

A glass globe is the central focus, containing a detailed scene of a forest with tall trees and a stream. The globe is set against a background that transitions from a dark green at the top to a lighter, yellowish-green at the bottom. The text is overlaid on the globe and background.

UD's Stormwater Retrofit Study

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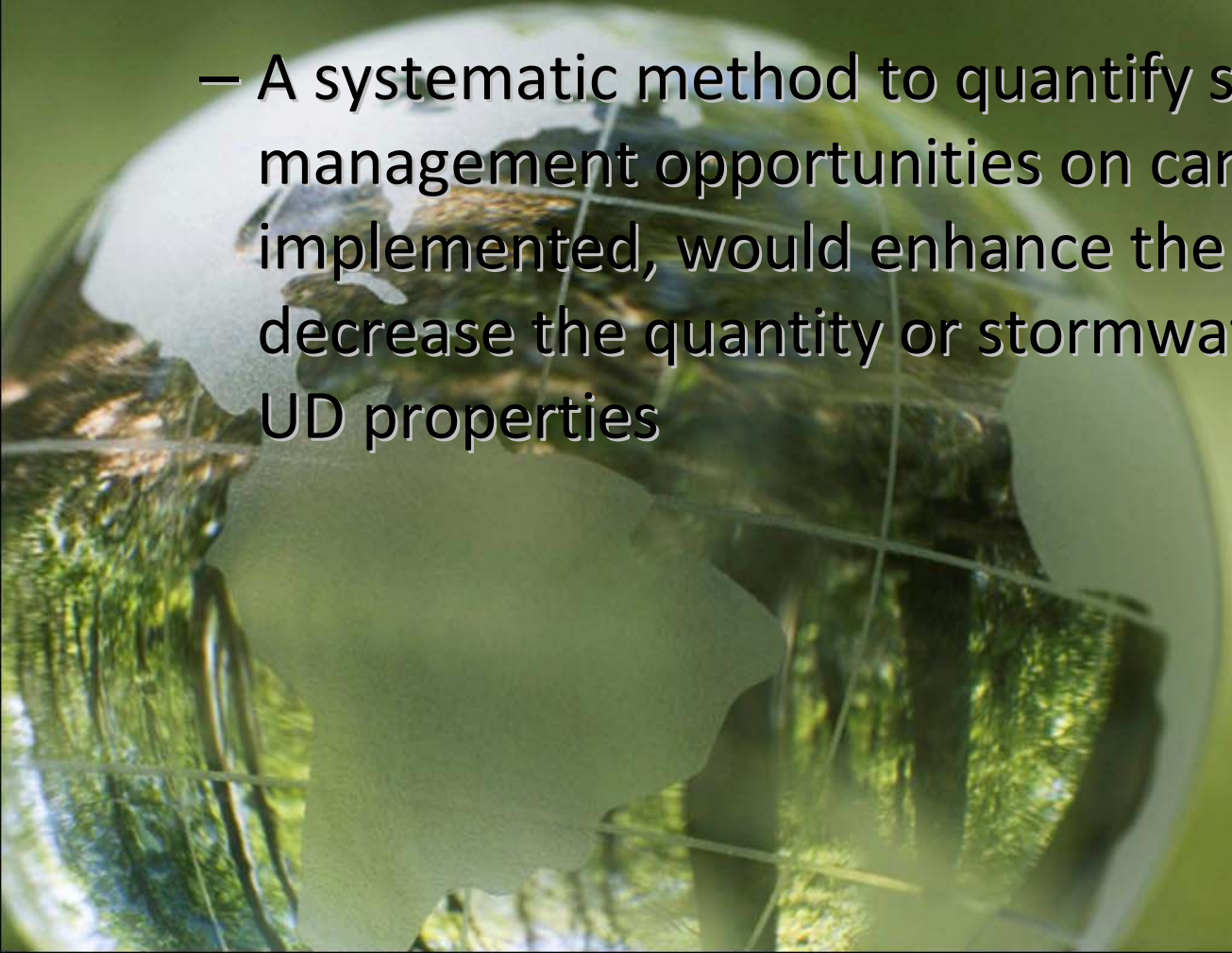
The Department of Occupational Health and Safety

Presentation

- Introduction – So what is a Stormwater Retrofit anyway....
- Elements and Goals of the Stormwater Retrofit Study
- Available resources and Time Frame
- Summary

Introduction

- What is a stormwater retrofit anyway....
 - A systematic method to quantify stormwater management opportunities on campus that ,if implemented, would enhance the quality or decrease the quantity or stormwater runoff from UD properties



Intro. Continued

- History of UD Stormwater Program –
 - Some of the campus was built before stormwater management was on the radar
 - We have not had an entity reviewing stormwater management plans for capital projects until ~3-4 years ago
- Currently working to institute:
 - Stormwater management construction standards
 - Plan review committee
 - comprised of various individuals in a number of different agencies on campus
 - Provide expertise with regard to the reviews
 - Provide recommendations back to Facilities

What Does this Mean For You....

- This class is going to help with conducting a retrofit study for the University
- Real life experience
 - The EPA has strongly suggested that Municipalities/Facilities conduct these studies



What are Retrofit Opportunities...

- Any stormwater management technique that could be instituted
 - large or small
 - Examples:
 - stream restoration
 - wetlands development
 - Downspout disconnects into garden/swale area
 - Porous pavement installation
 - Retention/detention pond installation
 - Bioswale installation

Elements and Goals of the Stormwater Retrofit Study

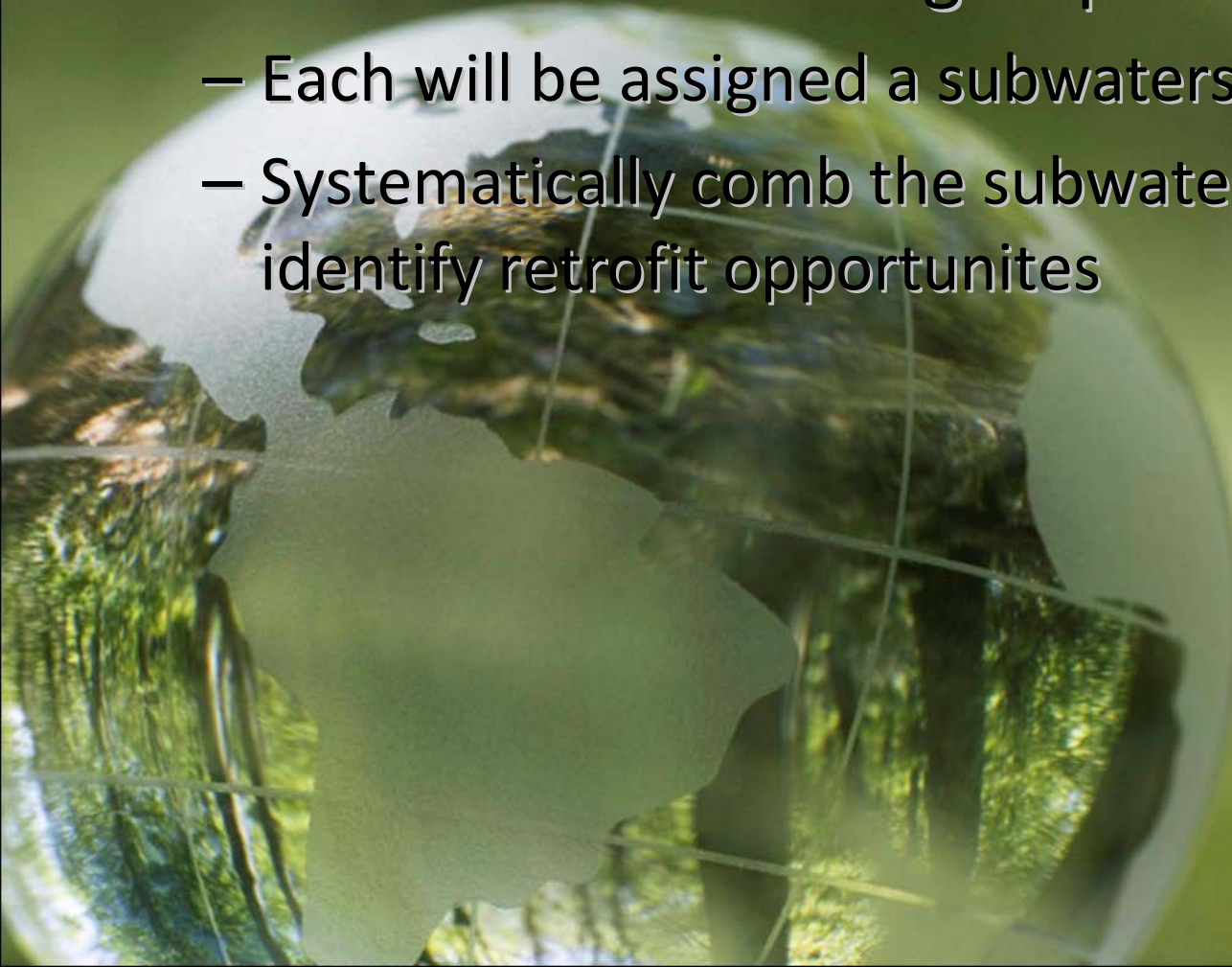
- Ultimate goal is for UD stormwater runoff to meet the current Delaware quality/quantity standards
 - Remove 80% of suspended solids
 - Treat the first flush – first .5" of rain generally
 - Control 2" of runoff

Elements and Goals of the Stormwater Retrofit Study

- Fall CIEG 440 class will locate and indentify the opportunities and prioritize for their subwatershed
- Spring CIEG 442 class will devise solutions for the identified
- We will ultimately work to develop an implementation strategy
 - complete as many of the identified opportunities as possible going forward

Process

- Divide the class into 5 groups
 - Each will be assigned a subwatershed
 - Systematically comb the subwatershed and identify retrofit opportunities



Process

- Use the Retrofit Reconnaissance Investigation Form (RRI) from the Center for Watershed Protection to gather the information

Retrofit Reconnaissance Investigation **RRI**

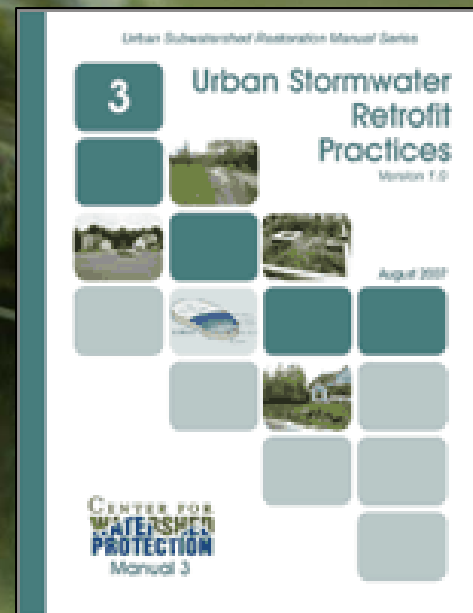
WATERSHED:		SUBWATERSHED:		UNIQUE SITE ID:	
DATE:	ASSESSED BY:	CAMERA ID:	PICTURES:		
GPS ID:	LMK ID:	LAT:	LONG:		
SITE DESCRIPTION					
Name: _____					
Address: _____					
Ownership: <input type="checkbox"/> Public <input type="checkbox"/> Private <input type="checkbox"/> Unknown					
If Public, Government Jurisdiction: <input type="checkbox"/> Local <input type="checkbox"/> State <input type="checkbox"/> DOT <input type="checkbox"/> Other: _____					
Corresponding USSE/USA Field Sheet? <input type="checkbox"/> Yes <input type="checkbox"/> No If yes, Unique Site ID: _____					
Proposed Retrofit Location:					
Storage			On-Site		
<input type="checkbox"/> Existing Pond	<input type="checkbox"/> Above Roadway Culvert	<input type="checkbox"/> Hotspot Operation	<input type="checkbox"/> Individual Rooftop		
<input type="checkbox"/> Below Outfall	<input type="checkbox"/> In Conveyance System	<input type="checkbox"/> Small Parking Lot	<input type="checkbox"/> Small Impervious Area		
<input type="checkbox"/> In Road ROW	<input type="checkbox"/> Near Large Parking Lot	<input type="checkbox"/> Individual Street	<input type="checkbox"/> Landscape / Hardscape		
<input type="checkbox"/> Other: _____	<input type="checkbox"/> Other: _____	<input type="checkbox"/> Underground	<input type="checkbox"/> Other: _____		
DRAINAGE AREA TO PROPOSED RETROFIT					
Drainage Area ≈ _____%			Drainage Area Land Use:		
Imperviousness ≈ _____%			<input type="checkbox"/> Residential	<input type="checkbox"/> Institutional	
Impervious Area ≈ _____			<input type="checkbox"/> SFH (< 1 ac lots)	<input type="checkbox"/> Industrial	
Notes: _____			<input type="checkbox"/> SFH (> 1 ac lots)	<input type="checkbox"/> Transport-Related	
			<input type="checkbox"/> Townhouses	<input type="checkbox"/> Park	
			<input type="checkbox"/> Multi-Family	<input type="checkbox"/> Undeveloped	
			<input type="checkbox"/> Commercial	<input type="checkbox"/> Other: _____	
EXISTING STORMWATER MANAGEMENT					
Existing Stormwater Practices: <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Possible					
If Yes, Describe: _____					
Describe Existing Site Conditions, Including Existing Site Drainage and Conveyance: _____					
Existing Head Available and Points Where Measured: _____					

Process

- GPS/GIS and assign number to each identified retrofit opportunity
 - Be systematic and clear with your numbering
 - GPS instrument you must sign out from Water Resources Agency in Andrew Homsey's office -2nd floor.
 - The instrument must be returned by the close of business 4:30 PM – instruments cannot be kept overnight

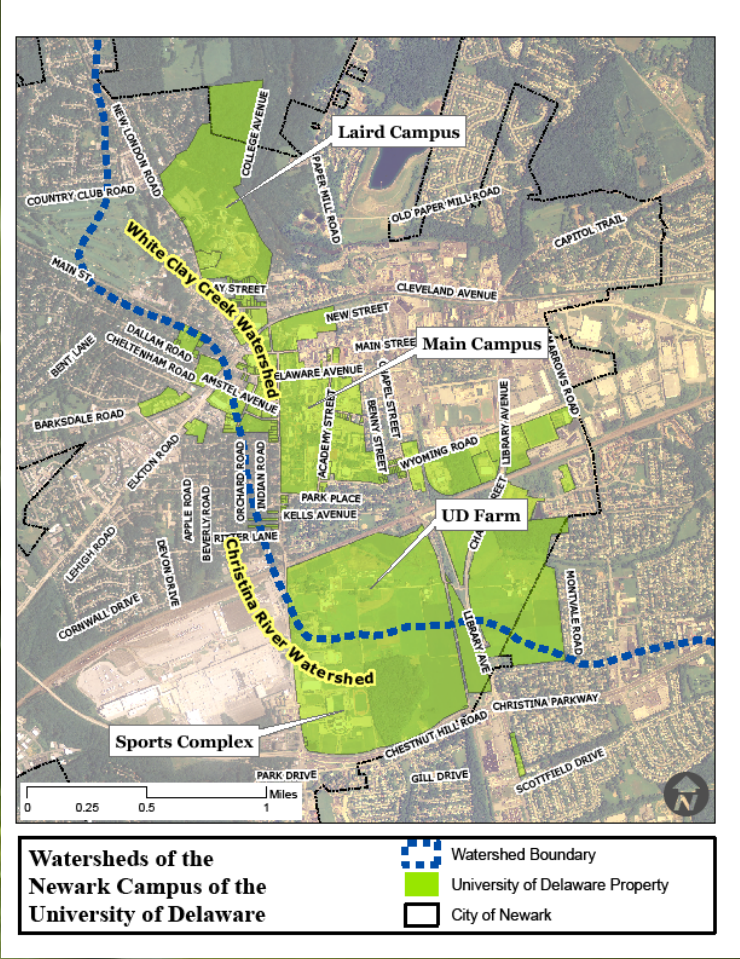
Resources

- Resources:
 - Website for this project
 - Center for Watershed Protection Urban Retrofit Manual and Appendices



Resources

- Maps of the campus on website



Resources

- Biohabitats and Ayers/Saint/Gross resources:
 - Stormwater and Ecological Management Opportunities PowerPoint
 - Green Infrastructure Visual Glossary PowerPoint
 - Stormwater Strategy for Redevelopment Projects
 - File name “BMP Profiles U of DE 052708
 - Draft University of Delaware Newark Campus Ecological Assessment

Time Frame

- You have until the end of October to complete the project
- Your group will be expected to present your findings to the class to include:
 - Description of your project
 - GIS map of retrofit opportunities identified

A glass globe is shown in the lower-left portion of the frame, reflecting a lush green forest scene. The globe's surface is curved, and it features a grid of latitude and longitude lines. The reflection shows tall trees and a bright sky. The word "Questions?" is written in a white, sans-serif font across the center of the globe's reflection. The background is a soft, out-of-focus green gradient.

Questions?

