



**Chagrin River  
Watershed Partners, Inc.**

**2011 Annual Report**

**Chagrin River Watershed Partners, Inc. strives to preserve and enhance the scenic and environmental quality of the ecosystem of the Chagrin River and its watershed in a manner that assures a sustainable future for people, plants and animals.**

# President's Message

We are pleased to present the fifteenth annual report of the Chagrin River Watershed Partners. Thanks to the support of our Members, and the cooperation of many private companies and governmental agencies, we have made great strides in helping Chagrin Valley communities to better manage the problems of erosion and flooding.

The big news in storm water management this year has been simply the record breaking amount and intensity of rain that we have received. All this water has strained existing storm water facilities and caused everything from dam washouts to major stream bank erosion. At the same time, the consensus among climate scientists tells us that more rain is on the way; as the air warms, it holds more moisture, driving larger and more intense storms, and more overall precipitation - in both summer and winter.



We are also in a time of economic turmoil, when local governments are straining to meet budget constraints. Fortunately, everything we do at the Watershed Partners is designed to save money for our Member communities. Our mission and work are focused on protecting the functioning of natural systems as much as possible. Where development occurs, we try to preserve natural storm water flows at the lowest possible long-range cost.

If there's a silver lining in the economic clouds, it's that a slow down in development activity has given us a chance to take a closer look at the structure and function of our current mix of buildings, parking lots, and roads. Since our founding in 1996, we have preached that the number one enemy of good watershed management is the creation of "impervious surfaces." The more we build and the more we pave, the more we increase the amount and velocity of surface water runoff, with resulting damage from erosion and flooding. Now that we're not building as much, we have the opportunity to take a much closer look at existing development, and to ask what we can do to improve the performance of associated impervious surfaces. In 2012, we'll be helping our Members to look for opportunities to reduce storm water damage from buildings, roads, and parking lots, by retrofitting these facilities to make runoff water "slow down" and "infiltrate."

Our approach is to mimic nature in slowing down the flow of water off existing development sites, while encouraging infiltration into the ground. This means making the maximum use of open space, vegetated swales, bioretention cells, rain gardens, floodplains, and pervious pavers. There's a huge amount of existing infrastructure that requires periodic maintenance, and eventual replacement. We want to raise the level of awareness at all levels of community management, so that when the time comes for major repairs or replacement of roads and parking lots, we can consider the use of the most up-to-date and low cost techniques for reducing damaging runoff.

Water is our most precious resource, and we are blessed with an abundant (sometimes over-abundant) supply. We want to help our Members work with nature to maintain the quality and quantity of water supply, while reducing the expense caused by Mother Nature's increasing tendency to shower us with her overflowing gifts.

Greg Studen, *President, Chagrin River Watershed Partners, Inc.*



**thank you** CRWP's 2011 accomplishments were made possible through partnerships with CRWP Members; the Cuyahoga, Geauga, Lake and Portage County Soil and Water Conservation Districts, Planning Commissions, and Health Departments; the Geauga and Lake County Engineers; the Lake County Stormwater Management Department; and the Geauga County Department of Water Resources; the Ohio Environmental Protection Agency; the

Ohio Department of Natural Resources; the Ohio Lake Erie Commission; the Ohio Water Development Authority, the Northeast Ohio Regional Sewer District; the National Estuarine Research Reserve System Science Collaborative (cooperative agreement between National Oceanic and Atmospheric Administration, and the University of New Hampshire); the US Environmental Protection Agency; US Fish and Wildlife Service and the US Geological Survey.

### CRWP Members

Auburn Township	Cleveland Metroparks	Lake Metroparks	Pepper Pike
Aurora	Eastlake	Mantua Township	Russell Township
Bainbridge Township	Gates Mills	Mayfield Heights	Solon
Bentleyville	Gauga County	Mayfield Village	South Russell
City of Chardon	Geauga Park District	Mentor	Waite Hill
Chagrin Falls	Hunting Valley	Moreland Hills	Wickliffe
Chagrin Falls Township	Kirtland	Munson Township	Willoughby
Chester Township	Kirtland Hills	Newbury Township	Willoughby Hills
Claridon Township	Lake County	Orange Village	Woodmere

### 2011 CRWP Sponsoring Members

CDM, Inc.	LDC, Inc.
Chagrin Valley Engineering, Ltd.	Ohio Stream Preservation, Inc.
CT Consultants, Inc.	Partners Environmental Consulting, Inc.
EnviroScience, Inc.	Trout Unlimited-Emerald Necklace Chapter
GPD Group	URS Corporation
The Holden Arboretum	Western Reserve Land Conservancy

### Other 2011 Donors and In Kind Services Providers

Absolute Contracting, Inc.	Ohio Central Basin Steelheaders
Cleveland Metroparks	Trout Unlimited - Emerald Necklace Chapter
Innovative Turf Solutions	US EPA Region 5, Cleveland Office
Lake County Stormwater Management Department	US EPA, National Risk Management Research Laboratory
North Coast Fly Fishers	US Geological Survey Ohio Water Science Center
Northeast Ohio Regional Sewer District	Western Reserve Federation of Conservationists

### 2011 Grant Funders

- Gund Foundation
- NERR Science Collaborative through NOAA and the University of New Hampshire
- Northeast Ohio Regional Sewer District Watershed Grants Program
- Ohio Department of Natural Resources Division of Soil and Water Resources
- Ohio Environmental Protection Agency, Section 319 Grant Program
- Ohio Environmental Protection Agency, Surface Water Improvement Fund
- Ohio Lake Erie Commission, Lake Erie Protection Fund
- Ohio Water Development Authority's Research and Development Grant through the Ohio Lake Erie Commission
- US Environmental Protection Agency - National Community Decentralized Demonstration Project
- US Fish and Wildlife Service – Great Lakes Basin Fish Habitat Partnership

# Member Services

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In 2011, CRWP provided a wide array of services to our Members, including:

- Provided technical assistance and design review of 7 development and redevelopment projects.
- Assisted with 19 sites for open space protection, restoration or stormwater retrofit.
- Community Building and Zoning Codes
  - Assisted 11 communities with updates to stormwater management and erosion and sediment codes.
  - Provided Conservation Development code and code updates to **Bentleyville, Aurora and Mantua Township**.
  - Discussed updated Off Street Parking Codes with **Aurora, Eastlake and Mentor**.
  - Presented Riparian Setbacks and Conservation Open Space Resolutions to **Claridon**.
  - Provided technical assistance to **City of Chardon** with Flood Damage Reduction code.
  - With Lake SWCD assistance, updated **Waite Hill's** ecologically sensitive areas map in coordination with Village zoning code updates.
- Grants
  - Assisted **Aurora, Bainbridge, Russell, Mentor, Munson, Lake Metroparks, and Cleveland Metroparks** with developing grant applications.
  - Provided grant implementation assistance to **Eastlake, Gates Mills, Chester, Mayfield Heights, Hunting Valley, Lake Metroparks, Lake County Stormwater Management Department, Aurora, Bainbridge, Mayfield Village, and the Village of Chagrin Falls**.
- Presented at 8 professional conferences and seminars across the State of Ohio and at the 2011 Low Impact Development Symposium in Philadelphia, PA.

CRWP completed over 50 site visits to individual property owners in 23 separate Member communities in 2011 including:

- Streambank or hillside erosion in **Auburn, Aurora, Bainbridge, Village of Chagrin Falls, Chagrin Falls Township, Chardon, Chester, Hunting Valley, Kirtland, Mantua Township, Mayfield Village, Munson, Moreland Hills, South Russell, Wickliffe, Willoughby Hills, and Willoughby**
- Flooding or stormwater management in **Aurora, Bainbridge, Chagrin Falls, Chester, Claridon, Mayfield Heights, Mentor, Newbury, Pepper Pike, South Russell, Wickliffe, Willoughby Hills and Willoughby**
- Wetland verification in **Auburn, Bainbridge, Solon and Willoughby**
- Pond maintenance in **Auburn, Chester and Hunting Valley**

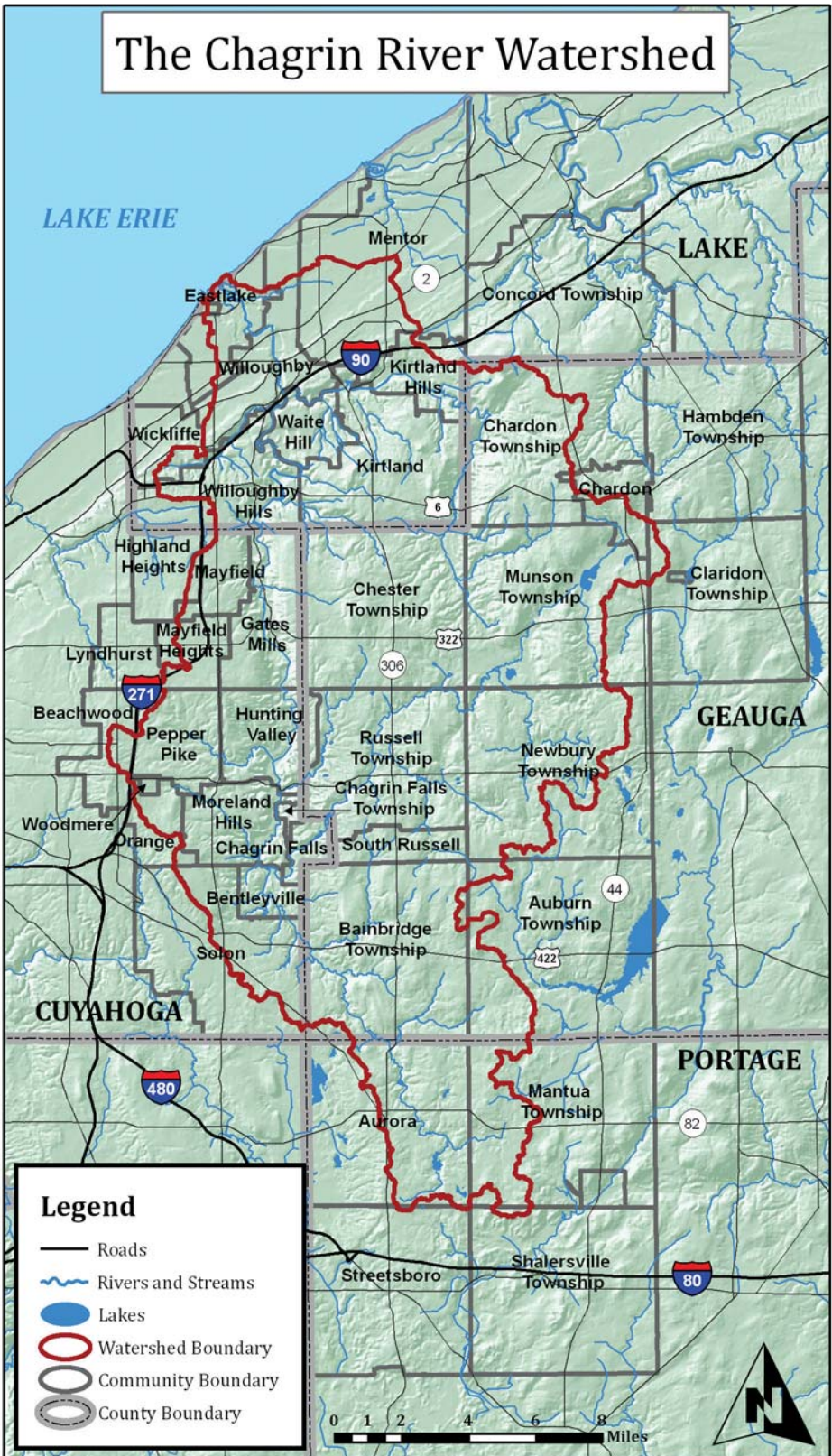
# External Services

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In 2011, CRWP provided technical assistance to:

- Tinkers Creek Watershed Partners (TCWP): Technical assistance on zoning code review for 14 Tinkers Creek watershed communities.
- Northeast Ohio Regional Sewer District: Doan Brook Stream Enhancement Project as part of the CT Consultants team.
- Lorain County Community Development: Update and revise the Black River Watershed Action Plan with Coldwater Consulting, LLC.

# The Chagrin River Watershed



# Demonstrating Innovative Stormwater Management in Northeast Ohio

Low impact development (LID) uses structural best management practices (BMPs) such as rain gardens, bioretention cells and pervious pavement and non-structural BMPs such as conservation development and riparian setbacks to minimize impervious surfaces and promote infiltration and evapotranspiration of stormwater on developed areas. Since 2008, CRWP, U.S. Geological Survey, and the Northeast Ohio Regional Sewer District monitored three U.S. Environmental Protection Agency funded LID demonstration sites in **Orange Village**, **Pepper Pike** and **South Russell**.

## **Cawrse and Associates, Inc. Stormwater Management System, South Russell**

One of the main goals of this project is to demonstrate effective ways to reduce runoff volumes from urbanized areas. No matter how intense the rain event, monitoring verified that the permeable paver parking lot did not generate surface runoff over the top of the pavers. The amount of runoff exiting the paver underdrain decreased from 2009 to 2010; however, there is variability in annual performance over the three year period. In 2009, 33% of the runoff from this parking area was infiltrated or evaporated, while in 2010 the runoff was reduced by 60%. Preliminary data from 2011 indicates the runoff was reduced by 40%. This variability highlights how rain event amount, duration and intensity influence annual performance efficiency of LID BMPs. Much of the runoff reduction observed is due to infiltration beneath the permeable pavers and evaporation from the paver surfaces and upper limits of the gravel base directly underneath the pavers. Understanding long-term runoff reduction performance by stormwater BMPs requires further evaluation of practices.

Permeable pavers allow property owners to reduce winter salt use. Generally, salt (chloride) concentrations of 230 mg/L impair aquatic life use in freshwater ecosystems over time. Water quality data collected at the site indicates relatively low levels of chloride detected throughout the winter and especially during the spring of both 2009 and 2010. All runoff samples contained chloride levels below 185 mg/L with most samples measuring below 30 mg/L. Permeable pavers do not remove chlorides from runoff, but they may allow for the reduction of de-icing salt application due to the thermal warming of the aggregate material below the pavers, melting snow which infiltrates through the pavers and minimizes ice formation. Comparatively, chloride levels measured at the stormwater bioswale located along Chagrin Boulevard in **Pepper Pike**, in front of Orange High School, ranged as high as 3,460 mg/L during winter sampling with average summer collection levels greater than 300 mg/L.



*Permeable Pavers Can Reduce Salt Use*

The U.S. Geological Survey will continue monitoring precipitation and stormwater runoff in 2012 at both Cawrse and Associates in South Russell and Sterncrest Drive in Orange Village with funding provided by U.S. EPA.

## Orange Village Sterncrest Drive Drainage Improvement

Bioswales installed along Sterncrest Drive, a residential road in Orange Village, continue to manage chronic flooding. The bioswale data collected for this project measures the pollutant and runoff reduction and promotes LID stormwater practices in new and redeveloped areas. Since construction of the bioswales in 2007, flooding has not occurred along this portion of Sterncrest Drive.

A slow steady rain over several days can flood the bioswales and cause overflows into the storm sewer catch basins in the bioswales. In other situations a short, intense storm can cause an overflow. Flow data collected from 2008 through 2010 recorded 22 overflow events out of 133 precipitation events when the bioswales could not infiltrate all the runoff received during the storm event. The system continues to perform better than expected in that the bioswale was still able to infiltrate the runoff volume through its soil media during many of the precipitation events that exceeded the bioswale's runoff design criteria.

The water quality data, while still inconclusive in some areas, shows that the bioswales are functioning as intended. They are infiltrating runoff, removing pollutants associated with sediments and particulate matter, and transforming and removing excess nutrients such as phosphorous and nitrogen. As surface runoff infiltrates through the soil media of the bioswales during the fall, winter and spring, the bioswales are effectively removing phosphorous from the runoff. The nitrogen concentrations of the runoff are being reduced in the spring and summer when both plants and soil microbial processes in the soil media are active, but treatment decreases during fall and winter when the plants are dormant and microbial activity slows.



*Bioretention Cells Reduce Runoff and Remove Sediment and Nutrients*

## Chagrin River Watershed Stream and Wetland Mitigation Bank Project

CRWP continues to research and work on implementation of a stream and wetland mitigation bank in the watershed to ensure mitigation efforts are completed locally and not exported to adjacent watersheds. CRWP, **Cleveland Metroparks** and EnviroScience presented a draft prospectus to the Interagency Review Team on March 2, 2011.

CRWP has selected the two highest priority sites: North Chagrin Reservation in **Mayfield Village** and **Willoughby Hills** and the Chesnes Property in **Aurora**.



*Potential Mitigation Area in North Chagrin Reservation*

# Assisting Members with Phase II Compliance in 2011

In 2011, CRWP provided a wide array of services to our Members, including:

- Provided updates to erosion and sediment control and stormwater management codes to **Eastlake, Kirtland, Kirtland Hills, Lake County Stormwater Management Department, Mayfield Heights, Mayfield Village, Orange Village, Solon, Wickliffe, Willoughby, and Willoughby Hills.**
- Assisted **Aurora, Chagrin Falls Village, Eastlake, Kirtland, Lake County Stormwater Management Department, Lake Metroparks, Mayfield Village, Orange Village, and Solon** with Good Housekeeping training, program review, and developing Stormwater Pollution Prevention Plans for maintenance, storage, and service facilities.
- Participated in the Northeast Ohio Stormwater Training Council and assisted with workshops, including:
  - Stormwater Solutions for Existing Urbanized Areas: Retrofitting in Northeast Ohio, which highlighted the **Mayfield Heights** City Hall Stormwater Retrofits.
  - Assisted with planning a workshop on Post-Construction Practices for Public Roadways.
  - Presented at an LID workshop with Dr. Bill Hunt of North Carolina State University.
- Provided Phase II email updates on trainings, permit requirements, and articles for newsletters.

**Lake Metroparks** has been working with CRWP to ensure that all park facilities meet Phase II compliance standards, including:

- Development of Stormwater Management Program Plans for 5 facilities.
- Performed good housekeeping reviews of 9 park facilities.
- Completed training on MCM 4: Construction Site Runoff Control and MCM 5: Post-Construction Stormwater Management with **Lake Metroparks** staff.
- Investigated opportunities for stormwater retrofits at **Lake Metroparks** facilities.

CRWP is exploring similar reviews, plan development, and training with **Cleveland Metroparks** and **Geauga Park District**.



*Bioretention Retrofit at Lake Metroparks  
Environmental Learning Center*



*Spill Kit at Lake Metroparks Facility*

## Member Projects Funded by Ohio EPA Section 319 Grants

There is currently over \$1.8 million in 319 grant funding for projects in the watershed.

### Pleasant Valley Park Floodplain Restoration Project – Lake Metroparks

**Lake Metroparks** acquired the Pleasant Valley Park along the Chagrin River near the Pleasant Valley Bridge in 2007. CRWP assisted **Lake Metroparks** in acquiring and administering a \$303,586 grant to restore this former nursery to a naturally functioning floodplain and riparian corridor. This project will remove 650 linear feet of earthen levee along the Chagrin River to enable the river to access its historical floodplain. In addition, 9.2 acres of gravel driveways and nursery growing areas were removed and existing drainage tiles were crushed to restore a historical 3.5 acre wetland. Further floodplain restoration will re-establish 17 acres of floodplain forest and meadow. This project will be completed in early 2012 to increase floodplain storage, enhance water quality treatment and improve wildlife habitat along the Chagrin River in **Willoughby Hills** and the downstream communities of **Eastlake, Willoughby,** and **Waite Hill**.

### Parking Lot Retrofit Demonstration Project at Mayfield Village's Wiley Park

**Mayfield Village** continues to implement stormwater retrofit projects to protect the Fosters Run tributary from destructive stormwater flows. Building on its 2005 floodplain restoration project along Fosters Run, **Mayfield Village** received a \$184,429 grant to implement stormwater retrofits at its newly renovated Wiley Park facility adjacent to the new police station. An 8,000 square feet permeable paver parking lot and a 650 square feet bioretention cell will treat and slow stormwater flows to Fosters Run.



*Pervious Paver Underdrain and Curb Cuts Drain to Bioretention Cell*

### City of Aurora Harmon Homestead Restoration Project

**Aurora** received a \$475,075 grant to restore over 3,000 linear feet of stream and floodplain, 3 acres of wetland, enhance 4 acres of existing wetland, restore and enhance 17.5 acres of riparian and wetland buffer, and preserve 100 acres of the Harmon Homestead property. Located at the headwaters of both the Aurora Branch of the Chagrin River and the Cuyahoga River watersheds and upstream of Sunny Lake, this property is part of the City's ongoing efforts to improve the water quality of Sunny Lake and the Aurora Branch of the Chagrin River. Construction is expected to begin in the summer of 2012. CRWP assisted **Aurora** with the grant proposal, grant administration, and conceptual plans for restoration on the property.



*Impaired Stream on Harmon Property*

## Kenston Lake Dam Modification Bainbridge Township

The Kenston Lake dam was built in 1959 and did not meet ODNR's current dam safety standards. The dam overtopped 3 times between 1969 and 2006 due to the lack of an emergency spillway and an undersized outlet. Kenston Lake Drive, a Township road, is on top of the dam and is the sole access to 12 homes.

Kenston Lake drains to Linton Creek and eventually to the Aurora Branch of the Chagrin River. Both Linton Creek and this portion of the Aurora Branch are coldwater habitat streams that support fish and aquatic bugs that are adapted to cool, groundwater fed streams which maintain constant cool stream temperatures. Over 80% of the stream segments in the Chagrin River watershed are Exceptional Warmwater Habitat (EWH) or Cold Water Habitat (CWH) streams. This is the highest percentage of EWH and CWH tributaries of all the major rivers in northeast Ohio. When lakes are constructed in coldwater streams, they warm the water and impact the coldwater habitat biology downstream.

In October 2006, **Bainbridge** hosted a meeting for Kenston Lake residents where CRWP and ODNR presented on dam safety, maintenance issues, and funding opportunities for dam removal. At the end of this meeting, only a few property owners expressed an interest to repair and maintain the dam. In 2008, the Township received a \$294,900 grant to remove the dam and restore the stream. This project included the cooperation of 4 dam owners, 2 of whom did not have lake access, and 10 lake property owners. The dam was removed

in late 2010 by drilling a new culvert at the toe of the dam to convert the lake back into a stream. **Bainbridge** contracted with EnviroScience, GPD Group, and RiverReach Construction to design and construct the stream restoration. 1,635 linear feet of stream and 0.52 acres of wetland were restored in the former lake bed in 2011 through floodplain excavation, riffle construction, stream bank stabilization and planting 620 trees and shrubs and 950 herbaceous plants in the riparian corridor. This restoration removed a hazardous dam and provides a stable stream with a forested riparian corridor. The former lake bed contains a number of springs that create wetlands. The wetlands and stream provide flood control, erosion control, wildlife habitat, and restores a coldwater source to the downstream coldwater habitats of Linton Creek and the Aurora Branch.



*New Culvert Installation at Kenston Lake Dam*



*Streambank Stabilization at the Former Kenston Lake*



*Floodplain Restoration at the Former Kenston Lake*

## IVEX Lower Dam Modification Village of Chagrin Falls

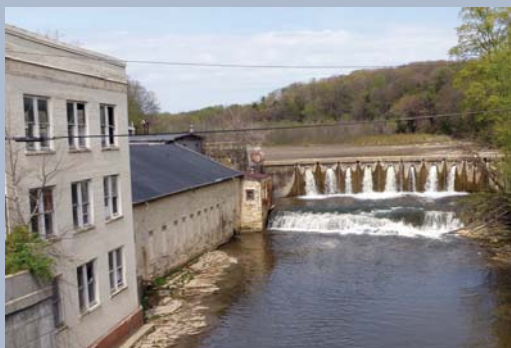
CRWP assisted the **Village of Chagrin Falls** with a \$400,800 grant application, awarded in 2008, to modify the lower IVEX Dam and restore over 3,000 linear feet of the Chagrin River in the lowered dam pool. After submittal, the property was purchased by the Spillway development group who proposes to repurpose the original 1858 structure into a brewery, restaurant, outdoor plaza, office, and other commercial uses.

The Village continues to work with Spillway to ensure the responsible redevelopment of the property, lowering of the dam, restoration of the Chagrin River, and expansion of Whitesburg Preserve. Spillway, the Village, and CRWP worked with the Army Corps of Engineers, Ohio EPA, ODNR, and the State Historic Preservation Office to obtain the permits for dam construction and stream restoration, including mitigation for impacts to the historic dam structure.

The dam is being lowered incrementally and began by drilling a series of weep holes in the dam to dewater areas upstream and allow the stream to establish natural stream features including riffles, pools, and accessible floodplain. The next steps will be to permanently lower the concrete spillway of the dam and restore the stream channel and riparian corridor throughout the lake bed. This project lowers the risk of future problems with the dam as the amount of water that can be impounded behind the lower dam will be much less.



*Drilling Weep Holes in IVEX Lower Dam*



*Weep Holes Dewatering the Dam Pool Upstream*



*Natural Riffle Forming Upstream After Dewatering*



# Member Projects Funded by the Ohio EPA Surface Water Improvement Fund

In 2010, CRWP assisted 14 communities in preparing Ohio EPA Surface Water Improvement Fund (SWIF) grant proposals. Five of these proposals were funded in early 2011 for a total of \$660,343 in funding for Member projects.

## Mayfield Heights Green Infrastructure Demonstration and Showcase Project

**Mayfield Heights** received a \$231,900 grant to retrofit their municipal complex with stormwater BMPs to showcase green infrastructure practices for residential, commercial, and light industrial use. Construction was completed in July of 2011 and the site is being monitored for stormwater quantity capture through fall of 2012. The project was featured in the Northeast Ohio Stormwater Training Council's Urban Stormwater Retrofit Tour in September 2011 and includes three components:

*Rain Garden:* The rain garden collects and filters stormwater from a portion of the City Hall roof equal to about half the size of a typical residential roof (1,500 square feet). The rain garden drains in 24-48 hours and features native plants selected to withstand large amounts of water, de-icing salt, pollution, and periods of dry weather.

*Permeable Parking Area:* Nineteen parking lot spaces were converted to permeable concrete that collects and infiltrates runoff from an area similar in size to a small business or commercial area. The surface can be plowed and only requires annual vacuuming to work at peak infiltration capacity.

*Forested Parking Lot:* A combination of tree vaults, bioretention, and permeable pavement treats stormwater and provides shade to over 85 parking lot spaces. Tree shade reduces the overall heat of the lot and helps prevent heated stormwater from entering our stream system. The stormwater is filtered by the permeable pavement and used by the trees, while the bioretention islands collect, treat, and infiltrate stormwater with native plantings.



*Rain Garden*



*Permeable Concrete Parking Area*



*Bioretention Island with Trees for Shade*

## City of Eastlake Service Department Bioretention Demonstration Project

**Eastlake** received a \$64,479 SWIF grant to remove 2,700 square feet of asphalt at the Service Department parking lot on Lakeshore Boulevard and construct two bioretention cells in its place. This project, completed in September 2011, shows how innovative stormwater retrofits can be incorporated into existing parking lot areas. CRWP assisted the City with the grant application, grant reporting and project deliverables.



*Eastlake Service Department Bioretention Cell  
Parking Lot Stormwater Retrofit*

## Stormwater & Salt Remediation Demonstration Project Concord Township

Concord received a \$61,644 grant to construct a 465 square feet bioretention cell and 1,400 square feet of permeable pavers to treat stormwater runoff from the Concord Town Hall parking lot. CRWP assisted Concord and the **Lake County Stormwater Management Department** with the grant application and design review for this project. A 3,200 square feet subsurface gravel wetland and a vegetated swale were constructed to capture and treat stormwater runoff from the service department salt storage area. The subsurface gravel wetland mimics the function of a natural wetland, effectively removing pollutants found in runoff while adding a greenscape buffer. This innovative stormwater practice is the first of its kind to be installed in northeast Ohio.



*Concord Township Subsurface Gravel Wetland*

## SWIF Projects with Construction Scheduled for 2012

- **Hunting Valley** received \$137,500 to stabilize 400 linear feet of eroding river bank on the Chagrin River adjacent to Chagrin River Road with vegetative riprap.
- **Gates Mills** received \$87,525 to construct a 1,750 square feet bioretention cell and 1,000 square feet rain garden at the Village Hall Complex to treat stormwater runoff.
- **Chester** received \$77,295 to construct three bioretention cells totaling 1,300 square feet and 3,806 square feet of permeable pavers at the Chester Town Hall parking lot, and a 1,000 square feet rain garden at West Geauga High School.

# CRWP Training for Members

## Dam Safety Meeting

In October 2011 CRWP hosted a Dam Safety Meeting in cooperation with ODNR and Lake, Geauga, Cuyahoga, and Portage SWCDs. The workshop provided information on:

- Pond maintenance and management
- Dam owner responsibilities and liabilities
- How dams work and why they fail
- Ohio dam safety law

Eighty-six people attended the meeting, representing 27 communities across 9 counties, including residents or representatives from 17 CRWP Member communities. Many attendees were private dam owners or representatives of homeowner associations who felt they benefited most from learning about their class of dam, how to inspect a dam for potential trouble, who to call for help, how to put an Emergency Action Plan in place, and general liability and safety information. Presentations are available on CRWP's website.



*Martin Joyce and Rodney Tornes, ODNR*



*Dam on the East Branch*

## Roadside Ditch Erosion Control

Sediment remains the #1 pollutant in Ohio's streams, including the Chagrin. Routine roadside ditch maintenance can contribute significant amounts of sediment to local waterways. The Ohio Lake Erie Commission awarded CRWP a Lake Erie Protection Fund grant to provide training to local road departments to reduce sedimentation through improved roadside ditch management. During the October demonstration training, Absolute Contracting, Inc. and Innovative Turf Solutions showcased innovative erosion control BMPs that include adding biostimulants to seed mixes, applying super absorbent hydro mulch, and installing alternative check dam practices. Over 60 participants representing 21 different public roadway and park district departments attended. **Lake and Geauga County** Engineer Offices and the **Lake County Stormwater Management Department** installed BMPs at three additional demonstration sites to provide additional installation training. Lake and Geauga County SWCDs will conduct BMP performance monitoring.



*BMP Demonstration by Absolute Contracting, Inc.*



*Straw Wattle and Hydroseed Mix Applied by Lake County Engineering Department*

## Sulphur Springs Restoration and Assessment Project

CRWP was awarded a \$46,000 grant from US Fish and Wildlife Service's Great Lakes Basin Fish Habitat Partnership to restore and assess a segment of Sulphur Springs in **Solon** and **Bentleyville** as a potential site for the reintroduction of Ohio brook trout. CRWP is partnering with **Cleveland Metroparks** and Emerald Necklace Chapter of Trout Unlimited to restore 400 linear feet of stream and riparian corridor impacted by a historic impoundment. **Cleveland Metroparks** is monitoring the stream to assess impacts of urbanization on stream temperature, flow, and sediment. CRWP will develop educational materials and provide recommendations to residents and communities on stormwater management, local development codes, land protection, and riparian reforestation.



*Ohio Brook Trout by Cleveland Metroparks*

## Identifying Members' Needs and Challenges

CRWP was awarded a \$25,000 grant from the Gund Foundation to better serve our Members by identifying the needs and challenges of each Member to effectively address and solve water quality issues in the Chagrin River watershed. This project will allow CRWP to determine and implement future services that will provide the best long range results for Members and improve the overall health of the Chagrin River watershed and Lake Erie. CRWP will contract with the Great Lakes Environmental Finance Center at Cleveland State University to complete the Member needs assessment by assisting CRWP with focus groups and community interviews and developing the strategic work plan. We look forward to working with all of our Members on this project to tailor CRWP services to each Member.

## NERR Science Collaborative Grant

CRWP has been awarded the largest grant in our history - \$821,000 for a three year project beginning in November 2011. The grant is from the National Estuarine Research Reserve (NERR) System Science Collaborative which is a cooperative agreement between NOAA and the University of New Hampshire. CRWP is collaborating with the Old Woman Creek NERR, ODNR, and Erie SWCD to implement more effective stormwater management in Ohio's Lake Erie Basin.



*Curb Cut to Bioretention Cell*

Ohio communities have stormwater peak discharge requirements for flood control and Ohio EPA's requirements for treatment of a water quality volume. Additional research focused on local soil and climatic conditions are needed to manage the water quantity and quality volumes more effectively. As a part of this project, CRWP will assist with design and monitoring of several LID BMPs, complete modeling, develop technical information and tools, and provide training. This project will also highlight the role of LID in adapting to changes in rainfall volumes and intensities as a consequence of climate change.

CRWP is a non-profit organization that provides technical assistance to its Members and develops cost effective, prevention-focused solutions to minimize new, and address current, natural resource management problems as communities grow. The Chagrin River watershed is a high quality natural resource that is increasingly impacted by urban/suburban development which increase flooding, erosion, and water quality problems. Faced with rising infrastructure costs as a result of these impacts, the cities, villages, townships, counties, and park districts of the watershed formed CRWP in 1996. CRWP is now an established organization that has grown from 16 Members in 1996 to 36 Members in 2011, representing 94% of the watershed.

## 2012 Meeting Dates

### BOARD OF TRUSTEES

February 9, 2012  
May 10, 2012 (Annual Meeting)  
September 18, 2012  
December 6, 2012

### EXECUTIVE COMMITTEE

January 23, 2012  
March 19, 2012  
April 16, 2012  
June 18, 2012  
August 20, 2012  
October 15, 2012  
November 19, 2012

For more information contact:



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