

Site-Scale Stormwater Management Problems & Practices

**Lisa Loosigian
SOAK NH Program Coordinator
NHDES**



NH Homeowner's Guide & Soak Up the Rain NH

NEW HAMPSHIRE HOMEOWNER'S GUIDE TO STORMWATER MANAGEMENT

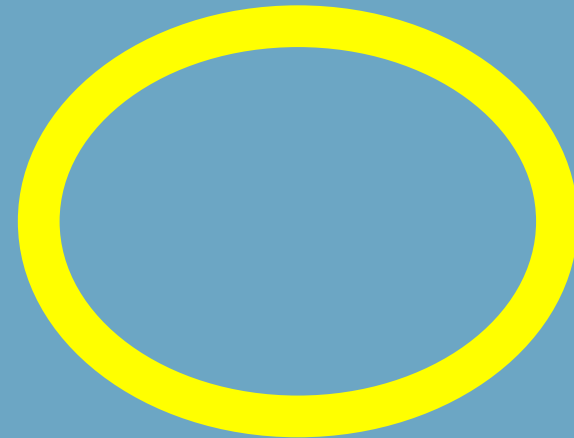
DO-IT-YOURSELF STORMWATER SOLUTIONS
FOR YOUR HOME

Soak
up the
Rain
New Hampshire

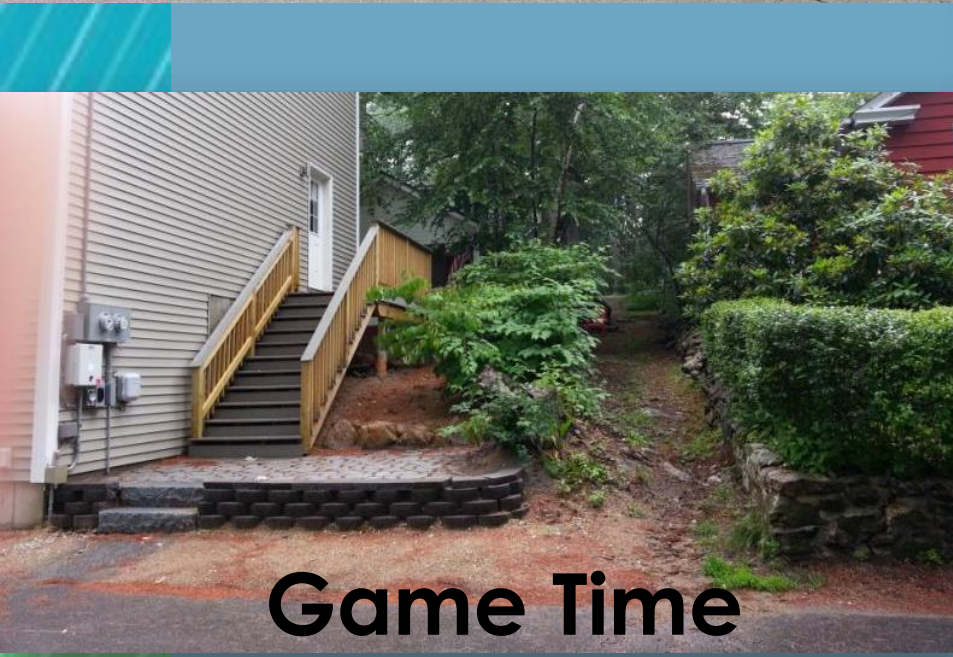


**"Low Impact Development OR
Green Infrastructure OR
Stormwater BMPs"**

ment



This session:



Site-Scale Stormwater Solutions

-structural

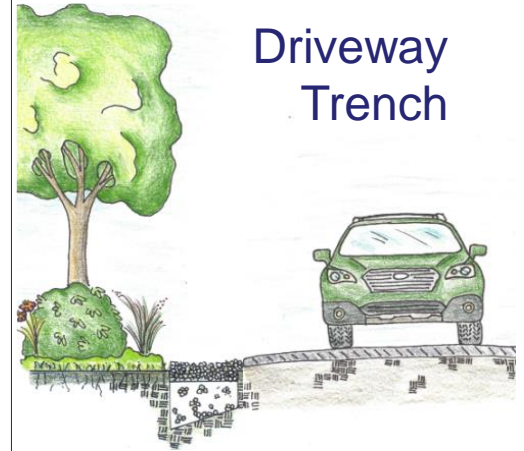
-good housekeeping

Infiltration Practices

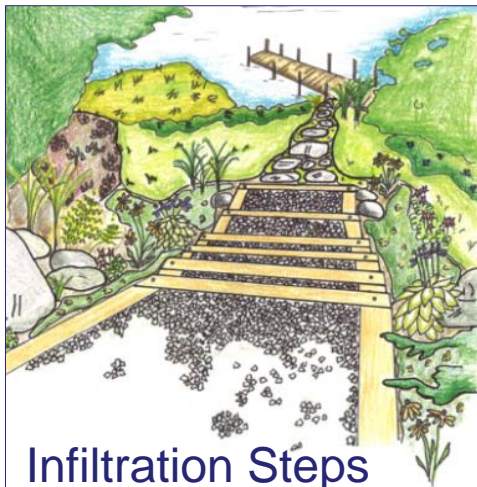
Rain Garden



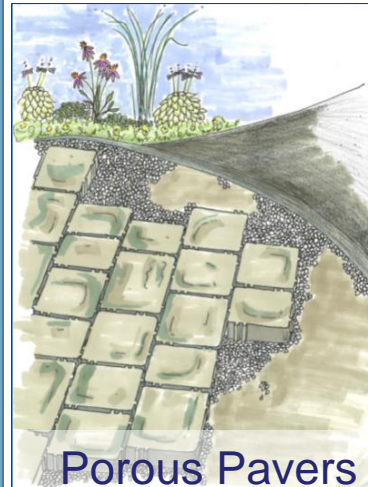
Dripline
Trench



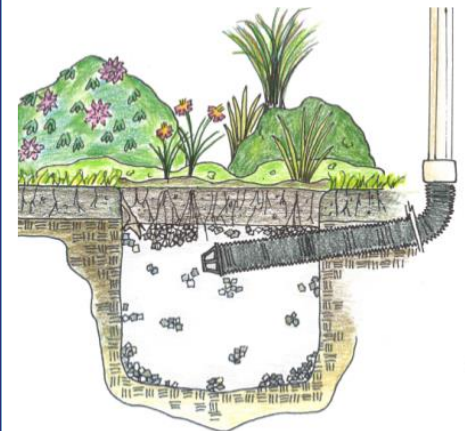
Driveway
Trench



Infiltration Steps

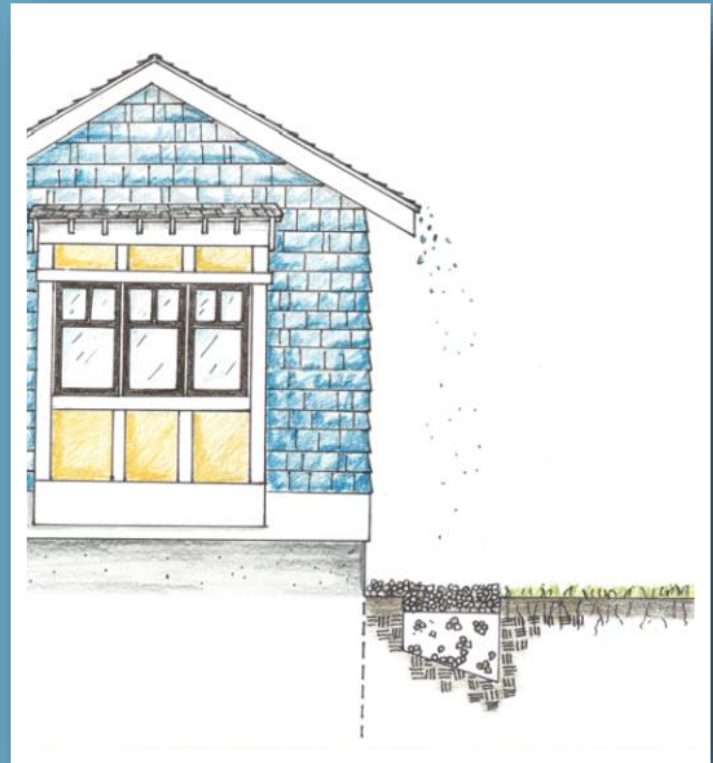


Porous Pavers



Dry Well

Dripline Infiltration Trench



A stone-filled trench around the perimeter of a building.

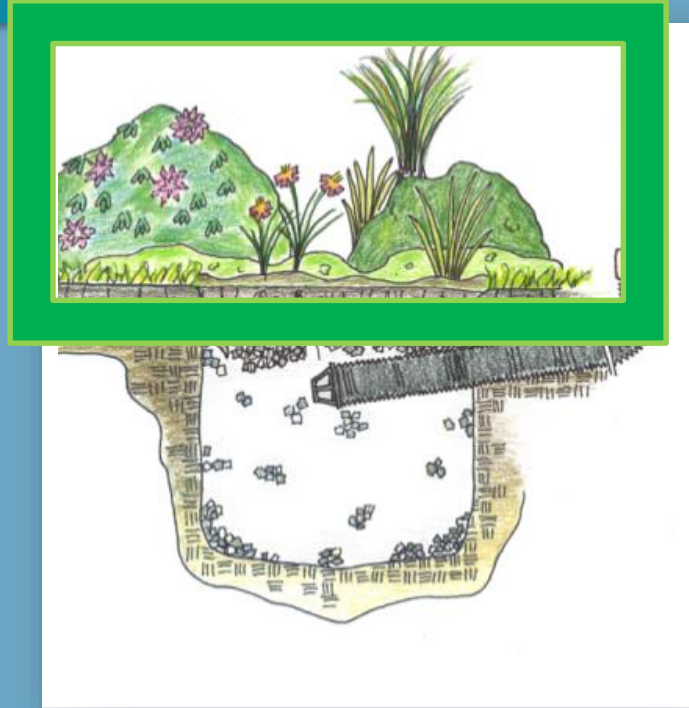
Driveway Infiltration Trench



A stone-filled trench along the perimeter of your driveway.

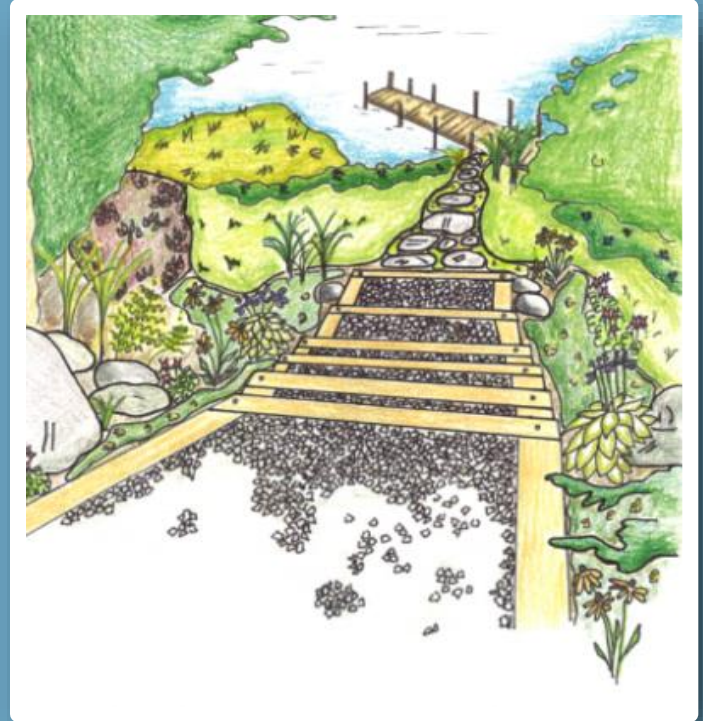


Dry Well



A hole in the ground filled with stone.

Infiltration Steps

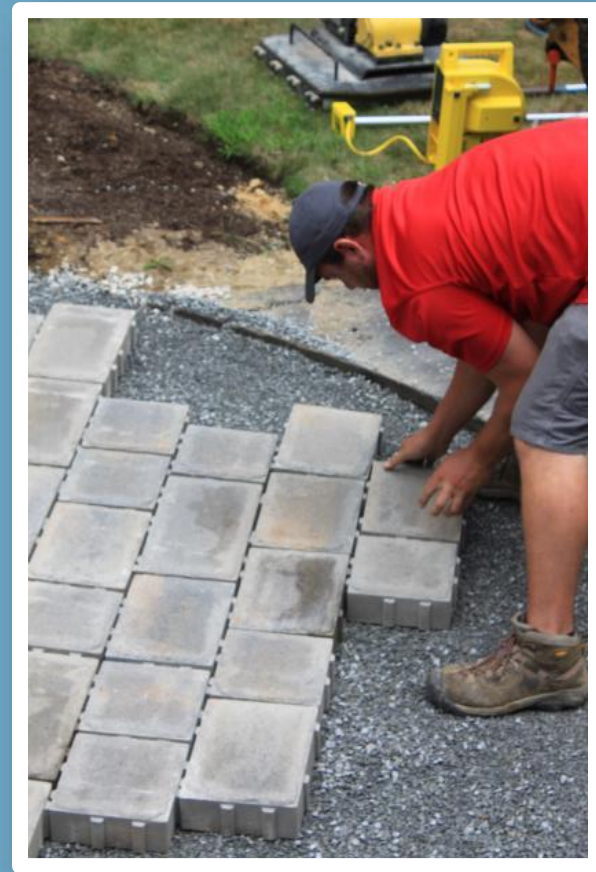
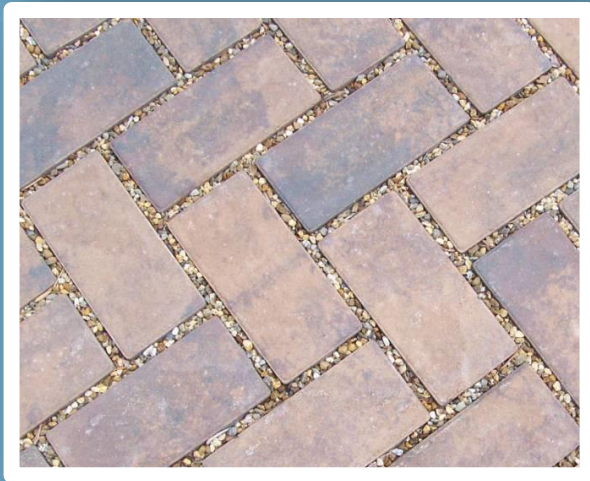


Stabilize sloped paths, reduces erosion.



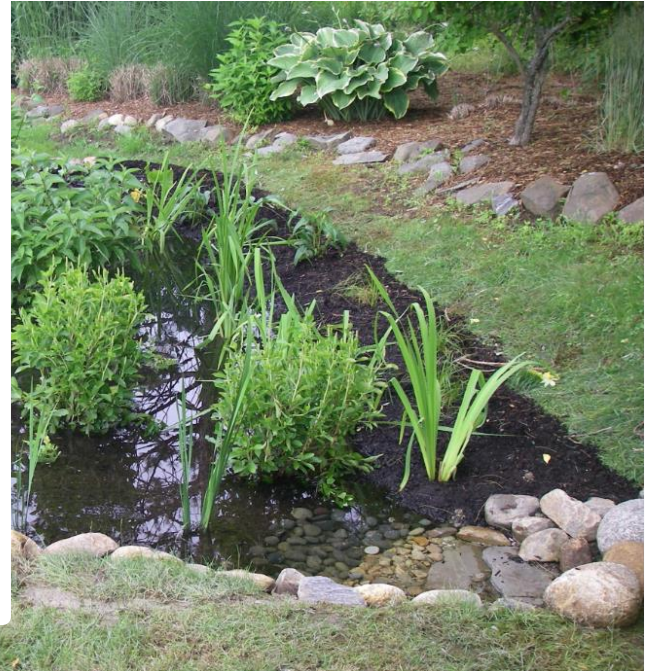
Porous Pavers

Stone reservoirs under pavers.

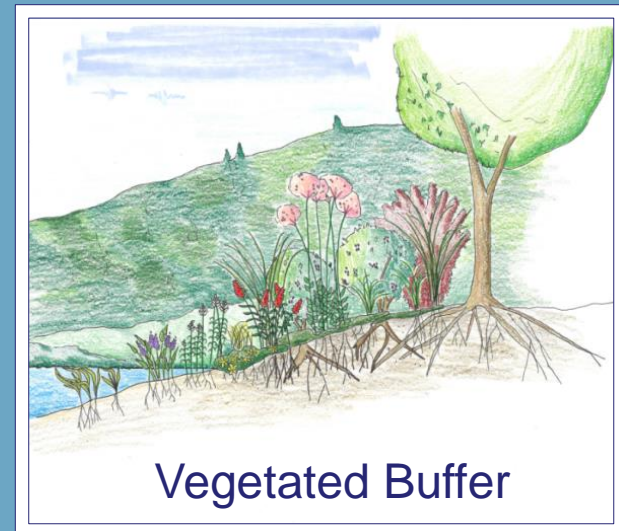
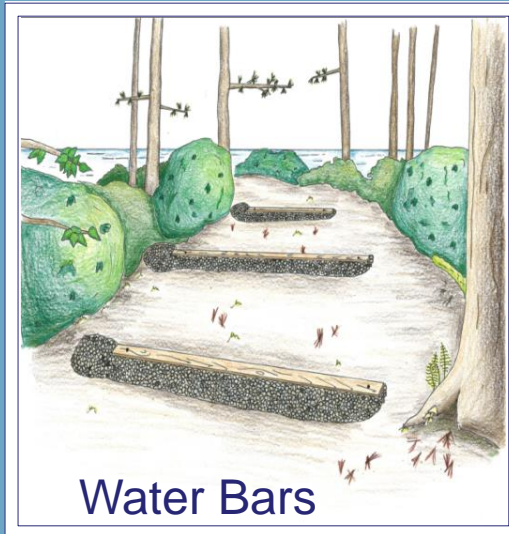
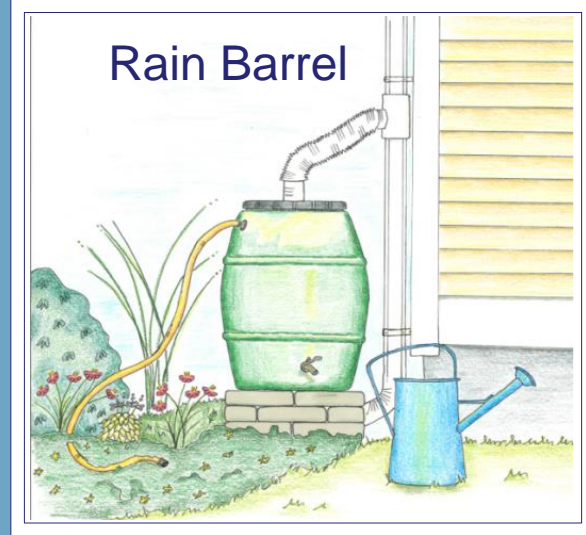
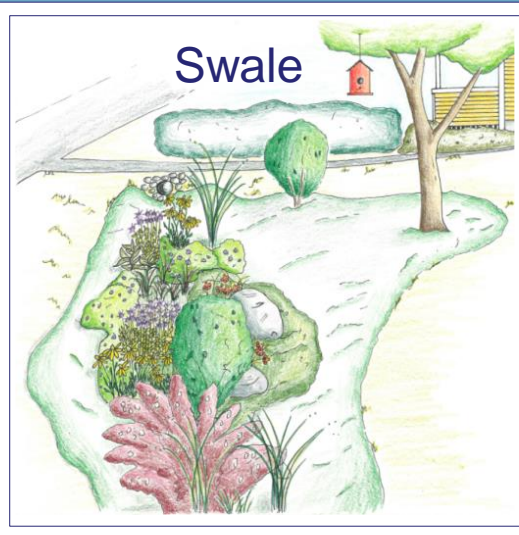


Rain Garden

A sunken, flat-bottomed garden



Additional Practices



Rain Barrel

A container that captures and stores rainwater from a roof for later use.



Water Bar

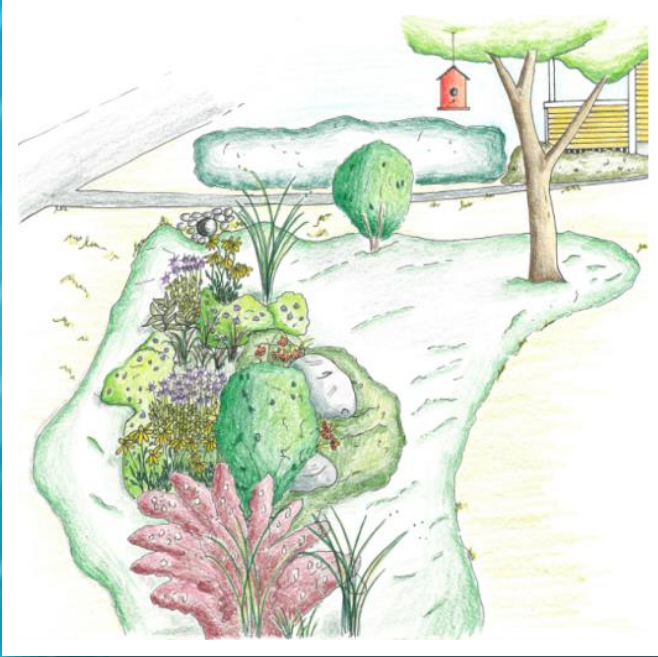


Intercepts and
diverts water
traveling down
paths.



Rubber razor

Vegetated Swale



A vegetated channel with or without checkdams.

Vegetated Buffer



A buffer is a vegetated area along a waterbody.

Questions?
Comments?

Site Assessment

Impervious Surfaces:

- ✓ Roofs
- ✓ Driveways, Parking Areas
- ✓ Walkways
- ✓ Decks & Patios

Lawn & Landscaped Areas:

- ✓ Source or Sink?

Undisturbed Areas:

- ✓ Natural buffers
- ✓ Wooded Areas

Surrounding Areas

- ✓ What's it doing?



Site Assessment

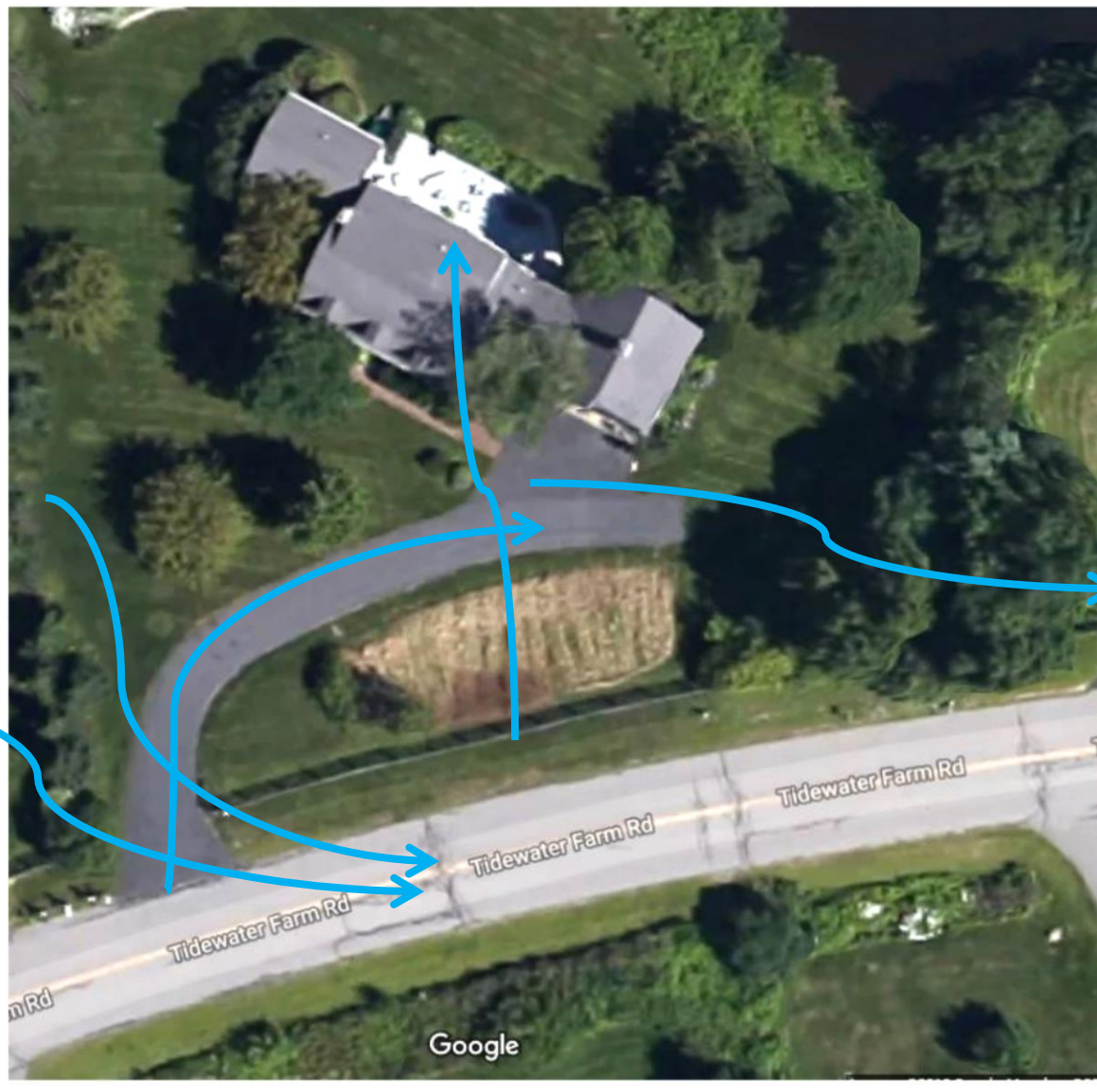
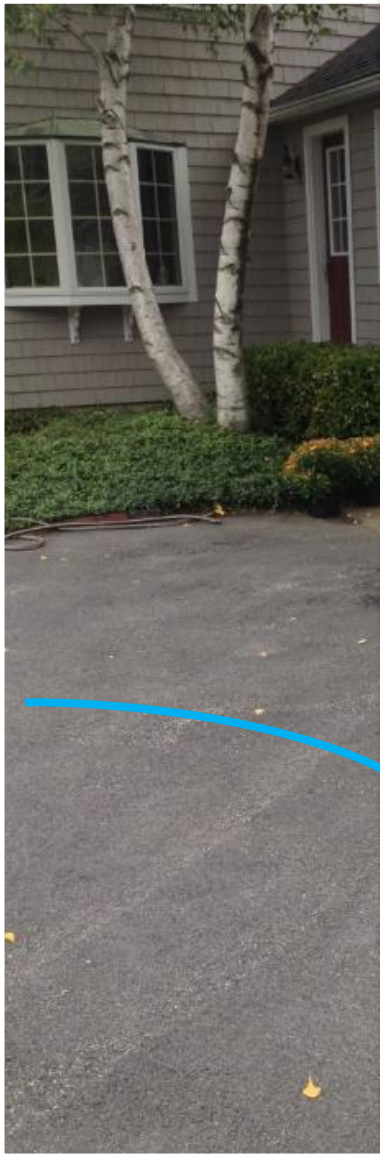
Follow the Flow

1. Where does it come from?
2. Where does it end up?
3. Does it cause any problems along the way?

Site Assessment – Follow the Flow



Site Assessment – Follow the Flow



Site Assessment – Follow the Flow



Site Assessment - Problems



Site Assessment - Problems



moving material

Site Assessment - Problems

Signs of fertilizer reaching lake



Site Assessment – Soil Tests

Soil Infiltration Test

1. Dig a hole 12" deep.



2. Fill it with water. Let drain. Fill again.



3. Note water level & time.



Ideally want the hole to drain in 24 hours
(or at least 0.5"/hr)

Site Assessment – Soil Tests

Soil Ribbon Test



Soil Type	Ribbon Length (inches)
sand	soil does not form a ribbon at all
silt	a weak ribbon <1.5" is formed before breaking
clay	a ribbon >1.5" is formed

Site Assessment – Soggy Test

Is it:

Spongy? , then say “no” to
Squishy?
Squishy?
Spongy?



Questions?
Comments?

Project Considerations

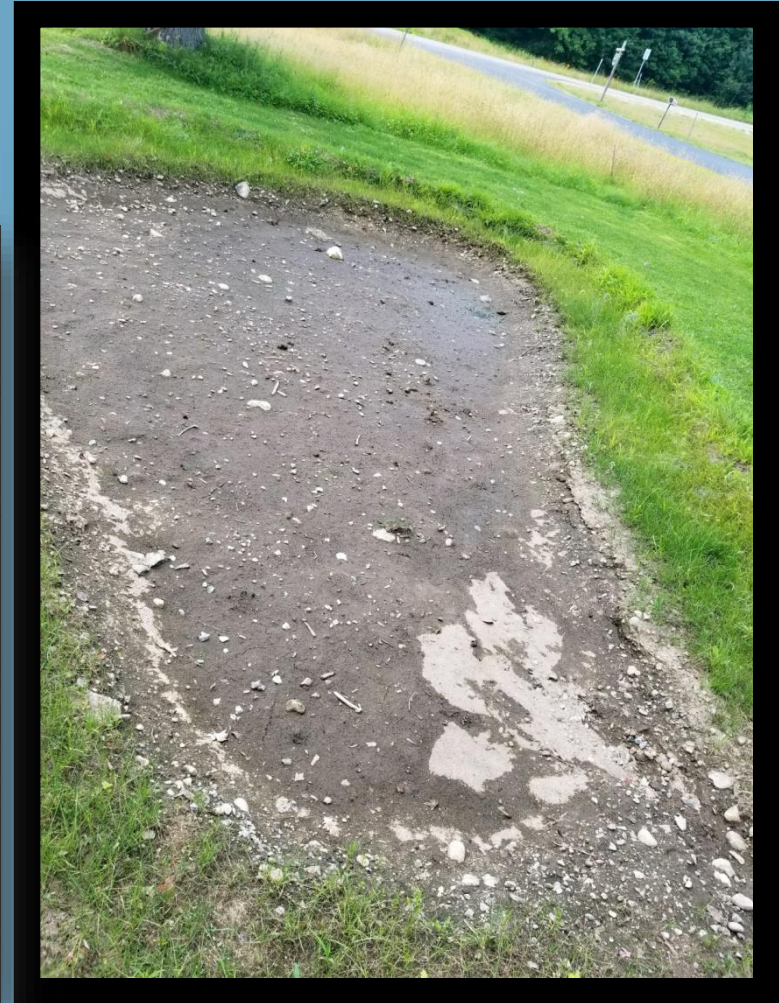
1. Will the soils soak up the rain?
2. Are there special site constraints?
3. Will it “fit” the location
4. What does the property owner want?

Will the soils soak up the rain?

#1 Rule: Do the infiltration test!

Why do I have a puddle in my yard days after the rain has stopped? Will a rain garden help?

NO!!



Site Constraints

Property setbacks and Right-of-Way.

Underground utilities.

Water well, septic tank, leach field

Roots and rocks

Steep slopes (<12%)

Sun/shade

High water table



Will the practice “fit”?



What does the homeowner want?

Preferences & Concerns



Beautify?



Utility?



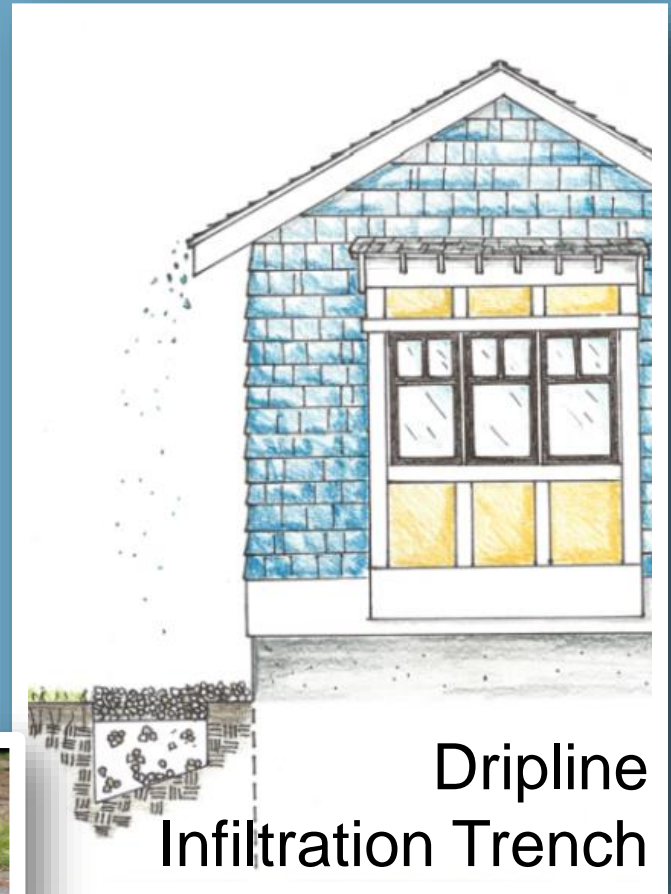
Gardeners?



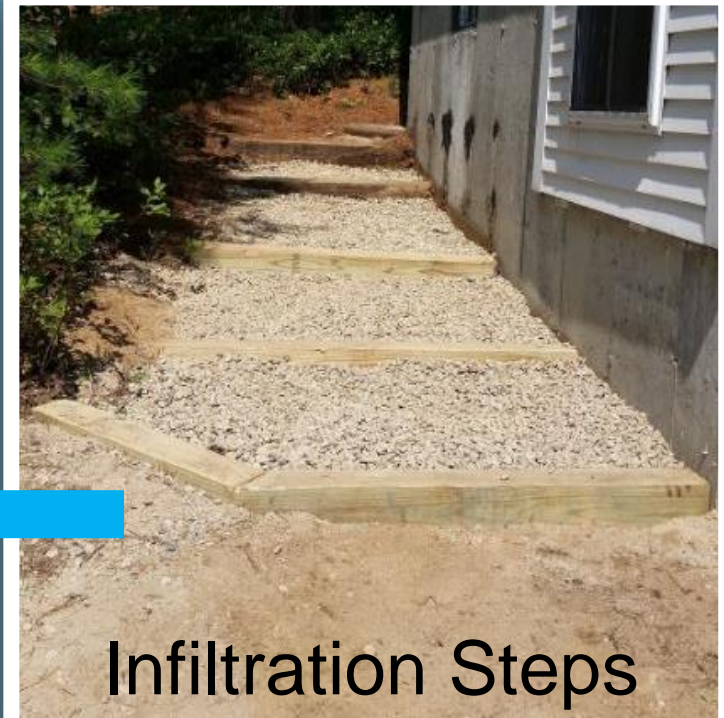
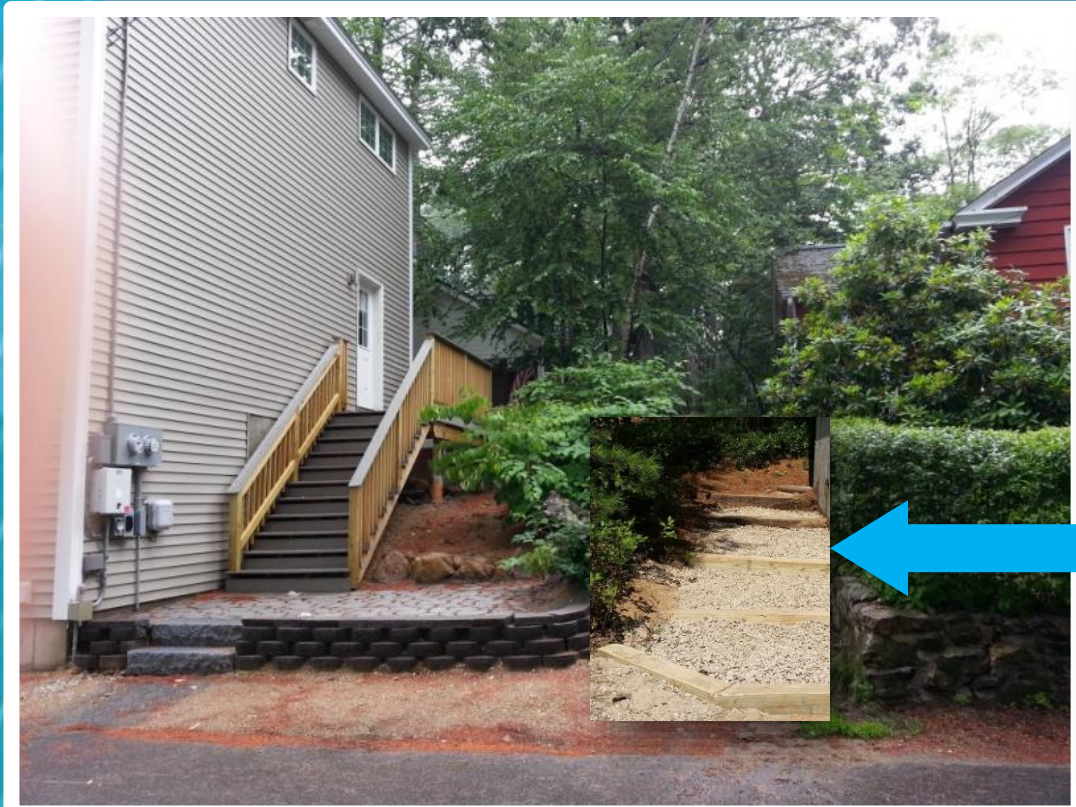
Out of sight?

GAME TIME: WHAT MAKES SENSE?

What makes sense here?



What makes sense here?



Infiltration Steps

What makes sense here?

Water Bars



What makes sense here?

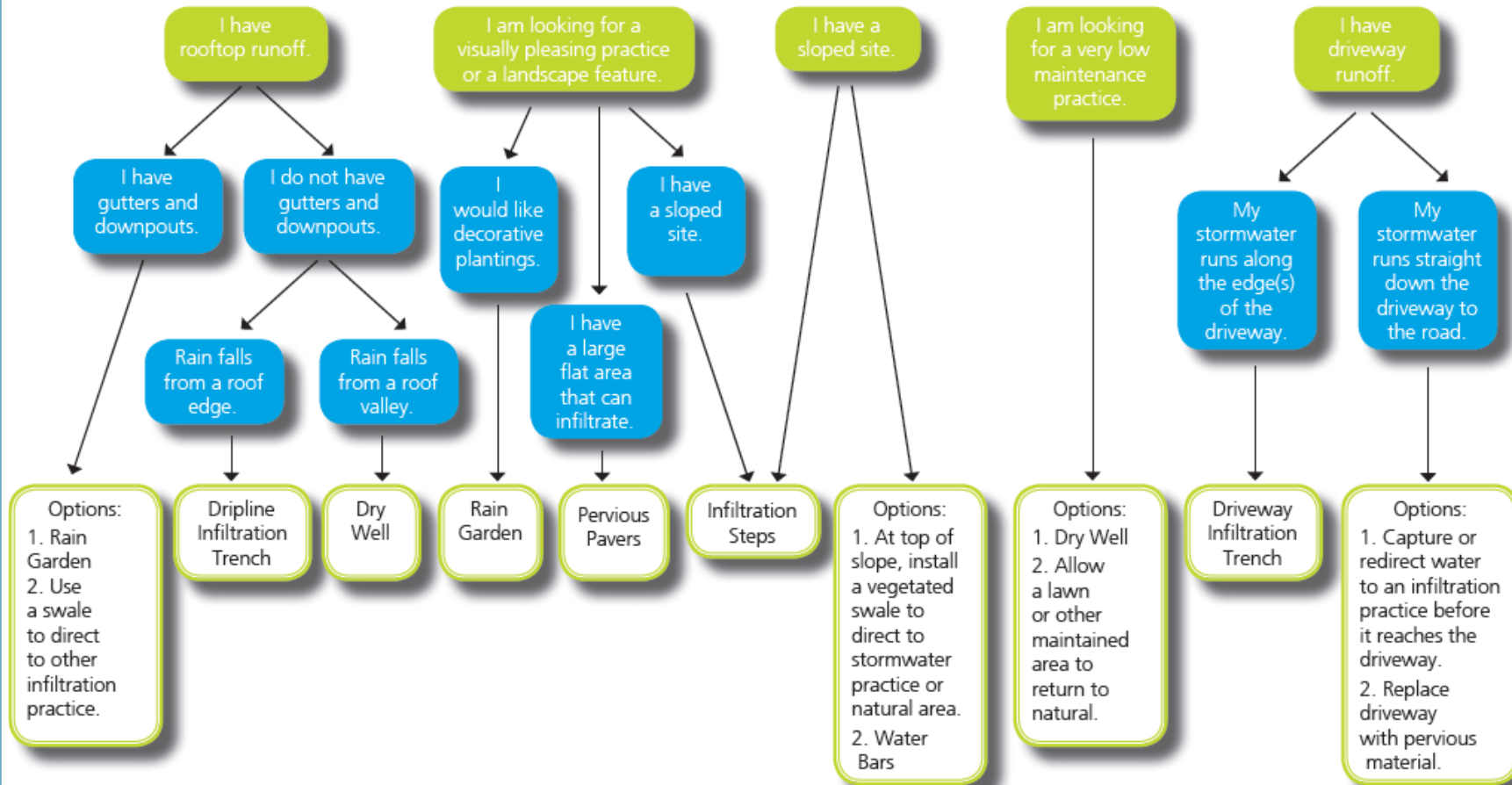


What makes sense here?

Dry Well



Need help?





Soak
up the rain NH

Soak up the Rain
NEW HAMPSHIRE



Resources

[DIY Fact Sheets](#)

[Publications](#)

[Rain Garden Planning](#)



Like us on Facebook



Field Packet

This Field Packet contains the information needed to complete a screening and design assessment for potential SOAK projects including:

1. Instructions
2. Site Screening Field Sheet
3. Design Field Sheet

Instructions

Review these instructions before conducting SOAK field assessments.

SITE SCREENING FIELD SHEET

Purpose: Complete the Site Screening field sheet to determine if a property has potential for a SOAK project.

RECORDING TABLE

Use the Recording Table to track multiple stormwater issues on the site and information associated with each area as you work through the field packet.

COMMON STORMWATER PROBLEMS

- Flooding and/or persistent wet areas
- Water in basement
- Erosion - bare soil, exposed rocks, rill/gully formation along path of stormwater flow
- Large amount of stormwater runoff to drainage system or waterbody
- Known or suspected pollutants running off of property - fertilizer or lawn chemicals are applied or pet waste seen at the property

Questions?
Comments?

Site Assessment this Afternoon



Lisa.loosigian@des.nh.gov

603-419-0322