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.
We’re hearing a lot of talk about sustainability lately, and with good reason. We are faced with difficult problems on a world wide scale as we try to conserve and protect the natural resources that sustain us. Major concerns include everything from the heat balance of the Earth to energy supplies, rain forests, fresh water, oceans, and soils. We can no longer act as if the resources that sustain are infinite. This means that future development must provide for our long-term needs without totally depleting resources or destroying the life-supporting systems of the biosphere.

What does this have to do with the work of a local watershed partnership? Actually, a lot. In addition to state, national, and international efforts, it will take significant efforts at the regional and local levels to build sustainability into our society. Maintaining the Great Lakes as a top notch fresh water reserve is a major concern. Fortunately, the members of the Chagrin River Watershed Partners are working hard to protect the quality and quantity of water in the Chagrin River.

Local leaders realized in 1996, when they formed CRWP, that the best way to sustain our local built environment and economy is to use nature’s own resources to perform the water management services we need, rather than to build expensive and hard to maintain structures. Nature’s services include everything from the nuts and bolts of diffusing and distributing rain water runoff without erosion and pollution, to providing our beautiful forest, field, and stream habitats. When we bulldoze, excavate, and pour concrete, we destroy nature’s systems and then are committed to spending lots of energy and materials in an effort to construct and maintain engineered solutions to replace them.

For almost fourteen years now the CRWP staff has worked with you to create low-cost ways of maintaining nature’s systems while still accommodating reasonable development. Our set of tools includes two basic approaches to the water management problem. First, we assist in the preservation of open space, which is the source of nature’s services. In some cases this may mean the acquisition of important natural features, from mature woodlands to wetlands to river floodplains. In other cases it means siting structures appropriately away from water courses, or clustering development to minimize land disturbance and protect natural features. Second, we offer communities help in applying all the tools of what we call “low impact development,” including the creation of natural features to absorb runoff water and stop erosion, or the use of clever engineering designs to mimic the functions of nature.

In 2008 and 2009 we have put a lot of effort into a new program to help our Members develop the Chagrin River Watershed Balanced Growth Plan. Balanced growth is an effort to take a broader view of sustainability by identifying specific areas within each community where the emphasis will be on development or on conservation. Within each area the appropriate tools can then be applied to maximize resource protection and minimize cost. The Plan will provide a foundation for guiding the future development of each community and of the watershed as a whole. It will help to make our watershed more sustainable by using existing infrastructure to support development and by encouraging the conservation of open space lands.

We are grateful to all our partners who have supported our work this year, including the Ohio Department of Natural Resources, the US Environmental Protection Agency, the Ohio Environmental Protection Agency, and the Ohio Lake Erie Commission, the Northeast Ohio Regional Sewer District, the US Geological Survey. A special thanks is due to all the Member communities and organizations who have maintained with us a fourteen year commitment to the wise use of resources while we protect the natural habitats and beautiful landscapes of the Chagrin River valley.

Greg Studen, President, Chagrin River Watershed Partners, Inc.
thank you  CRWP’s 2009 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 and Portage County Departments of Water Resources; the Ohio Environmental Protection Agency; the Ohio Department of Natural Resources; the Ohio Lake Erie Commission; the Northeast Ohio Regional Sewer District; the US Environmental Protection Agency; and the US Geological Survey.

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

2009 CRWP Sponsoring Members
CDM, Inc.
Chagrin Valley Engineering, Ltd.
CT Consultants, Inc.
EnviroScience, Inc.
The Holden Arboretum
Ohio Land Stewardship
Partners Environmental Consulting, Inc.
Stantec Consulting, Inc.
TranSystems Corporation
Trout Unlimited-Emerald Necklace Chapter
URS Corporation
Western Reserve Land Conservancy

Other 2009 Donors
North Coast Fly Fishers
Ohio Central Basin Steelheaders
Western Reserve Federation of Conservationists

2009 In Kind Services Provided by
Cuyahoga County Board of Health
Northeast Ohio Regional Sewer District
US Environmental Protection Agency, (US EPA) Region 5, Cleveland Office
US EPA, National Risk Management Research Laboratory
US Geological Survey, Ohio Water Science Center

2009 Grant Funders
Cooperative Institute for Coastal and Estuarine Environmental Technology (CICEET)
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 Lake Erie Commission’s Lake Erie Protection Fund
Ohio Water Development Authority through Ohio Lake Erie Commission’s Balanced Growth Pilot Project
Ohio Water Development Authority Research and Development Grant through Ohio Lake Erie Commission
US EPA - National Community Decentralized Demonstration Project
CRWP is a collaboration of 36 cities, villages, townships, counties, and park districts working on innovative solutions to flooding, erosion, and water quality problems to minimize the impacts of development and limit local infrastructure costs. CRWP’s founding principles are:

Natural systems provide flood control, erosion control, and water quality protection services that should be maintained as land is developed.

It is more cost effective for local governments to take planning and development steps to maintain these services than to pay for costly, and generally less effective, remedial solutions.

**CRWP** responds directly to the needs of Member communities, elected officials, engineers, planners, law directors, and other professional advisors by helping them update comprehensive plans, zoning regulations, and other programs guiding land use. CRWP has assisted communities by introducing innovative practices that maintain natural resource functions and prevent or minimize flooding, erosion, and water quality problems. These practices include CRWP’s recommended watershed management tools for planning, riparian and wetland setbacks, conservation development, improved erosion and sediment control, comprehensive stormwater management, open space acquisition, stream restoration and stormwater retrofits.

**In 2009 CRWP’s work included:**

- Drafting and implementing the *Chagrin River Watershed Balanced Growth Plan*, endorsed by the State in September 2009.
- Working with CRWP Members on Comprehensive Land Use Plan Updates.
- Providing tools to communities to fund and use innovative stormwater Best Management Practices.
- Monitoring of demonstration projects for distributed stormwater management.
- Implementing the *Chagrin River Watershed Action Plan*.
- Providing riparian and wetland setback implementation assistance.
- Assisting Members to update their flood damage reduction codes.
- Assisting Members with Phase II compliance.
- Prioritizing potential mitigation sites for a CRWP sponsored stream and wetland mitigation bank.

For more information about CRWP programs, visit [www.crwp.org](http://www.crwp.org).
The Chagrin River Watershed
Progress on Member Priority Projects

- **Eastlake** Port Authority and **Lake Metroparks** protected Anchor Island at the mouth of the Chagrin River.

- In response to localized flooding, erosion, and infrastructure needs, **Kirtland**, **Mentor**, and **Lake Metroparks** are investigating opportunities for stormwater retrofits.

- CRWP assisted several communities with open space protection through support for grant applications and technical support in **Chagrin Falls**, **Hunting Valley** and **Eastlake**.

- CRWP has been working with numerous communities on dam modification, and stream and wetland restoration projects, including:
  - Kenston Lake, **Bainbridge**
  - Spillway/IVEX, **Chagrin Falls Village**
  - Orchard Hills Golf Course, **Geauga Park District**
  - Shadybrook, Holden Arboretum in **Kirtland Hills**

- CRWP worked with **Auburn**, **Eastlake**, and **Mentor** to update their land use plans.

Solving Member Concerns

In 2009, CRWP provided a wide array of services to our Members, including:

- Completed over 45 site visits to individual property owners in 16 separate Member communities.

- Assisted with the implementation, planning, support, and application for 13 grants to promote Member priorities.

- Presented at 18 professional conferences and seminars across the State of Ohio.

- Provided technical assistance and design review of 6 development projects.

- Assisted 18 Members with adoption, implementation, and review of local zoning regulations including riparian and wetland setbacks, conservation development, comprehensive stormwater management, erosion and sediment control, illicit discharge detection and elimination, and flood damage reduction.

- Assisted 4 Members with coordination of US Army Corps of Engineers and Ohio EPA permitting.

- Completed special presentations on GreenScapes, Septic System Operation and Maintenance, and more!
NPDES Phase II Stormwater Management Update

In January 2009, Ohio EPA finalized a new National Pollution Discharge and Elimination System (NPDES) Phase II permit to cover Phase II communities from January 2009 through January 2014. Twenty-two CRWP Member communities are regulated under this permit and have been implementing their stormwater management programs since 2003. The new permit includes several new amendments that require updates to community stormwater programs.

Assisting Members with Phase II Compliance in 2009:

• Updated Members on new conditions for new Phase II permit.

• Provided Orange Village, South Russell, and the Lake County Stormwater Department with updates for Erosion and Sediment and Stormwater codes to be compliant with the new permit.

• Distributed 8 Phase II email updates covering a range of Phase II related topics such as upcoming training, permit requirements, and public education articles on Sensible Salting and yard tips.

• Partnered with the Geauga Soil and Water Conservation District to provide evening programs for Geauga County residents in Bainbridge, Chester, and Russell on GreenScaping Your Yard, and the Operation and Maintenance of Septic Systems and Drinking Water Wells with the Geauga County Health District.

• Provided assistance to Chester, Gates Mills, and Willoughby with Ohio EPA Stormwater Program Reviews.

• Participated in the Northeast Ohio Stormwater Training Council and presented at workshops to help Phase II communities manage their stormwater programs. These workshops are available for review and employee training online on CRWP’s website under “Events”.

Assisting Members with Phase II Compliance in 2010:

• CRWP will launch a regional website in early 2010 to help communities provide online information on stormwater issues to their residents.

• Assist Members with implementation and updates to their stormwater programs.

• Provide employee training on Phase II permit compliance steps and program implementation.

• Assist in developing post-construction inspection and maintenance programs.

• Provide zoning and code adoption assistance to Members for codes that can help meet Phase II requirements. These include but are not limited to:
  • Comprehensive Stormwater Management
  • Conservation Development
  • Erosion and Sediment Control
  • Off-Street Parking
  • Riparian and Wetland Setbacks
CRWP Recommended Codes

CRWP worked with numerous communities on adoption and implementation of local codes. CRWP recommends that all communities complete comprehensive plans, open space plans and acquisition, as well as consider adopting planning and zoning codes to prevent or minimize flooding, erosion and water quality problems.

Riparian and Wetland Setbacks

Over 50 communities in Northeast Ohio have adopted regulations for riparian and wetland setbacks, including 14 CRWP Member communities. Many of these communities have used CRWP’s model code. CRWP assisted Aurora, Auburn, Chagrin Falls Village and Moreland Hills with implementing existing riparian and wetland setback codes. In addition we worked with Bentleyville and Hunting Valley on revising their riparian setback codes. We drafted maps and presented on riparian and wetland setback codes to Claridon, Mentor, Wickliffe, and Willoughby.

CRWP completed a Riparian Setback Parcel Inventory identifying parcels that have more than 30% of the parcel affected by riparian setbacks. This analysis may highlight opportunities for property acquisition, adoption of riparian and wetland setbacks, or consideration of conservation development to protect valuable flood storage and stormwater management functions provided by these riparian parcels. CRWP will continue to work with all Member communities to identify potential parcels and funding for acquisition to preserve the green infrastructure provided by existing streams, wetlands, and floodplains.

Erosion and Sediment Control and Comprehensive Stormwater Management

As Ohio EPA updated their General Construction Permit, communities must update their Erosion and Sediment Control and Comprehensive Stormwater Management codes to ensure compliance with these new permit requirements. All Phase II communities must update their codes by the end of 2010.

- Gates Mills adopted these codes in 2009.
- CRWP is discussing updates to these codes in Orange Village, South Russell and Claridon and with the Lake County Stormwater Department as a service to their Member communities.
Flood Damage Reduction
As the Federal Emergency Management Agency revises floodplain maps, communities must update their Flood Damage Reduction Codes in order to continue participation in the National Floodplain Insurance Program. In 2009, CRWP worked with Aurora, Chardon, Eastlake, Hunting Valley, Kirtland, Wickliffe and Willoughby Hills on revising flood damage codes and considering higher standards. Lake County community codes need to be updated by February 3, 2010 with references to the new floodplain maps. In addition CRWP assisted Chagrin Falls Village in technical review of a development proposal in the floodplain.

Conservation Development
CRWP presented the model Conservation Development District Code to planning and zoning committees in Bentleyville and Claridon. CRWP has developed a model zoning regulation for a Conservation Development District that can be tailored to local municipalities. The Geauga County Planning Commission has developed a Planned Residential Development - Conservation Open Space District for consideration by Townships. CRWP also reviewed Aurora’s existing Conservation Subdivision code and recommended changes to update this code.

Illicit Discharge Detection and Elimination
As a part of their Phase II stormwater programs, Aurora, Gates Mills and Willoughby Hills adopted Illicit Discharge Detection and Elimination codes.

Updated Parking Regulations
CRWP completed a review of parking codes in Bainbridge, Chester, and Eastlake to identify opportunities to minimize impervious cover, provide alternative parking arrangements and allow porous paving alternatives. Many communities’ parking codes are outdated resulting in the creation of oversized parking lots that do not provide any stormwater management or aesthetic value.
The Chagrin River Watershed Balanced Growth Plan was endorsed by the Ohio Lake Erie Commission (OLEC) on September 28, 2009. Sean D. Logan, Director, ODNR and Edwin J. Hammett, Executive Director, OLEC attended CRWP’s December 3rd Board of Trustees meeting for a special presentation recognizing the Plan endorsement.

This Plan promotes the conservation and development goals of Chagrin communities. From 2006-2009, CRWP worked with a Balanced Growth Steering Committee and Chagrin River watershed communities to:

- Locally identify Priority Conservation Areas (PCAs) and Priority Development Areas (PDAs),
- Identify action measures for each community to implement the PCA and PDA designations,
- Incorporate the balanced growth planning concepts and PCA and PDA designations into community comprehensive land use plans,
- Incorporate locally designated PCA and PDA designations and recommendations for implementation into the Chagrin River Watershed Balanced Growth Plan.
Implementing Balanced Growth

CRWP and watershed communities worked to ensure that designated PDAs throughout the Chagrin River watershed linked to transportation, water, and sewer infrastructure, and local planning and economic development goals. The PCA designations promote the protection of existing green space and preservation of additional critical areas to minimize loss of habitat, farmland, forest, and open space.

The best way to develop a PDA or to protect a PCA is for a community to own those properties and control their development or conservation. This is also the most costly approach. Planning and zoning tools offer lower cost, market driven approaches to manage development and conservation. Implementation tools include:

- Adopt best local land use practices
- Acquire additional open space
- Update community comprehensive land use plans to include balanced growth concepts
- Continue coordination with local economic development directors and initiatives
- Facilitate implementation of streams and wetland mitigation in line with this Plan
- Use transfer of development rights (TDR) and revenue sharing

Through funding from Cooperative Institute for Coastal and Estuarine Environmental Technology (CICEET), CRWP and the Lake County Planning Commission worked with the Cities of Eastlake and Mentor to complete updates of the community comprehensive land use plans as a part of the balanced growth planning effort.

In 2009, CRWP worked with the Lake County Port Authority, OLEC, Toledo Area Metropolitan Area Council of Governments and the Ohio Department of Development to submit a grant application for potential brownfields assessment from US EPA. If granted, funding will be available for communities that endorsed locally designated PCAs and PDAs and the Chagrin River Watershed Balanced Growth Plan to complete Phase I and Phase II environmental assessments on parcels targeted for development or conservation activities.
Demonstrating Innovative Stormwater Management in Northeast Ohio

In 2006, CRWP received funding from the US EPA National Community Decentralized Demonstration Project to assist Members in implementing innovative stormwater management techniques. This project included funding to design, construct, and monitor four low impact development demonstration projects. All four projects have been constructed and are functioning with great success. The monitoring program, partially funded by the Lake Erie Protection Fund, commenced in 2008 and will continue through 2010.

Short videos demonstrating the installation of the Cawrse and Associates, Orange Village, and the City of Pepper Pike projects were produced and can be viewed from the CRWP website. These videos demonstrate the installation process as well as the monitoring program.

Cawrse and Associates, Inc. Stormwater Management System, South Russell Village

Project Goal: Mitigate stormwater runoff from a new private office building and parking area using a combination of low impact development best management practices (permeable pavers, rain garden and vegetated swale) and a traditional stormwater pond.

This project has been a great success. The pervious pavement parking area operated as designed throughout the winter with only one instance where salt was used. The parking area was snow plowed as usual without extra precautions.

Craig Cawrse, Property Owner: “We have received a tremendous amount of positive feedback on the pavers, rain garden and swales.”

Mayor Matthew Brett: “The Village is very pleased with the project, and it has been a great solution to a flooding problem. The end result has alleviated the flooding for residents. Talking with some residents they no longer have problems.”

Munson Township Scenic River Retreat Rain Garden Project

Project Goal: Install three rain gardens to manage the runoff from two park pavilions and a parking lot at the Scenic River Retreat and promote their use in Munson Township.

Andrew Bushman, Township Trustee: “Residents have been commenting on how beautiful the flower gardens are at the Scenic River Retreat. When we explain that they are a stormwater management tool they are really amazed and start to ask questions about rain gardens.”
Orange Village Drainage Improvement Project, Sterncest Road

**Project Goal:** Use a linear bioretention swale system within the right-of-way of a residential street to reduce and treat stormwater runoff before connecting to an existing storm sewer system.

Sampling results from the first year of data collection show the system is working well with the majority of runoff from rain events infiltrating through the soil. There were only six rain events during this time where all the runoff was not infiltrated through the bioretention soils. The data is showing the soil and plants are reducing excess pollutants, such as nitrogen, in runoff that does infiltrate through the soil.

Mayor Kathy Mulcahy: “The Sterncrest Project included a drainage improvement and road resurfacing in an area that was a source of regular and repeated flooding. This project provided an ideal opportunity for the Village to pursue a green solution to an existing drainage problem while educating our residents as well. The project was funded by a grant from Chagrin River Watershed Partners as well as funding from Moreland Hills. The existing problem was corrected within the right-of-way and the drainage channels were not disturbed. The installation of the rain garden is a great example of a new and effective way to clean water and to minimize flooding.”

Councilman Dan Brown, Village: “When I began on council in 2000, I regularly heard from residents on Sterncrest Road about flooding problems. Since the installation of the stormwater system in 2007, I have not heard any concerns regarding flooding on the street. It is highly gratifying that this flooding problem was solved using green infrastructure techniques that will hopefully be a model for other communities.”

City of Pepper Pike Bioretention Project, Chagrin Boulevard, Fox Hollow Drive

**Project goal:** Showcase bioretention areas along Fox Hollow Drive, a residential street, and Chagrin Boulevard, a public street, as an alternative to the standard open ditch or culvert system.

This project has been in the ground for over a year and plants and soils are working as designed. The plants chosen for the bioretention areas have flourished. Because of the use of salt along Chagrin Boulevard in the winter, there were concerns that the plants would have problems establishing and growing, but this has not been the case.

Mayor Bruce Akers: “This project is a visible demonstration of sound stormwater management that communities can embrace, and one that involved the students in an education project by installing and maintaining the bioretention swale which helps to improve water quality.”

Councilwoman Paulette Morganstern: “The Fox Hollow Drive and Chagrin Boulevard projects provided a beautiful visual enhancement.”
CRWP Stream and Wetland Mitigation Bank

In January 2009 CRWP received a grant from the Ohio Water Development Authority (OWDA) through OLEC to establish a stream and wetland mitigation bank.

Goal: Keep all mitigation of stream and wetland impacts within the watershed of impact.

How it Works: Once a mitigation bank is established, mitigation credits are assigned based on proposed restoration, enhancement, or preservation of wetlands and streams. As future development impacts wetlands or streams, credits can be purchased from the mitigation bank to compensate for the impacts that will occur on the development site.

Why is CRWP getting into Mitigation Banking? There are currently no mitigation banks within the watershed, therefore mitigation for most wetland and stream impacts is completed in other watersheds. By establishing a mitigation bank, CRWP will promote stream and wetland restoration while facilitating wise development.

Potential mitigation bank sites are located in:

- Aurora
- Cleveland Metroparks
- Geauga County Property in Munson and Bainbridge Townships
- Geauga Park District in Chester Township and Kirtland
- Hiram House in Moreland Hills
- Holden Arboretum, in both Kirtland and Chardon Township
- Lake Metroparks in Willoughby Hills
- Newbury Township
Look for these 2010 Services

In 2010, numerous opportunities will become available to assist local communities in improving their infrastructure and water quality in area streams. CRWP will work to increase our role in regional discussions about sustainability while continuing our work in the following program areas:

- Assist communities with funding proposals through the Great Lakes Restoration Initiative and Ohio EPA Surface Water Improvement Fund.
- Provide continued Phase II stormwater management assistance to local governments.
- Complete subwatershed plans to target impaired streams in the Chagrin River watershed to ensure full attainment of water quality in Chagrin streams.
- Work with Members to preserve additional open space throughout the watershed.
- Implement the Chagrin River Watershed Balanced Growth Plan and the Chagrin River Watershed Action Plan through comprehensive planning, adoption and implementation of the best local land use practices, restoration of streams and wetlands, preservation of high quality resources, and stormwater retrofits.
- Assist Members in adopting and implementing local zoning regulations.
- Provide website updates and web templates for public education and Phase II compliance.
- CRWP will continue to work with the Northeast Ohio Stormwater Training Council to develop training to assist Phase II communities to comply with their permit requirements. Look for Phase II e-mail updates for future training opportunities such as the March 2010 training on Pollution Prevention and Good Housekeeping that includes site visits to several community facilities.
Serving Members in the Chagrin Watershed

Auburn Township
  Aurora
Bainbridge Township
  Bentleyville
Chagrin Falls Township
Chagrin Falls Village
  Chardon
Chester Township
Claridon Township
Cleveland Metroparks
  Eastlake
  Gates Mills
  Geauga County
  Geauga Park District
  Hunting Valley
  Kirtland
  Kirtland Hills
  Lake County

Lake Metroparks
  Mantua Township
  Mayfield Heights
  Mayfield Village
  Mentor
  Moreland Hills
  Munson Township
  Newbury Township
  Orange Village
  Pepper Pike
  Russell Township
  Solon
  South Russell
  Waite Hill
  Wickliffe
  Willoughby
  Willoughby Hills
  Woodmere

For more information contact:

Chagrin River Watershed Partners, Inc.
P.O. Box 229 Willoughby, Ohio 44096-0229
Phone: (440) 975-3870  Fax: (440) 975-3865
Web site: www.crwp.org

Amy H. Brennan, Director: abrennan@crwp.org
Rachel M. Webb, Low Impact Development Coordinator: rwebb@crwp.org
  Mindy Hayes, Program Associate: mhayes@crwp.org
Linda Moran, Administrative Assistant: lmoran@crwp.org