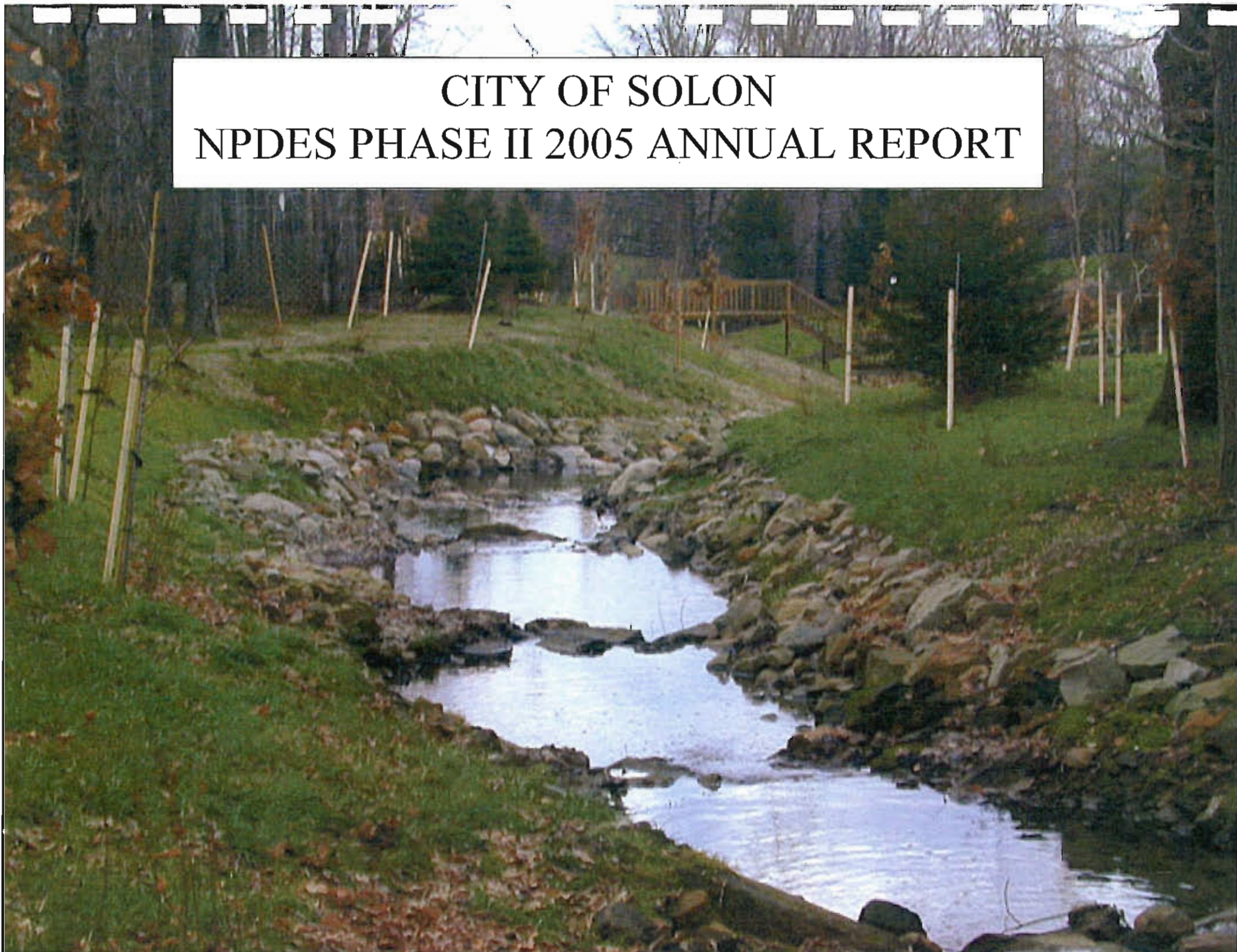


CITY OF SOLON
NPDES PHASE II 2005 ANNUAL REPORT





The City of Solon

SERVICE DEPARTMENT

6600 Cochran Rd.
Solon, OH 44139-3904
Phone: (440) 248-5834
Fax: (440) 248-8969

March 23, 2006

Ohio EPA - Central Office
Attn: Mr. Jason Fyffe
Division of Surface Water
P.O. Box 1049
Columbus, Ohio 43216-1049

and Ohio EPA - Northeast District Office
Attn: Mr. Dan Bogoevski
Division of Surface Water
2110 E. Aurora Road
Twinsburg, Ohio 44087

Re: 2005 Annual Report - NPDES Phase 2 Program

Dear Mr. Fyffe and Mr. Bogoevski,

Please find enclosed one copy of the City of Solon's 2005 Annual Report for the Ohio EPA NPDES Phase 2 Storm Water Program as required.

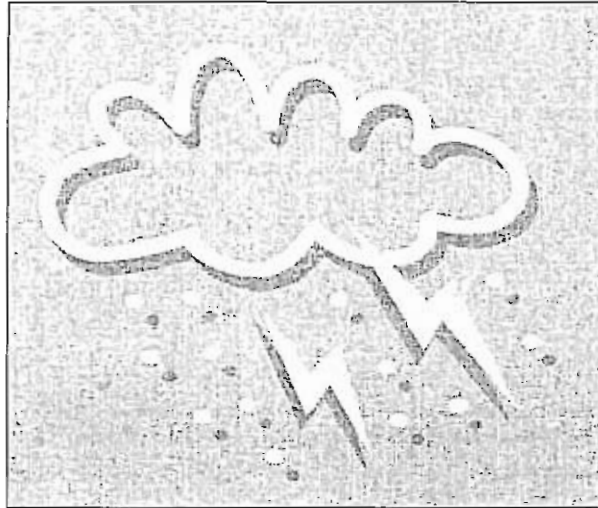
If you have any questions or comments regarding the above, please feel free to call me at 440-248-5834. Thank you in advance for your cooperation.

Sincerely,

Bill Mooney
Director of Public Works

attachments

cc (w/att): James Stanek, Director of City Services
John J. Busch, PE, City Engineer
Joan Milhoan, PE, Asst. City Engineer
Paul Solanics, Acting Supervisor, Water Reclamation
Dan Driscoll, Sewer Division Manager



City of Solon, Ohio

NPDES Phase II 2005 Annual Report

Report to Ohio EPA Regarding Status of the City of Solon
Storm Water Management Program
In Conformance with Ohio EPA NPDES Permit 3GQ00036*AG

March, 2006

City of Solon
Public Education and Outreach
2005 Best Management Practices and Measurable Goals

A. Curb Marker Program - Effective

Curb markers installed in 2004 by the 8th grade student group, Save our Streams and in 2001 by City employees continue to be effective.

All catch basin castings replaced in the City of Solon, either by contract or Service Department crews, are the "Dump No Waste" type. Projects in which catch basin castings were added or replaced during the year 2005 include:
The Annual Catch Basin Repair Program, Thornbury Subdivision, Phase 8 and Baldwin Road.

B. Rain Gauge Program – see Pollution Prevention / Good Housekeeping

The information recorded by the rain gauges located at the City's Water Reclamation Plant and the Northeast Pump Station is not used for public education and will be reported in the Pollution Prevention / Good Housekeeping section of this report.

C. Educational Brochures - Effective

The City of Solon keeps various storm water quality brochures displayed and available for the public at the main reception lobby in City Hall and at the Engineering / Building Department waiting area. Brochures include the following titles:

Recipes for a Healthy Chagrin River - CRWP

The Solution to Stormwater Pollution – EPA 833-B-03-003

After the Storm – EPA 833-B-03-002

A six page educational series titled "Life on the Waters Edge" was distributed to adjacent property owners on the Boulder Creek Stream Rehabilitation Project. A location map is included at attachment "A."

D. City Participation in Partnership – Highly Effective

Throughout 2005, the City of Solon maintained a "Trustee" standing with the Chagrin River Watershed Partners and participated in their meetings and functions. The CRWP-members and staff continue to be extremely helpful by sharing information and supporting our Storm Water Management Program. A copy of the CRWP 2005 Annual Report is included as attachment "C."

CRWP Staff assisted the City of Solon with the preparation and submission of the final report for our Boulder Creek Streamside Stabilization Project which was performed this

**City of Solon
Public Education and Outreach
2005 Best Management Practices and Measurable Goals**

year and supplemented by grant funds that the partnership assisted us in obtaining. A copy of the Boulder Creek Stabilization Project final report is included as attachment "B".

CRWP Staff provided us with a series of six Toolbox Talks which were prepared by Lake County (a partnership member). One of the talks was used for a storm water quality education and training session for City Engineering and Service Department employees this permit period.

CRWP Staff provided us with 200 copies each of a series of six fact sheets on stream management titled "Life at the Water's Edge".

E. Additional Strategies

E1. Web Page Announcement – Very Effective

The NPDES Phase 2 informational web page posted on the City of Solon web site has remained in place.

The Drainage Problem Questionnaire was available on the web site for the purpose of reporting storm water quality or quantity issues to the City.

E2. Community Television Channel – Very Effective

The Ohio EPA video "Tempest in a Channel: Stormwater Runoff's Impact on Urban Streams" was aired at varying times each day for one month, from late December into January 2006.

E3. Drainage Problem Questionnaires - Highly Effective

Drainage Problem Questionnaires are available to the public on line and in the Engineering Department for reporting stormwater quantity or quality issues.

City of Solon Public Participation & Involvement

A. Curb Marker Program - Effective

Curb markers installed in previous years by the Service Department and the volunteer group "Save our Streams", were evaluated and found to be in good condition.

C. Public Meetings – Very Effective

Two public meetings were held for the Aurora East Infrastructure Improvement Project. The project consists of installing storm and sanitary sewers in a previously un-sewered area. The meetings were advertised to the public and affected property owners were notified of the meetings by mail. The purpose of the two meetings was to explain the construction project to members of the public and specifically to those who would be directly affected by construction on a daily basis and to describe their private responsibilities upon completion of the project.

The City is a member and participated in all four regular meetings and special meetings publicly advertised and held by the Chagrin River Watershed Partners.

D. Volunteer Program - Effective

The high school student volunteer group, "Save Our Streams", was contacted and plans are developing to enlist their assistance for installing curb markers and distributing fliers to streamside residents and / or at public events.

E. Additional Community Programs

E1. Drainage Problem Questionnaire – Very Effective

Drainage Problem Questionnaires are available to the public on the City of Solon website and in the Engineering Department. In 2005, approximately 20 questionnaires were received by the Engineering Department regarding various storm water issues throughout the city. The City responded to all of these concerns by supplying informational handouts. If the problem and its solution only affected water quantity on one lot, a copy of the Cuyahoga County Soil & Water Conservation District's informational handout entitled "Improper Drainage – A Homeowner's "Nightmare" was provided to the homeowner along with advice to help him correct his problem.

If the problem reported affected multiple properties, the Engineering Department investigated and designed and installed a solution that would best benefit all of the affected residents. Often the solution required additional effort by the homeowner.

City of Solon Public Participation & Involvement

All of the problems reported in 2005 were water quantity issues.

On June 28, 2005, a portion of the City experienced the most intense rain storm to hit the City in over 25 years. The storm affected the south central portion of the City the most. More than five inches of rain fell on that portion of the City in a little more than an hour's time.

During and following the June 28, 2005 storm event, approximately 144 storm water concerns were reported to the Public Works, Service and Engineering Departments. Each concern was addressed in-person or by telephone. Service Department crews inspected laterals for blockage and assisted wherever possible. With very few exceptions, sewer back-ups occurred due to an extremely high volume of rain falling in a very short period of time.

City of Solon Illicit Discharge Detection and Elimination

F. Additional Procedures

F1. Preventative Maintenance Procedures - Effective

The City has designated a new Sewer Division in the Service Department. The purpose of the Sewer Division is to implement an effective preventative maintenance program by cleaning, inspecting and performing required repairs in the storm sewer system. In order to be most effective, the Storm Water Manager and the Sewer Division Manager positions have been combined. This combination of responsibilities gives the person responsible for implementing and monitoring the Storm Water Management Plan the authority to make the greatest possible impact in the program to maintain the storm water system.

F2. Sanitary and Storm Sewer Projects - Highly Effective

One final home was tied into the new sanitary sewer system which was installed on our Aurora West Infrastructure Improvement Project. This project, constructed in 2001 and 2002, eliminated 198 separate home treatment systems.

In 2005, the City awarded a \$10,800,000.00 contract, which is well underway, to construct the Aurora East Infrastructure Improvement Project. The construction of sanitary and storm sewers in this previously un-sewered area is designed to eliminate 448 separate home treatment systems.

City of Solon Construction Site Runoff Control

A. Ordinance & Design Criteria Review - Very Effective

Chapter 1254 of the codified ordinances gives the City Engineer authority to take necessary steps to insure compliance with approved grading and erosion control plans. The ability to issue a stop work order has proven to be an effective tool for getting corrective measures quickly implemented.

B. Non-compliance Notification Procedures - Highly Effective

When corrective measures were determined to be required to bring a construction site into compliance with the approved site plan or to provide effective erosion control, the builder was notified of deficiencies in writing from the office of the City Engineer. Notification was often followed up with a meeting by the builder/contractor on site. Corrective measures were finally inspected and approved. Notifications included a copy of our silt fence installation standard drawing.

During 2005, thirteen builders were issued non-compliance notifications regarding forty different sites.

C. On-site City Inspections - Highly Effective

In 2005, the City contracted with an independent inspection firm to inspect and report on the erosion control measures in the Thornbury Subdivision, Phases 7 & 8 construction projects. Each project was inspected twice per week and after rainfalls of 1/2" or greater. A total of 143 inspections were performed in 2005.

In 2005, the City issued permits for 123 new home starts and 4 commercial / industrial projects. The Engineering Department reviewed, revised as needed and approved the various site plans. The City inspected each of these sites to verify that grading and erosion control measures were installed in accordance with the approved plans.

The City followed up with re-inspections of the construction sites and notified thirteen builders of erosion control deficiencies on forty different sites. The City used these notifications as an educational opportunity. Attached to each notification was a copy of the standard drawing for silt fence installation. The City met with the builders at the various sites, reviewed the corrective measures that were required to re-establish effective erosion control and re-inspected to verify that the corrective measures were properly implemented. Stop Work Orders were issued at seven different building sites to force compliance.

City of Solon Post Construction Runoff Control

C. Storm Water & Sanitary Task Force – Renamed “Public Works Task Force” - Highly Effective

The Public Works Task Force continued to meet regularly throughout the year 2005 to address stormwater and other various issues.

D. Additional Procedures

D1. City Construction Projects - Highly Effective

With the assistance of the Chagrin River Watershed Partners, the City received a \$30,000 grant from the Great Lakes Commission to construct the Boulder Creek Stabilization Project for a total cost of \$234,950.00. A copy of the project final report is included as attachment “B”. A photograph of the Boulder Creek project is included as the cover page for this report.

Aurora East Infrastructure Improvement Project – The City designed and awarded a contract and is currently constructing sanitary sewers in an older section of the City where sewers did not previously exist. This \$10,800,000.00 project will install 31,990 lf. of new sanitary sewers and 18,844 lf. of storm sewers and will eventually eliminate 448 residential septic systems. In an effort to encourage timely connections of private properties to the new sewer systems, tap-in fees will not be assessed to owners who are issued permits and properly connect their existing sanitary sewer lateral and abandon their existing septic system within 120 days of project completion.

The final connection of 198 total new connections of existing sanitary sewer laterals into the new sanitary sewer system installed on the Aurora West Infrastructure Improvement Project was completed in 2005, which accomplished the elimination of an equal number of separate home treatment systems.

The City contracted for the dredging of the Cheswick pond. The contract cost was \$27,472.00 and accomplished the removal of approximately 4000 cubic yards of material and restored the pond to its original design performance. The storm water managed by this structure is received from Orange Village, a neighboring community.

In the year 2005, the City contracted for the dredging of Gallows Pond, cleaning of a portion of the Liberty Road ditch (along the old railroad tracks at Liberty Road and Chagrin Highlands), and the cleaning of the Creekside ditch.

City of Solon Post Construction Runoff Control

The total cost for this project was \$9,500.00.

The City performed a contract in the amount of \$9,000.00 for the removal of silt from the stream located at 34765 Lakeview Drive.

With the City Annual Restoration Project, embankments were reconstructed on Aurora Road, near the Metro Park, rip-rap was installed at various outfalls and swales restored for proper drainage. The total cost for the project was \$50,060.00.

City of Solon Pollution Prevention / Good Housekeeping

A. Employee Education Program – Very Effective

With the assistance of the Chagrin River Watershed Partners and the cooperation of Lake County, the City of Solon has obtained a series of storm water pollution prevention "Tool Box Talks". In a series of three sessions, with the assistance of the Chagrin River Watershed Partners, the city presented the first topic in the series to employees of the Service and Engineering Departments. The topic was titled "Construction Site Spill Response" and was presented to 72 employees. A copy of the handout is included as attachment "D."

Using the combination of handouts, brief lecture and open discussion was very effective in reviewing and evaluating procedures, informing the work force and addressing employee concerns.

B. Street Sweeping Practices – Very Effective

In 2005, the Service Department swept every street in the city a minimum of three times. Arterial streets including SR-91, SR-43 and Cochran Road were swept more frequently.

C. Water Quality Monitoring - Effective

The primary system that is in place for the public to report water quality issues is our Drainage Problem Questionnaire. The questionnaire is available on our website and in our Engineering Department. In 2005, approximately 20 Drainage Problem Questionnaires were received by the Engineering Department. None of these questionnaires reported water quality issues.

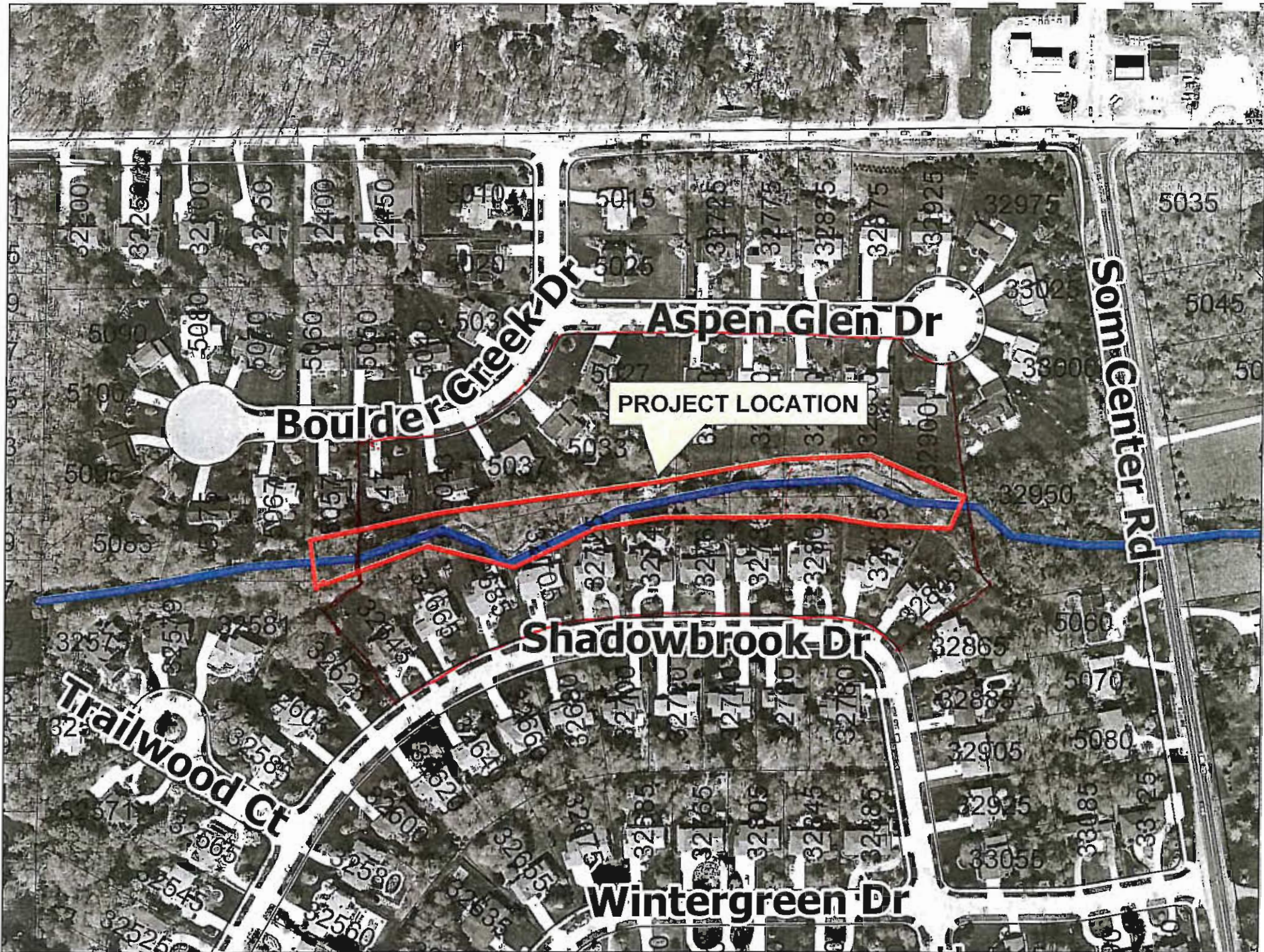
D. Rain Gauge Program - Effective

The City has been monitoring and recording rainfall data at the Water Reclamation Plant and at the Northeast Pump Station. The new rain gauges have proven to be very reliable.

ATTACHMENT “A”

Boulder Creek Stream Rehabilitation Project

Location Map



Boulder Creek Dr

Aspen Glen Dr

PROJECT LOCATION

Shadowbrook Dr

Wintergreen Dr

Trailwood Ct

Som Center Rd

ATTACHMENT “B”

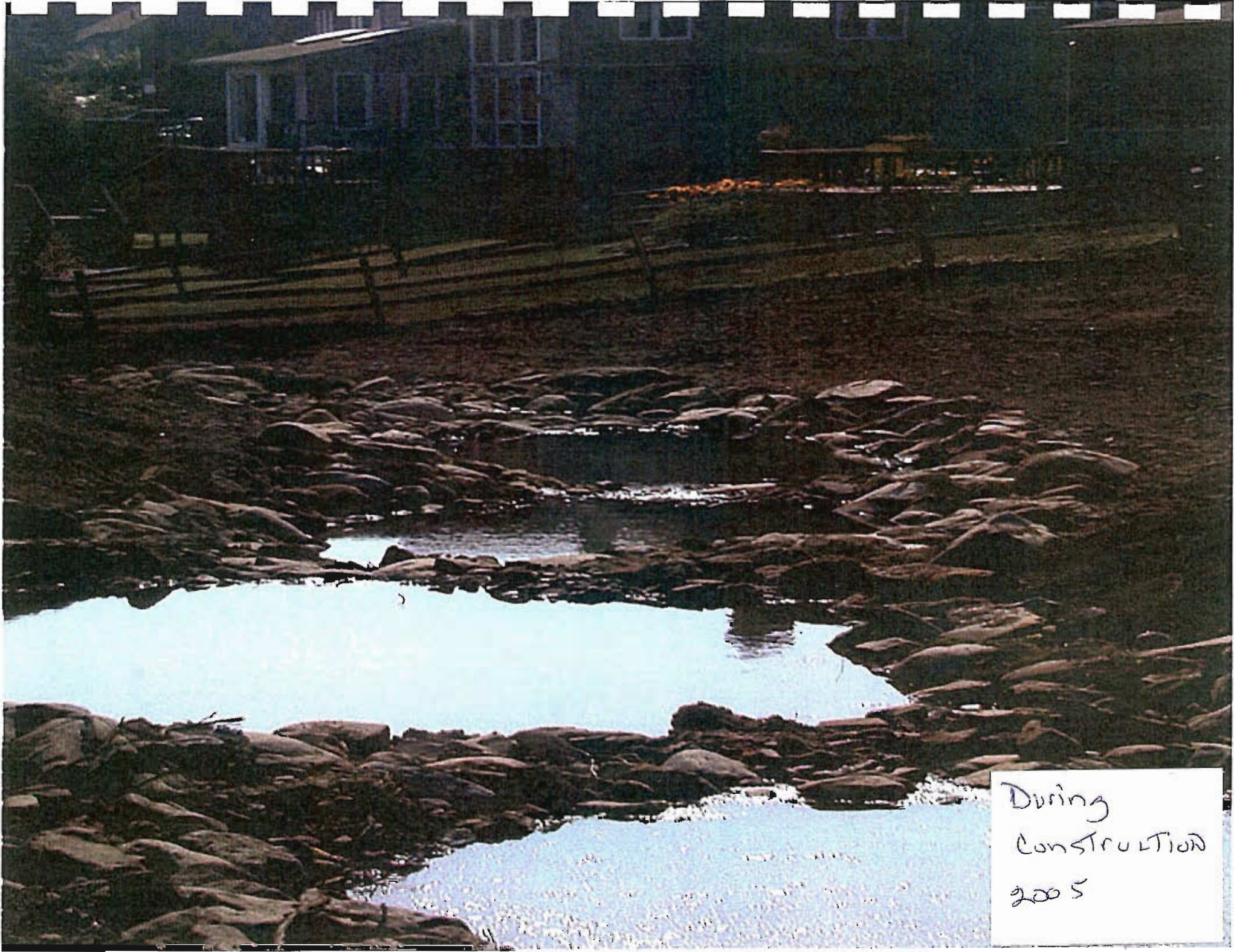
Boulder Creek Stream Rehabilitation Project

Final Report

**Photos: Before Project
After Project
Finished Project on Cover**



BEFORE
CONSTRUCTION
2005



During
Construction
2005

Boulder Creek Restoration Project

Problem Statement

The problem in Boulder Creek is excess sedimentation due to stream bank erosion. This erosion is caused by unstable channel morphology, including channel incision and subsequent bank failure, as a result of channel relocation in the mid-1980's.

Boulder Creek is a headwater stream of the Chagrin River and is located in the City of Solon, Ohio. Before reaching the Chagrin River, Boulder Creek joins Sulphur Springs Creek, the location of successful brook trout reintroduction. The presence of brook trout in this location highlights the importance of addressing the erosion on Boulder Creek as a source of high sediment loading.

The seriously incised channel condition and poorly vegetated banks, composed of manicured lawns, insure a long-term source of sediment to downstream areas causing loss of habitat and insufficient canopy cover. Like Boulder Creek, many streams within the Great Lakes basin have been relocated and encroached upon by development. The Boulder Creek Restoration Project will demonstrate the cooperative efforts of the City of Solon and riparian landowners in restoring this urban stream to a stable morphology and condition that controls the export of offsite sediment and is sustainable with its water and sediment supply.

Ohio EPA's 2002 and draft 2004 Integrated Water Quality Assessment and Monitoring Reports highlight suburbanization, flow alteration, habitat alterations, urban runoff, and storm water runoff as major sources of impairment to the Chagrin River. Additionally, the Ohio EPA has highlighted the importance of the health of headwater streams through its Headwater Stream Initiative. These headwater stream resources are often impacted, contributing to non-attainment of downstream resources.

Background:

Boulder Creek is located in the City of Solon, Ohio and is a tributary of the Chagrin River. The Creek is an example of an urban stream that has been impacted by channelization and riparian vegetation removal as the result of development. While the stream appears to have reclaimed a floodplain and reestablish sinuosity in some reaches, much of the riparian vegetation has been removed and several areas of the channel show signs of severe erosion and instability.

The Boulder Creek Restoration Project will demonstrate the cooperative efforts of the City of Solon and riparian landowners in restoring an urban stream and reducing soil erosion and sedimentation. The entire length of the stream reach from the culvert pipe to the road crossing at SOM Center (St. Rt. 91) as shown in Figure 1 is 2,000 linear feet. The watershed draining to the storm water drainage pipe, which is the beginning of this stream, is 269 acres. As the stream flows between the Boulder Creek Subdivision and the SOM Hills Subdivision, an additional 349 acres drains to this stream. Boulder Creek flows southeast and enters the Cleveland Metroparks approximately 1.5 river miles downstream. Boulder Creek drains into Sulphur Springs Creek on Metroparks property and ultimately to the Chagrin River near the Miles Road bridge.

Sulphur Springs Creek supports brook trout that were reintroduced into this stream throughout the early 1990's by staff and students from University School. The brook trout rely on clean gravel deposits at the tail end of pools for spawning beds and riffles with adequate macroinvertebrate populations for feeding. Any excess sediment supplied by the erosion along Boulder Creek is

detrimental to this brook trout population. Additionally brook trout require cool water and shading provided along Boulder Creek would assist in maintaining cooler temperatures within Sulphur Springs.

Through this Project, the City of Solon will assist Boulder Creek morphology to reach dynamic equilibrium. Although this process may eventually occur naturally, completing this project will shorten the process and minimize downstream impacts caused by excessive sedimentation. The City will address problems along a 2,000 linear foot reach of stream through the following steps:

Restore Boulder Creek: Perform geomorphic rehabilitation of approximately 300 linear feet of stream. This will involve:

- Reducing bank height and re-establishing a floodplain bench at a lower elevation.
- Stabilizing stream banks by reducing bank slopes, stabilizing the toe of the slope where necessary, and planting high quality riparian vegetation.
- Installing step pools and naturalized bed control to stabilize stream grade where there are head cuts and increases in profile.

Activities:

Restore Boulder Creek: Perform geomorphic rehabilitation of approximately 300 linear feet of stream by:

- Establishing active floodplain,
- Stabilizing stream banks,
- Planting high quality riparian vegetation, and
- Installing bed controls to stabilize stream grade where necessary.

Provide Landowner Education

- Distribute stream management fact sheets to the 26 residents of the Boulder Creek stream corridor.
- Host one (1) ribbon cutting ceremony with public officials and Boulder Creek residents.
- Host Internet link of the Boulder Creek Restoration Project on City of Solon website throughout the construction process.

Improve Water Quality: Make three (3) site visits annually to monitor the slope stability and planting success on Boulder Creek.

Best management practices used to complete the stream restoration were natural channel design concepts for stream restoration and included step pools to stabilize grade, planting of native riparian vegetation to provide long-term stability of stream banks. The existing bank height was lowered to restore an active floodplain and further contribute to channel stability.

The landowner education materials distributed by the City of Solon were reprinted by the Chagrin River Watershed Partners, Inc. and provided to the City. Copies of the Life at the Water's Edge fact sheets can be viewed at <http://www.crwp.org/publications/publications.htm>.

The City of Solon would use these BMP's on future stream restoration projects as they may become available. The Boulder Creek site is located with the Chagrin River watershed. A watershed action plan has been developed and is currently under review. A copy of this plan can be viewed at http://www.crwp.org/watershed_action_plan/watershed_action_plan.htm.

Project Results:

The Boulder Creek restoration has been constructed and appears to be performing well. Prior to construction this stream was incised and exhibited heavily eroding stream banks. Nearly 2,000 linear feet of stream now has a more stable geomorphology and improved habitat. The restored channel has a better substrate for macroinvertebrate and fish habitat. In addition the stabilization of the stream banks and minimization of sediment loading will further encourage an improved biological community. Restoration of this area will help promote downstream health as well by minimizing sediment transport and promoting macroinvertebrate populations. Fish have already been observed utilizing the created pools. Future monitoring of this stream will be completed to ensure maintenance of the riparian vegetation and stream stability.

Education provided to the area residents will help them become better land stewards. The project was well received by the local residents and provided opportunities for education and discussion.

ATTACHMENT “C”

**Chagrin River Watershed Partners
2005 Annual Report**



CHAGRIN RIVER WATERSHED PARTNERS, INC. 2005 PROGRAM HIGHLIGHTS

Claridon Township Joins CRWP, Growing Membership to 90% of the Watershed: We welcomed Claridon Township and now have 34 members. Calfee, Halter, and Griswold LLP and BioHabitats also joined as Sponsoring Members, raising to 15 the number of organizations supporting CRWP.

\$400,000 Awarded for Land Preservation: We successfully partnered with the Chagrin River Land Conservancy on a \$400,000 application to Ohio EPA for land preservation with interested member communities.

Members Defend Zoning: CRWP members joined together in 2005 to support an *amicus brief* in the pending Ohio Supreme Court case of *Jaylin Investment Inc. v. Village of Moreland Hills*. CRWP partnered with Cuyahoga Soil and Water Conservation District to submit this brief that articulated the storm water management rationale for low-density development. The results of this case are pending.

CRWP Helps Your Community...

- *Compete for state and federal funding.*
- *Review development proposals to minimize infrastructure costs.*
- *Comply with Ohio EPA Phase II storm water requirements.*
- *Implement regulations to control flooding and erosion problems.*
- *Address resident's flooding and erosion concerns.*

Members Continue to Improve the Rules for Development: We worked with members across the watershed to adopt and implement **Comprehensive Storm Water Management, Erosion and Sediment Control, Conservation Development, and Riparian and Wetland Setbacks**. Russell adopted conservation development, and **Hunting Valley** and **Claridon** are considering such regulations. We supported these members by reviewing regulation drafts and addressing questions from their Planning Commissions, Trustees, and Councils. With our watershed Geographic Information System and work with communities across the region, we provided technical support necessary to address concerns about this non-traditional approach to development. We worked with **Orange** and **Wickliffe** on storm water management and erosion and sediment control. We assisted **Aurora, Auburn, Bainbridge, and Kirtland** with implementation of their existing riparian setbacks. We also prepared draft riparian setback maps and/or regulations for **Chagrin Falls Township, Mentor, and Orange** as they consider this regulation as part of Phase II compliance for 2006.

With overwhelming member support, we received \$200,000 from the Ohio Water Development Authority and the Ohio Lake Erie Commission to participate in the Balanced Growth Pilot Program. The Balanced Growth Program is Ohio's effort to better align state spending and incentives with local conservation and development priorities. Over the next 3 years CRWP will work with members to identify local priority development and conservation projects, effectively communicate these to state agencies such as the Departments of Transportation, Development, and Natural Resources, and facilitate funding for these projects. The goals of this effort are a member and state endorsed Balanced Growth Plan for the watershed, increased funding for members, and additional technical support for local zoning.

We also received \$61,520 from the Lake Erie Protection Fund to address member concerns about the implementation of riparian setbacks and comprehensive storm water management.

Development Projects Improve with CRWP Assistance: In 2005 we worked closely with members to enhance their review of development projects. Members asked for our assistance on these projects because they presented particular concerns such as potential downstream storm water impacts or difficult topography with significant streams and wetlands. Our assistance on the sites listed below included field evaluations to verify stream and wetland delineations, review of site plans in conjunction with the Geauga County Planning Commission to suggest alternative layouts to minimize resource impacts and storm water problems, meetings with developer consultants, and testimony before the Geauga County Planning Commission on variance requests.

- **Auburn:** Fireside, Hidden Lakes, LaDue Trails, and Moreland subdivisions.
- **Bainbridge:** Judson Retirement Community, Fine Alpaca and Fireside subdivisions, and The Shops at Marketplace.
- **Chagrin Falls Township:** Single family home development.
- **Mentor:** Newell Creek subdivision.
- **Munson:** Nottingham Woods and Falling Water subdivisions.
- **Newbury:** Proposed commercial development.
- **Kirtland:** Foxwood Farms, Stone Creek, and Courtney Lane subdivisions.
- **Russell:** Rivendell subdivision.
- **Willoughby:** Willoughby Crossing subdivision.

Members Comply with Phase II Using CRWP Presentations, Tools & Support: In addition to helping members adopt and implement regulations as part of their Phase II programs, we helped members meet their storm water management commitments by:

- Partnering with the Geauga Soil and Water Conservation District and the Geauga County General Health District to provide a series of four evening programs for residents across

western Geauga County on septic systems, rain gardens, and other storm water topics.

- Hosting a **storm water case study** workshop for local officials, engineers, site designers, and other professional advisors. Seventy people attended this workshop.
- **Presenting the model comprehensive storm water management regulation** to engineers throughout the watershed including the staff of CT Consultants and the members of the Municipal Engineers Association of Northeast Ohio.
- Partnering with Lake County General Health District and the Cuyahoga County Board of Health to develop an Ohio EPA approved model ordinance for **detection and elimination of illicit discharges**. Communities must adopt such a regulation as part of compliance with Phase II Minimum Control Measure #3 and many will be considering this model for 2006.

CRWP works with Members and Residents on Low Cost Solutions to Flooding & Erosion: As land use intensifies, residents face yard flooding and stream bank erosion that may threaten homes, driveways, and other property. While traditional solutions such as culvert widening and replacement, regional retention, and gabion baskets may be necessary in certain situations, they are costly and may transfer problems to other communities and landowners downstream. We worked with members such as **Auburn, Aurora, Bainbridge, Chagrin Falls Village, Cleveland Metroparks, Eastlake, Gates Mills, Hunting Valley, Munson, Newbury, Russell, Willoughby, and Willoughby Hills** and their residents on low cost, lot based solutions to these problems such as rain gardens, rain barrels, floodplain benches, and streamside plantings. We also partnered with the **Geauga SWCD** to construct a **rain garden demonstration site** at the Geauga County Fairgrounds.

Funding Members Restoration and Preservation Efforts:

Under certain circumstances, developers must mitigate their impacts to streams and wetlands. We worked with community officials and interested residents in **Aurora, Bainbridge, Chester, Geauga County, Kirtland, Mentor, Munson, Newbury, South Russell, Wickliffe, Willoughby, and Willoughby Hills** to find sites in these communities where landowners – both local governments and residents – can fund their restoration and preservation efforts through payments from developers to address impacts elsewhere in the watershed.

Watershed projects: Through these projects we gathered information to support member land use decisions, implementation of model regulations, and improved grant applications. In 2005 we -

- **Provided stream management information to 113 headwater stream landowners and their community officials.**
- **Produced the report *Updating Parking Requirements to Minimize Impervious Cover.***
- **Produced the report *Alternative Sewage Treatment Systems & Conservation Design in Unsewered Areas.***
- **Revised *The Chagrin River Watershed Action Plan* for full endorsement.**
- **Updated the report *Riparian Setbacks: Technical Information for Local Decision Makers.***

Watch for in 2006

- **Demonstration Projects for Storm Water Management:** A request for possible projects will go to members in early 2006. This is made possible through the \$750,000 grant CRWP received from USEPA.
- **Training for Riparian Setback Implementation.**
- **Demonstration Projects for Floodplain Restoration during Development.**
- **Dam Safety Workshops.**

For More Information Contact

Kyle Dreyfuss-Wells, Director
440-975-3870 kdw@crwp.org

Regular Members: Auburn, Aurora, Bainbridge, Bentleyville, Chagrin Falls, Chagrin Falls Twp., Chester, Claridon, Cleveland Metroparks, Eastlake, Gates Mills, Geauga County, Geauga Park District, Hunting Valley, Kirtland, Kirtland Hills, Lake County, Lake Metroparks, Mayfield Heights, Mayfield Village, Mentor, Moreland Hills, Munson, Newbury, Orange, Pepper Pike, Russell, Solon, South Russell, Waite Hill, Wickliffe, Willoughby, Willoughby Hills, and Woodmere.

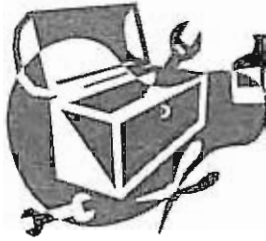
Sponsoring Members: BioHabitats, Calfee, Halter, and Griswold LLP, Chagrin River Land Conservancy, CT Consultants, Inc., EMH&T, Inc., EnviroScience, Inc., FMSM Engineers, Inc., The Holden Arboretum, North Coast Fly Fishers, Ohio Central Basin Steelheaders, Ohio Stream Preservation, Inc., Partners Environmental Consulting, Inc., TranSystems Corporation, URS Corporation, and Western Reserve Federation of Conservationists.

Other 2005 Funders: The George Gund Foundation, Great Lakes Commission Great Lakes Basin Program for Soil Erosion and Sediment Control, Lake County Stormwater Management Department, and Ohio Department of Natural Resources Office of Coastal Management and Division of Soil and Water Conservation.

ATTACHMENT “D”

Employee Education Program

Tool Box Stormwater Pollution Prevention Talks



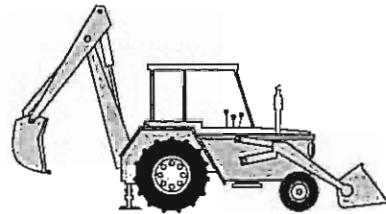
construction site
Spill Response – petroleum products

Introduction

There are several ways that hazardous substances can be spilled during construction operations and could lead to the pollution of stormwater. The hazardous substances include paints, cleaners, petroleum products, hydraulic fluids, and solvents.

There are many ways that pollutants can enter the storm drainage system at a construction site. The most common ways are dripping from vehicles, disposal of waste material and accidental spillage.

A very small amount of hazardous substance can pollute a very large quantity of water, so appropriate clean up is important.



Clean Up

Questions for staff:

Do you know the proper way to clean up small leaks?

Where do you dispose of equipment wash water?

Do you know what to do in the event of a larger spill?

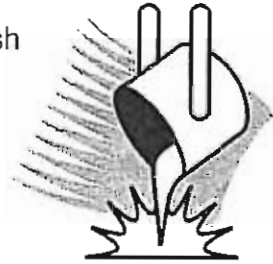
Dripping from Vehicles

Even with proper maintenance, vehicles can have small leaks of petroleum products. If the leak is on a hard surface such as pavement or concrete, use kitty litter or sand to spread over the area. Shovel up the contaminated material and dispose of it at the trash dump.

If the leak occurs on a gravel surface, immediately use a shovel to collect the contaminated soil. If left, it can quickly contaminate a larger area. Again, dispose of the contaminated material at the trash dump.

Disposal of Wash Water

Construction site workers have been observed disposing of wash water in catch basins, or in ditches, creeks, rivers, or streams. This directly contaminates water resources and is not permitted under any circumstances. Wash water should be disposed of down the sanitary sewer or placed in a holding tank for proper disposal.



If you observe an individual disposing of wash waters in an inappropriate way, immediately tell your supervisor or contact your local Health Department.

Spills



If the spill is greater than 25 gallons, it must be reported to Ohio EPA (800-282-9378), the local fire department (440-349-6333), and the local emergency planning committee (440-951-5252). These numbers should be posted in the maintenance facility.

If the spill is less than 25 gallons, then all contaminated soil should be collected and disposed of in an approved location.

Points to remember

Fast response to a spill can limit the amount of contamination and reduce pollution.

On a hard surface use kitty litter or sand to clean up petroleum spills.

Spills greater than 25 gallons must be reported.

Never pour wastewater into catch basins, ditches, creeks, rivers, or streams.

Report any suspicious activity.