



NFWF



Cultivating Community Conservation: Techniques, Engagement and Education

Webinar Nine: Water Quality - Restoration Techniques and Best Practices

October 20, 2015

11:00 am PDT/ 2:00 pm EDT

How to Participate

- ❖ Type your question into the questions box at any time during the presentation.
- ❖ The questions box and buttons are on the right side of the webinar window.
- ❖ This box can collapse so that you can better view the presentation. To unhide the box, click the arrows on the top left corner of the panel.
- ❖ Your question will be read during the Q&A session.
- ❖ If you are having technical difficulties, please send us a message via the questions box on your right. Our organizer will reply to you privately and help resolve the issue.

Webinar Objectives

- ❖ Learn about innovative ways environmental leaders have addressed watershed and wetland management in restoration projects.
- ❖ Learn how Five Star and Urban Waters grantees are aligning restoration goals with environmental stewardship opportunities.
- ❖ Explore how environmental restoration leaders are gathering support from volunteers and community groups.
- ❖ Discuss new engagement strategies.

Webinar Speakers



Marie Branch

Grant Writer and Special Projects Coordinator
Wolf River Conservancy



Mark Adler

Director of Special Projects
Keep Indianapolis Beautiful

Engaging Urban Youth with the Wolf River Watershed in Shelby and Fayette Counties, TN

Wolf River Conservancy



The community strongly supported the Wolf River Canoe Day in 1985.



MBR helps establish Wolf River Conservancy

The Memphis Board of REALTORS® was instrumental in the formulation of the Wolf River Conservancy, a non-profit foundation established for the conservation and preservation of the Wolf River and its amenities.

One hundred REALTORS® participated in the Memphis Board of REALTORS® 75th Anniversary Musical Revue that performed twice for the public and raised \$10,000 for the Wolf River Conservancy in November, 1985.

The Wolf River Conservancy sought

support from Mayors Richard Hackett and William Morris soon after it was chartered, and the two top political leaders gave support. Mayor Hackett told us:

"It is through the dedication of our citizens that projects such as this come into being. Many of us have long recognized that the Wolf River is an amenity too long neglected. I am particularly glad to know of this commitment of your organization to work through the many legal, communication and coordina-

tion concerns inherent in the preservation and improvement of the Wolf River and its environment. We will most certainly cooperate."

Mayor Morris told Conservancy members: "Your organization is awakening this community to the potential of the Wolf River, the dangers which threaten it, and the actions we must take to preserve it. Those of us in county government benefit from your leadership in this area, and we can attest to your sincerity and commitment."

"We look forward to working with you to preserve, protect and enhance this irreplaceable natural resource. Please be assured of the cooperation of my administration. Working with you... we can ensure the Wolf River area's natural beauty for future generations."



Steve Butler, WRVR radio announcer; Jim Routt, Chairman, Board of County Commissioners; Mason Granger, Channel 5; and Carolyn Gates, County Commissioner, enjoy the Wolf River Conservancy outing.

“Preserve, protect and enhance this irreplaceable natural resource and ensure the Wolf River area’s natural beauty for future generations.”

-Esther West, circa 1980's

Wolf River Conservancy

- * Land trust dedicated to the protection and enhancement of the Wolf River watershed as a sustainable natural resource
- * Founded in 1985 (celebrating our 30th anniversary!)
- * Ghost River Section saved in 1995 (20th anniversary)



Wolf River Conservancy

- * Conservation
- * Recreation
- * Education
- * Commitment



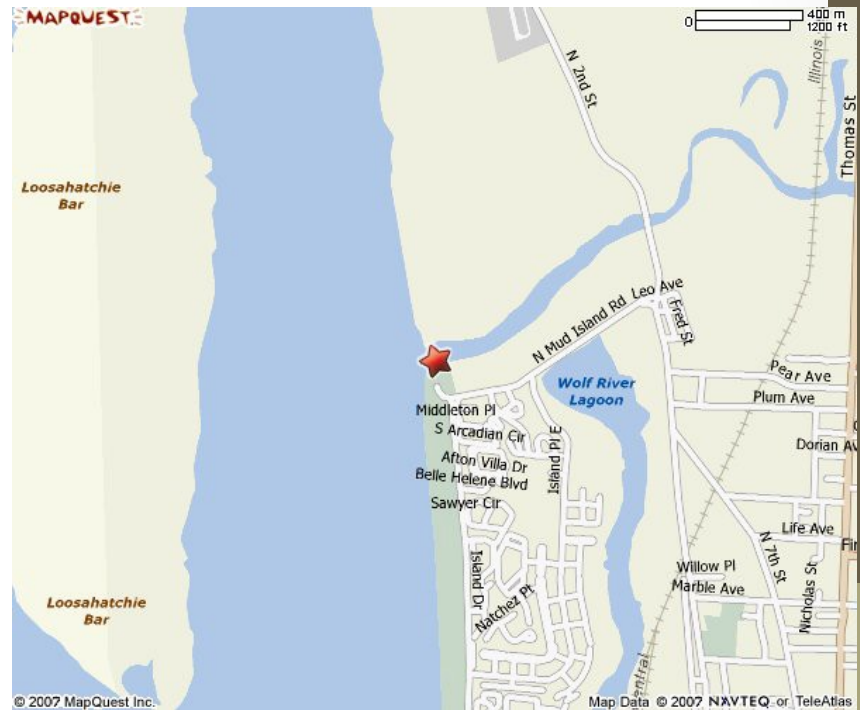
Wolf River Facts

- * The Wolf River begins at Baker's Pond, a huge spring in Holly Springs National Forest (north Mississippi)

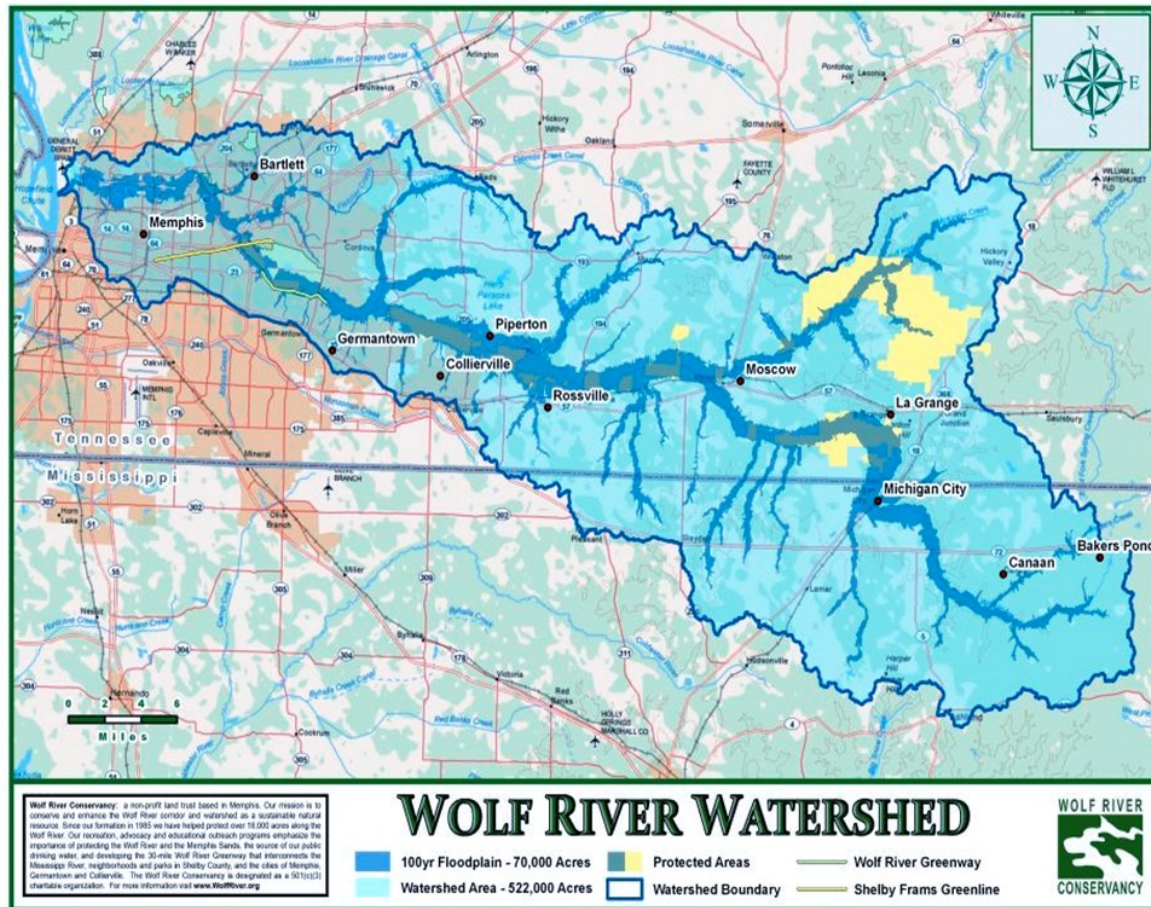


* The Wolf River ends at
the Mississippi River in
downtown Memphis

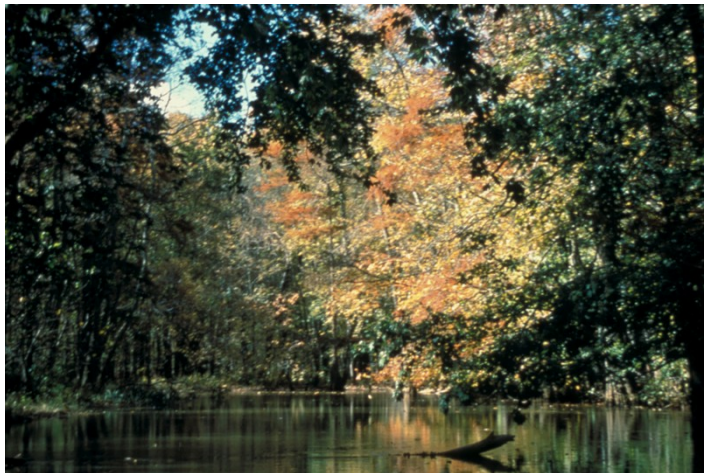
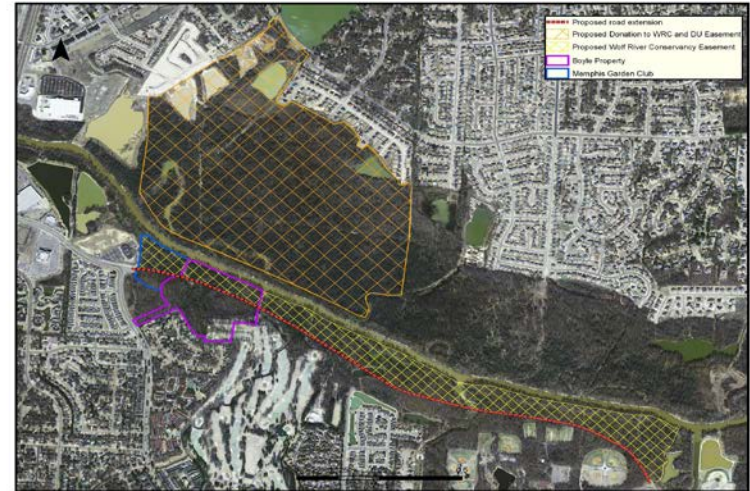
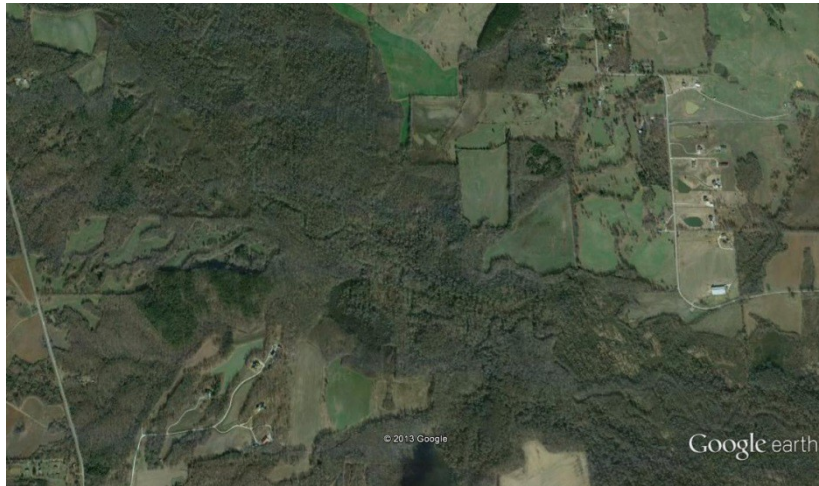
Wolf River



Wolf River Watershed



Rural vs. Urban Wolf River



Rural vs. Urban Wolf River

* Rural (Fayette

Co.)

• Urban (Shelby

Co.)

- * Unchannelized
- * Channelized
- * Healthy wetlands
- * Altered hydrology
- * Extensive floodplain
- * Diminished floodplain
- * Greater biodiversity
- * Less biodiversity
- * Fewer exotic invasive plants
- * Exotic invasive plants – lots!
- * Some sections OK
- * Popular paddling destination
- * Highly eroded
- * More pollution
- * Less erosion
- * Fish unsafe to eat
- * Less pollution
- * Fish safe to eat

Habitat Restoration and Watershed Stewardship Needs

Efforts focused on urban Wolf River...

- * Removal of exotic invasive plants, esp. privet
- * Planting of native trees, shrubs, and other plants to protect watershed and retain biodiversity
- * Trash removal (including tires, furniture, etc.)
- * Erosion control
- * Storm water filtration and retention

Goals of Youth Engagement

- * **Increased environmental knowledge, especially in regard to drinking and storm water, biodiversity protection**
 - * Outcomes – improved water quality and environmental behavior, future stewards and advocates
- * **Restoration and Stewardship of Urban Wolf River:**
 - * Outcomes – improved water quality, improved biodiversity, healthier habitats, less litter – as well as sense of ownership and pride among participants
- * **Appreciation for wild and beautiful upper Wolf River :**
 - * Outcomes – continued protection and participation, advocacy for river into the future

How We Engage

- * **Indoor Presentations**
- * **Service projects – watershed stewardship; habitat creation and restoration along Wolf River and at schools within watershed.**
- * **Field trips and paddling experiences**
- * **Follow-up, evaluations and feedback when possible**

How to Engage: Making Contact

- * WRC contacts adult leaders – school system admin, principals, teachers, scout leaders, youth groups, etc.
 - * Teacher workshops, school events, teacher in-service, public events, media, website, direct communication
- * Adult leaders (e.g. teachers) contact WRC
 - * Education Director, Land Protection Associate, River Guides

Classroom Presentations



- * Introduction to Wolf River
- * Water quality concepts and issues
- * Specific information about service project and/or field trip

Field Trips: “Watershed Tour”



Field Trips: Wolf River Greenway along urban river



Rotation Stations for Large Groups



Station activities dependent on availability of other instructors.

Rotation Stations

<i>Site Visit Workstations</i>	<i>Description</i>
Planting	WRC staff led discussion and demonstration of proper way to plant native plants.
Nature and Art	Using natural art materials such as charcoal, and bird feathers, participants drew and painted the surrounding natural landscapes.
Privet Removal	Students were supervised as they learned to identify Privet and cut/pull it out of the ground.
Watersheds, Wildlife, and Water Quality	WRC staff discussed watersheds, demonstrated how to test water quality, and showed students native Wolf River creatures.
Storm Water Pollution	Clean Memphis representative discussed and demonstrated water pollution and recycling using an interactive model.

Field Trips: Upper Wolf, Fayette Co. Ghost River State Natural Area



Field Trips: U of M Aquifer Research Site, Upper Wolf River Watershed



Field Trips: Paddling





May 20, 2014: Stewardship trash pick up along urban Wolf River ...combined with a rafting trip.

“I never thought I’d be doing something like *this!*”

“I want to do this again and again and again and again!”



Service Projects: Trash Pickup



* Exotic invasive plant removal, esp. privet



Privet Removal



Service Projects: Planting for Biodiversity



Lucius Burch State Natural Area Trailhead

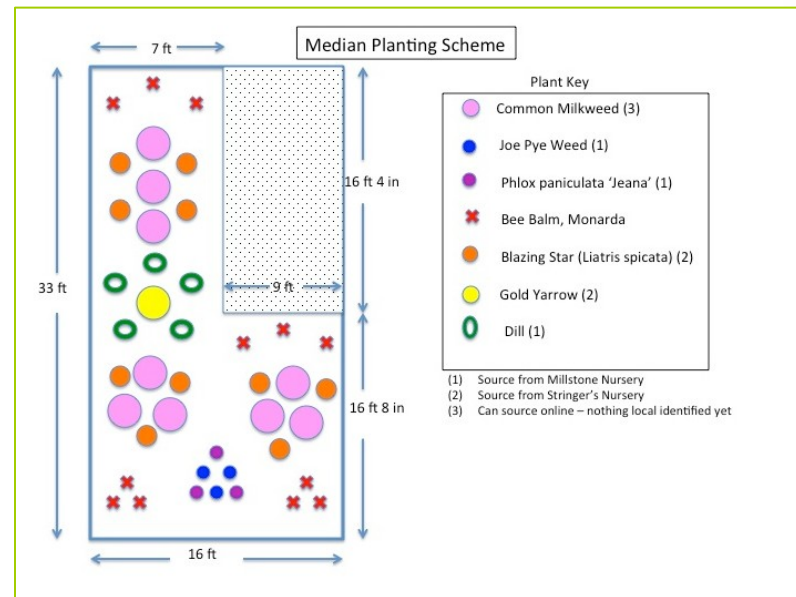
Native grassland restoration

Parking lot islands

Created wetlands



Girl Scout Gold Star Project



This fall, working with U of M graduate students to plant two additional beds.

Girl Scout Gold Star Project: Pollinator Habitat



Results of Combined Field Trip and Service Project

- * **Increased knowledge:** Students reported learning about invasive privet, water pollution, caring for the river, wildlife species, littering, recycling, aquifers, watersheds, water quality...
- * **Students overwhelmingly described pulling privet as their favorite part of the trip. . .**

Results from school programs...

- * “I first got interested in science and nature when Ms. Cathy visited our class and taught us about watersheds, species around the Wolf River, aquifers and many other things about the environment and the Wolf River.”
- * “I got to experience nature. I now understand how a watershed works.”
- * “I learned about how the river and creek provide habitat for the animals.”

Results ...

- * “I enjoyed cutting down trees [privet] because it was a new experience. It was something I had never done before. I was proud of myself because I worked hard.”
- * “The field trip to the Wolf River and Cypress Creek was amazing. I realized that we do put and throw things in our river that do not belong there. We need to watch out and take control of what we put in there.”
- * “We can’t drink contaminated water and neither can the fish or other life forms in the water.”

2015 Projects and Outreach

- * Continuing restoration efforts within the Wolf River Watershed – exotic invasive plant removal, planting of native trees and other plants
- * Storm water and habitat projects at schools within the urban Wolf River watershed
- * Environmental education presentations and field trips for school groups
- * Outdoor experiences for youth and families

Fall 2015 Projects and Plans

- * Collierville High School – service project and field trip
- * Raleigh Egypt High School - classroom program, service project, field trip
- * Lausanne Elementary – classroom program, service project
- * Cordova High School – classroom program, field trip
- * Math/Science Nights at Raleigh Egypt HS, Springdale ES
- * Rhodes College and Univ. of Memphis student service projects
- * Ongoing membership paddling trips and hikes

Rhodes College Environmental Science Class

Service Project (privet removal) and Comparative Plot Studies



Fall 2015 Projects

- * Collierville High School Outdoor Classroom Service Project
- * Field trip to Fayette County on Nov. 5th



* Collierville High School Outdoor Classroom Service Project



* Collierville High School Outdoor Classroom Service Project



Lausanne Elementary

- * Classroom program
- * Small-scale native butterfly garden project for 2nd graders



Kingsbury High School Project – storm water storage and rain barrels



Kingsbury High School Project: increasing biodiversity



Effective youth engagement

PLANNING

- * Clear communication with adult leaders, admin, teachers, etc.
- * Thorough planning and logistics
- * Liability waivers, parent signatures
- * First aid kit, emergency plan
- * Scale project to age group
- * With some exceptions, kids don't use power tools or herbicides

- * E.g. for a large service project, 100+ kids
 - * Communicate to group/group leaders
 - * 1 adult per 20 or fewer kids
 - * Rotation stations as needed
 - * Adequate staff and/or volunteers
 - * Adequate supplies and first aid kit
 - * Water, snacks
 - * Emergency plan , charged cell phone

Service Projects: Communication

- * Talk to the students first if possible
 - * overview of project, clothing and footwear
- * What to expect, what's expected of them:
 - * e.g., you might get muddy, we might see wildlife; you have to listen and follow instructions; safety issues
- * Allay fears:
 - * urban youth often uncomfortable or frightened outside; photos of previous service projects, etc.
- * Evaluations/Opportunity for feedback afterward

Snakes and Poison Ivy



For service projects, keep in mind...

- * With volunteers, and especially with youth, it's about them more than the work that gets done
- * Safety and adequate supervision is the first concern.
- * Everyone should feel they've had a POSITIVE experience and leave with a SENSE OF ACCOMPLISHMENT.

Effective youth engagement

- * Relevant
- * Experiential, memorable
- * Sensory or physical, “hands-on”
- * Good teaching methods
- * Outdoors
- * Interactive

Less effective

- * Activity booklets and posters
- * Web resources
- * One time classroom visits
- * Information tables
- * Highly technical and abstract
- * Visually unappealing

Not great...

* What's a WETLAND?

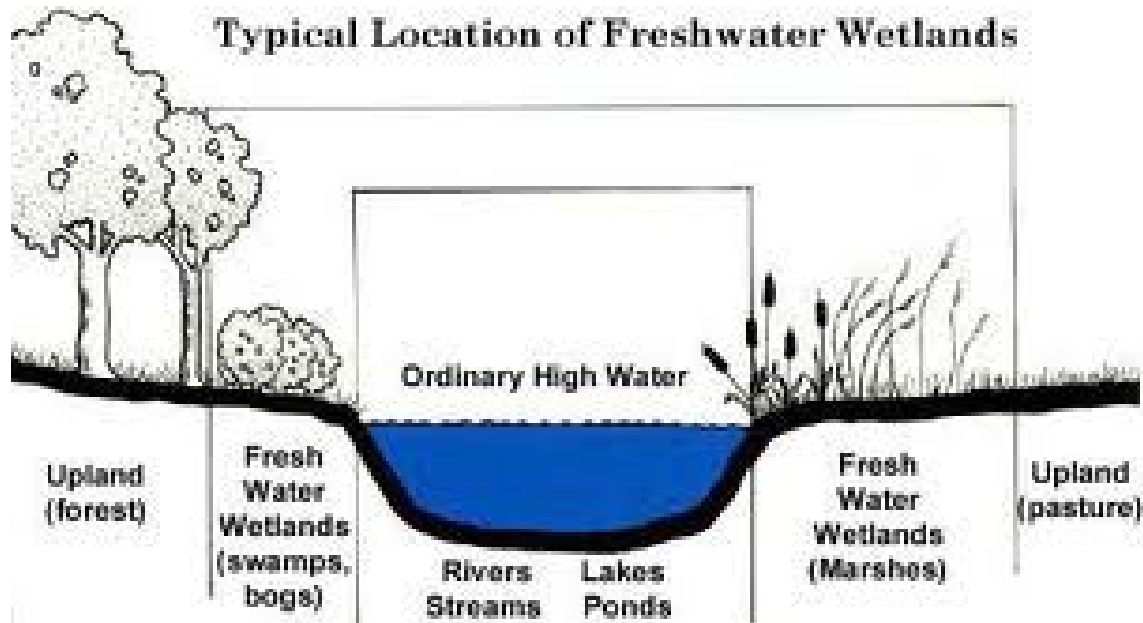
- * A **wetland** is a land area that is saturated with water, either permanently or seasonally, such that it takes on the characteristics of a distinct ecosystem.^[2] The primary factor that distinguishes wetlands from other land forms or water bodies is the characteristic vegetation of aquatic plants,^{[3][4]} adapted to the unique hydric soil. Wetlands play a number of roles in the environment, principally water purification, flood control, carbon sink and shoreline stability. Wetlands are also considered the most biologically diverse of all ecosystems, serving as home to a wide range of plant and animal life.^[5] Wetlands occur naturally on every continent except Antarctica,^[6] the largest including the Amazon River basin, the West Siberian Plain,^[7] and the Pantanal in South America.^[8] The water found in wetlands can be freshwater, brackish, or saltwater.^[4] The main wetland types include swamps, marshes, bogs, and fens;^[9] and sub-types include mangrove, carr, pocosin, and varzea.
- * The UN Millennium Ecosystem Assessment determined that environmental degradation is more prominent within wetland systems than any other ecosystem on Earth.^[10] International conservation efforts are being used in conjunction with the development of rapid assessment tools to inform people about wetland issues.^[citation needed]
- * Constructed wetlands can be used to treat municipal and industrial wastewater as well as stormwater runoff. They may also play a role in water-sensitive urban design.



BETTER...

WHAT'S A WETLAND?

Where land and water meet -
a *transitional zone* between land and water



Better...

How *long* is the Wolf River?

- * 5 miles?
- * 20 miles?
- * 50 miles?
- * 90 miles?
- * 200 miles?

About 90 miles long!

Tennessee River: 652 miles

Mississippi River: 2,320 miles

Amazon River: 4,000 miles

Nile River: 4,130 miles

Memorable experiences...



Meaningful engagement leading to future commitment



Working with adult volunteers

- Goals:
 - * Site restoration
 - * Education
 - * Positive experience
 - * Continued organizational involvement
 - * Partnerships
 - * Fundraising

FedEx Employee Volunteer Days



FedEx Employee Volunteer Days



Tree Planting Events

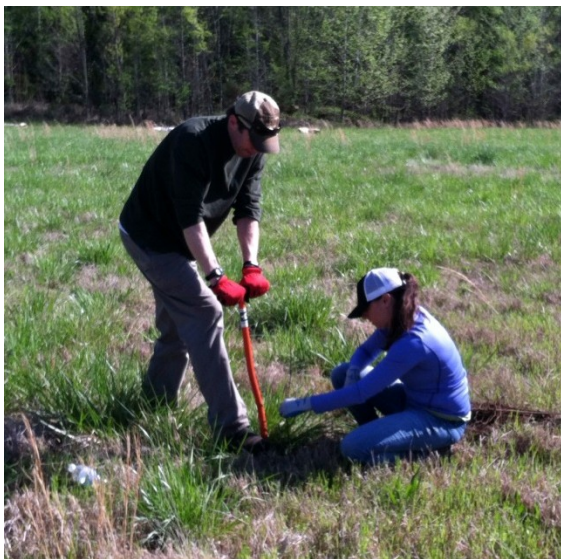
- * Date and time specific
- * Hands-on activity
- * Family friendly
- * Not difficult to organize
- * Easy connection to environmental benefits
- * Connection to future generations



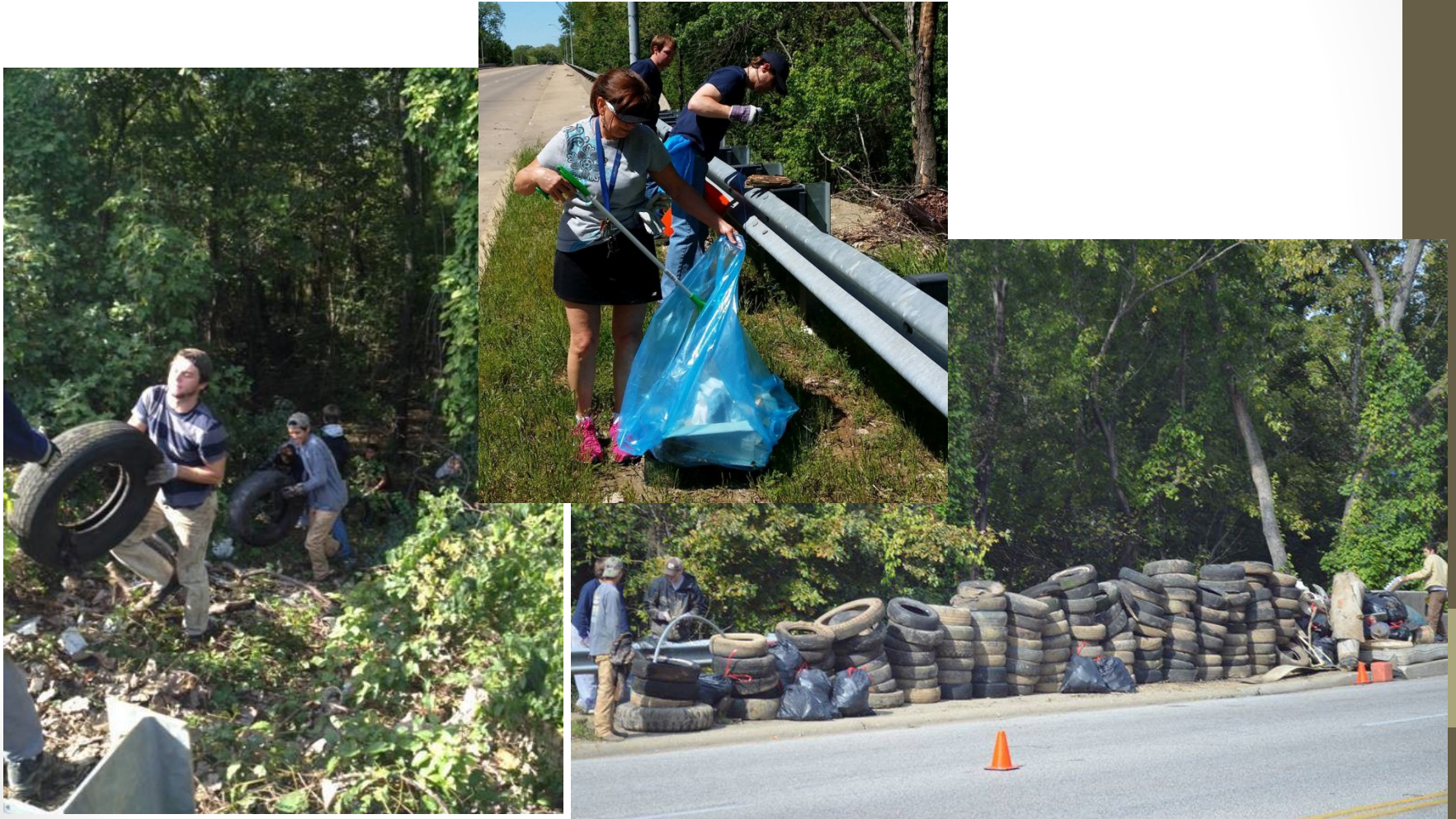
Tree Planting Events



Tree Planting Events

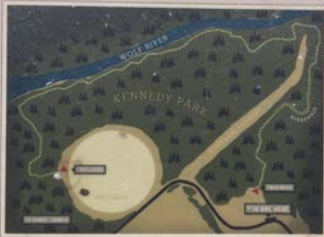


Clean up projects




Kennedy Park Trail












Explore an Urban Wilderness Along the Wolf River Floodplain



JOIN F. KENNEDY PARK, one of Memphis' top five largest (100-plus acre) parks, is home to one of the city's best-kept secrets. Kennedy Park Trail is a short, yet scenic, 2½-mile out-and-back path through cypress and tupelo gum wetlands and bottomland hardwood forest along the Wolf River. Activities allowed along the trail include hiking, bird-watching, fishing, nature study, horseback riding and bicycle riding. **No hunting or shooting of firearms is allowed.** *Be careful. The trail and boardwalk are in various degrees of shade. Do not venture into the forest unprepared. Comfortable walking shoes, water and a spirit of adventure are recommended. Enjoy your hike. And be mindful of the ecology of which you are a part.*

The Wolf River Conservancy is a non-profit, nonpartisan dedicated to conserving and enhancing the Wolf River and its estuaries as a natural preserve for public education and has important recreational activities. To learn more, visit our web site at www.wolfriver.org.



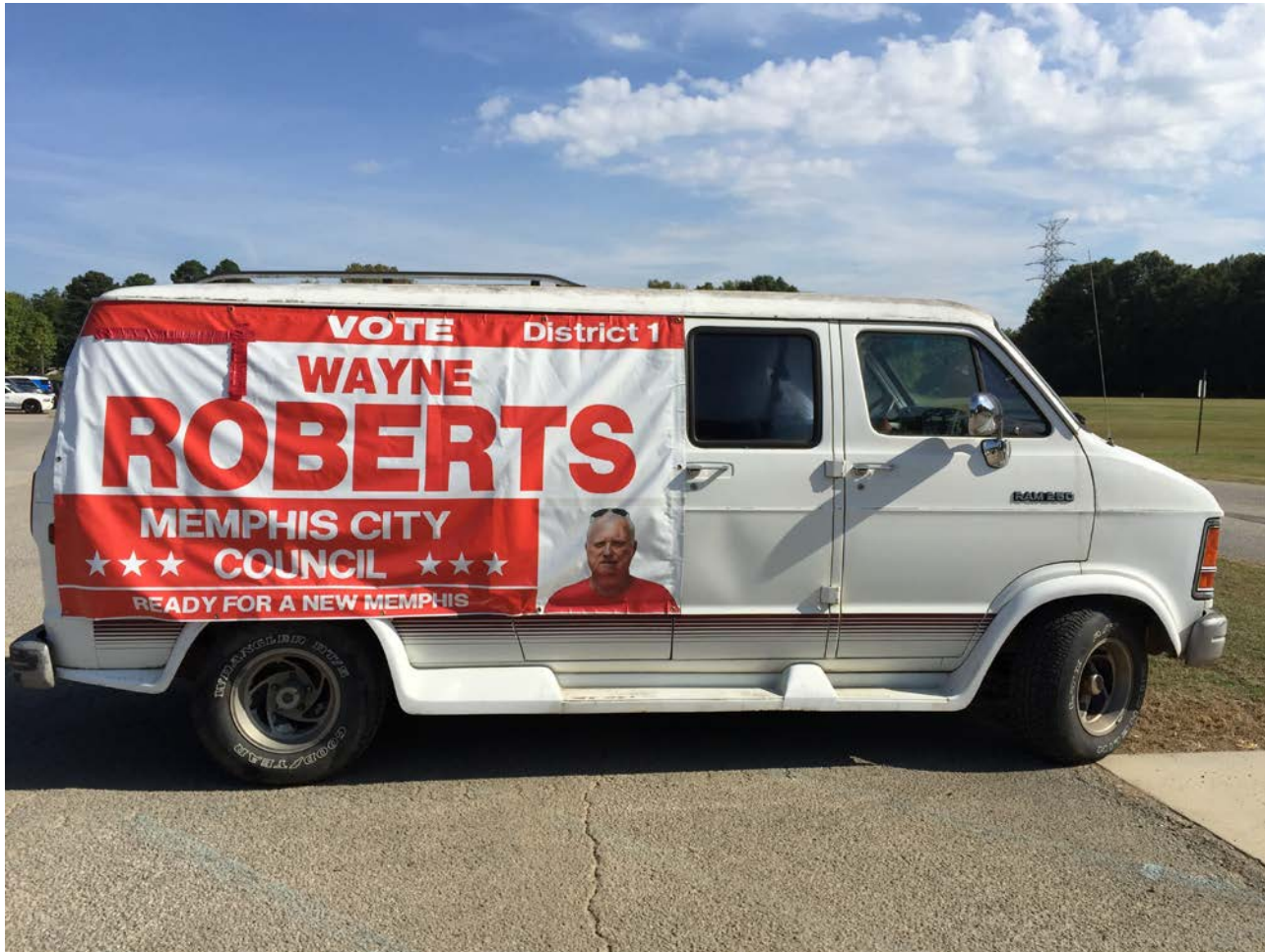
										
American Coot	American Osprey	American Robin	American Crow	American Duck	American Eagle	American Heron	American Kingbird	American Woodcock	American Woodpecker	American Woodpecker



Kennedy Park Project



Kennedy Park Project



Kennedy Park Project



Kennedy Park Project



Working with adult volunteers

- Keep in mind:
 - * Can be a great engagement tool
 - * Valuable matching contributions
 - * Staff commitment required!
 - * Balance needs and expectations
 - * Make it meaningful (but doable)

Thank you for listening!



Questions?

Cathy Justis, Director of Education

education@wolfriver.org

Marie Branch, AICP, Grant Writer/Special Project Coordinator

Marie.branch@wolfriver.org

Webinar Speakers



Marie Branch

Grant Writer and Special Projects Coordinator
Wolf River Conservancy



Mark Adler

Director of Special Projects
Keep Indianapolis Beautiful

The background of the slide is a solid olive green color. It features two large, faint sunflower patterns. One sunflower is in the upper left corner, and the other is in the lower right corner. Both are rendered in a lighter shade of green than the background, creating a subtle, organic texture.

KEEP INDIANAPOLIS BEAUTIFUL: *Helping People & Nature Thrive*

Mark Adler
Director of Special Projects

WHO IS



keep
Indianapolis
beautiful ^{INC.}

- **KIB engages diverse communities to create vibrant public places, helping people and nature thrive.**

KIB sees a vibrant city, with every neighborhood landscape thriving and well, and its people empowered, mobilized, and devoted toward that vision. The result: a city defined by strong neighborhoods; inspired places; and a clean, flourishing environment.

A KIB SNAPSHOT

- **37,000 volunteers**
(71 FTE equivalent)

- **500 projects**
All over Indianapolis

- **Community
forestry,
placemaking, and litter
abatement**

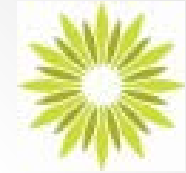


Volunteer Led Invasive Removal



Fall Creek

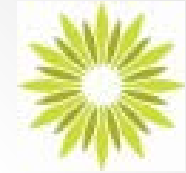




Invasive Removal Process

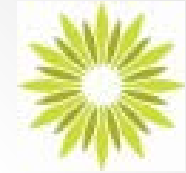
- When you begin your day:
 - You and your group will have a designated parking area and then report to the section you have been assigned to.
 - The group will then divide tasks and begin to open up an area to get deeper into the area of removal. This will be done through stump cuts with loppers.





Invasive Removal Process

- **When you begin your day:**
 - Once the items are cut, they can be dragged as close to the roadway (NOT IN THE ROADWAY) as possible.
 - All of the cut ends should be facing the roadway and not just piled up together, this will help the chipping crews.
 - If there is a large piece of invasive that you cannot cut through, you will need to cut the growth off the main trunk or stem as high as you can go. The remaining large trunk will be cut and treated at a later date. Having this initial cut will still provide great value.

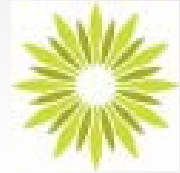


Invasive Removal Process

- When you begin your day:
 - The trained herbicide applicator team will follow as the stumps are cut in the field.
 - **It is important to wait for this person(s) before you begin cutting as the cut stumps must be treated immediately or the herbicide will not reach its full potential.**

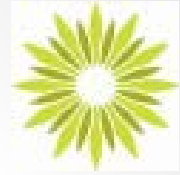


Overview of Jobs



○ Working together to:

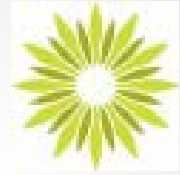
- ✦ Follow Project Manager
- ✦ Arrive at time assigned
- ✦ Place material correctly
- ✦ Cut material
- ✦ Stay away from chipping equipment
- ✦ Spray stumps (authorized team only)
- ✦ Clean-up trash



Tools Needed

- Both a list of items to bring and NOT to bring will coming soon, but some things that will be needed are:
 - Loppers
 - Arbor Saws
 - Bug Spray
 - Gloves
 - Safety Glasses
 - Snacks / Water
 - Trash Bags
 - Ear Plugs

Team Member Duties



- To encourage a great day for all involved, talk with your team members to find out their capabilities.
- Jobs include:
 - ✦ Safety Captain
 - ✦ Manual Labor
 - ✦ Checking team in
 - ✦ Taking pictures
 - ✦ Clean-Up Crew

Invasive Removal



Community Involvement to Address a Long-standing Invasive Species Problem: Aspects of Civic Ecology in Practice

Rebecca W. Dolan, Kelly A. Harris and Mark Adler

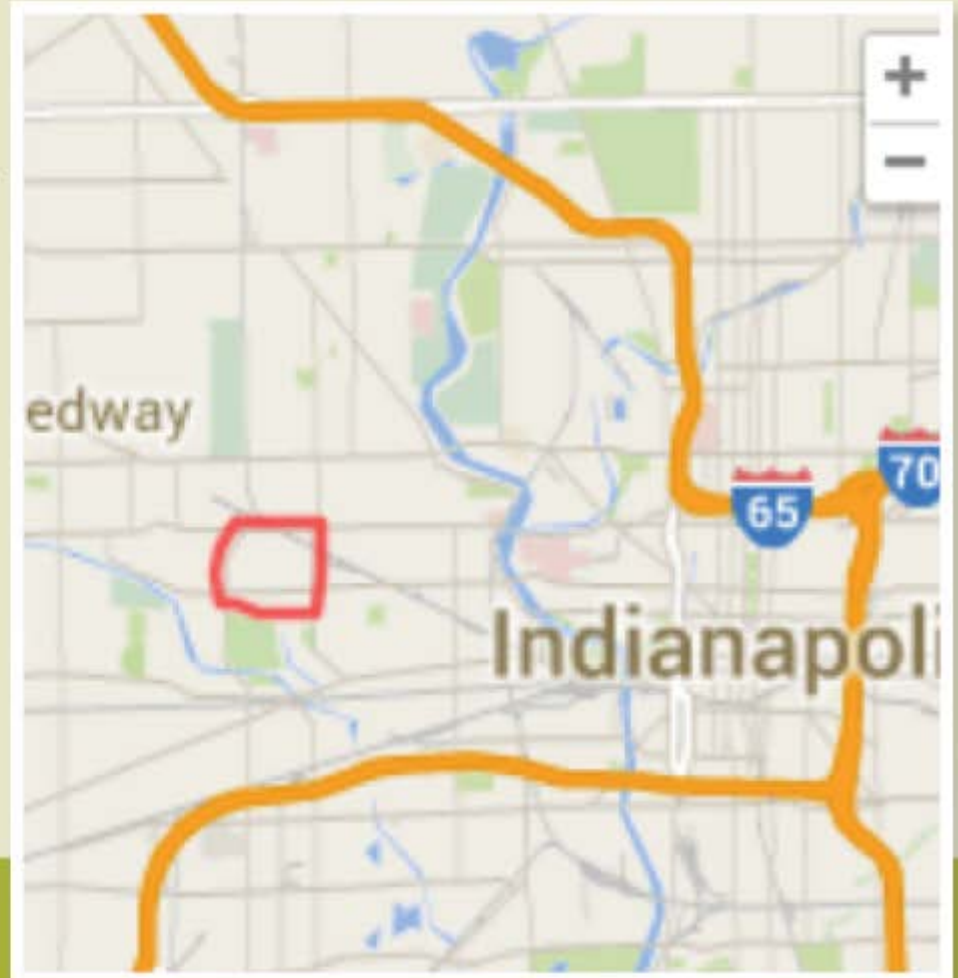
ABSTRACT

Invasive non-native species (INS) are found in every city around the globe, but their impacts in urban settings as biological agents of visual pollution that block views of natural landscapes and disconnect citizens from nature are not as often addressed as comprehensively as their impacts in natural areas or agricultural settings. The multiple impacts of INS in cities make them ideal candidates for aspects of Civic Ecology Practice, where local environmental stewardship action is taken to enhance green infrastructure and community well-being in urban and other human-dominated systems. We present details of a community driven program focused on removal of an INS, Amur bush honeysuckle (*Lonicera maackii*), from banks of a creek in Indianapolis, Indiana, in the midwestern USA. Unlike many civic ecology practices, this project was motivated by community response to the long-developing environmental, social, and economic impacts of an INS and includes involvement of a major corporation. In response to local residents' concerns and following months of planning, over 2,000 volunteers removed more than 760 m³ of Amur bush honeysuckle from 30 acres of land along Fall Creek during a single day. The honeysuckle removal served ecological and environmental goals of removing an invasive species, but it also helped foster in citizens a sense of place and connection with Indianapolis' waterways, reflecting local history and culture. Aspects of the project can serve as a model for action in other cities.

THE FAIRFAX NEIGHBORHOOD

- **Quarter mile**
- **Neighborhood Composition**
66% Minority Population
- **Household Income**
75% Earn <\$50K
- **Housing Occupancy**
70% Owner/Renter Occupied
30% Vacant

— *Social Assets and Vulnerabilities Index, Polis Center, IUPUI*



SHARED VALUES



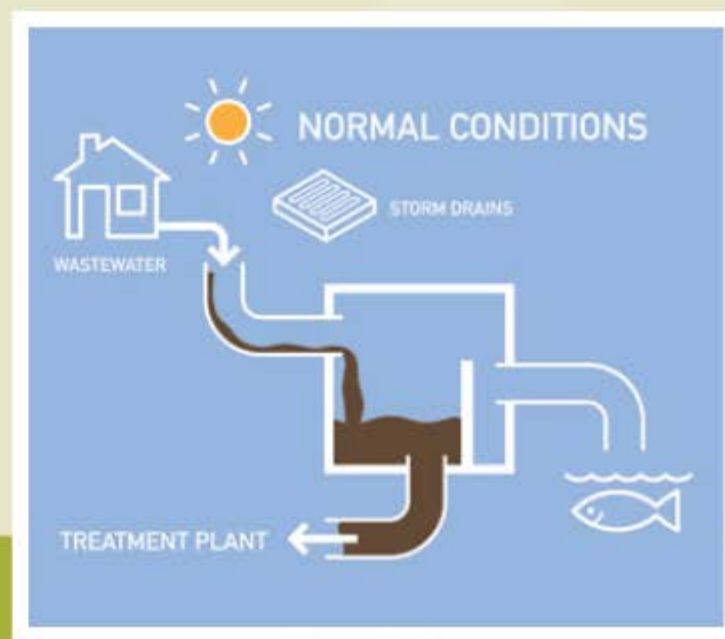
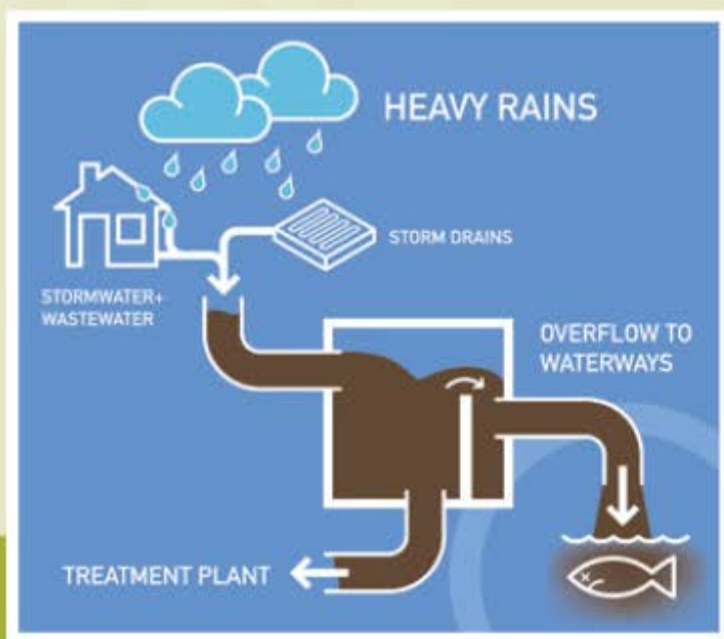
- **Environment**
- **Business**
- **Community**



- **Social**
- **Environmental**
- **Economic**

WHAT ARE COMBINED SEWERS?

- 6 Billion Gallons Annually
- \$1.6 Billion Fix Through 2025
- KIB Can Help!



100% ABOVE SURFACE STORMWATER SEPARATION

- **Environment:** *Create Amenities in a Low Income Neighborhood with Less Neighborhood Disruption*

- **Business:** *Save CEG Money*

- **Community:** *Beautify Neighborhood, and Bring Neighbors Together, and Employ/Enrich Youth*



BEGIN WITH 50 TREES

• 1st Community Tree Planting in the
Fairfax Neighborhood: *May 2014*



STORMWATER PLANTERS

- RFQ for Planting Partner & Subcontracting Contractor
- KIB Oversight Of Project & Community Engagement



MORE TREES!

• 2nd Community Tree Planting in the
Fairfax Neighborhood: *October 2014*



URBAN NATURALISTS

- **Paid Horticulturist and 4+ College-Age Students**

- **2015-2016 Stormwater Planter Maintenance**

(Watering, Weeding, Litter Pick-Up & Plant Replacement)

- **“Green Collar Job”**

March – October

- **Enrichment Activities Over Summer Months**



STRATEGIC KIB OPPORTUNITY

- Potential Long-Term Income Stream for Future Projects
- Engaging New Communities
- Next Generation of Environmental Stewards
- More Trees & Natives in the City!



THANK YOU!



Q&A with speakers.

Any questions?

Upcoming Webinar

Success Stories: Successful Five Star Projects

Tuesday, December 15, 11am PT/2pm ET