



Green Infrastructure

Illinois Design Resource Toolkit

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Illinois Extension
UNIVERSITY OF ILLINOIS URBANA-CHAMPAIGN



Agenda

- Project Overview
- Website prototype summary
- High level feedback (aesthetics, functionality, user flow)
- Questions / discussion

A large, mature tree with a thick trunk and dense green foliage dominates the upper half of the image. To its left, a wooden walkway with a railing runs across the frame. In the foreground, a small stream flows through a lush, green area filled with various grasses and plants. In the background, a brick building with several windows is visible on the right side, and a paved area with a utility pole is on the left. The overall scene is a well-maintained outdoor space.

Project Overview

Background

- Lack of urban soils characterization identified as a barrier to GSI Design by the CSC.
- Use of low- resolution soils data masks soils variability, leading to poorly sited, suboptimal GSI.
- Calumet soils research project addresses the urban soils design gap

*Hydrogeologic Soil Research for Green Stormwater Infrastructure Planning and Design
Replicable Research from the Chicago-Calumet Region (Mary Pat McGuire, PI) (IISG)*

- Ongoing input from the CSC was instrumental to the Calumet Soils research and project outputs.

7 STEPS TO DEVELOP YOUR GSI DESIGN



Establishing commitment, goals, priorities



Site selection and prioritization



Site soils analysis



Sizing the GSI design using reliability curves



Design scaling



Design modeling and evaluation



Ongoing commitment and engagement

University of Illinois Extension Collaboration Green Infrastructure Illinois Design Resource Toolkit

- Bring together University of Illinois Green Stormwater Infrastructure research & Extension into a comprehensive website.
- Highlight how Green Stormwater Infrastructure is fundamentally collaborative & interdisciplinary.
- University of Illinois has expertise within GSI disciplinary domains but has not integrated them across departments and within Extension Services.
- Collaborate with GSI stakeholders / target audience during website design & development.

Content Development (2021 - 2022)

Outreach Program

Website Development

Content

Development*

Calumet Soils Process
Guide* (IISG)

Outreach Program

Red Oak Rain Garden
Rainscaping
Workshops

Content Development

Content Editing &
Additions

(1) Include University
Research & Extension
(Extension Collaboration)
(2) Case Studies (Extension
Collaboration)
Other Resources (Plant
Selector, Sizing Tool)

Outreach Program

(3) Rainscaping Workshops
(Extension Collaboration)

Website Development

Design Wireframe (Miro)
Design Prototype (Figma)*

Content Development

Content Editing &
Additions (Workshop
materials, Cost
Evaluation)*

Outreach Program

Rainscaping
(3) Toolkit Workshops
(2022) (Extension
Collaboration)*

Website Development

Hand-off design/content
to developer
Website Coding
Design Revisions*
Content Revisions &
Additions*
Website Published (2022)

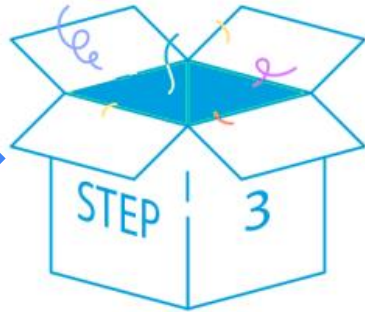
* CSC / Stakeholder engagement

Where we're going

Website Design Prototype,* → Design Revisions → Website development*



Site soils analysis



OVERVIEW:

Once sites are selected, subsoils information needs to be collected. Field soil surveys are recommended which involves collecting soil samples, creating soil profile descriptions, and performing saturated hydraulic conductivity (Ksat) field measurements.

PEOPLE WHO ARE INVOLVED:



Soils survey personnel



USDA-NRCS Consultants



Community partners



Design professional

TASKS:

Consult existing soils data for the site.

Collect soils directly from the site and conduct infiltration tests.

Coordinate with a soils scientist or engineer to discuss the results and use the data in Step 4

RELATED RESOURCES

What are Hydraulic Conductivity (Ksat) field measurements?

Chicago Soil Condition Dataset

Field soil survey expert recommendation

How to obtain Laker contour map?

Soil field survey examples

Published paper that discusses the role of subsoils in GSI design

OUTCOMES:

As completing Step 3, communities and professionals will be able to use soils information to estimate the infiltration potential of subsoils which will impact the size of GSI design that is needed to meet run-off reduction targets. This GSI size estimate calculator is provided in Step 4.

* CSC / Stakeholder engagement

Target audiences & geography

Calumet Region → State of Illinois

PRIMARY INTENDED USERS



PLANNERS



MUNICIPAL



CONSULTING
ENGINEERS



STORMWATER
MANAGERS

POTENTIAL USERS



DECISION AND
POLICY MAKERS



MODELERS



DESIGNERS



LANDSCAPE
ARCHITECTS



OUTREACH AND
OPEN SPACE
ADVOCACY GROUPS



INVESTMENT



COMMUNITIES



PRIVATE LAND
OWNERS

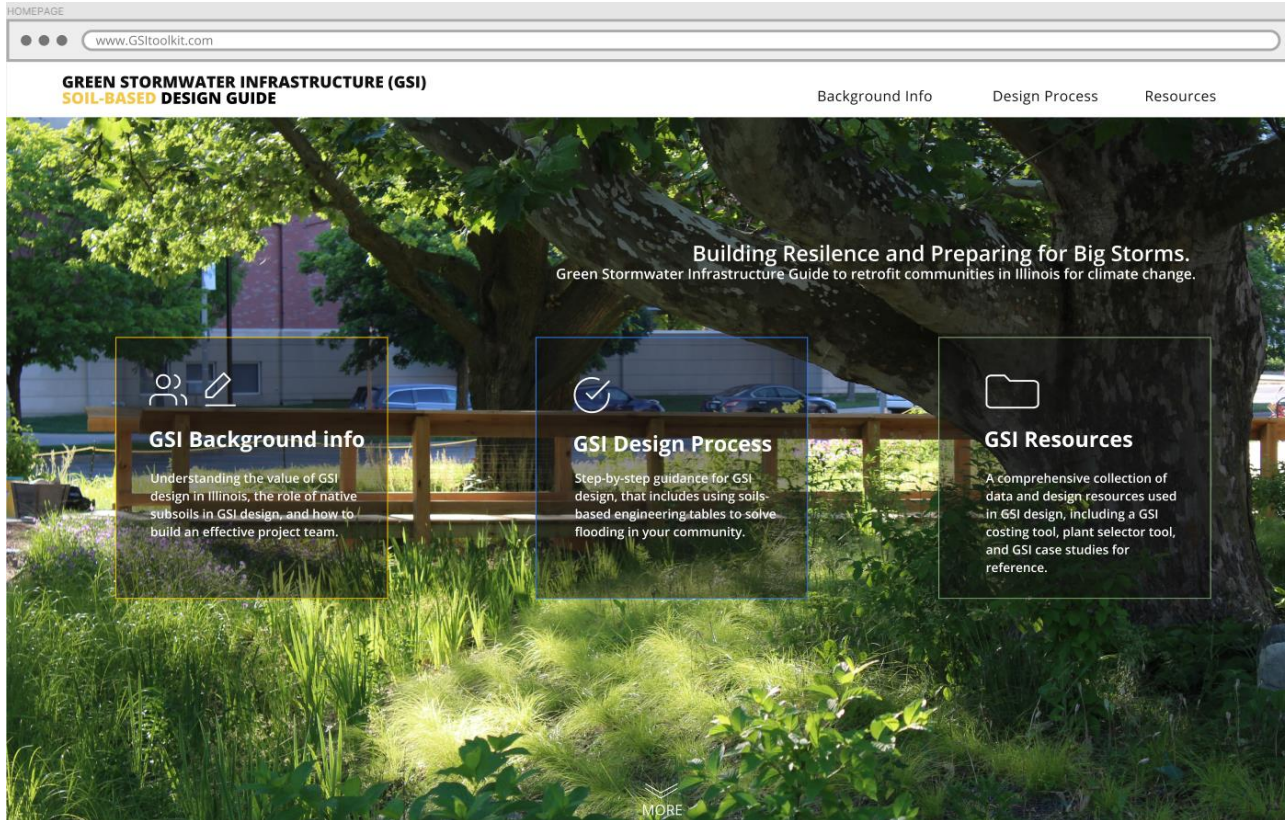


INTERDISCIPLINARY
RESEARCH TEAMS
INVOLVED IN GSI STUDIES

A large, mature tree with a thick trunk and dense green foliage dominates the upper half of the image. In the background, a wooden bridge with a railing spans across a path. To the right, a brick building with several windows is visible. The foreground is filled with a lush garden bed containing various green plants, including tall grasses and smaller leafy plants, interspersed with several large, smooth grey rocks. The overall scene is bright and natural, suggesting a campus or park setting.

Website Prototype Summary

Landing Page



Web Prototype - Ginger Jiang

- [https://uofi.box.com/s/7ihhp42phh2gnz0t34g
eniwqni55boev](https://uofi.box.com/s/7ihhp42phh2gnz0t34g
eniwqni55boev)

Aesthetics

Themes

Soils

Design

Tasks

People

Resources



#54AD1D



#95D86F

Theme color for GSI Design page



#FFC700

Theme color for Soil page



#FF513C

Theme color for People page



#3B8FFD

Theme color for Tasks page



#54AD1D

Theme color for Resources page



Images invoke GSI

Functionality



FEATURED RESOURCES:

**PLANT
SELECTOR
TOOL**

**COST
EVALUATION
GUIDE**

**GSI
CASE
STUDIES**

**RELIABILITY
CURVE
TOOL**

Over ____ resources are provided here to guide decision-making for GSI. These can be searched using the Filter tool below for ease of access and relevance to your project.

FILTER BY

AUDIENCES

- Government official
- Professional
- Academic
- Non-technical/Public

CATEGORIES

- Water
- Soil
- Community
- Scale
- Investment
- Maintenance
- Plants

LEARNING MODE

- Case Studies
- Research Papers
- Brochure
- Webinar
- Book
- Fact Sheets
- External toolkits

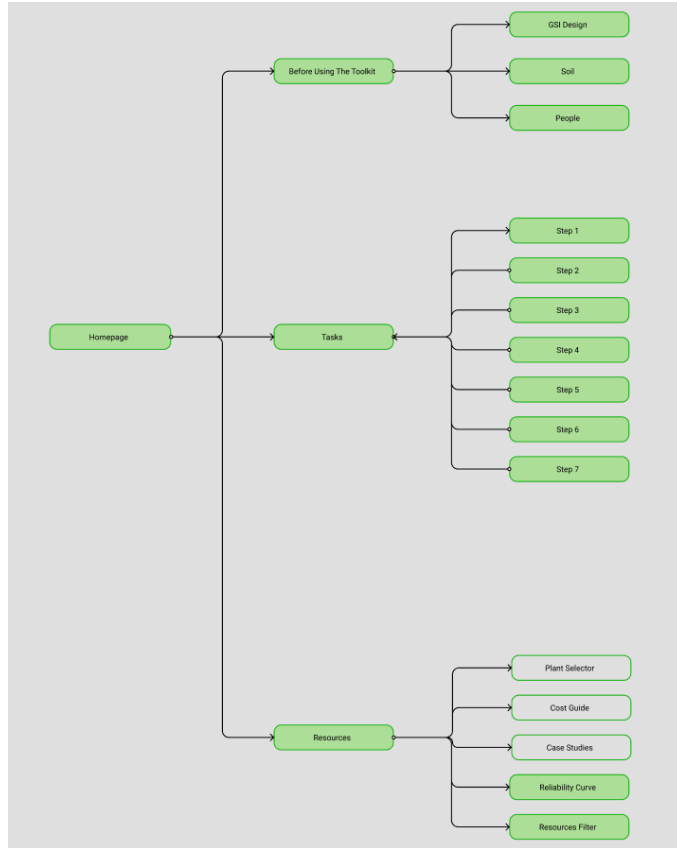
APPLIED IN TOOLKIT

- Background-GSI
- Background-Soil
- Background-People
- Step 1 Establish Commitment, Goals, Priorities
- Step 2 Site Selection and Prioritization
- Step 3 Site Soils Analysis
- Step 4 GSI Design at the Site Scale
- Step 5 Design Scaling
- Step 6 Design Modeling and Evaluation
- Step 7 Ongoing commitment and engagement

CLEAR

directly accessing the data

User Flow



Resources

- Partner resources
- Case Studies
- University research & data
- Extension products

A large, mature tree with a thick trunk and dense green foliage dominates the upper half of the image. A wooden walkway with a railing runs horizontally across the middle ground, partially obscured by the tree's branches. In the foreground, a lush green area features a small stream or drainage channel with several large, smooth rocks. The background shows a grassy lawn, more trees, and a brick building with white window frames on the right side. The overall scene is a well-maintained outdoor space.

Illinois Design Resource Toolkit

A large, mature tree with a thick trunk and dense green foliage stands in the center of a landscaped area. The ground is covered with various green plants, including tall grasses and smaller shrubs. A wooden walkway with a railing runs across the middle ground. In the background, there are more trees and a brick building with several windows. The overall scene is a well-maintained outdoor space.

Questions?