CNT

Quantified Ventures

USDA Natural Resources Conservation Service
U.S. DEPARTMENT OF AGRICULTURE

GREENPRINT PARTNERS

Unlocking the Value of Green Infrastructure Incentive Programs for Urban Agriculture by Leveraging Public and Private Investment

Webinar
October 26th, 2023

GREENPRINT PARTNERS

AGENDA

2 - 3	**Welcome & Introductions**
4 - 12	**Project Background**
13 - 17	**Initial Learnings & Shift**
18 - 22	**Project Profiles**
23	**Break/Q&A**
24 - 34	**What would this look like scaled up?**
35	**Recommendations**

Certified B Corporation

WOMEN OWNED

GREENPRINT PARTNERS

The Core Team

Anna Jentz
Senior Planning Associate
anna@greenprintpartners.com

Hannah Kacprzak, PE
Senior Project Manager
hannah@greenprintpartners.com

Jen McGraw
Director, Sustainability Innovation
jen@cnt.org

Matt Carney
Associate Director
carney@quantifiedventures.com

GREENPRINT PARTNERS

greenprintpartners.com

CNT

cnt.org

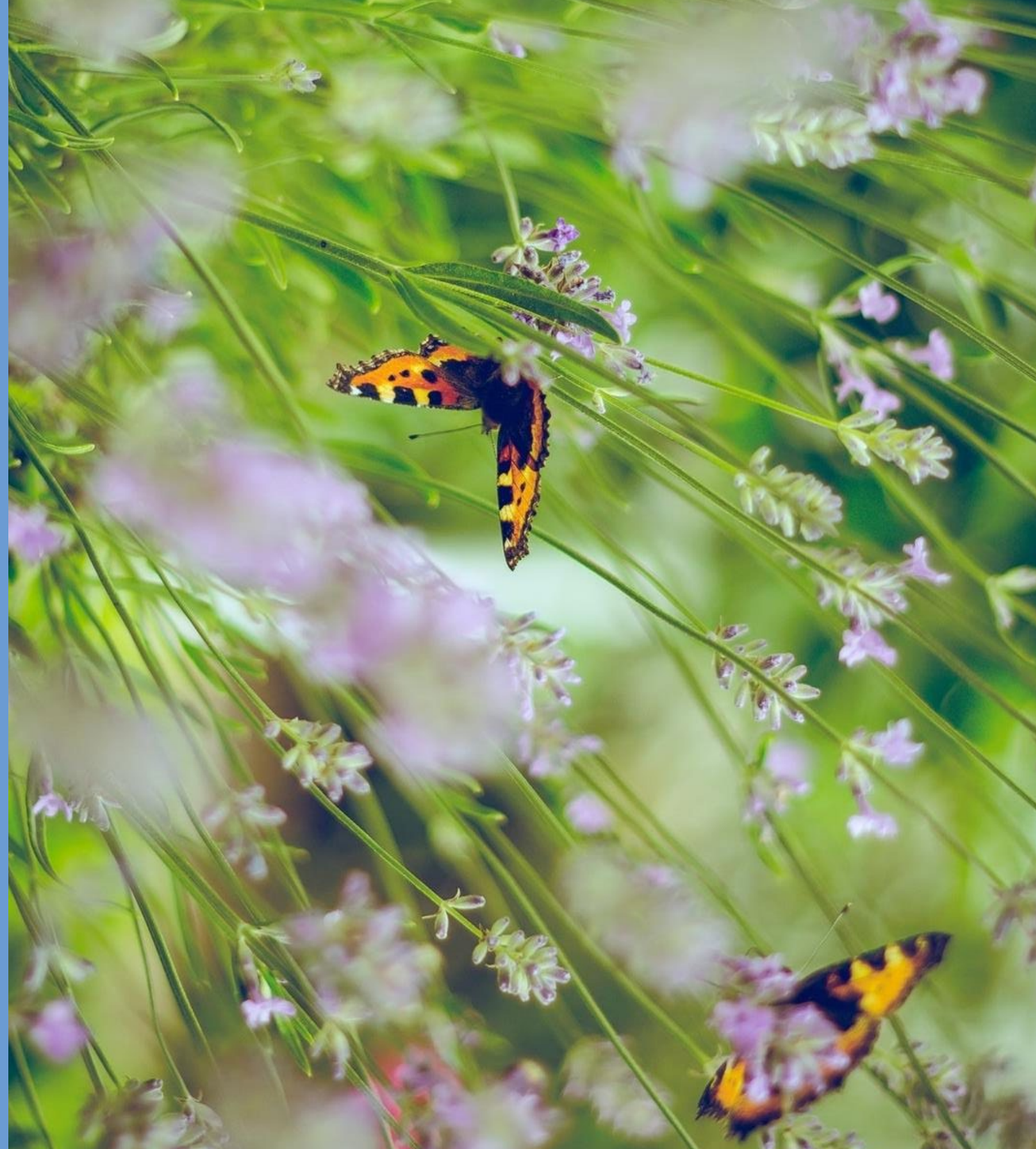
Quantified Ventures

quantifiedventures.com

Certified B Corporation

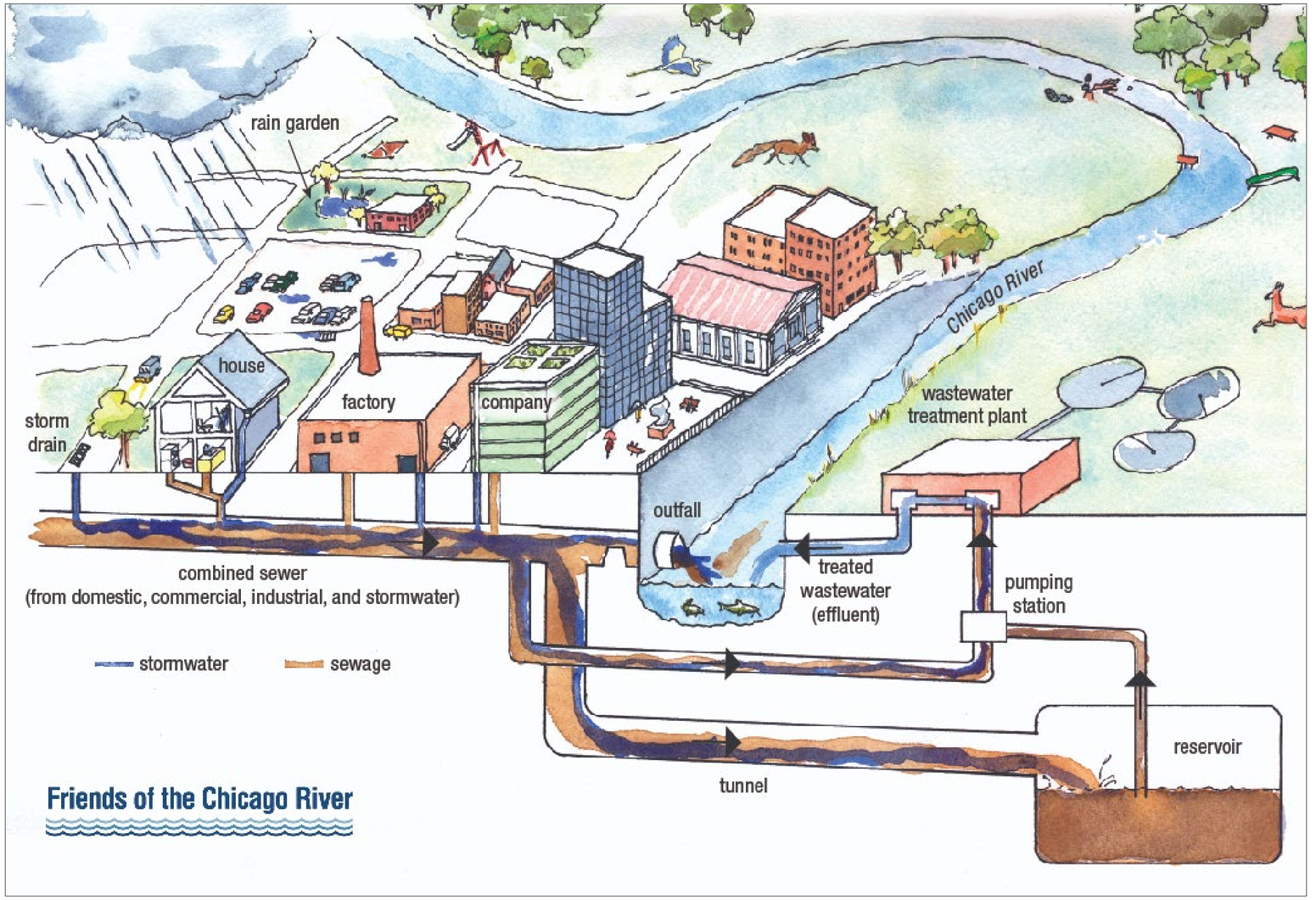
WOMEN OWNED

PROJECT BACKGROUND



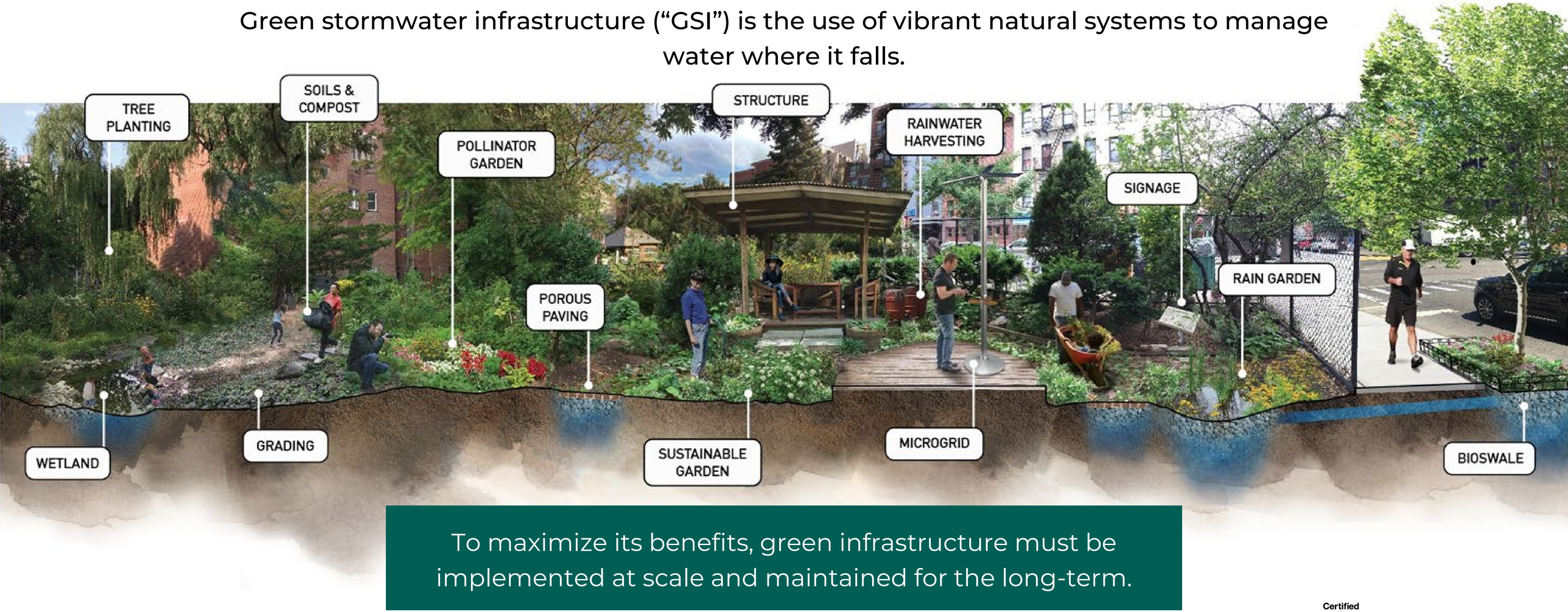
Combined Sewer Systems

These systems collect rainwater, sewage from toilets, and industrial wastewater in a *combined* pipe.



Green infrastructure is a multi-benefit solution.

Green stormwater infrastructure (“GSI”) is the use of vibrant natural systems to manage water where it falls.



To maximize its benefits, green infrastructure must be implemented at scale and maintained for the long-term.

Illustration credit: We Design

GREENPRINT PARTNERS

What are ‘Green Infrastructure Incentive’ (GI2) Programs?

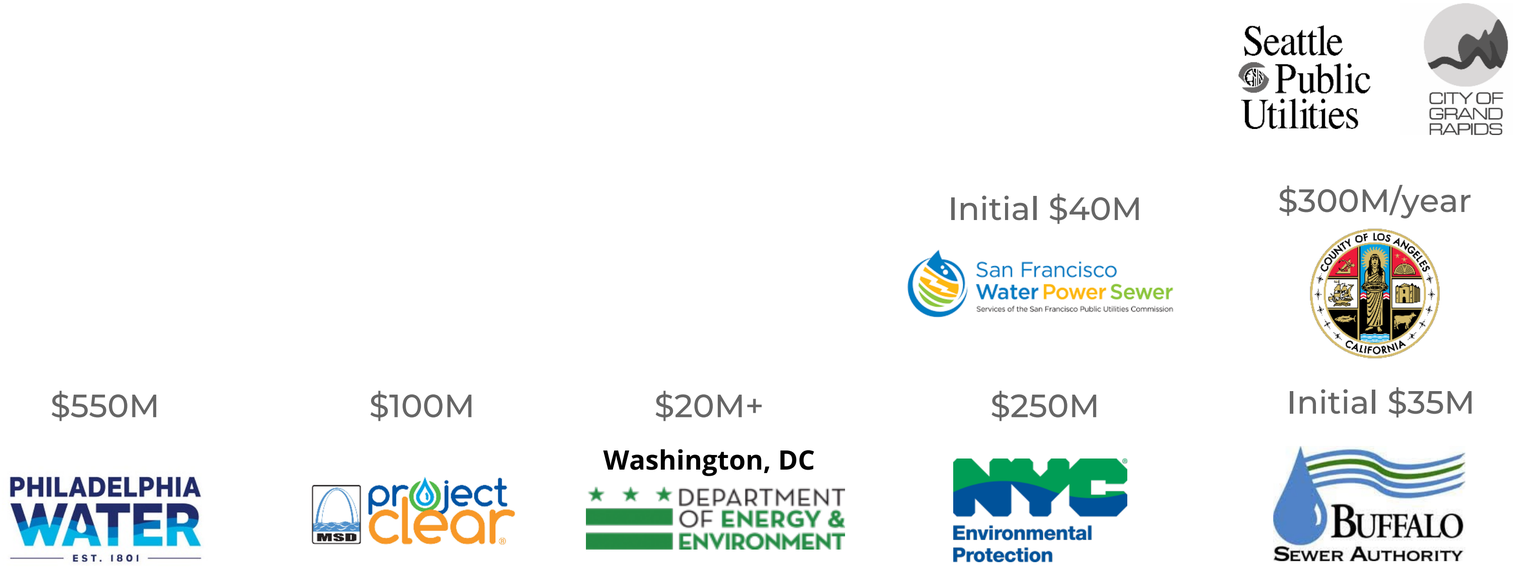
Water utilities offer **financial incentives** for private property owners to install green stormwater infrastructure that meets utility specifications.

Cities / utilities seeking to scale green infrastructure need access to cost effective projects on private property

Private property owners benefit from grant-funded green space and (in some cases) reduced stormwater fees

GI2 program adoption is reaching an inflection point.

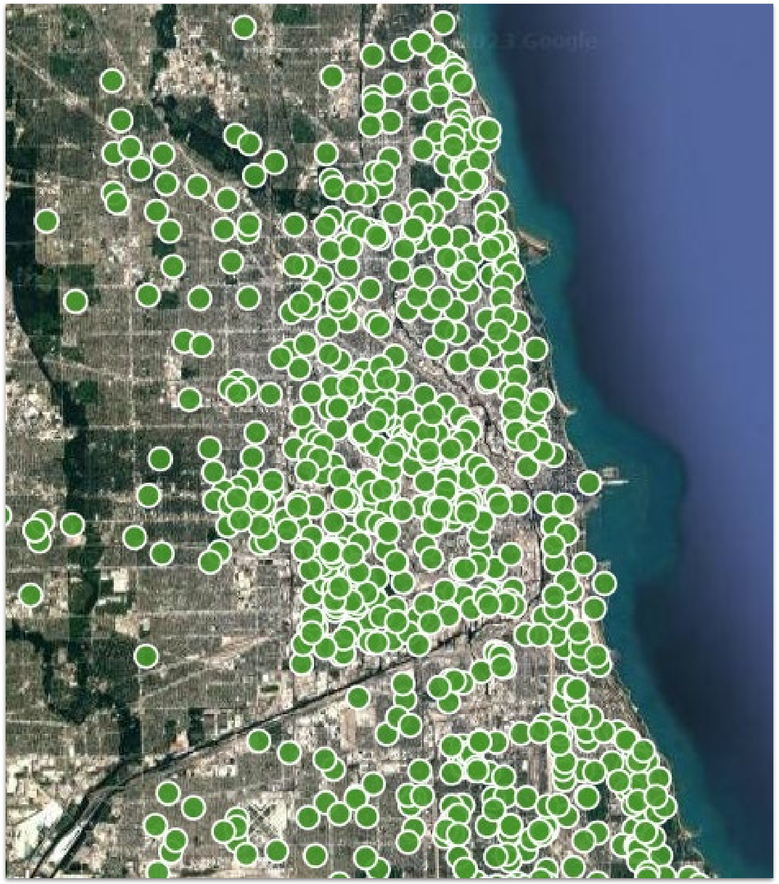
The following water utilities offer a financial incentive for landowners to retrofit their property with green infrastructure, creating a new marketplace.

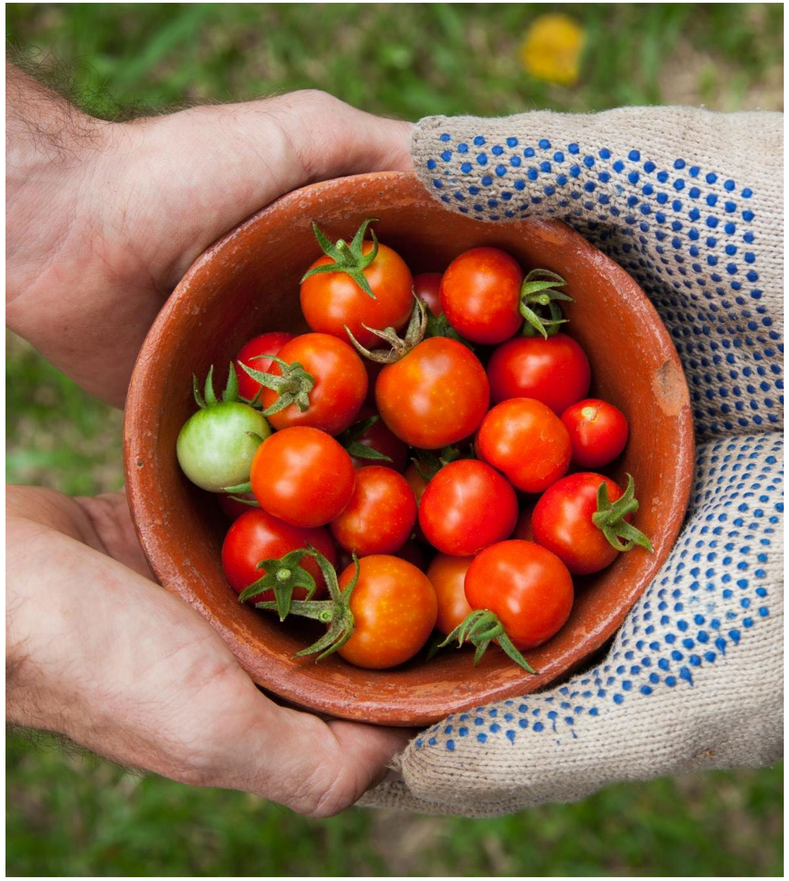


Certified B Corporation

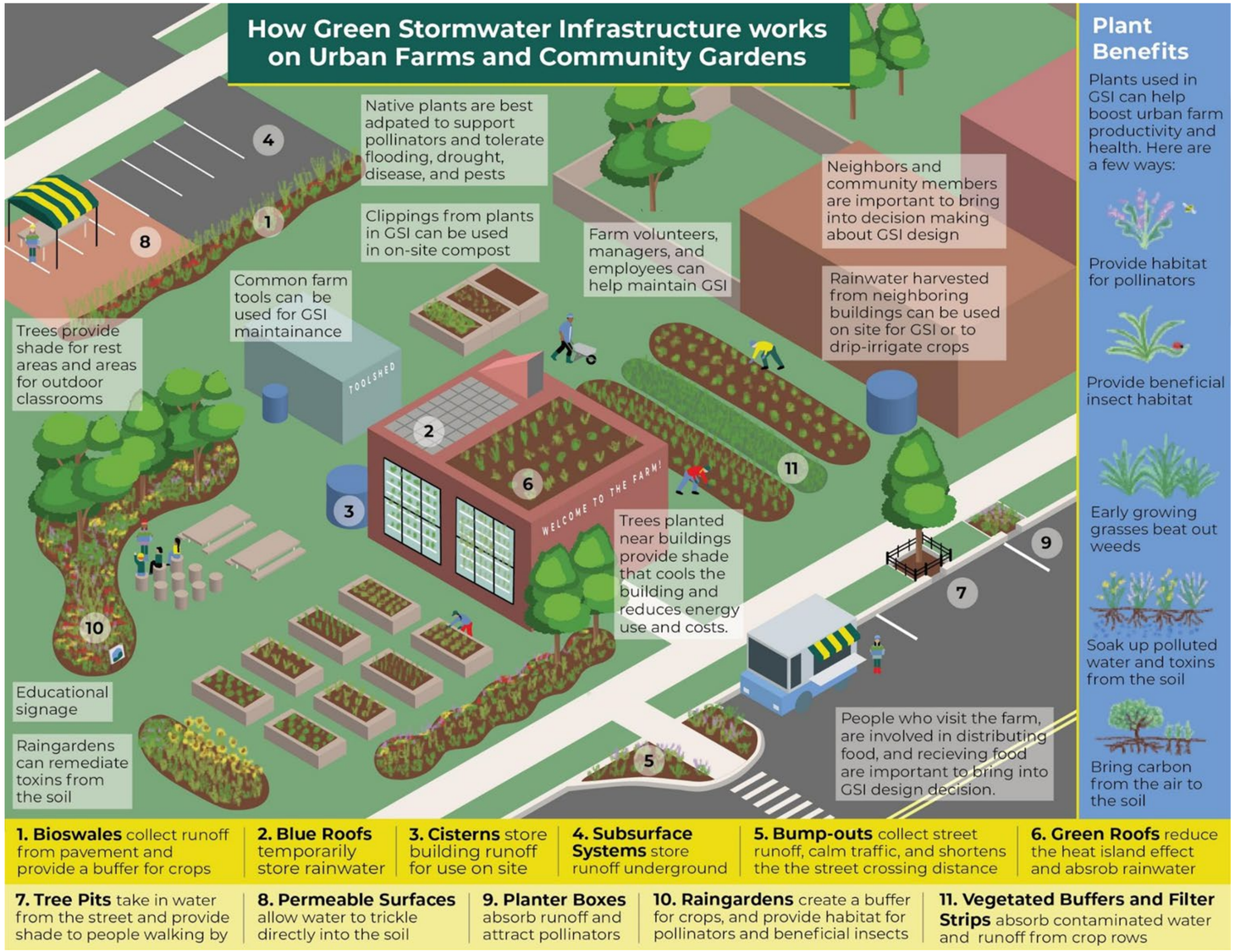
WOMEN OWNED

Urban agriculture practices are on the rise.





Urban Agriculture Up Close



GREENPRINT PARTNERS

The Well Farm, Peoria IL

Photos by Doug and Eileen Leunig

Using our knowledge to expand urban agriculture.

How can we duplicate some of the successes of the Well Farm to develop a program that co-locates GSI with Urban Agriculture?

INITIAL LEARNINGS & SHIFT

GREENPRINT PARTNERS

Project Goals

USDA is funding Greenprint to develop a GSI program that co-locates GSI with urban agriculture.

1

ALIGN GSI WITH URBAN AG

2

PROGRAM REVIEW

3

FINANCIAL MODELING

4

PILOT DEVELOPMENT

Certified B Corporation

WOMEN OWNED

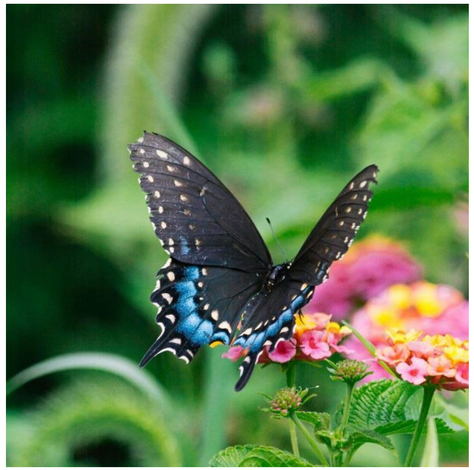
GREENPRINT PARTNERS

Initial Assumptions

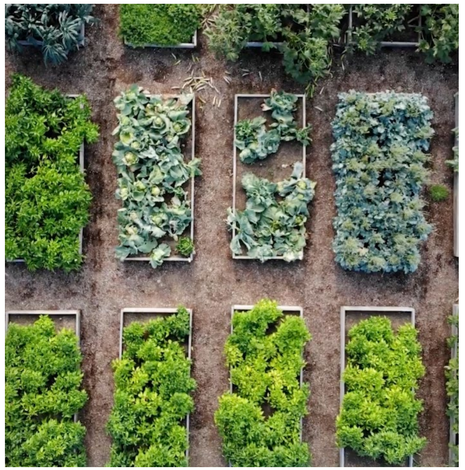
What did we assume going into this project?

Assumption #1: Urban ag practitioners are not taking advantage of utility GSI incentive programs

Assumption #2: Practitioners stand to benefit due to the potential to:

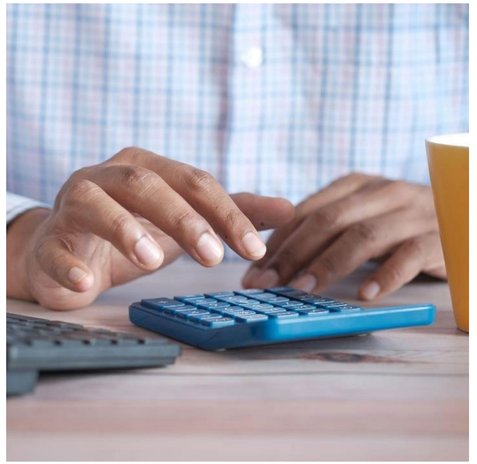


Support pollinator habitat



Manage excessive rainfall to reduce crop loss

Create a protective buffer between production spaces and urban ROW



Reduce operational costs

Financial Modeling

APPROACH: Greenprint selected a community garden in the Botanical Heights neighborhood of St. Louis to be the pilot site that Quantified Ventures (QV) and Center for Neighborhood Technology (CNT) would focus on. QV and CNT explored the application of various intervention practices to the site and what, if any, outcomes the practices would produce.

FINDING: The project partners used the CNT Green Values Stormwater Management Calculator, a formula-driven research-backed quantification method, to measure the stormwater impacts in economic values [TABLE 1]. While the pilot site is estimated to reduce over 30,000 gallons of stormwater each year, this would have a negligible effect on the economics for the water utility if measured strictly on reduced treatment costs. However, utilities may be more inclined to invest in similarly sized GSI projects if there are other external considerations, such as fulfilling a consent decree or meeting site-specific needs.

TAKEAWAY: Given this finding, the project partners decided to pivot strategy and explore a model of using existing funding sources to complement potential outcomes-based financing and make the green stormwater infrastructure installations financially viable.

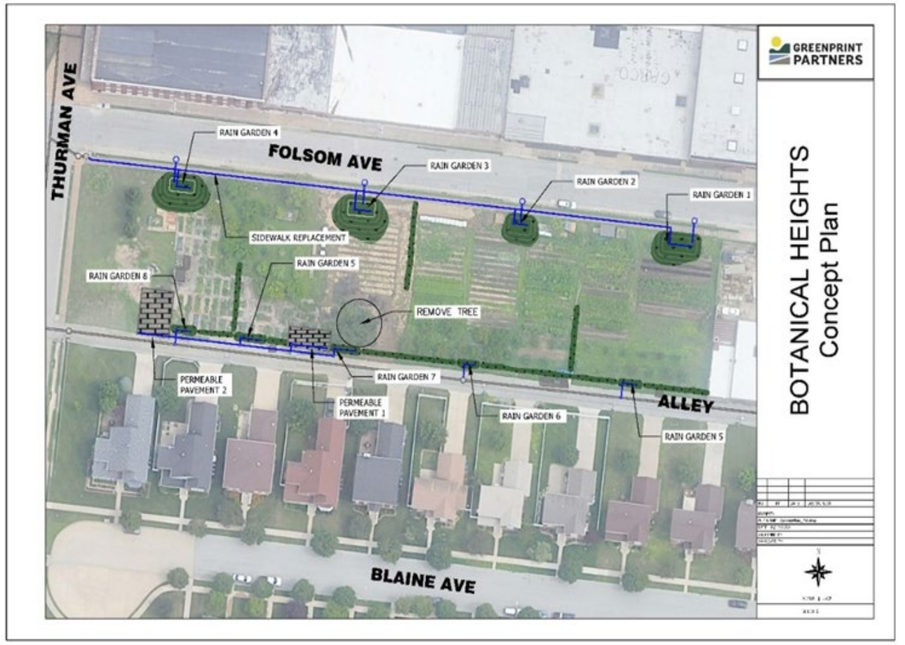


TABLE 1. Measurable Economic Impacts of GSI at Botanical Heights Community Garden

Estimated Total Site Area (sq. ft)	71,534
Annual value from groundwater replenishment	$18.33
Reduced treatment benefit	$6.35
Total gallons reduced per year	30,327

GREENPRINT PARTNERS

Key Learnings

What is informing our new direction with CIG?

Pilot Development in STL

- Assumed benefits were NOT highest priorities for urban ag practitioners
- Urban ag already maximizing creative use of their space
- Challenging to develop cost effective projects on existing urban ag sites
- Continued interest

MMSD Insights

- Interest from schools to integrate additional nature-based features like urban ag alongside their GSI projects
- Funding is disparate and uncoordinated

National Interest

- Utilities increasingly seeking ways to drive community benefit and support integrating additional nature-based features alongside GSI
- Restricted from funding these features and have asked private partners to find ways to fill the gap

Certified B Corporation

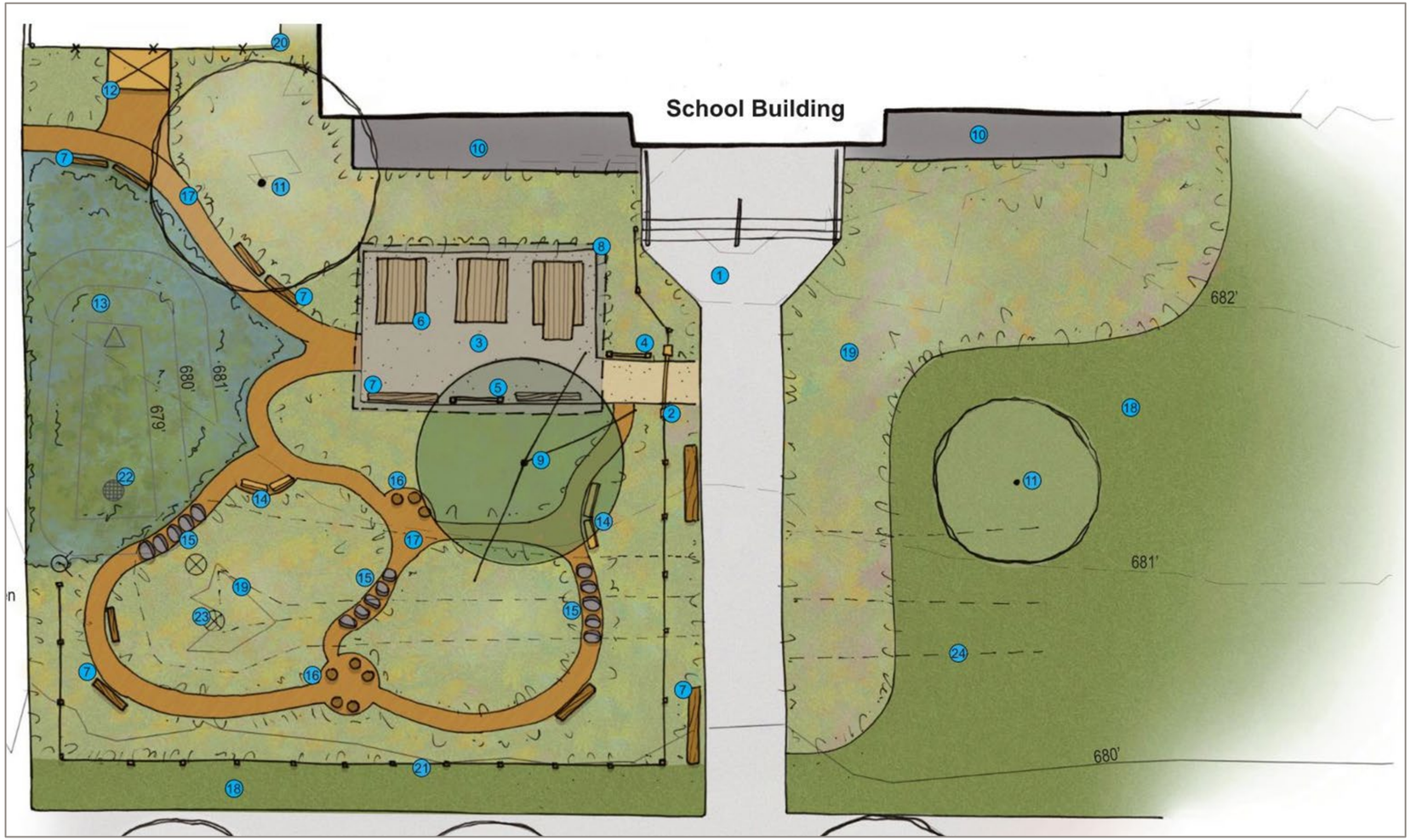
WOMEN OWNED

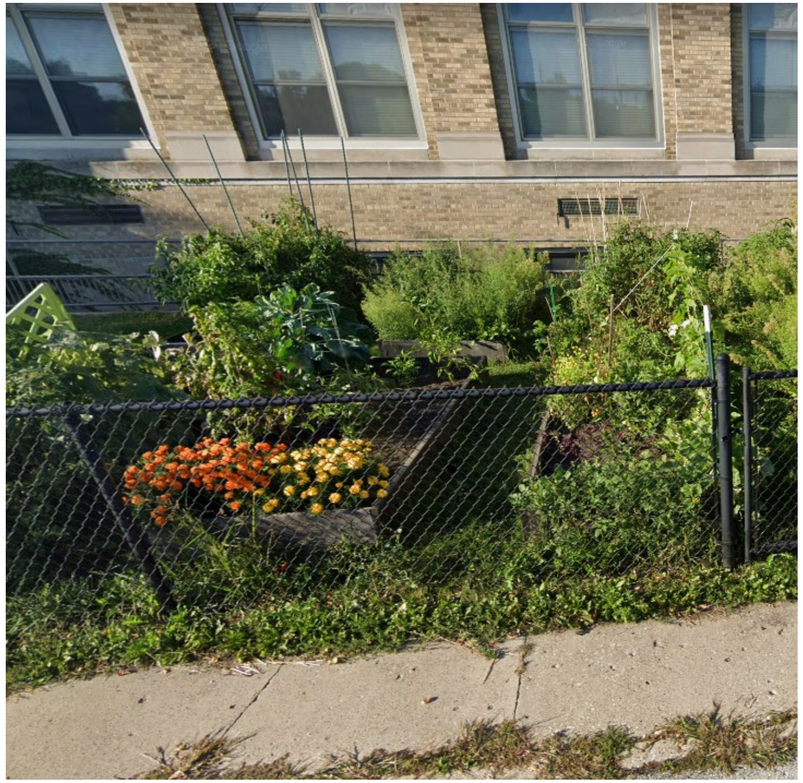
PROJECT PORTFOLIO

Horace Mann Elementary

Horace Mann's courtyard (pictured above) will be transformed into a new outdoor learning space.

Shorewood High School

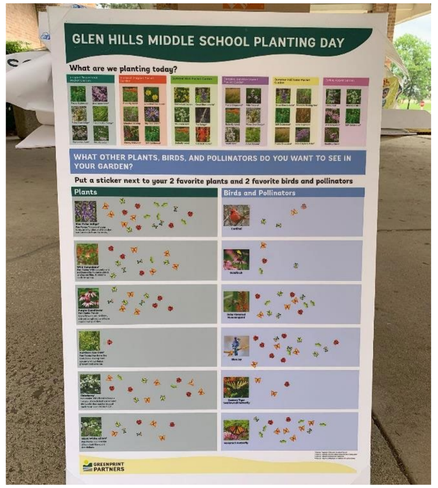




The existing community garden on the school's property (depicted above) will benefit from the new prairie area designed to attract pollinators to the site.

Glen Hills Middle School

Aerial photo (right) of site for Glen Hill's new outdoor gathering and garden space.



During the school planting day, community members voted (pictured left) on the native plants and animals they hoped to see in their green schoolyard.

St. Luke’s Episcopal Church

GREENPRINT PARTNERS

BREAK/Q&A

Are there any questions about the presentation so far?

What would this look like scaled up?

Quantified Benefits of Green Stormwater Infrastructure & Edible Gardens in U.S. Schoolyards

Jen McGraw
Center for Neighborhood Technology

USDA NRCS Webinar: Unlocking the Value of Green Infrastructure Incentive Programs for Urban Agriculture by Leveraging Public & Private Investment

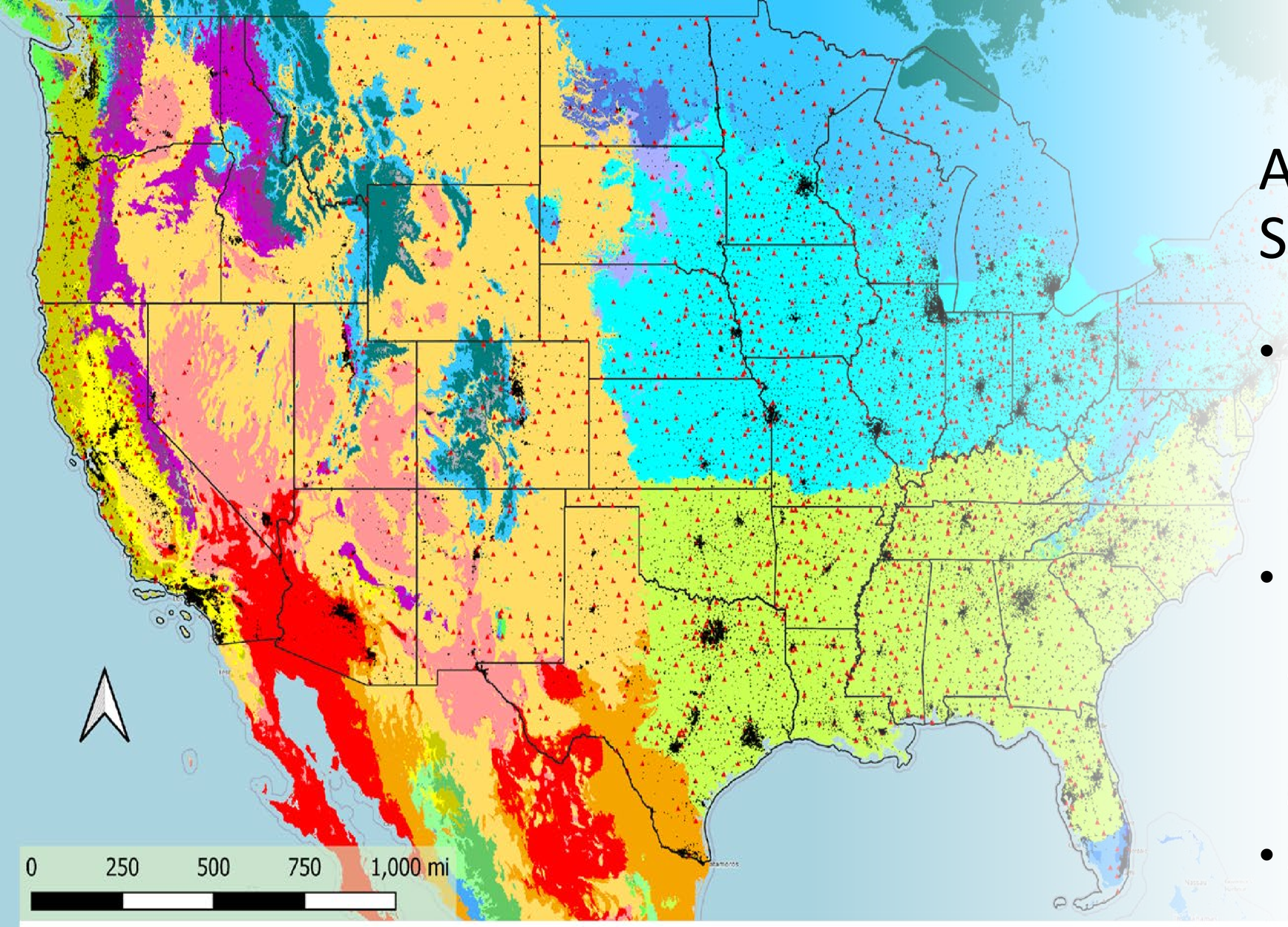
October 5, 2023

CNT

Schoolyard Gardens as a Stormwater Solution

National GSI & edible garden schoolyard potential:

- 39 billion gallons of stormwater runoff avoided per year
- 34% of runoff that would typically occur on these sites



Analyzing Schoolyards

- Detailed assessments of Buffalo, NY & Milwaukee, WI schoolyards for model development
- Runoff scenarios for “typical” schools with & without green stormwater infrastructure & edible gardens
- Scaled nationally—analyzed 67,650 urban & suburban (K-12) U.S. public schools

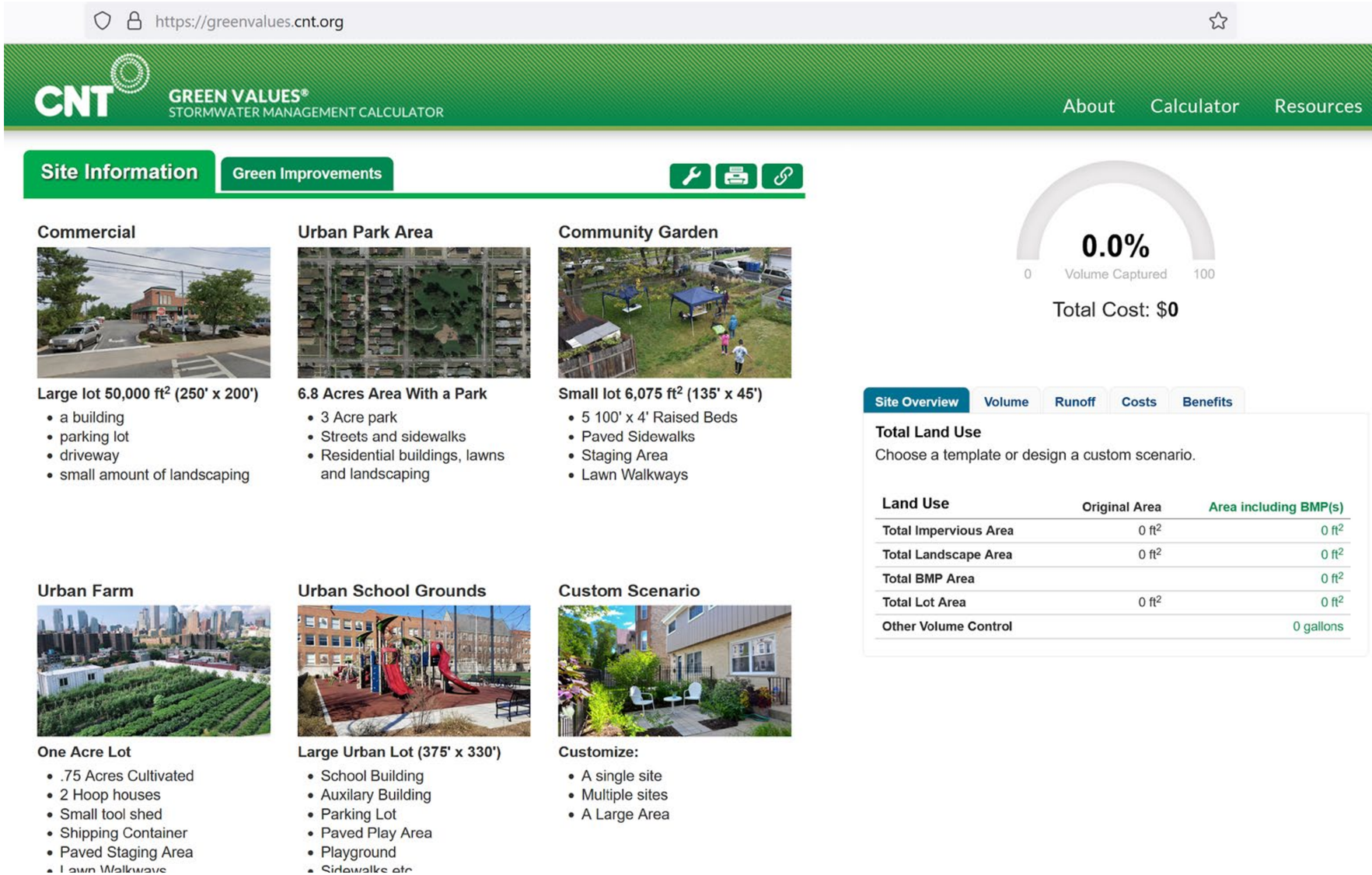
CNT

Green Values Calculator

Added school, farm, & garden templates

Schoolyard scenario modeled:

- Raised beds
- Rain garden
- Parking lot swale
- Native vegetation



Benefits Beyond Stormwater Runoff

Environmental, resilience, & social, including:

- water quality
- heat island reduction
- carbon sequestration
- reduced energy use
- groundwater recharge
- student academic achievement
- nutrition

Transformation requires support

CNT

Nature-Based Schoolyards & Academic Achievement

Access to nature improves **concentration, emotional wellbeing**, & **school performance**

Literature shows positive correlations with test scores & schoolyard greening

CNT applied findings to the national schoolyard scenario

Achieving results requires incorporating curricula & activities to support achievement

School Gardens Resilience Opportunities

- Growing food (even a small amount)
- Supporting biodiversity & pollination—focus on planting natives & whole ecosystems
- Serving as resilience hubs—e.g., food bank site; emergency services; learning, capacity building, & building power through connections

CNT

Equity Best Practices in Urban Schoolyard Gardens

- School collaboration with CBOs or NGOs for technical or financial support
- Funds made available without grant writing requirements to help under-resourced schools
- Sharing natural resources between school networks (seeds, soil, etc.)
- Relevant JEDI programming & curricula
- Student-led processes from ideation to implementation
- A well-rounded feedback loop, prioritizing community
- Shifting to prioritizing schools with an objective assessment of historic lack of investments

Potential Benefits of Equity Best Practices

- Increasing BIPOC student & community access to green, beautiful, & aesthetic spaces
- A full-sensory experience to ease the learning process of neurodivergent students
- Enhancing students' socio-emotional learning
- Therapeutic safe space for students who need it most
- Providing trauma-informed practices to students who deal with generational &/or racism-induced trauma
- Partially increasing access to fresh & nutritious produce to areas that face food apartheid
- Honoring cultural & ethnic backgrounds of students, their families, & their food traditions
- Teaching students to be more okay with each other's differences
- Evolving onwards from normalized gender stereotypes

Recommendations

1

Host informational sessions and provide resources at local, urban-based NRCS Offices to both urban producers and local schools on how to leverage funds from other entities, such as local stormwater management organizations or the U.S. Department of Education.

2

More actively promote NRCS office connections in urban areas for USDA grant application support.

3

Build relationships between NRCS offices and stormwater agencies to enable joint education sessions and to explore streamlining funding requirements for combined GSI and urban ag projects.

4

Make securing USDA grant funding easier to access for small, urban producers and small-scale projects with turnkey/pre-defined project “check-the-box” applications.

GREENPRINT PARTNERS

Thank you!

Anna Jentz
Senior Planning Associate
anna@greenprintpartners.com

Hannah Kacprzak, PE
Senior Project Manager
hannah@greenprintpartners.com

Jen McGraw
Director, Sustainability Innovation
jen@cnt.org

Matt Carney
Associate Director
carney@quantifiedventures.com

GREENPRINT PARTNERS

greenprintpartners.com

CNT

cnt.org
greenvalues.cnt.org

Quantified Ventures®

quantifiedventures.com

Certified B Corporation

WOMEN OWNED

GREENPRINT PARTNERS