

*State of Ohio
Environmental Protection Agency*

Cuyahoga County GLRI/SWIF Grant FFY11 Annual Report



*Vegetated Bioswale-City of Cleveland Heights
Project #10SWIF-CUY-102*

September 12, 2011

Nonpoint Source Program
Russ Gibson, NPS Manager

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New Initiative: Cuyahoga County FFY10 GLRI & SWIF Project

The NPS Program continues to implement provisions of the FFY10 Great Lakes Restoration Initiative (GLRI) Grant under provisions of federal grant #GL-00E00395-0. The Cuyahoga County SWIF/GLRI project is funded with \$1.5 million in state SWIF funds and \$1 million awarded to Ohio EPA under the GLRI. Thirteen local sponsors are receiving subgrants to complete nonpoint source restoration and stormwater demonstration projects. These projects will effectively demonstrate innovative stormwater management practices as well as wetland restoration; green stream bank stabilization methods and urban stream restoration practices.



This rain garden installed at a village park in the village of Glenwillow was the first project completed under provisions of the Cuyahoga GLRI/SWIF project.

Detailed project summaries for all subgrant funded projects being implemented under provisions of the FFY10 Cuyahoga County GLRI/SWIF project are available at <http://www.epa.state.oh.us/dsw/nps/swif.aspx> and are included in this annual report.

Other project specific activities conducted during the reporting period on the Cuyahoga County GLRI/SWIF project included:

- The STEPL Quality Assurance Project Plan (QAPP) was submitted by Ohio NPS program staff on 1/14/11 and approved by US EPA on 1/19/11.
- Russ Gibson and Martha Spurbeck conducted a GLRI/SWIF training session for all successful subgrantees at Ohio EPA's northeast district office in Twinsburg, Ohio. A total of 30 people participated in the training. Information that was covered included all required reporting, accounting and other grant administrative matters.
- NPS Program Manager Russ Gibson participated in the first Ohio GLRI Synthesis Team meeting on 11/10/10. The GLRI Synthesis team is facilitated by the Ohio Great Lakes Commission as a means of coordinating reporting and information on all Ohio-based GLRI grant projects. As part of this meeting, Gibson delivered a brief presentation on the specifics of the GLRI/SWIF Cuyahoga County project.
- The first semi-annual progress report for the Cuyahoga GLRI/SWIF project was completed and submitted to US EPA-GLNPO on 4/15/11. This report is included as an appendix this annual report.

- Russ Gibson and Martha Spurbeck conducted site visits with all GLRI/SWIF subgrantees during the reporting period. Following is a list of projects where Ohio EPA conducted site visits during FFY11:
 - #10GLRI-CUY-039: City of Cleveland
 - #10GLRI-CUY-075: Parkworks
 - #10GLRI-CUY-068: Village of Hunting Valley
 - #10GLRI-CUY-123: Cuyahoga County SWCD
 - #10GLRI-CUY-082: Village of Glenwillow
 - #10SWIF-CUY-027: City of Broadview Heights
 - #10SWIF-CUY-034: City of Mayfield Heights
 - #10SWIF-CUY-047: Nature Center at Shaker Lakes
 - #10SWIF-CUY-049: City of North Olmsted
 - #10SWIF-CUY-061: Cleveland Metroparks Zoo
 - #10SWIF-CUY-067: Village of Gates Mills
 - #10SWIF-CUY-083: City of Seven Hills
 - #10SWIF-CUY-102: City of Cleveland Heights

These site visits have confirmed (and semi-annual reports validated) that all projects are on schedule with the majority of projects being constructed and/or completed during this construction season.

- All subgrantees are current on required semi-annual progress and quarterly fiscal reports. Data in the GLNPO GLAS system has been updated and is current.
- 319 Grants Administrator Martha Spurbeck closed out two (2) GLRI-SWIF subgrants during the reporting period. These were:
 - #10SWIF-CUY-042: City of Brecksville (grant terminated at sponsor's request)
 - #10SWIF-CUY-082: Village of Glenwillow
- GLRI/SWIF project summaries have been updated to include most recent information provided in semi-annual progress reports. Where applicable, photographs have been updated to document progress.
- In collaboration with the Ohio State Parks, Ohio EPA's NPS Program designed and printed a standardized sign to be installed at each location where GLRI/SWIF funding has been used to install best management practices in Cuyahoga County. In addition to generating considerable cost-savings (total price for 75 signs was less than \$500) this attractive addition to each project will help to enhance the public's awareness of the GLRI program and provide consistency that would not be possible otherwise and allows all GLRI/SWIF grantees to meet GLNPO sign requirements.



Although Cuyahoga County is Ohio's most densely populated, this white-tail deer greeted NPS Program staff at the site of Project #10SWIF-GLRI-027 within the city of Broadview Heights.

Appendices

GLRI/SWIF Cuyahoga County Annual Report



City of Mayfield Heights-City Hall Stormwater Demonstration
Project #10SWIF-CUY-034

Appendix 1: GLRI-SWIF Completed Project Fact Sheets

Appendix 2: GLRI-SWIF Funded Project Summaries

Appendix 3: 1st Cuyahoga GLRI-SWIF Semi-Annual Progress Report

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*State of Ohio
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Cuyahoga County GLRI/SWIF Completed Project Fact Sheets



*Village of Glenwillow
Project #10GLRI-CUY-082*

September 8, 2011

Nonpoint Source Program
Russ Gibson, NPS Manager

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#10SWIF-CUY-102

Cumberland Park Parking Lot Retrofit

Project Sponsor

City of Cleveland Heights
Surface Water Improvement
\$232,074 SWIF & GLRI Funds

Local Project Contact

Richard Wong, Planning Director
City of Cleveland Heights
40 Severance Circle
Cleveland Heights, OH 44118

Environmental Results

Installed 250 ft² of permeable
pavers and reduced impervious
areas by 13,700 ft²

Redesigned drainage and installed
nearly 6,000 ft² of bio-filtration
islands.

The city conducted a
comprehensive education and
outreach program including 3 signs,
a project specific website and field
days with area high school nature
study program.



Great Lakes
RESTORATION

Ohio

Environmental
Protection Agency

Division of Surface Water
Nonpoint Source Program
614-644-2020

#10GLRI-CUY-82

Village of Glenwillow Green Infrastructure Demonstration Project

Project Sponsor

Village of Glenwillow
Surface Water Improvement
\$63,050 GLRI-SWIF Funds

Local Project Contact

Katherine Holmok
Village of Glenwillow
29555 Pettibone Road
Glenwillow, OH 44139

Environmental Results

Installed more than 1000
square feet of vegetated bio-
filtration islands in village
owned parking areas

Restored ¼ acre of riparian
area along Tinkers Creek via
native plantings and live
stakes



Division of Surface Water
Nonpoint Source Program
614-644-2020



#10SWIF-CUY-034

Mayfield Heights Green Infrastructure Demonstration

Project Sponsor

City of Mayfield Heights
Surface Water Improvement
\$231,900 SWIF Funds

Local Project Contact

David McCallops, City Engineer
City of Mayfield Heights
6154 Mayfield Road
Mayfield Heights, OH 44124

Environmental Results

2,215 ft² of pervious concrete parking bays were installed at city hall visitor parking areas.

415 ft² of community scale rain garden demonstrations installed in front of city hall.

1,475 ft² of vegetated and shaded island bio-swales were installed in conjunction with 1,620 ft² pervious pavement strip in service garage area.



Division of Surface Water
Nonpoint Source Program
614-644-2020



#10SWIF-CUY-083

Project R.A.I.N. at City Hall

Project Sponsor

City of Seven Hills
Surface Water Improvement
\$256,530 SWIF Funds

Local Project Contact

Mark Papke, City Engineer
City of Seven Hills
7325 Summitview Drive
Seven Hills, OH 44131

Environmental Results

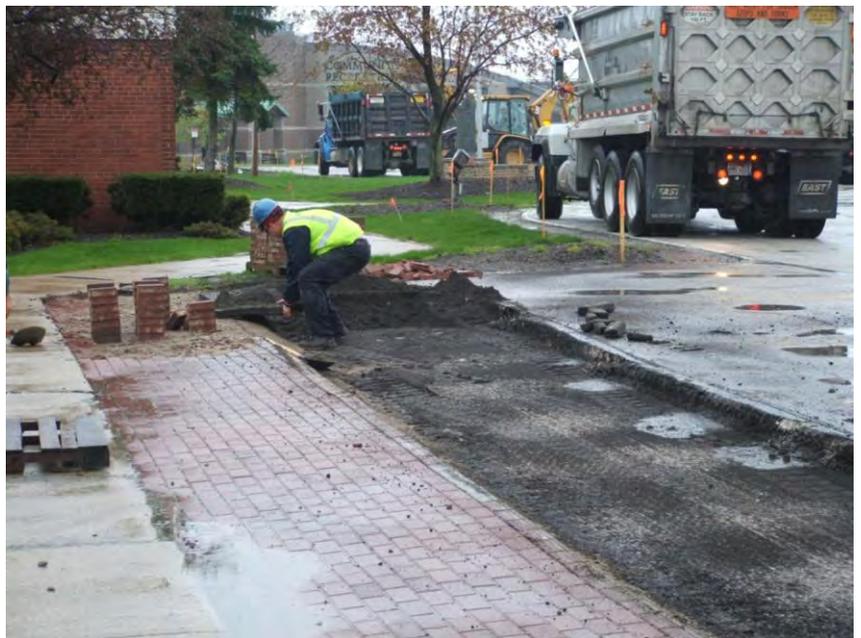
Nearly 1,800 square feet of permeable pavers were installed at city hall.

More than 5,600 square feet of bio-retention cells were installed and a rain collection (cistern) system that will be used for irrigation.

Install a project sign highlighting the project and SWIF grant as a funding source



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614-644-2020



#10SWIF-CUY-047

Shaker Lakes Wetland Restoration

Project Sponsor

Nature Center at Shaker Lakes
Surface Water Improvement
\$78,664 SWIF & GLRI Funds

Local Project Contact

Kay Carlson
Nature Center at Shaker Lakes
2600 South Park Blvd.
Cleveland, OH 44120

Environmental Results

Removed invasive species
(narrow leaf cattail) from 5 acres
of wetland areas.

Replanted native trees, shrubs
and other wetland plant species.

Recruited and mobilized 75
volunteers providing more than
2,000 hours of labor planting
native wetland plant species and
removing non-native invasives.



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Nonpoint Source Program
614-644-2020



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Cuyahoga County GLRI/SWIF Grant Project Summaries

Appendix 2 to the GLRI/SWIF Annual Report Updated 8/31/11

Background: The Surface Water Improvement Fund was created in 2008 with the passage of Ohio House Bill 119 and authorizes the Ohio Environmental Protection Agency to provide grant funding to applicants such as local governments, park districts, conservation organizations and others. During 2010, there was \$1.5 million available that was required to be awarded for projects in Cuyahoga County only. Ohio EPA elected to use the state SWIF funding as local match for a Great Lakes Restoration Initiative (GLRI) grant from US EPA in which an additional \$1 million may be available for total SWIF awards for Cuyahoga County of \$2.5 million. We are awaiting formal notification of this award and expect to hear on April 30, 2010. Applications were due on February 15, 2010 and for projects in Cuyahoga County, Ohio EPA received 40 applications. A total of 13 of these projects were successful and are being implemented using FFY10 GLRI/SWIF grant funding. Grants are awarded for two-year periods with effective start dates June 1, 2010.

Eligible Applicants: The following entities in Cuyahoga County were eligible to apply for grant funding from the Surface Water Improvement Fund during 2010:

- Local municipalities, counties and townships
- Park districts
- County Soil & Water Conservation District
- City and/or county health departments
- 501(c)(3) non-profit conservation groups with land managing responsibilities
- Watershed groups that are sponsored by a local government
- Recognized land conservations or trusts

Ohio EPA—Division of Surface Water 2010 Cuyahoga County GLRI/SWIF Subgrant Recipients

Project Number	Applicant	Project Title	Amount Recommended
#10SWIF-CUY-061	Cleveland Metroparks	Big Creek Water Quality Improvement Project	\$181,000
#10SWIF-CUY-027	City of Broadview Heights	Elsa Drive Wetland Restoration and Protection	\$219,727
#10SWIF-CUY-083	City of Seven Hills	Project R.A.I.N. at City Hall	\$265,530
#10SWIF-CUY-047	Nature Center at Shaker Lakes	Restoring a Wetland with Native Species	\$78,664
#10SWIF-CUY-067	Village of Gates Mills	Gates Mills Stormwater Retrofit Demonstration	\$87,525
#10SWIF-CUY-034	City of Mayfield Heights	Mayfield Heights Green Infrastructure Demo	\$231,900
#10SWIF-CUY-049	City of North Olmsted	City Hall Parking Lot Stormwater BMPs	\$196,028
#10SWIF-CUY-102	City of Cleveland Heights	Cumberland Park Parking Lot Improvements	\$238,726
#10GLRI-CUY-082	Village of Glenwillow	Glenwillow Green Infrastructure Demonstration	\$63,050
#10GLRI-CUY-068	Village of Hunting Valley	Green Stabilization of Riparian Area in Chagrin	\$137,500
#10GLRI-CUY-123	Cuyahoga County SWCD	Baldwin Creek Dam Removal & Habitat Enhance	\$147,270
#10GLRI-CUY-039	City of Cleveland	Cleveland WPC Stormwater Mgmt Improvements	\$260,158
#10GLRI-CUY-075	ParkWorks	Cleveland's Lake Link Greenway Bioswale	\$161,659
		Total Recommended	\$2,268,737

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2010 Surface Water Improvement Grant Project Summary

Project Number #10SWIF-CUY-027

Est. Project Completion May 31, 2012

SubGrantee **City of Broadview Heights**
9543 Broadview Road
Broadview Heights, OH 44147

Project Contact: **Eugene Esser, City Engineer**
City of Broadview Heights

Amount Awarded: **\$219,727**

Project Title: **Elsa Drive Wetland Restoration and Protection Project**

Project Location: City of Broadview Heights, Cuyahoga County

Watershed: Chippewa Creek Watershed

Project Summary: \$219,727 in Surface Water Improvement Fund (SWIF) grant funding is awarded to the city of Broadview Heights to complete the restoration and enhancement of the 1.9 acre Elsa Drive wetland area. This project proposes to increase the existing 1.9 acre wetland area to a total of 3.5 acres and to increase stormwater treatment and capacity by 5.4 acre feet. The Elsa Drive Wetland Restoration Project will be a first step in implementing the Chippewa Creek Balanced Growth Initiative Watershed Plan and will serve as an effective demonstration of the use of green infrastructure practices in solving stormwater management concerns and improving surface water quality. The enhanced floodplain wetland areas will restore wetland habitat and vegetation through the planting of native species and elimination of invasive plant species during construction activities.

The Elsa Drive project site is located on the boundary of Broadview Heights and the city of North Royalton. The property is a total of 7 acres consisting of an upper and lower wetland basin. A tributary to Chippewa Creek flows for approximately 725 linear feet and flows to the southeast corner of the property. The two wetland basins on the project site are connected by a 36 inch culvert and separated by differences in their elevation. This project is shovel ready and will commence construction activities upon receipt of SWIF grant funding.

Project Deliverables:

- Completion and preparation of one set of design documents and a separate set of construction documents.
- Restoration and enhancement of 3.15 acres of existing wetlands using a combination of removing all invasive species incidental to construction and planting native species of wetland grasses and shrubs.

- Installation of four water control devices to insure stability of the wetland area as well as satisfactory holding capacity for stormwater management and passive treatment.
- Installing 20 boundary markers and placing the entire 7 acre parcel under the protection of a conservation easement.
- At the city's expense, constructing 1,100 linear feet of interpretative and educational access trails around the wetland area.
- Conducting project specific education and outreach activities including the development of 1 fact sheet, conducting 2 public meetings, issuing 1 press release, developing a project specific website, installing 3 interpretative signs and other activities designed to enhance the public's knowledge and awareness of green stormwater infrastructure practices and alternatives.

Progress to Date:

- Executed planning and design services contract.
- Completed construction documents and awarded construction contract. Construction planned early August 2011.
- Developed and distributed one project fact sheet one newsletter, two press releases and two neighborhood flyer announcements.
- Conducted two public meetings.
- Posted project specific information and conceptual master plan on the city's website: <http://www.broadview-heights.org>
- Created drafts of the projects interpretive signs. Signs will be installed during construction.
- Initiated easement process.
- Completed first spray and removal of invasive species.

Environmental Results: Successful completion of this project is expected to restore and expand the existing Elsa Drive wetland area from 1.9 to 3.15 acres and increase stormwater treatment and storage capacity by 5.4 acre/feet. Additional benefits will include:

- Restoring existing wetland quality with native species plantings.
- Increasing wetland area from 1.9 to 3.15 total acres.
- Establishing permanent protection of the wetland area with a conservation easement.
- Prevent erosion and sediment loadings to Chippewa Creek.
- Restore native wetland vegetation.
- Increase riparian area buffer plantings.
- Creating the first wetland park in the city of Broadview Heights.
- Serving as an effective demonstration of innovative stormwater management.



This white-tail deer greeted Ohio EPA NPS Program staff at the project site during a recent site visit.



2010 Surface Water Improvement Grant Project Summary

Project Number #10SWIF-CUY-034

Est. Project Completion May 2012

SubGrantee **City of Mayfield Heights**
6154 Mayfield Road
Mayfield Heights, Ohio 44124

Project Contact: **David McCallops, City Engineer**
City of Mayfield Heights

Amount Awarded: **\$231,900**

Project Title: **Mayfield Heights Green Infrastructure Demonstration**

Project Location: City of Mayfield Heights, Cuyahoga County

Watershed: Chagrin River

Project Summary: \$231,900 in Surface Water Improvement Fund (SWIF) grant funding is awarded to the city of Mayfield Heights to implement a green infrastructure demonstration project on the grounds of the city of Mayfield Heights City Hall. The project will include the installation of 415 square feet of rain gardens planted at the front entrance of the city hall building, 2,215 square feet of permeable concrete parking bays and 2,150 square feet of bioswale end islands 3,797 square of forested parking areas including shade tree bumper islands, permeable concrete strips and bioswales end islands functioning as canopy, understory and soil/duff layers to capture rainfall and parking lot runoff. Additionally, the project will include education and outreach designed to inform the public on cost effective, environmentally beneficial solutions to relieve flooding, and to enhance water quality.

This project is being implemented consistent with the recommendations to retrofit antiquated stormwater practices with green practices in the state endorsed Chagrin River Watershed Action Plan. It is also generally consistent with findings and recommendations within the Chagrin River Total Maximum Daily Load study completed by Ohio EPA and approved by US EPA.

Project Deliverables:

- Installation of 415 square feet of community scale rain garden demonstration areas at the main entrance to the city of Mayfield Heights City Hall building. This building is an ideal demonstration site, receiving more than 175 visitors per day.
- Installation of 2,215 square of permeable concrete parking bays. These bays will replace existing impervious asphalt bays and are designed to allow stormwater to infiltrate, thereby capturing nonpoint source pollutants from surface water runoff. These

parking bays will include an under drain and will be identified with permanently displayed interpretive signage.

- Install 2,150 square of vegetated end island bio-swales (9 shade tree bumper islands total) planted with understory and shade trees to provide filtering and cooling of surface stormwater flows. These shall also include the installation 1,620 square feet of permeable concrete strip.
- Conduct public education and outreach activities consisting of 2 public meetings, 2 project specific news releases, 1 in-construction project sign and 3 permanent interpretive signs, 20 post-construction tours, 3 field days, printing and distribution of 100 rain garden manuals and other activities.

Progress to Date:

- Executed design contract. Design documents are complete.
- Conducted two public meetings.
- Completed survey.
- Established project specific website. For more information please visit: http://www.cuyahogawcd.org/EuclidCreekFiles/EC_MayfieldHtsGreenInfrastructureProject.htm
- Installed 2,215 square feet of permeable parking bays. These bays will replace existing impervious asphalt bays and are designed to allow stormwater to infiltrate, thereby capturing nonpoint source pollutants from surface water runoff. These parking bays will include an under drain and will be identified with permanently displayed interpretive signage.
- Installed 415 square feet of community scale rain garden demonstration areas at the main entrance to the city of Mayfield Heights City Hall building. This building is an ideal demonstration site, receiving more than 175 visitors per day.
- Installed 2,150 square of vegetated end island bio-swales (9 shade tree bumper islands total) planted with understory and shade trees to provide filtering and cooling of surface stormwater flows. These shall also include the installation 1,620 square feet of permeable concrete strip

Environmental Results: Successful completion of this project will improve water quality by reducing nonpoint source pollutant loadings, reducing runoff through infiltration, and reduce downstream erosion and sediment deposition.



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2010 Surface Water Improvement Grant Project Summary

Project Number #10SWIF-CUY-042
Est. Project Completion GRANT TERMINATED AT SPONSOR'S REQUEST

SubGrantee City of Brecksville
9069 Brecksville Road
Brecksville, OH 44141

Project Contact: Gerald Wise P.E., City Engineer
City of Brecksville

Amount Recommended: \$181,900

Project Title: Glen Forest Trail Stream Channel Restoration Project

Project Location: City of Brecksville, Cuyahoga County

Watershed: Unnamed Tributary to the Cuyahoga River

Project Summary: \$181,900 in Surface Water Improvement Fund (SWIF) grant funding was recommended to complete stream channel and floodplain restoration on an unnamed tributary to the Cuyahoga River. Within the project site, the tributary stream is a highly channelized, urbanized stream that has been heavily impacted with vertical treated timber crib walls for its entire open water length, extensive use of culverts, concrete lined channel in some locations and extensive residential development. Stream banks behind the crib wall have eroded in a number of locations throughout the project area causing sediment to be carried downstream and be deposited into neighboring wetland areas and the Cuyahoga River. This project will restore and re-naturalize 530 linear feet of the stream channel while also providing a functional floodplain that currently does not exist. Activities will be supported by a project specific education and outreach effort resulting in the production of fact sheets, issuance of news releases, newsletter article and a project site on the city's website. This project is shovel ready and will commence construction activities upon receipt of SWIF grant funding.

Although not specifically recommended in the Cuyahoga River Total Maximum Daily Load Study that was completed by Ohio EPA approved by USEPA in 2003, this project is being implemented consistent with the habitat improvement recommendations included in the TMDL.

Project Deliverables:

- Restoration of 530 linear feet of an unnamed tributary to the Cuyahoga River using such design features as restoration of a functional floodplain, installation of in-stream features such as 6 stone grade controls and re-vegetation of both streambanks.
- Rehabilitation and enhancement of 530 linear feet of riparian habitat using native plant materials such as hardwood seedlings and shrubs. Total acreage to be enhanced will be approximately 4/10ths of an acre.

- Conduct a project specific public education and outreach program including the production of 1 project fact sheet, 2 press releases, 1 newsletter article and 3 updates to a project specific webpage on the city's website.

Environmental Results: Successful completion of this project is expected to restore 530 linear feet of natural stream habitat and to reduce sediment loadings to the Cuyahoga River.



2010 Surface Water Improvement Grant Project Summary

Project Number #10SWIF-CUY-047

Est. Project Completion May, 2012

SubGrantee Nature Center at Shaker Lakes

2600 South Park Boulevard

Cleveland, OH 44120

Project Contact: Kari Elsila, Grants Manager
Nature Center at Shaker Lakes

Amount Awarded: \$78,664

Project Title: Restoring a Wetland through Establishment of Native Species

Project Location: City of Shaker Heights
Watershed: Doan Brook

Project Summary: \$78,664 in Surface Water Improvement Fund (SWIF) grant funding is awarded to the Nature Center at Shaker Lakes to restore the 5 acre wetland/marsh area located at the Nature Center. Shaker Lakes is an urban park listed on the National Register of Historic Places and has been designated as an Important Bird Area by the National Audubon Society. The wetland area at the Nature Center is the only sizeable vegetated wetland area within the entire Doan Brook watershed. Restoration activities will focus on removing non-native invasive narrow leaved cattail that has overtaken the native species that were found in the wetlands as recently as 1997. Today, the wetland is 99% narrow leaved cattail. As part of this project, narrow leaved cattail, crack willow, bush honeysuckle, European privet, buckthorn and all other non-native species will be eradicated using low percentage herbicide treatments. Plants will be sprayed in late September and those that are too large to be eradicated using chemicals or via hand-pulling will be cut and treated. Following removal of invasive species, restoration will focus on reintroducing native Ohio wetland species. Nature Center staff and volunteers will plant the wetland with a diverse mix of herbaceous wetland species, including shrubs and a canopy assortment of trees. Restoring this wetland will have a significant impact on Doan Brook by improving flood control and water quality to this Lake Erie tributary.

In conjunction with the wetland restoration activity, an ambitious education and outreach component will be conducted including holding project-specific Town Hall discussions, developing wetland restoration curriculum into the center's environmental education classes, field trips and summer camps. Project specific displays and signs will also be posted documenting the progress of restoration activities. Since restoration will occur over a two year period, there will be many opportunities to inform the public and visitors to the center.

This project will be completed in partnership with the Cleveland Museum of Natural History, the Parklands Management Committee and the Black Swamp Bird Observatory.

Project Deliverables:

- Restoration of 5 acres of wetlands, including the treatment and/or removal of non-native invasive species and replanting of native wetland species of herbaceous, shrubs and tree species.
- Conduct a comprehensive education and outreach program including the development and distribution of 2 project and wetland-specific fact sheets, conducting 4 public meetings, issue 2 press releases, install 1 inside display related to the wetland restoration, 2 project signs, 2 informational kiosks and conduct 24 project specific tours, include project information in 4 workshops and 2 newsletters.
- To recruit and mobilize 75 volunteers providing 2,200 hours of volunteer native species treatment and wetland restoration planting services.

Environmental Results: Successful completion of this project is expected to restore 5 acres of currently degraded wetland areas and to reduce nonpoint source pollutant loadings into Doan Brook, a direct tributary to Lake Erie.

Project Results to Date:

- Removed/treated 3 acres of invasive species.
- Planted 2.5 acres of wetland species.
- Restored 3 acres of wetlands.
- Developed 3 facts sheets, 2 press releases and 1 newsletter.
- Conducted 2 public meetings, 9 tours and 6 workshops.
- Created project website. For more information please visit: www.shakerlakes.org/blog
- Installed one project sign and developed one display.
- Recruited and engaged 235 volunteers for the project.

Nature Center at Shaker Lakes Marsh Restoration Project



A view of the Nature Center's wetlands habitat, located between Shaker Heights and Cleveland Heights, overrun with narrow-leaved cattails.



A "bio-blitz" of the marsh habitat was conducted on August 17, 2010, by Nature Center staff and volunteers from the Geauga Park District. The bio-blitz included plant surveying, plant rescue, and soil sampling to give us a baseline of the "before" project condition of the marsh.



The invasive narrow-leaved cattails were sprayed with a low-percentage herbicide (which is not harmful to insects, birds, or aquatic life) on September 2, 2010. We made use of a tank-like All-Terrain Vehicle called an ARGO, on loan from the Nature Conservancy.



View of the marsh following the herbicide application; cattails are dying and turning brown.



After the cattails were dead, it was time to cut them down! On November 8, 2010, we were aided by student groups from Ruffing Montessori School and from Hawken School.



Before

On November 13, 2010, we held a work day to finish the job. A crew of eighty volunteers and seven Nature Center staff members cut and stacked all the narrow-leaved cattails.



After. The next step is to seed the marsh with native plants.





2010 Surface Water Improvement Grant Project Summary

Project Number #10SWIF-CUY-049

Est. Project Completion May 31, 2012

SubGrantee **City of North Olmsted**
5200 Dover Center Road
North Olmsted, Ohio 44070

Project Contact: **Kimberly Wenger, Planning Director**
City of North Olmsted

Amount Requested: **\$196,028**

Project Title: **North Olmsted City Hall Parking Lot Stormwater BMPs**

Project Location: North Olmsted, Cuyahoga County

Watershed: Rocky River

Project Summary: \$196,028 in Surface Water Improvement Fund (SWIF) grant funding was awarded to the city of North Olmsted to retrofit the existing parking lot at North Olmsted City Hall with permeable pavers and bio-retention swale. The system of permeable pavers and bio-retention swale will all stormwater to permeate the ground surface rather than running directly into area storm sewers. Runoff will be filtered by the aggregate base material and bio-retention soil and stored for a duration of time allowing it to slowly infiltrate the ground or to be released (during heavy flow periods) at a controlled rate into the city's storm sewers. The project site is currently 100% impermeable with continuous asphalt pavement and an integral concrete curb and walk median. The Schematic Design Phase for this project has been completed consisting of site assessment, conceptual layout and design and an estimate of probable costs. In addition to the permeable pavers and bio-retention swale, the project will include education and outreach activities designed to inform the public about the project and the importance of effective stormwater management.

This project is being implemented consistent with the recommendations in the state endorsed Rocky River Watershed Action Plan. It is also generally consistent with findings and recommendations within the Rocky River Total Maximum Daily Load study completed by Ohio EPA and approved by US EPA.

Project Deliverables:

- Installation of 6,700 square feet of permeable pavement in the parking areas immediately adjacent to the city of North Olmsted's City Hall and municipal complex.
- Installation of 1,281 square feet of bio-filtration island(s) in the North Olmsted City Hall and municipal complex parking areas.
- Conduct education and outreach activities including the development and distribution of 1 project-specific fact sheet, establishment and maintenance of a website informing the community about the status of the project, developing a project-specific display that will

be installed in the vicinity of the project recognizing the partnerships who made the project possible, installation of 1 project specific sign, and a student workshop that will be conducted by the city engineer.

Progress to Date:

- Successfully established a project specific website. For more information please visit: <http://northholmsted.besavvy.egovlink.com/planning/SWIF.cfm>
- Prepared plans. Plans went out to bid in April 2011.
- Commenced construction July 2011.
- Developed and distributed one project fact sheet.
- Conducted one public meeting.

Environmental Results: Successful completion of this project will eliminate more than 6,700 square feet of currently impervious surface and provided enhanced filtering capacity of stormwater surface runoff thereby reducing nonpoint source pollution loadings to the Rocky River.





2010 Surface Water Improvement Grant Project Summary

Project Number #10SWIF-CUY-061

Est. Project Completion Fall 2011

SubGrantee **Cleveland Metroparks**

4104 Fulton Parkway

Cleveland, OH 44144

Project Contact: **James Kastelic, Senior Park Planner**

Cleveland Metroparks

Amount Requested: **\$181,000**

Project Title: **Big Creek Water Quality Improvement Project**

Project Location: City of Cleveland, Cuyahoga County

Watershed: Cuyahoga (Big Creek), 04110002

Project Summary: \$81,000 in Surface Water Improvement Fund (SWIF) grant funding is awarded to the Cleveland Metroparks to install innovative storm water management practices to redirect and treat runoff from an existing eleven (11) acre impervious parking lot located at the Cleveland Zoo. The project includes installation of 720 linear feet of runoff channels along the north and south borders of the parking lot that will intercept lot runoff that now flows directly into Big Creek. Flow will be directed from the channel to a dry extended detention basin which will include a forebay, wetland features and a micro-pool. The extended dry detention basin will have a footprint of 7,400 square feet and an effective volume of 43,000 square feet. In addition to treating the runoff for pollutant reduction, installation of this innovative storm water treatment system is expected to substantially reduce the rate and amount of runoff that has historically discharged directly to Big Creek from this parking area. For instance, runoff that currently discharges almost immediately from the parking lot to Big Creek will now be discharged to Big Creek over a 48 hour period. The Cleveland Zoo is popular urban learning center that frequently hosts more than 15,000 visitors per day in the summer. The parking lot to be retrofit has approximately 1,600 parking spaces. Because of the traffic through this location, implementation of storm water demonstration practices will serve to provide an important educational opportunity for zoo visitors and other interested parties. General water quality benefits will include the reduction of runoff to Big Creek, as well as reductions in total suspended solids, organic compounds, bacteria and nutrients by promoting settling, water infiltration, absorption and increased nutrient assimilation.

This project is being implemented consistent with the recommendations in the Big Creek Watershed Plan as developed by the Cuyahoga Remedial Action Plan organization.

Project Deliverables:

- Installation of 720 linear feet of diversion channel along north (500 feet) and south (220 feet) edges of the zoo parking area.
- Installation of a 7400 square foot dry extended detention basin (including forebay, wetland features and micro-pool). The volume of the basin will be approximately 43,000 cubic feet
- Conduct an educational outreach program including the development and installation of project specific displays, 3 project specific signs, distribution of 1 project-specific press release, creation of a website highlighting the status and features of the project, 3 fact sheets.

Progress to Date:

- Completed design in July 2011. Public bidding for construction scheduled for August 2011 with construction in Fall 2011.

Environmental Results: Successful completion of this project is expected to considerably reduce nonpoint pollution loadings into Big Creek and to more effectively manage and filter storm water runoff thereby reducing both stream flashiness and water temperature. This project also will serve as an effective demonstration of various alternative storm water management practices.





2010 Surface Water Improvement Grant Project Summary

Project Number #10SWIF-CUY-067

Est. Project Completion May 31, 2012

SubGrantee **Village of Gates Mills**
1470 Chagrin River Road
Gates Mills, Ohio 44040

Project Contact: **Dave Biggert, Service Director**
Village of Gates Mills

Amount Requested: **\$87,525**

Project Title: **Village of Gates Mills Stormwater Retrofit Demonstration**

Project Location: Village of Gates Mills, Cuyahoga County

Watershed: Chagrin

Project Summary: \$87,525 in Surface Water Improvement Fund (SWIF) grant funding is awarded to the village of Gates Mills to install a community scale rain garden and bio-filtration islands near Village Hall. Additionally, all roof water will be re-directed through the rain garden and more than 100,000 square yards of drainage from the service yard will be directed to the bio-filtration islands. The village will use these practices to demonstrate and promote these forms of stormwater management to area developers and residents throughout the village. The project will be supported by education and outreach activities such as a workshop conducted by the village engineer on how to install rain gardens on private residences, articles within the village's community newsletter and project specific signage that will be installed on the project sites.

This project is being implemented consistent with the recommendations in the state endorsed Chagrin River Watershed Action Plan. It is also generally consistent with findings and recommendations within the Chagrin River Total Maximum Daily Load study completed by Ohio EPA and approved by US EPA.

Project Deliverables:

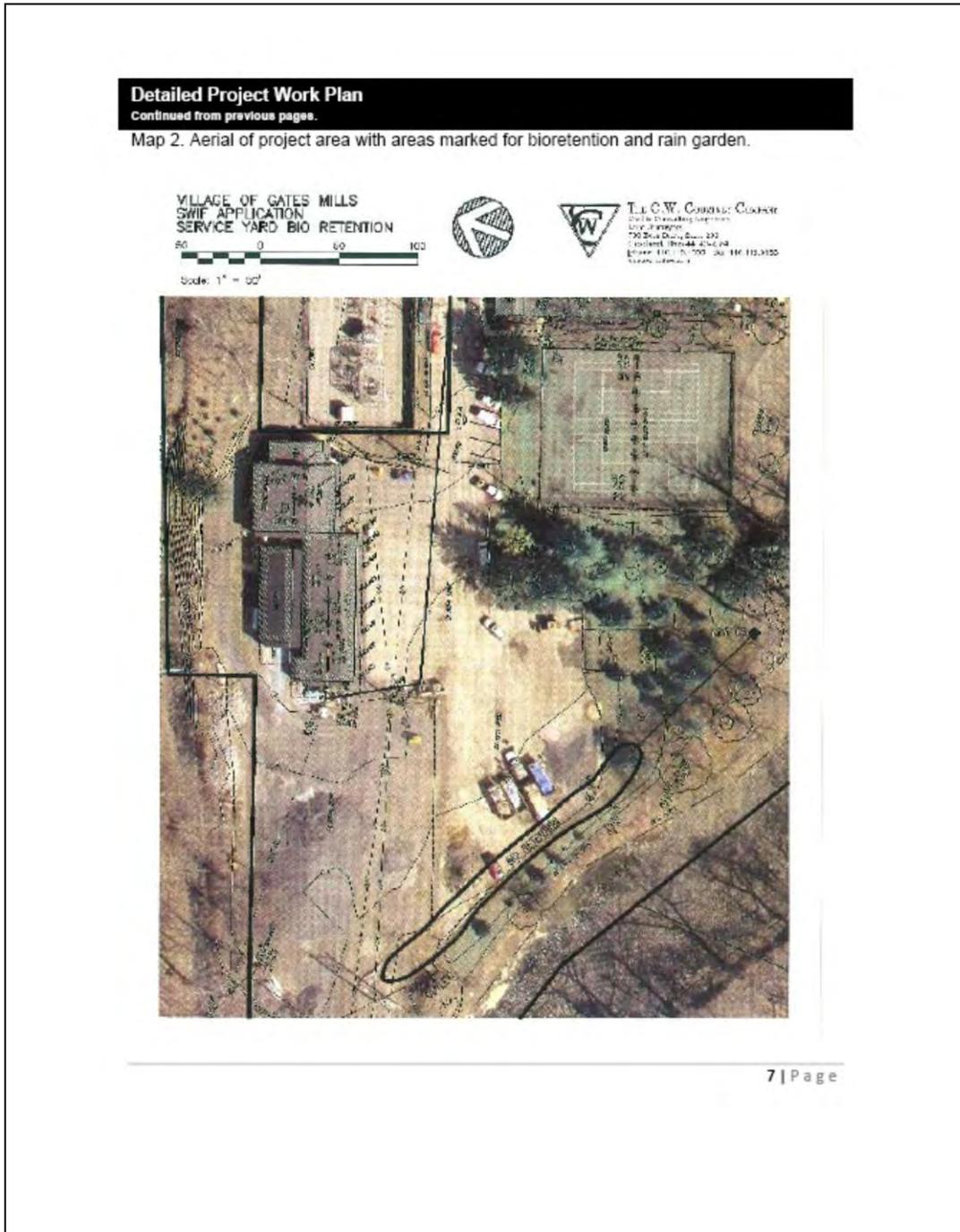
- Installation of 1,000 square feet of community rain at the US Post office near Gates Mills Village Hall. All roof water flowing from the post office will be directed to the rain garden for filtering.
- Installation of 3,500 square feet of bio-filtration island(s) in the Gates Mills service yard on the Village Hall complex. More than 100,000 square feet of stormwater surface runoff will be directed to the bio-filtration island(s) rather than existing storm sewers for filtration. The island(s) will be installed without an under-drain and thus operate much like a sand filter to passively treat stormwater.
- Conduct education and outreach activities including the development and installation of 2 project specific signs, distribution of 1 project-specific press release, creation of a project-specific fact sheet, 1 newsletter articles and 1 workshop entitled "How to Install a

Rain Garden". One presentation will also be made to the Board of the Chagrin River Watershed Partners.

Progress to Date:

- Design documents approximately 40% complete.

Environmental Results: Successful completion of this project will passively treat more than 100,000 square feet of stormwater drainage and demonstrate alternative methods of stormwater management for area developers and homeowners.



Rain Garden (Before Implementation-Looking



Rain Garden (Before Implementation-Looking East)



Bio-filtration Island (Before Implementation-Looking North)



Bio-filtration Island (Before Implementation-Looking South)



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2010 Surface Water Improvement Grant Project Summary

Project Number	#10SWIF-CUY-083
Project Completion	May 2012
SubGrantee	City of Seven Hills 7325 Summitview Drive Seven Hills, OH 44131
Project Contact:	Mark K. Papke, P.E. – City Engineer City of Seven Hills
Amount Requested:	\$256,530
Project Title:	Project R.A.I.N. at City Hall
Project Location:	City of Seven Hills, Cuyahoga County
Watershed:	West Creek--Tributary to the Cuyahoga River

Project Summary: \$256,530 in Surface Water Improvement Fund (SWIF) grant funding is requested to implement a comprehensive stormwater demonstration project at the city hall building within the city of Seven Hills, Ohio. The proposed project is a component of a larger city-wide stormwater management and has the goals of: redirecting city hall parking lot awarded to the city of Seven Hills to install two separate bio-retention cells; harvesting rainwater from the western bio-retention cell for irrigation purposes; installing permeable pavers and conducting a project specific education and outreach program including the development and installation of a public information kiosk identifying innovative stormwater BMPs.

The project will result in the installation of two bio-retention cells totaling 5,615 square feet; a rainwater collection cistern; 2,704 square feet of permeable pavement and other practices within the city hall campus. This project will also result in the invitation of developers, contractors and residents to a stormwater management workshop sponsored by the city, project contractor and representatives of the Cuyahoga County Soil & Water Conservation District. Project administration, public outreach and bid advertisement costs will be provided by the city.

West Creek has both a state endorsed watershed action plan and a completed Total Maximum Daily Load study (TMDL).

Project Deliverables:

- Installation of 5,615 square feet of bio-filtration islands within the Seven Hills City Hall parking areas.
- Installation of 2,704 square feet of permeable pavers in main pedestrian sidewalk areas around city hall and in the areas leading between city hall and the Seven Hills Police Department offices.
- Installation of a rain water collection cistern underneath the bio-filtration islands that will be constructed as part of this project. The cistern system will include a submersible pump and harvested water will be used to water the landscape at the city main entrance.

- Conduct a project specific public education and outreach program including the production of a project fact sheet, 1 project-specific press release, 1 newsletter article and the development, installation and maintenance of an informational kiosk that will be placed at the main Seven Hills City Hall entranceway.

Environmental Results: Successful completion of this project is expected to reduce nonpoint source pollutant loadings into the West Creek, a tributary to the Cuyahoga River.

Progress to Date:

- Issued request for proposals (RFP) for project design services and selected a contractor.
- Established one project specific website. For more information please visit: <http://www.sevenhillsohio.org/departments/engineering/project-rain.aspx>
- Installed 1,450 square feet of permeable pavement.
- Installed 5,615 square feet of bio-filtration islands within the Seven Hills City Hall parking areas.
- Developed and issued one press release.





2010 Surface Water Improvement Grant Project Summary

Project Number #10SWIF-CUY-102
Est. Project Completion May 31, 2012

SubGrantee **City of Cleveland Heights**
40 Severance Circle
Cleveland Heights, OH 44118

Project Contact: **Richard Wong, Planning Director**
City of Cleveland Heights

Amount Awarded: **\$232,074**

Project Title: **Cumberland Park – Parking Lot Improvements**

Project Location: City of Cleveland Hts., Cuyahoga County
Watershed: Chagrin

Project Summary: \$232,074 in Surface Water Improvement Fund (SWIF) grant funding is awarded to the city of Cleveland Heights to install innovative stormwater management practices and control runoff from an existing impervious parking lot within Cumberland Park. The project will result in the installation of pervious pavers combined a re-engineering of drainage to a series of bio-retention islands that will be installed. Cumberland Park is a heavily used urban recreation area; therefore, implementation of stormwater demonstration practices will serve to provide an important educational opportunity for city residents and park users. This project proposes to reduce the impervious parking area (which is currently 53,700 square feet) by 25% through the addition of pervious pavement. Additionally, bio-retention islands will be installed in the parking lot and all surface drainage redirected to these islands. General water quality benefits will include the reduction of runoff to Dugaway Creek, as well as reductions in total suspended solids, organic compounds, bacteria and nutrients by promoting settling, absorption and increased nutrient assimilation.

This project is being implemented consistent with the recommendations in the state endorsed Chagrin River Watershed Action Plan. It is also generally consistent with findings and recommendations within the Chagrin River Total Maximum Daily Load study completed by Ohio EPA and approved by US EPA.

Project Deliverables:

- Installation of 250 square feet of pervious pavers and reduction of existing impervious parking lot area from 53,700 square feet to approximately 40,000 square feet.
- Installation of 5,900 square feet of bio-filtration islands in the center of the parking lots with drainage in the areas to be re-directed to these filtration islands.
- Conduct a comprehensive education and outreach program including the development and installation of 3 project specific signs, distribution of 1 project-specific press release, creation of a website highlighting the status and features of the project, 2 newsletter articles and 1 field trip for area high school nature study program.

Progress to Date:

- Developed project plans. Work on the impervious areas will begin as soon as weather permits.
- Updated city's webpage. Please see http://www.clevelandheights.com/citydept_dev_sustainabledevelopmentpractices.asp for more information.
- Installed 250 square feet of pervious pavers and reduced existing impervious parking lot area from 53,700 square feet to approximately 40,000 square feet.
- Installed 5,900 square feet of bio-filtration islands in the center of the parking lots with drainage in the areas re-directed to these filtration islands.

Environmental Results: Successful completion of this project is expected to considerably reduce nonpoint pollution loadings into Dugaway Creek and to more effectively manage and filter stormwater runoff thereby reducing water temperature. This project also will serve as an effective demonstration of various alternative stormwater management practices.





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2010 Surface Water Improvement Grant Project Summary

Project Number #10SWIF-GLRI-CUY-039
Project Completion May 2012

SubGrantee **City of Cleveland, Dept. of Public Utilities**
12302 Kirby Avenue
Cleveland, Ohio 44108

Project Contact: **Rachid Zoghaib, Deputy Commissioner**
City of Cleveland Department of Public Utilities

Amount Recommended: \$260,158

Project Title: **City of Cleveland WPC Building Stormwater Management Improvements**

Project Location: City of Cleveland, Cuyahoga County
Watershed: Cuyahoga River

Project Summary: \$260,158 in Surface Water Improvement Fund (SWIF) grant funding is awarded to the city of Cleveland to incorporate a variety of green stormwater management practices at the city's Water Pollution Control facility. Planned activities include replacing 11,200 square feet of currently impervious asphalt with permeable asphalt, constructing two rain gardens totaling 480 square feet and two bioswales, and to install a water reuse system to collect, store, and reuse storm water from a portion of the roof of the maintenance warehouse building. Upon completion of all stormwater demonstration practices, stormwater flow from more than 60,000 square feet of drainage area will be effectively eliminated from existing storm sewers and treated in green BMPs. In addition to the above listed practices, education and outreach activities consisting of news releases, formal and informal tours and school presentations, and project signs will be incorporated into each installation site.

This project is being implemented consistent with the findings and recommendations within the Lower Cuyahoga River Total Maximum Daily Load study completed by Ohio EPA and approved by US EPA.

Project Deliverables:

- Installation of at least 11,200 square feet of pervious pavement in and around the publicly accessible areas of the city of Cleveland's Water Pollution Control Center.
- The planning, design and installation of one rainwater re-use system that will capture roof runoff from the building and reuse the captured water for toilet facilities in the building, vehicle washing station and/or the existing irrigation system for the buildings landscaping and lawn.
- Construction of two rain gardens totaling 480 square feet designed to treat drainage from 17,400 square feet of the facility's roof. Rain gardens will contain plants native to the Cleveland area. Integration of the rain gardens will be done in a way that is a

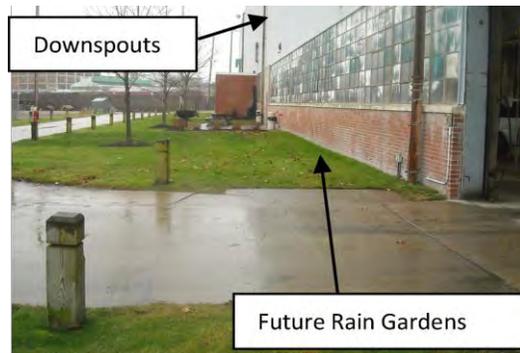
functional and attractive, including installation of 130 square feet of vegetated bio-swales designed to treat runoff from 9,950 square feet of parking lot drainage. Currently this runoff flows across the grassy areas where the bio-swales will be installed before dumping into the storm system on a nearby street. Essentially, this drainage will be eliminated as a result of infiltration and treatment that will occur as a result of the bio-swales.

- Conduct public education and outreach activities consisting of 1 project specific news release to local media outlets, permanent project specific interpretive signs, formal and informal public and school tours of the project sites and the production and distribution of 1 project specific fact sheet and/or brochure.

Progress to Date:

- Developed project plans/design documents.
- Published request for proposals.
- Bids for construction due May 19, 2011.

Environmental Results: Successful completion of this project will improve water quality by removing and treating through infiltration the surface runoff from more than 60,000 square feet of impervious parking areas and roof surfaces. Additionally, stormwater flows will be reduced as a result of the rainwater harvesting and reuse system that will be installed as a result of this project.





2010 Surface Water Improvement Grant Project Summary

Project Number #10SWIF-GLRI-CUY-068

Est. Project Completion May 31, 2012

SubGrantee Village of Hunting Valley
38251 Fairmount Boulevard
Chagrin Falls, OH 44022

Project Contact: Don Cunningham, Building Official/Service Director
Village of Hunting Valley

Amount Requested: \$137,500

Project Title: Green Stabilization of Riparian Area along the Chagrin River in Hunting Valley

Project Location: Hunting Valley, Cuyahoga County
Watershed: Chagrin River

Project Summary: \$137,500 in Surface Water Improvement Fund (SWIF) grant funding is awarded to the village of Hunting Valley to install vegetative rip-rap to restore vegetation and to stabilize 400 linear feet of severely eroding stream bank on the Chagrin River in Hunting Valley, Ohio. The project will use a green practice, vegetative rip-rap in an area that has been a perennial erosion problem. The project site is highly visible and should provide an excellent opportunity to serve as a demonstration of this particular type of installation. The Chagrin River Watershed Partners, the local watershed group has recommended this practice to a number of landowners as an alternative to hard engineering approaches such as rip-rap and gabion baskets. Having an example installed within the river valley will provide valuable opportunities to demonstrate green practices to landowners.

In addition to the streambank stabilization activity, this project will also conduct at least one workshop for village residents on "Green Stabilization Practices" and a variety of other education and outreach activities. This project is also being implemented consistent with the recommendations in the state endorsed Chagrin River Watershed Action Plan. It is also generally consistent with findings and recommendations within the Chagrin River Total Maximum Daily Load study completed by Ohio EPA and approved by US EPA.

Project Deliverables:

- Restoration of approximately 400 linear feet of currently eroding streambank using bio-engineering (green) vegetative rip-rap practices.
- Planting and restoring 3/10ths of an acre with native species of trees and shrubs following stabilization of the streambank.
- Conduct a comprehensive education and outreach program including the development and distribution of 1 project-specific fact sheet, issuing 1 press release, conducting one streambank stabilization workshop for area landowners, and preparing and publishing at least one project-specific article for the Chagrin River Watershed Partners newsletter.

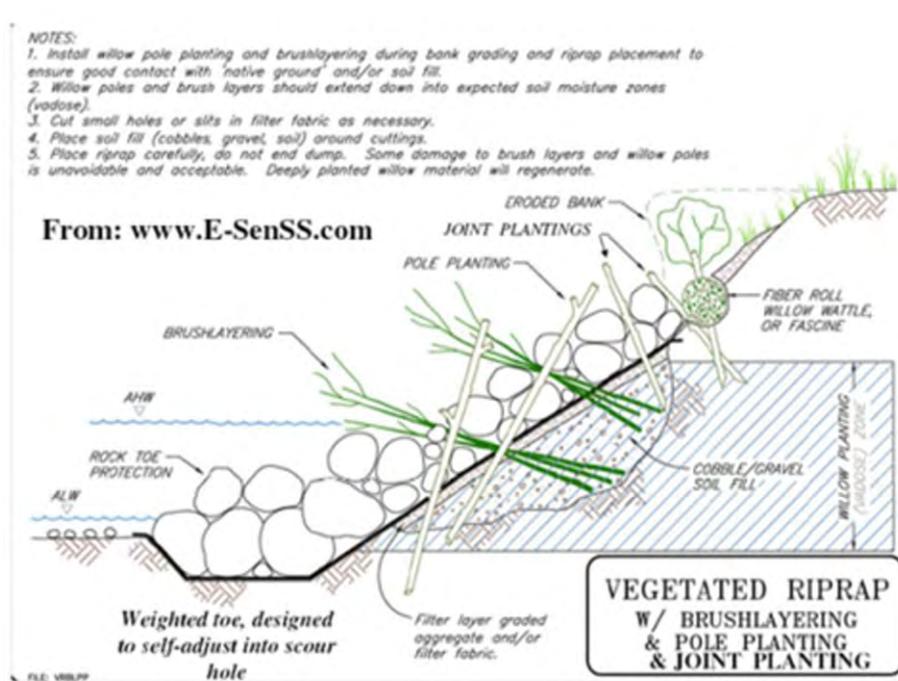
Progress to Date:

- Design documents 75% complete.
- Anticipate advertisement late May 2011 with construction to begin July 2011.

Environmental Results: Successful completion of this project is expected to considerably reduce sediment loadings into the Chagrin State Scenic River and to stabilize 400 linear feet of severely eroding stream bank using “green” stabilization and engineering practices.



Current Conditions at project site (above) and conceptual design drawing for restoration and stabilization of this site (below).





2010 Surface Water Improvement Grant Project Summary

Project Number #10SWIF-GLRI-CUY-075

Project Completion May 2012

SubGrantee **ParkWorks**
1422 Euclid Avenue, Suite 733
Cleveland, Ohio 44115

Project Contact: **Justin Glanville, Project Director**
ParkWorks

Amount Awarded: **\$161,659**

Project Title: **Cleveland's Lake Link Greenway Bioswale**
Demonstration Project: **Innovation in Action**

Project Location: City of Cleveland, Cuyahoga County
Watershed: Cuyahoga River

Project Summary: \$161,659 in Surface Water Improvement Fund (SWIF) grant funding is awarded for the construction of a 10 foot wide by 480 linear feet long (4,800 square feet) vegetated bioswales adjacent to a future bike and hiking trail near the mouth of the Cuyahoga River and Lake Erie. Stormwater runoff will be redirected to the vegetated bioswale rather than discharging as it does currently into a combined sewer overflow (CSO). The bioswales will consist of three feet of bio-filtrating soil mix covered with native riparian plant species. Success for the project will be evaluated by determining the volume of stormwater retained in the bioswale during significant storm events and by sampling the quality of water at the influent into the bioswales and the effluent from the bioswale. In addition to the above ParkWorks will conduct education and outreach activities consisting of public meetings, media events, installing an informational kiosk and display, preparing a project fact sheet, conducting tours and field days and conducting a workshop for engineers and water quality professionals.

This project is being implemented consistent with the findings and recommendations within the Lower Cuyahoga River Total Maximum Daily Load study completed by Ohio EPA and approved by US EPA.

Project Deliverables:

- Installation of at least 4,800 square feet of vegetated bioswale consisting of 3 feet of bio-infiltrating soil mix planted with native riparian vegetation along a hiking and bike path near the mouth of the Cuyahoga River.
- Installation of 250 linear feet of stormwater diversion structures and 2 stormwater diversion structures to re-direct influent into the constructed bioswale and to direct effluent from the bioswale.
- Conduct public education and outreach activities consisting of the following:
 - 4 project-specific fact sheets

- 6 public meetings
- 7 press releases
- 1 project-specific website
- Construction of 1 information kiosk and 1 display highlighting the features of the project and benefits of effective stormwater management.
- Conducting 5 public and local official tours of the project site
- Conduct 4 field days for local area school groups
- Conduct 1 workshop targeted to area engineers and water quality professionals
- 4 project-specific newsletter articles published in the Park Works newsletter.

Environmental Results: Successful completion of this project will improve water quality by redirecting currently untreated stormwater from nearby combined sewer overflows. Load reduction estimates will be calculated upon successful funding.

Progress to Date:

- Developed one project fact sheet and one press release.
- Conducted two public meetings.
- Created one website. Please see <http://parkworks.org/currentp-sustainabledesign.html>
- Anticipate RFP to be released in February 2011.
- Conducted one tour.
- ParkWorks is in discussion with Northeast Ohio Regional Sewer District to provide technical assistance to project.



2010 Surface Water Improvement Grant Project Summary

Project Number #10SWIF-GLRI-CUY-082
Project Completion Grant Closed November 30, 2010

SubGrantee Village of Glenwillow
29555 Pettibone Road
Glenwillow, Ohio 44139

Project Contact: Katherine Holmok, Village Landscape Architect
Village of Glenwillow

Amount Awarded: \$63,050.00
Total Spent: \$63,046.05

Project Title: Glenwillow Green Infrastructure Demonstration

Project Location: Village of Glenwillow, Cuyahoga County
Watershed: Tinker's Creek

Project Summary: \$63,050 in Surface Water Improvement Fund (SWIF) grant funding was awarded to the village of Glenwillow to install 1,500 square feet of vegetated bio-filtration islands in the parking lot of a village owned park as well as to restore .30 acres of riparian area immediately adjacent to Tinker's Creek by installing stream bank live stake plantings designed to improve riparian habitat, stabilize the bank and reduce erosion and sediment loadings into Tinker's Creek. This demonstration project will be a hands-on learning opportunity for park volunteers and members of village council, since both groups will be enlisted to assist with the plantings associated with the bio-filtration islands as part of a Bioswale Volunteer Field Day. Additionally, following completion of construction and planting, the village will install a permanent interpretive sign at each island. These panels will explain how the vegetated bioswales were installed as well as their value to improving water quality within the creek.

This project was implemented consistent with the recommendations in the state endorsed Tinker's Creek Watershed Action Plan. It is also generally consistent with findings and recommendations within the Tinker's Creek Total Maximum Daily Load study completed by Ohio EPA and approved by US EPA in 2003.

Final Project Results:

- Installed of 1,500 square feet of vegetated bio-filtration islands in parking areas within a village owned park that is immediately adjacent to Tinker's Creek. These bio-filtration islands were constructed by a contractor; however the planting of these practices was conducted by park volunteers and members of village council as part of a Bioswales Volunteer Field Day.
- Installed vegetated live stake plantings on .30 acres of riparian areas immediately adjacent to Tinker's Creek. Plantings were designed to provide shade for the creek and to improve riparian habitat and stabilize currently eroding areas of the streambanks.

- Conducted education and outreach activities including the development and installation of 4 interpretive signs at each of the bio-filtration islands, created and distributed a project-specific fact sheet, and conducted a Volunteer Field Day for park volunteers and members of village council.

Environmental Results: This project resulted in the reduction of nonpoint source pollutant loadings to Tinkers Creek and restored .30 acres of riparian habitat.

NPS Load Reductions Resulting from Project

Pollutant	Final Loading Reductions
Nitrogen	30.4 pounds/year
Phosphorus	15.2 pounds/year
Sediment	13.2 tons/year





2010 Surface Water Improvement Grant Project Summary

Project Number #10SWIF-GLRI-CUY-123

Est. Project Completion May 2012

SubGrantee Cuyahoga County Soil & Water Conservation District
6100 West Canal Road
Valley View, Ohio 44125-3330

Project Contact: Jared Bartley, Rocky River Watershed Coordinator
Cuyahoga County SWCD

Amount Requested: \$147,270

Project Title: Baldwin Creek Dam Removal and Habitat Enhancement

Project Location: City of Berea, Cuyahoga County

Watershed: Baldwin Creek—Rocky River

Project Summary: \$147,270 in Surface Water Improvement Fund (SWIF) grant funding is awarded to the Cuyahoga County Soil & Water Conservation District to remove three small lowhead dams on Baldwin Creek within the city of Berea. The project sites are located within property owned by the Cleveland Metroparks System and/or by the city of Berea. One intact lowhead dam and two smaller degraded structures impede fish passage and degrade habitat throughout the stream segment. In addition to dam removal activities, this project proposes to enhance in-stream habitat conditions by installing a grade control structure such as a step/pool or cross vane at the downstream end of the stream reach. Activities associated with this project are designed to restore habitat conditions within this segment of Baldwin Creek to its designated warmwater habitat aquatic life use and to restore nearly a mile of natural flow conditions within the stream (4,750 linear feet). The TMDL for Rocky River approved by US EPA in 2001 identifies that *“habitat restoration the stream (Baldwin Creek) could have a high degree of success ... if implemented in conjunction with stream channel barrier removal and enhancements”*. This project is being implemented consistent with those recommendations.

Outreach activities will be conducted by the Cuyahoga County SWCD with assistance from the city of Berea and will include public meetings, newsletter articles, press releases and tours of the completed project sites. Rocky River, of which Baldwin Creek is a tributary has both a state endorsed watershed action plan and an approved Total Maximum Daily Load Study.

Project Deliverables:

- Removal of three small lowhead dam structures and restoration of 4,750 linear feet of natural flow conditions in Baldwin Creek.
- Installation of 3 fish passage and in-stream structures including grade control structures such as a step/pool and/or cross vane at points downstream from the current dam structures.

- Conduct education and outreach activities consisting of 1 project specific fact sheet, 3 public meetings, 2 press releases, 2 tours, 5 project specific newsletter articles, and the maintenance of 1 project specific webpage.

Progress to Date:

- Published two newsletters to inform public about project and importance of removing dam.
- Created one website. For more information please visit: www.myrockyriver.org
- Published request for proposals.
- Conducted one public meeting.

Environmental Results: Successful completion of this project will restore 4,750 linear feet of unimpeded natural flow conditions within the lower reaches of Baldwin Creek and will enhance in-stream habitat conditions and improve QHEI scores for the segment to attainment of WWH standards.



Progress Report USEPA-Great Lakes Restoration Initiative Projects

Grant or IA Number: GL-00E00395-0
Project Title: Cuyahoga County Surface Water Improvement Fund Grants Program
Reporting Period: June 1, 2010 through April 15, 2011
Principal Investigator: Russell Gibson, Ohio Environmental Protection Agency

The principal investigator of grants, cooperative agreements, and interagency agreements (IAs) is required to submit to the USEPA project officer a semi-annual progress report. This report can be as brief as one page as long as you can provide the requested information. The items listed below should be addressed as appropriate:

1. What work was accomplished for this reporting period? Report should quantify results as measurable products, i.e. numbers, acres, contact, improvements in water quality, habitat, etc.

- Ohio EPA successfully prepared and executed 14 subgrant agreements. 1 agreement was terminated during the reporting period (at the request of the sponsor) and another grant was completed and closed out (Village of Glenwillow). The table below lists the subgrants awarded under this project:

Table 1.1 Cuyahoga County GLRI/SWIF Subgrants Awarded during Reporting Period

Project #	Subgrant Sponsor/Recipient	Amount Awarded
10GLRI-CUY-039	City of Cleveland Department of Public Utilities	\$260,157
10GLRI-CUY-068	Village of Hunting Valley	\$137,500
10GLRI-CUY-075	ParkWorks	\$161,659
10GLRI-CUY-123	Cuyahoga County Soil and Water Conservation District	\$147,270
10GLRI-CUY-082	Village of Glenwillow	\$63,050
10SWIF-CUY-027	City of Broadview Heights	\$219,727
10SWIF-CUY-34	City of Mayfield Heights	\$231,900
10SWIF-CUY-047	Nature Center at Shaker Lakes	\$78,664
10SWIF-CUY-049	City of North Olmsted	\$196,028
10SWIF-CUY-061	Cleveland Metroparks	\$181,000
10SWIF-CUY-067	Village of Gates Mills	\$87,525
10SWIF-CUY-083	City of Seven Hills	\$265,530
10SWIF-CUY-102	City of Cleveland Heights	\$238,726
10SWIF-CUY-042	City of Brecksville (terminated at request of sponsor)	\$0
Total Subgrant Amount Awarded		\$2,268,736

- Ohio EPA NPS program staff conducted one site visit with GLRI/SWIF sub grantees. This meeting was conducted with the village of Glenwillow (#10GLRI-CUY082) upon the completion of their

grant-funded project to confirm successful installation and construction. All final reporting information was received from the village and this subgrant was closed out on 11/30/10.

- Russ Gibson and Martha Spurbeck conducted a GLRI/SWIF training session for all successful subgrantees in Ohio EPA's northeast district office in Twinsburg, Ohio on 8/19/10. A total of 30 people participated in the training. Information that was covered included all required reporting, accounting and other grant administrative matters. A sample power point presentation of the training is available upon request.
- All required updates to the GLAS reporting system and database were completed by Ohio EPA grants staff. As of 4/15/11 all project files within the GLAS system for this project are complete and up to date.
- STEPL load reduction model Quality Assurance Project Plan (QAPP) was submitted by Ohio EPA on 01/14/11 and approved by US EPA on 01/19/11.
- Load reduction estimates were calculated by Rick Wilson of Ohio EPA for all GLRI/SWIF funded projects. It was brought to the region's attention that there was no place for entering such data in the GLAS system. Once this situation is resolved, we will include all load reduction information in the GLAS system.
- Ohio EPA received all required quarterly fiscal reports and semi-annual progress reports from GLRI/SWIF funded subgrantees. All reports were reviewed and determined to be complete and all reports were submitted to Ohio EPA in a timely manner. Following are the reporting periods covered by these reports:

Quarterly Fiscal Reports: June-Sept 2010; Oct-Dec 2010 and Jan-March 2011

Semi-annual Progress Reports: June 2010 through December 2011

- Progress Reporting/Updates from grant funded subgrant Projects:
 - **City of Brecksville #10SWIF-CUY-042** terminated their grant agreement due to inability to acquire the right-of-entry that was needed to complete the project. No funds were expended.
 - Ohio EPA reallocated funds originally awarded to Brecksville to the **Cleveland Metroparks project #10SWIF-CUY-061**. This applicant was the next down on the ranking list for the GLRI/SWIF projects.
 - **City of Glenwillow #10GLRI-CUY-082** completed their project and closed their subgrant. As a result of their completion, the following deliverables were completed:
 - Installation of 1,500 square feet of vegetated bio-filtration islands in parking areas within a village owned park immediately adjacent to Tinkers Creek.
 - Live stake plantings on 1/3 acre of riparian areas adjacent to Tinkers Creek.
 - Installed 4 interpretive signs, created a distributed a project-specific fact sheet and conducted a volunteer field day for volunteers and members of village council.
 - Reduced pollutant loads by: Nitrogen 30 lbs/year; Phosphorus 15.2 lbs/year and Sediment 13.2 tons/year.
 - Following is a final project summary sheet for the Glenwillow #10GLRI-CUY-082 project:

#10GLRI-CUY-82

Village of Glenwillow Green Infrastructure Demonstration Project

Project Sponsor

Village of Glenwillow
Surface Water Improvement
\$63,050 GLRI-SWIF Funds

Local Project Contact

Katherine Holmok
Village of Glenwillow
29555 Pettibone Road
Glenwillow, OH 44139

Environmental Results

Installed more than 1000
square feet of vegetated bio-
filtration islands in village
owned parking areas

Restored ¼ acre of riparian
area along Tinkers Creek via
native plantings and live
stakes



Division of Surface Water
Nonpoint Source Program
614-644-2020



- Attached as an Appendix to this report is an updated project summary for each of the GLRI/SWIF funded projects in Cuyahoga County. Each summary identifies the deliverables that each grantee is expected to complete as well as a “project results to date” update that will inform you of the progress reported by each recipient during the reporting period. Based on phone discussions that we have had with a number of these grantees, we anticipate that the majority of these projects will be completed during the upcoming construction season.

2. What, if any, changes were made from the Object Class Categories listed in Sec. B of the SF 424A or Box 29 of the IA, as applicable?

No changes have been made to the object class categories. However, as indicated above, the city of Brecksville terminated their grant agreement with Ohio EPA due to technical problems they encountered with moving forward with their project. As a result, Ohio EPA selected the next recipient on the applicant ranking list and issued a subgrant in the amount of \$181,000 to the Cleveland Metroparks for project #10SWIF-CUY-061.

3. If a problem was encountered, what action was taken to correct it?

There have been no problems encountered – only opportunities.

4. What work is projected for the next reporting period?

Please see the project summaries in the appendix of this report for details on the work that we anticipate being completed during the upcoming construction season.

Ohio EPA anticipates completing the following activities during the upcoming reporting period:

- Completing site visits and compliance reviews with all GLRI/SWIF subgrantees.
- Receiving from subgrantees and processing 26 quarterly fiscal reports and 13 progress reports.
- Updating GLAS with all project progress information
- Updating Ohio EPA project summaries and posting these on the Ohio EPA website
- Distributing all required project funding acknowledgement signs to grantees
- Closing out subgrants as projects are completed and funds expended

5. Is the project work on schedule? List activities from the Work Plan, and any required Quality System Documentation, and report as percent completed.

As indicated, the subgrant funded projects are for the most part, on schedule. We did not anticipate the bulk of construction activities to occur until the second year of the grant. Nearly all projects have completed their project designs and/or engineering plans and many projects have already gone out to bid. Detailed updates on progress and what is expected to be completed in coming months are outlined in the project summaries included as an Appendix to this report.

All Ohio EPA deliverables, including the completion and approval of a QAPP document are on schedule and roughly 33% complete (since the grant is roughly one year into a 3 year term).

6. Does the project funding rate support the work progress? Report as percent spent of budgeted amounts Federal and non-Federal.

Activity/Expenditures	Federal Funds	State Match
Subgrant Funded Project Reported Expenses	\$63,046.05	83,481.00

Based on the progress to date, this funding supports the work progress. As mentioned previously, subgrant funded projects committed most of their time and resources on bidding and contracting projects, engineering and design work and other preliminary activities. It is expected that the rate of expenditures will dramatically increase this spring and summer as construction of projects accelerates significantly.

7. Is there a change in the principal investigator?

No. Russell Gibson continues to be the principal investigator with support from Martha Spurbeck, Johanna Hodanbosi and others within Ohio EPA.

8. Will the project take longer than the approved project period? If so, have you formally requested an amendment in writing?

We anticipate that this project will be completed within the timeframe allotted. Should a project extension be necessary, we will submit any formal request for such an amendment at least six months prior to the scheduled termination date of our grant agreement. As mentioned, we expect this project to complete on schedule.

9. What is the date and amount of your latest drawdown request? If no request has been submitted, please explain.

10. What is the date of your latest entry into the Great Lakes Accountability System (GLAS)? If no recent entry has been submitted, please explain.

As of our latest entry on 4/15/11, all required elements in the GLAS system for this project have been entered and are current.