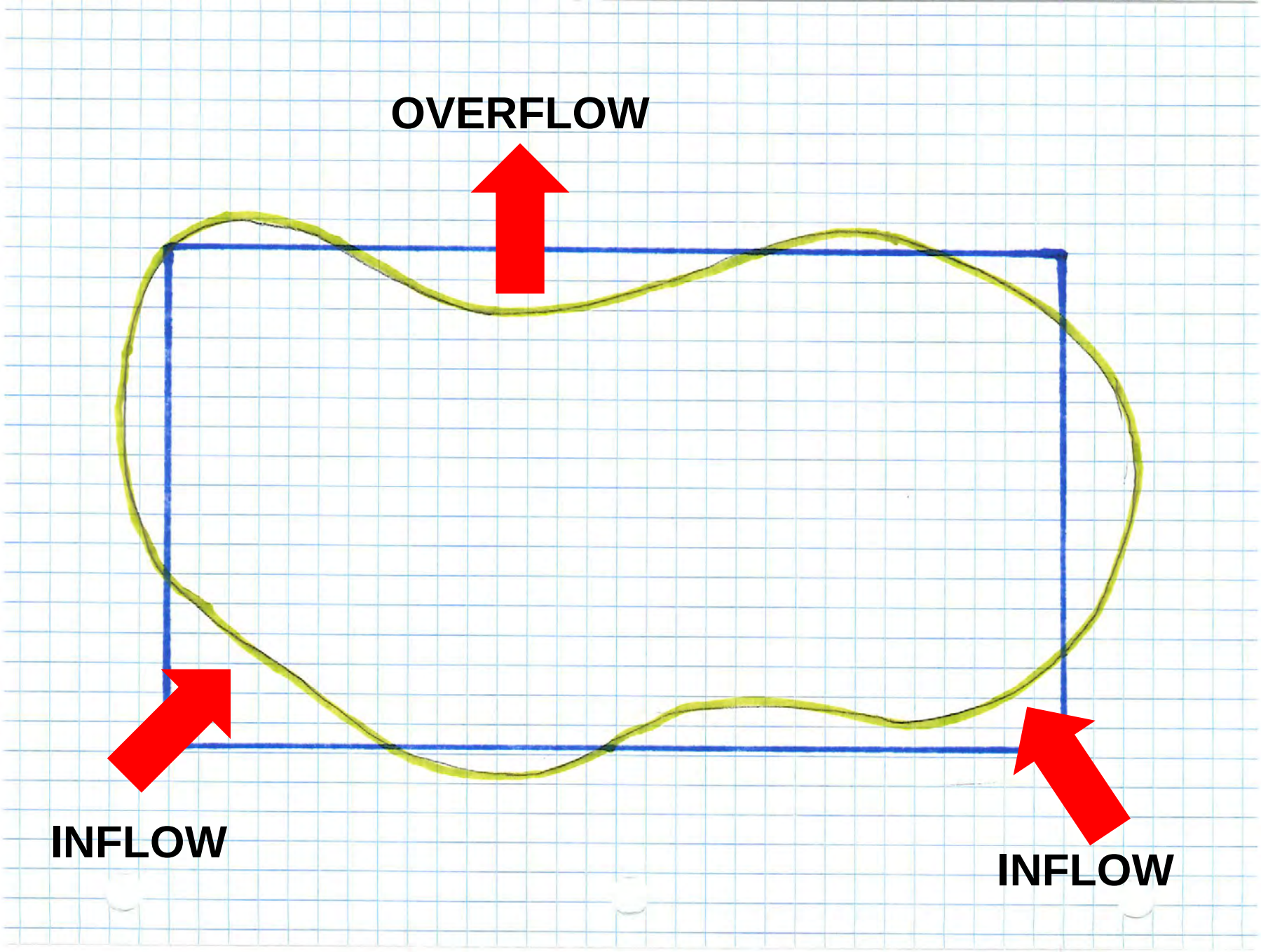

1 box = 0.5 ft x 0.5 ft = 0.25 sq.ft.
500 boxes total
8.3 ft = 16.6 boxes
15 ft = 30 boxes


OVERFLOW
INFLOW
INFLOW

Input Cells		
Calculated Cells		
Name		
Address		
Drainage Area Size	0	
Rain Garden Sizing	WQ (Min) 1.25"	Suggested 1.5"

Let's go to the Excel Spreadsheet!

Width	#DIV/0!	FT
Mulch	0.00	CY
	0.0	Bags
Soil Amendments (clay soils)		
Depth of amendments	0.25	FT
bioretention media	0.0	CY
sand	0.0	CY
	0.0	Bags*
compost	0.0	CY
	0.0	Bags*
*Bags @ 2 CF/Bag		

Steps to developing a design

6. Use the spreadsheet to determine amount of mulch needed (1 cubic yard per 100 sq.ft. of rain garden)
7. Review piping needed to get water from impervious surface to rain garden
8. Discuss stone inlet/outlet/border

Steps to developing a design

9. Discuss with homeowner planting style
    a) Manicured or Natural
        i. All shrubs
        ii. Perennial and shrubs
        iii. Deer tolerant
        iv. Shade
        v. All perennial
        vi. Salt tolerant

Let’s Review Design Samples

Manicured or Natural

i. All shrubs
ii. Perennial and shrubs
iii. Deer tolerant
iv. Shade
v. All perennial
vi. Salt tolerant

Maintenance

Weekly:

1. Watering
2. Weeding
3. Inspecting

Annual:

1. Mulching
2. Pruning
3. Re-planting
4. Removing sediment
5. Soil Testing
6. Harvesting Plants
7. Cleaning of Gutters
8. Replacing materials (stone, landscape fabric)

Maintenance Guide

(all available on the RCE Website)

1. General guide
2. One-pager

Questions

Next: Hands on Activity

- Let’s watch how Benny and Alrick will run a design and planting plan session for local residents