

Gardening for Clean Water:

Supporting central Ohio landscape professionals, garden center staff and their customers in realizing the benefits of rain gardens and other stormwater protection efforts

(3) Work Plan

(a) Project Summary

(i) *Organization and Partnerships:* Franklin Soil & Water Conservation District (FSWCD) is Franklin County's natural resource agency with the sole purpose of promoting land stewardship for better water quality and natural resource management. Habitat conservationist Stephanie Suter will assume primary responsibility for management and implementation of this project. Our main partner, the Central Ohio Rain Garden Initiative (CORGI) is a community based partnership comprised of a diverse group of 25 experts in the area of onsite stormwater infiltration practices. Another major partner, Friends of the Lower Olentangy Watershed (FLOW), is currently working with residents in a low-income neighborhood on stormwater infiltration techniques, including using rain gardens for vegetables.

(ii) *Summary:*

Central Ohio is an urban center where stormwater runoff and discharge from storm sewers contribute to impaired water quality. Increased urbanization and aging sewer systems contribute to sewer overflows, compounding the problem. Excess stormwater rapidly entering the conveyance system can cause flooding and erosion and increase the likelihood of sewer overflows.

This project educates growers, landscape designers, garden center staff and gardeners about local causes of impaired water quality and engages them in a process of exploring onsite stormwater infiltration practices as a means of lessening the impact of this environmental concern. Garden centers and growers have the greatest ability to reach landscape designers and gardeners and encourage the adoption of practices that protect the water quality of Central Ohio streams. Partnering with area garden centers will increase public **awareness** of the relationship between stormwater runoff, sewer overflows, the health of our streams and the need for stormwater infiltration. Workshops, training and literature will provide **knowledge** of options to consider that add value to gardening and landscaping efforts. Information on different stormwater solutions for residential sites will provide an opportunity for **critical thinking** and **problem solving** so that customers can **make informed decisions** about the best course of **action** for their site. We will work with garden centers to provide homeowners with the tools necessary, including written materials and technical consultation, to expand and sustain this program long-term in order to promote ongoing **stewardship**.

(iii) *Delivery Method:* (1) Partner with garden centers for technical workshops for design teams, education for staff and workshops for customers. (2) Provide literature, interactive displays, interpretive signage, training and technical support to increase awareness and knowledge of onsite stormwater infiltration practices. (3) Design and provide growers and garden centers with plant tags to help gardeners identify plants that help protect water quality (4) Outreach to 8,000 growers and garden centers through participation in the Central Environmental Trade Show, held in Columbus Ohio. (5) Maintain frequent contact with garden centers to offer support, answer questions and encourage ongoing education as needed. (6) Provide ongoing support to garden centers by remaining available to provide training, guidance and assistance with customers as needed.

(iv) *Audience:* We will work with five Central Ohio gardening centers and two growers serving residents and businesses in the Olentangy, Blacklick, Big Darby, Alum Creek, Big Walnut and Scioto watersheds within Franklin and Delaware Counties.

(v) *Costs:* \$ 60,057 for personnel, supplies, signage, rain barrels, printing, plant tags.

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(b) Project Description

(i) *What*

(1) This project will meet EPA's **educational priority** of addressing environmental stewardship through community projects. Water quality protection lends itself to community action where local residents can engage in a process of exploring gardening practices that individuals can implement to lessen the impact of stormwater runoff and sewer overflows on streams in Central Ohio.

To date this community effort has largely been led by stormwater and educational professionals in both the public and private sector. Over the past year we have researched the possibility of increasing our education base through interested garden centers for the following reasons:

- 1) Landowners look to garden centers and landscape designers for guidance on landscape design and challenges.
- 2) Many land developers contract with landscaping firms to design landscape around the buildings and infrastructure.
- 3) Garden centers, landscape designers and gardeners have a level of natural resource knowledge that may incline them to adopting best management practices for stormwater infiltration.

Through the efforts of CORGI and its partners, over 80 rain gardens have been established along with at least 10 examples of pervious pavement projects and 20 examples of larger scale bioswales or infiltration basins. Successful implementation of a grant from Ohio EPA has given CORGI an opportunity to study the impacts of rain gardens in a targeted area. Flow meter and rain gauge data show that onsite stormwater infiltration practices have reduced the amount of water entering the conveyance system by 60 percent.

Other accomplishments include:

- strong collaboration with 25 partners
- a website, www.centralohioraingardens.org
- existing brochures and other resources

The next logical step is to use these accomplishments as a foundation and strategically build new partnerships that will educate and involve the greatest number of residents in Central Ohio.

(2) This project will address the **environmental issue** of stormwater runoff impacting water quality. Urban and suburban landscapes are covered with buildings, pavement and compacted soil surfaces which impair stormwater drainage. Rain and snowmelt cannot soak into the ground, increasing the quantity of runoff entering our streams and rivers while decreasing the water quality. Pollutants found in stormwater runoff include:

- heavy metals
- oil, grease, and other chemicals from motor vehicles
- pesticides from lawns and gardens
- bacteria from pet waste
- road salt
- sediment

In addition, watersheds within Columbus are impacted by combined and sanitary sewer overflows due to high levels of urban runoff during rain and snowstorms. These overflows result in:

- contamination of recreational waterways
- rising sewerage bills to fund the large capital improvements to manage wet weather flow
- traffic disruption caused by the construction of large tunnels and installation of new piping to address this problem
- localized flooding and sewer backups as a result of stormwater runoff

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(3) The US EPA has listed Protecting America's Waters as one of its seven **environmental priorities**, with stormwater runoff as a challenge that demands traditional and innovative strategies. This program will give individuals the information, knowledge and tools necessary to take decisive action to protect water quality through their gardening practices.

(4) The **goal** of this project is to educate growers, landscape designers, gardeners, and garden center staff about local causes of impaired water quality and to engage them in a process of exploring gardening practices that individuals can implement to lessen the impact of stormwater runoff and sewer overflows on streams in Central Ohio. Our long term goal is to lessen the impact of stormwater runoff and sewer overflows on streams in Central Ohio by infiltrating stormwater on public and private properties.

Our community project engages homeowners visiting garden centers, a captive audience with an existing interest in their immediate outdoor environment. This is a recognized opportunity to partner with garden center professionals to increase customer awareness, engage customers who are seeking advice on garden practices, and assist customers seeking resources for specific practices that will reduce the local impact of stormwater runoff and sewer overflows.

(5) Engaging homeowners through garden center professionals will enable us to address a broader range of the environmental education continuum leading to **environmental stewardship**. As customers want to improve their personal property with plants, they are expressing some level of interest in the environment. The synergy from the number of individuals with interest in the natural environment and awareness of stormwater impacts will be greater than reaching out to the general public.

There will be a subset of customers with existing knowledge, awareness and a sense of personal responsibility to the larger community environment. As demonstrated by recent research, more serious gardeners already consider water quality and stream protection as a factor in their gardening decisions. Some local garden centers also have reported receiving customer requests for information on native plants, rain barrels and rain gardens.

We will provide support to garden centers in a manner that will incorporate stormwater infiltration practice concepts into their every day business. This will create re-exposure to their customers, encouraging ongoing consideration of stormwater infiltration practices, resulting in sustained practice.

(ii) *Why*

In Central Ohio the causes of water quality impairment are largely related to urbanization and stormwater runoff, demonstrated through the results of three Total Maximum Daily Load studies and corresponding watershed action plans. The documented impacts originating from land use in Franklin County include siltation and channelization from urban development; changes in hydrology due to increased impervious surfaces and stream modifications; pollution from urban runoff; and nutrient loading from home sewage treatment systems, combined and sanitary sewer overflows, and urban lawn management.

Stormwater professionals agree that retaining and infiltrating stormwater on site is the most effective way to reduce stormwater runoff. These practices include bioswales, wetlands, rain gardens and pervious pavement. With the increased use of these practices there are reductions in pollutants carried to the stream by storm sewers, occurrences of sewage overflows in combined sewers or older sanitary sewers, and stream bank erosion, all caused by stormwater flows.

The Garden Media Group and The Independent Garden Center study trends in gardening. For 2011 they reported that:

- Gardeners are very aware of conservation issues and want to use more native plants
- Water-conscious landscaping is a growing trend
- "Sustainable" is a key word
- "Gardening with a purpose" is the top trend among gardeners

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This program will meet gardening center customers where their interests lie and provide educational workshops that promote critical thinking and enhance problem solving and decision making skills around the topic of sustainable gardening methods that protect the quality of our waterways. These methods use native plants and conserve water by making optimal use of rain water onsite.

FSWCD conducted a survey of garden centers in 2010 to gauge their interest in providing educational information and assistance to their customers in relation to stormwater runoff and discharges from storm sewers. Eighty-three percent of respondents reported that they are interested in educating the public about preventing soil erosion and improving water quality. The top conservation initiatives they were interested in promoting included native plants and community tree plantings. Providing educational materials to customers was also demonstrated as a top interest area.

During a recent CORGI focus group with garden center owners, they noted that customers are asking for information on native plants, rain barrels and rain gardens. Supporting a growing market for these items will ensure their long term availability for customers ready for action.

(iii) How

Individual and community stewardship is key to protecting the quality of water in our streams and rivers. FSWCD, along with our partners in CORGI, have set out to change perceptions and behaviors through the demonstration of onsite stormwater infiltration practices possible in Central Ohio. We began with those most likely to adopt new technologies including willing residents, local governments, educational institutions and interested businesses.

Through the efforts of CORGI and the individual efforts of our partners, over 80 rain gardens have been established along with at least 10 examples of pervious pavement projects and 20 examples of larger scale bioswales or infiltration basins. Successful implementation of a grant from Ohio EPA has given CORGI an opportunity to study the impacts of rain gardens in a targeted area. Flow meter and rain gauge data show that onsite stormwater practices have reduced the amount of water entering the conveyance system by 60 percent.

While much has been accomplished, there is more work to be done. Over the past year we have researched the possibility of increasing our education base through interested garden centers for the following reasons:

- 1) Most landowners look to garden centers and landscape designers to guide their landscape projects and challenges.
- 2) Many land developers contract with landscape designers to assist with landscape around the buildings and infrastructure.
- 3) Garden centers and landscape designers have a level of natural resource knowledge that may incline them to adopting best management practices for stormwater infiltration.

A recent article from the Natural Resources Defense Council states that a successful onsite stormwater infiltration program will result in:

- maximizing infiltration, recharging groundwater systems
- slowing runoff, reducing flooding and erosion
- reducing effects of paved surfaces
- directing runoff from impervious surface onto landscaping
- capturing runoff for beneficial reuse

To support implementation of a successful program and meet their customers' needs, we will partner with area growers and garden centers to provide:

Activities

Technical workshops for design teams

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Local design teams can influence gardening practices in our community. We will provide technical workshops to design teams from each of the five garden centers we are partnering with. They will understand technical aspects of gardening practices that contribute to onsite stormwater abatement, which will lead to a greater use of onsite stormwater infiltration practices through landscape designer recommendations.

Education for garden center employees

Given that local garden centers are in the position to provide information about gardening methods that protect water quality to a wide audience, we will provide educational workshops on local water quality impacts and possible gardening solutions. The goal is for 5 local garden centers to have the knowledge and support required to actively market these gardening methods to their customers.

Garden centers are in a position to reach a large audience. As gardeners look for solutions to problems such as wet spots in the yard, or for new or sustainable practices, employees will be able to guide them toward options that improve the quality of water in our streams.

Educational and instructional workshops for residents

The program will meet gardening center customers where their interests lie and provide educational workshops that promote critical thinking and enhance problem solving and decision making skills around the topic of sustainable gardening methods that protect the quality of our waterways. These methods use native plants and conserve water by making optimal use of rain water onsite.

Interactive displays for families visiting garden centers

Educational displays will be provided at garden center events to engage youth and families. Displays available for use include Enviroscape model, Stormwater model with residential display, and soils tunnel. Activity handouts will be provided including ideas for science fairs, family projects and community service projects that involve stormwater infiltration.

Materials

Literature, brochures and technical guides

We will print and distribute literature that educates residents on local impacts to water quality and demonstrates the success of onsite stormwater infiltration practices. CORGI members will support garden centers by providing technical information and data for the installation of rain gardens.

Interpretive signage

Signage will be created and provided for garden centers to direct customers on how to find native and rain garden plants, along with educational brochures and information on additional resources.

Plant tags for growers

We will work with growers to design plant tags with a universal look to help gardeners easily identify plants that help protect water quality, then print and distribute the tags.

Raffle prizes

Rain barrels will be provided for raffle to increase CENTS Trade Show attendees and garden center customers to visit displays and participate in surveys.

Delivery Methods

Workshops and trainings

Garden center staff will receive training. This will include more technical workshops for design staff and educational information for sales staff so they can provide education and information to garden center customers.

Customer experience at garden center

We will work with garden centers to create a complete customer experience. As customers visit the garden center they will see strategically placed signage and brochures with visual demonstrations of attractive gardening practices that make use onsite stormwater infiltration. The signs will direct customers on how they can easily identify plants that benefit stormwater infiltration by reading the plant

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tags. The signage will direct customers to more education, information and resources. Recognizable branding will be used on signage, plant tags, brochures and web sites. Educational signage will also be used for rain barrels and other products the garden center sells that promote onsite stormwater infiltration. Customers will also see opportunities to sign up for workshops to consider various options for incorporating stormwater infiltration into their landscaping. Additional opportunities to visit displays, participate in surveys, and investigate family activities will also further complement this experience.

Advertising on organizational website, newsletters and community newspapers

We will provide information on our project, recognize garden center partnerships, and advertise related events through websites, social media outlets, newsletters and community newspaper.

Outreach through area trade show

We will provide a working model of onsite stormwater infiltration options for the Central Environmental Trade Show, Central Ohio's largest garden center trade show with the ability to reach thousands of gardeners, landscape designers and garden center owners looking for ways to incorporate the newest trend into their practice. Gardening with a purpose is a growing trend.

Ongoing support

FSWCD, FLOW and other CORGI collaborators will continue to be available to garden centers to provide training, guidance and assistance with customers as needed. CORGI members form a strong, collaborative partnership that has successfully implemented an Environmental Education grant funded by the Ohio EPA. We will make use of an existing website, www.centralohioraingardens.org, brochures and other resources that were developed as part of that grant.

(iv) Who

This project will allow us to work with a larger audience that includes individuals who are ready to act when provided with relevant information and accessible resources. Garden centers are in the business of engaging local residents on a daily basis. A mutually beneficial partnership with these businesses allows us to reach a much larger audience compared to our existing partnerships and educational outlets.

Garden Centers Strader's Garden Centers, Oakland Nursery, Hoover Garden Center and Scioto Gardens have all expressed a verbal or written commitment to participate in this project. A total of six business locations will be involved. Incentives for participation include technical assistance, educational materials, technical resources, interactive displays, recognition on organization websites, newsletters and other promotional materials.

Garden Center Customers An **xxx garden** center customers can be reached through this project based on previous customer visitation at business locations. Incentives for participation include education materials, technical resources, interactive displays, raffle prizes, family interaction and opportunities for community stewardship.

CENTS Trade Show attendees An estimated **xxx** businesses' staff will be reached through an interactive display. Incentives for participation include educational materials, technical resources, interactive display and raffle prizes.

(v) Project Uniqueness

This program capitalizes on the trend of gardening with a purpose. It provides an opportunity for environmental stewardship by engaging private businesses to greatly expand outreach to their customers and their peer networks. We will brand stormwater infiltration practices in a consistent, attractive and easily identifiable manner through graphics and design at six garden centers. The program that we implement can easily be replicated for wide application among garden centers, growers and landscape designers.

(c) Project Evaluation

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To measure success the following evaluation tools will be used to measure identified outputs.

Qualitative evaluation of garden center staff and customers on interest and knowledge of stormwater infiltration practices will be sought at the beginning, middle and end of the project. Garden center staff can be surveyed directly at their place of business. Customers will be asked to complete a brief survey with entry in a raffle for a rain barrel as an incentive. We will measure trends in awareness and commitment to stewardship over time by using the same survey for each measurement. This evaluation will measure outputs including:

- Increased community conversation about stormwater issues and rain gardens.
- Adoption of stormwater infiltration practices as a result of exposure to information at garden center.

Effectiveness of training and workshops will be measured through pre and post surveys. This also serves as an avenue to pique individual curiosity as participants begin to engage in a workshop. This evaluation will measure outputs including:

- Garden center staff understand and are able to explain to customers how they can improve stormwater quality through their gardening and landscaping choices.
- Garden center customer knowledge and awareness is improving as a result of garden center education materials, training and staff knowledge.

Future participation interest from garden center and landscape professionals will be measured from surveys conducted at our booth at the CENTS trade show. A raffle prize of a rain barrel will be used as an incentive to participate in the survey. This evaluation will measure outputs including:

- Additional garden and landscaping centers are expressing interest in participating in the program.

Increased adoption of stormwater infiltration practices will be measured. All displays and educational brochures will have information on how customers can register their stormwater infiltration practices online with CORGI, in return they can will get a estimate of how many gallons of stormwater they are infiltration as well as an overall total for CORGI initiatives to date. Trends showing increased reporting of practices will be measured. This evaluation will measure outputs including:

- Customers are using information and resources to implement stormwater infiltration practices.
- Customers are sharing their knowledge and interest with others.

Sales of native and rain garden plants and use of education materials will be tracked and tallied at the end of each growing season for each participating garden center. This evaluation will measure outputs including:

- Garden centers engage customers to actively promote onsite stormwater infiltration practices with limited assistance.
- Sale increases of native plants, rain garden plants and rain barrels are benefiting business.

To design the surveys, we will use guidance from <http://meera.snre.umich.edu>, and "Internet, Mail, and Mixed-Mode Surveys: The Tailored Design Method" by [Don A. Dillman](#), [Jolene D. Smyth](#), and [Leah Melani Christian](#), 2008.